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SESSIONAL PAPERS.

VOLUME 9.

SECOND SESSION OF THE SIXTH PARLIAMENT

OF THE

DOMINION OF CANADA.

SESSION 1888.



VOLUME XXI.

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CONTENTS OF VOLUME No. 1.

1. Public Accounts of Canada, for the fiscal year ended 30th June, 1887. Presented to the House of Commons, 27th February, 1888, by Sir Charles Tupper. Estimates for the fiscal year ending 30th June, 1889; presented 1st March, 1888. Supplementary Estimates of Canada for the fiscal year ending 30th June, 1888; presented 23rd April, 1888. Supplementary Estimates of Canada for the fiscal year ending 30th June, 1889; presented 14th May, 1888—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 2.

2. Report of the Auditor-General on Appropriation Accounts, for the year ended 30th June, 1887. Presented to the House of Commons, 27th February, 1888, by Sir Charles Tupper—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 3.

3. Tables of the Trade and Navigation of the Dominion of Canada, for the fiscal year ended 30th June, 1887. Presented to the House of Commons, 27th February, 1888, by Hon. M. Bowell—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 4.

4. Report of the Minister of Agriculture for the Dominion of Canada, for the calendar year 1887. Presented to the House of Commons, 27th March, 1888, by Hon. J. Carling—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 5.

- 4a. Report on Canadian Archives, 1887.....*Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 6.

- 4b. Criminal Statistics for the year 1886, being an Appendix to the Report of the Minister of Agriculture for the year 1886. Presented to the House of Commons, 18th May, 1888, by Hon. J. Carling.....*Printed for both Distribution and Sessional Papers.*
- 4c. Abstracts of the Returns of Mortuary Statistics for the year 1887—
Printed for both Distribution and Sessional Papers.
- 4d. Experimental Farms. Reports of the Director, Entomologist and Botanist, Chemist, and Horticulturist, for 1887.....*Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 7.

5. Twentieth Annual Report of the Department of Marine, for the fiscal year ended 30th June, 1887. Presented to the House of Commons, 13th March, 1888, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.
- 5a. Report of the Chairman of the Board of Steamboat Inspection, for calendar year ended 31st December, 1887.....*Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 8.

6. Annual Report of the Department of Fisheries, Dominion of Canada, for the year 1887—
Printed for both Distribution and Sessional Papers.
- 6a. Report of the Commissioners appointed to enquire into and report upon the Lobster and Oyster Fisheries of Canada. Presented to the House of Commons, 16th March, 1888, by Hon. G. E. Foster.....*Printed for both Distribution and Sessional Papers.*
- 6b. Special Report of the Fisheries Protection Service of Canada, 1887—
Printed for both Distribution and Sessional Papers.

CONTENTS OF VOLUME No. 9.

7. Annual Report of the Minister of Public Works of Canada, for the fiscal year 1886-87 on the works under his control. Presented to the House of Commons, 27th February, 1888, by Sir Hector Langevin.....*Printed for both Distribution and Sessional Papers.*
- 7a. Tables showing the extent and progress of Public Works, Distances, &c., on the main routes of navigation; Railways, Telegraph Lines, &c. Inland Navigation of Canada, Ocean Rates thence to Foreign Countries, Canadian Land Routes to the seaboard. Government Railways and Telegraph Lines, &c., &c. Suez Canal and Panama Canal Routes—
Printed for both Distribution and Sessional Papers.
8. Annual Report of the Minister of Railways and Canals, for the past fiscal year, from the 1st July, 1886, to the 30th June, 1887, on the works under his control. Presented to the House of Commons, 6th March, 1888, by Hon. J. H. Pope—
Printed for both Distribution and Sessional Papers.
- 8a. Report of the Royal Commission on Railways, with Appendices, viz: 1st. Report of Committee visiting United States. 2nd. Supplementary Report of same. 3rd. Extracts, Hadley, &c. Presented to the House of Commons, 29th February, 1888, by Hon. J. H. Pope—
Printed for both Distribution and Sessional Papers.
- 8b. Reports, Railway Statistics of Canada, and Capital, Traffic and Working Expenditure of the Railways of the Dominion, 1887. Presented to the House of Commons, 17th May, 1888, by Sir Charles Tupper.....*Printed for both Distribution and Sessional Papers.*

CONTENTS OF VOLUME No. 10.

9. Abstract of Statements of Insurance Companies in Canada for year ending 31st December, 1887. Presented to the House of Commons, 4th May, 1888, by Sir Charles Tupper—
Printed for both Distribution and Sessional Papers.
- 9a. Report of the Superintendent of Insurance, for the year ended 31st December, 1887—
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CONTENTS OF VOLUME No. 11.

10. Annual Report of the Department of Militia and Defence of the Dominion of Canada, for the year ended 31st December, 1887. Presented to the House of Commons, 27th February, 1888, by Sir Adolphe Caron*Printed for both Distribution and Sessional Papers.*
11. Report of the Minister of Justice as to Penitentiaries in Canada, for the year ended 30th June, 1887. Presented to the House of Commons, 27th February, 1888, by Hon. J. S. D. Thompson—
Printed for both Distribution and Sessional Papers.
12. Report of the Secretary of State of Canada, for the year ended 31st December, 1887. Presented to the House of Commons, 28th February, 1888, by Hon. J. A. Chapleau—
Printed for both Distribution and Sessional Papers.

- 12a.** Annual Report of the Department of Public Printing and Stationery for the Dominion of Canada, for year ending 30th June, 1887, with partial Report for services during six months ending 31st December, 1887. Presented to the House of Commons, 13th March, 1888, by Hon. J. A. Chapleau.....*Printed for both Distribution and Sessional Papers.*
- 12b.** Report of the Board of Examiners for the Civil Service in Canada, for the year ended 31st December, 1887.....*Printed for both Distribution and Sessional Papers.*
- 12c.** (1887.) Report of the Antwerp International Exhibition for 1885—
Printed for both Distribution and Sessional Papers.

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- 13.** Annual Report of the Postmaster General for the year ended 30th June, 1887. Presented to the House of Commons, 28th February, 1888, by Hon. A. W. McLellan—
Printed for both Distribution and Sessional Papers.
- 14.** Annual Report of the Department of the Interior for the year ended 31st December, 1887. Presented to the House of Commons, 27th February, 1888, by Hon. Thos. White—
Printed for both Distribution and Sessional Papers.

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- 15.** Annual Report of the Department of Indian Affairs for the year ended 31st December, 1887. Presented to the House of Commons, 1st March, 1888, by Hon. Thos. White—
Printed for both Distribution and Sessional Papers.

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- 16.** Report, Returns and Statistics of the Inland Revenues of the Dominion of Canada, for the fiscal year ended 30th June, 1887. Presented to the House of Commons, 24th February, 1888, by Hon. J. Costigan *Printed for both Distribution and Sessional Papers.*
- 16a.** Canal Statistics for season of navigation, 1886, being Supplement No. 1 to the Inland Revenue Report, for the year ended 30th June, 1887—*Printed for both Distribution and Sessional Papers.*
- 16b.** Fourteenth Report on Inspection of Weights, Measures and Gas, being Supplement No. 2 to the Report of the Department of Inland Revenue—
Printed for both Distribution and Sessional Papers.
- 16c.** Report on Adulteration of Food, being Supplement No. 3 to the Report of the Department of Inland Revenue*Printed for both Distribution and Sessional Papers.*

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- 17.** List of Shareholders in the Chartered Banks of the Dominion of Canada, as on the 31st December, 1887. Presented to the House of Commons, 14th March, 1888, by the Hon. M. Bowell—
Printed for both Distribution and Sessional Papers.
- 18.** The Civil Service List of Canada, on the 1st July, 1887, pursuant to section 59 of "The Civil Service Act." Presented to the House of Commons, 15th March, 1888, by Hon. J. A. Chapleau—
Printed for both Distribution and Sessional Papers.
- 20.** Report of the Joint Librarians of Parliament on the state of the Library of Parliament. Presented to the House of Commons, 23rd February, 1888, by Hon. Mr. Speaker—
Printed for Sessional Papers only.

CONTENTS OF VOLUME No. 16.

- 21.** Correspondence, Reports of the Minister of Justice, and Orders in Council upon the subject of Provincial Legislation, 1884 to 1887.....*Printed for both Distribution and Sessional Papers.*
- 22.** Statement of Governor General's Warrants issued since last Session of Parliament, and Expenditure incurred on account of same, in accordance with the Consolidated Revenue and Audit Act, section 32, clause b. Presented to the House of Commons, 27th February, 1888, by Sir Charles Tupper.....*Not printed.*

23. Statement of Expenditure on account of Miscellaneous Unforeseen Expenses for the fiscal year 1887-88. Presented to the House of Commons, 27th February, 1888, by Sir Charles Tupper—
Not printed.
24. Report of the Commissioner, Dominion Police, under Revised Statutes of Canada, chapter 184, section 5. Presented to the House of Commons, 27th February, 1888, by Hon J. S. D. Thompson.....*Not printed.*
- 24a. Return of the average number of men employed on the Dominion Police Force during each month of the year 1887, and of their pay and travelling expenses (under Revised Statutes of Canada, chapter 184, section 5). Presented to the Senate, 27th February, 1888, by Hon. Mr. Abbott.....*Not printed.*
25. Return to an Order of the House of Commons, dated 6th May, 1887, for a Return of lands sold by the Canadian Pacific Railway Company up to 1st April, 1887, in the North-West Territories; when sold, and to whom. Presented to the House of Commons, 28th February, 1888 —
Mr. Perley (Assiniboia).....*Not printed.*
- 25a. Return (*in part*) under Resolution of the House of Commons, passed on the 20th February, 1882, on all subjects affecting the Canadian Pacific Railway, respecting details as to: 1. The selection of the route. 2. The progress of the work. 3. The selection or reservation of land. 4. The payment of moneys. 5. The laying out of branches. 6. The progress thereon. 7. The rates of tolls for passengers and freight. 8. The particulars required by the Consolidated Railway Act and amendments thereto, up to the end of the previous fiscal year. 9. Like particulars up to the latest practicable date before the presentation of the Return. 10. Copies of all Orders in Council and of all correspondence between the Government and the railway company, or any member or officer of either, relating to the affairs of the company. Presented to the House of Commons, 8th March, 1888, by Hon. Thos. White.....*Printed for Sessional Papers only.*
- 25b. Supplementary Return under Resolution of the House of Commons, passed on the 20th February, 1882, on all subjects affecting the Canadian Pacific Railway, respecting details as to: 1. The selection of the route. 2. The progress of the work. 3. The selection or reservation of land. 4. The payment of moneys. 5. The laying out of branches. 6. The progress thereon. 7. The rates of tolls for passengers and freight. 8. The particulars required by the Consolidated Railway Act and amendments thereto, up to the end of the previous fiscal year. 9. Like particulars up to the latest practicable date before the presentation of the Return. 10. Copies of all Orders in Council and of all correspondence between the Government and the railway company, or any member or officer of either, relating to the affairs of the company. Presented to the House of Commons, 19th March, 1888, by Hon. Thos. White—
Printed for Sessional Papers only.
26. Return to an Address of the House of Commons to His Excellency the Governor General, dated 6th June, 1887, for copies of the Order in Council appointing Louis Boisvert lighthouse keeper at Grondines, in the place of E. Trottier; and copies of all correspondence recommending Charles N. Trottier for this position. Presented to the House of Commons, 28th February, 1888.—*Mr. De St. Georges*.....*Not printed.*
27. Return to an Order of the House of Commons, dated 27th April, 1887, for a statement setting forth the number of stills seized by the Department of Inland Revenue for the years 1878, '79, '80, '81, '82, '83, '84, '85 and '86, respectively, and the first three months of the year 1887; the names of the persons on whose premises the stills were seized; the names of the informers and the sums paid to each; also statement of the cost of effecting such seizures, and the receipts accruing from all sales of such stills. Also Return to an Order of the House of Commons, dated 27th April, 1887, for a statement showing all seizures effected in Canada for illegal sale of tobacco for each year since 1878 up to 1st March, 1887, inclusive; the names of the persons on whose premises the seizures were made, the amounts realized on such seizures by sale or otherwise, and the expense of making the seizures. Presented to the House of Commons, 28th February, 1888.—*Mr. Rinfret*.....*Not printed.*

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28. Report of the Commissioner of the North-West Mounted Police Force, 1887. Presented to the House of Commons, 3rd April, 1888, by Sir John A. Macdonald.
Printed for both Distribution and Sessional Papers.

- 29.** Return to an Order of the House of Commons, dated 6th June, 1887, for a Return giving the following details of the expenditure connected with the support of the Marine and Immigrant Hospital in the city of Quebec, during the term of years from the date of Confederation to June 30th, 1886, and showing: 1. The aggregate amount voted by Parliament for the maintenance of this hospital during the said term of years. 2. The amount actually expended. 3. The number of persons, other than sick mariners, who received hospital care there during the said term. 4. The aggregate number of days of hospital treatment accorded to them. 5. The number of sick mariners who received hospital care during the same term. 6. The number of days of hospital treatment accorded to them. 7. The average cost per patient per diem of both classes of patients during said term. 8. The price per patient per diem paid to the Montreal General Hospital for the care of sick seamen during the same years—1867-1886 9. The aggregate amount that has been charged during the said term of years to the fund for the relief of sick and distressed mariners, as for expenditure in connection with this Quebec Hospital, by virtue of the Act 31 Victoria, chapter 64, section 12 (now 40 Victoria, chapter 76, section 16). Presented to the House of Commons, 29th February, 1888.—*Mr. Hickey* *Not printed.*
- 30.** Report of the Royal Commission on the Leasing of Water Power, Lachine Canal. Presented to the House of Commons, 2nd March, 1888, by Hon. J. H. Pope.....*Not printed.*
- 30a.** Return to an Address of the House of Commons, to His Excellency the Governor General, dated 5th March, 1888, for a Return of copies of all correspondence between the Government of Canada and the commissioners appointed by the Government to take evidence and acquire information relative to the Trent Valley Canal, and the further progress thereof; of copies of all instructions authorizing the commissioners to act in the premises, and defining their powers and authority and mode of procedure; and of a copy of any and all reports of the engineer or engineers in charge of the works of said canal, made to the Government since the last session of this Parliament. Presented to the House of Commons, 13th April, 1888.—*Mr. Barron*..... *Not printed.*
- 30b.** Return to an Address of the Senate, to His Excellency the Governor General, dated 22nd March, 1888, for a detailed statement of all moneys paid to A. F. Wood, Esq., of Madoc, for services and expenses in connection with his office as valuator or otherwise in connection with the Trent Valley Canal, from the date of his appointment down to the 1st January, 1888. Also a detailed statement of all moneys paid him for services and expenses in connection with his services on the Murray Canal, from 1st December, 1883, to 1st January, 1888, in order to complete the full return of moneys paid him for services in connection with the return asked for at last session. Presented to the Senate, 18th April, 1888.—*Hon. Mr. Flint*..... *Not printed.*
- 31.** Return to an Address of the Senate, to His Excellency the Governor General, dated 17th June, 1887, for copies of all complaints which have been made by the authorities of the St. Vincent de Paul Penitentiary, since the 24th April, 1886, against Adolphe Lefavre, formerly an employé of the penitentiary; as also of all reports which the Inspector may have made since the same date against the said Lefavre, together with copies of the decisions which the Honorable the Minister of Justice may have given upon these reports and complaints. Presented to the Senate, 29th February, 1888.—*Hon. Mr. Bellerose* *Not printed.*
- 32.** Return to an Order of the House of Commons, dated 29th February, 1888, for a Statement of the Receipts and Expenditure, in detail, chargeable to the Consolidated Fund, from the 1st day of July, 1887, to the 1st day of March, 1888, and from the 1st day of July, 1886, to the 1st day of March, 1887. Presented to the House of Commons, 5th March, 1888.—*Sir Richard Cartwright*.—*Not printed.*
- 33.** Statement of all superannuations and retiring allowances in the Civil Service, giving the name and rank of each person superannuated, or retired, his salary, age and length of service, his allowance and cause of retirement, and whether the vacancy has been filled by promotion or new appointment, &c., for the year ended 31st December, 1887. Presented to the House of Commons, 5th March, 1888, by Sir Charles Tupper..... *Printed for Sessional Papers only.*
- 34.** Return to an Order of the House of Commons, dated 6th June, 1887, for copies of petitions presented from time to time and supported by the several transatlantic steamship companies and other persons, praying for the building of a breakwater at Pointe aux Pères. Presented to the House of Commons, 6th March, 1888.—*Mr. Fiset*..... *Not printed.*
- 34a.** Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all surveys, reports and correspondence in connection with the L'Ardoise Breakwater, in the county of Richmond, N.S. Presented to the House of Commons, 13th March, 1888.—*Mr. Flynn*—*Not printed.*

- 34b. Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all correspondence and telegrams, since 31st December last, relating to the construction or repair of breakwaters or piers at Scott's Bay, Horton Landing and Boot Island, in King's County, Nova Scotia; and also of all instructions to an engineer of the Department of Public Works, who visited said localities during the months of January and February last, with his reports thereon. Presented to the House of Commons, 4th April, 1888.—*Mr. Borden*..... *Not printed.*
- 34c. Return to an Order of the House of Commons, dated 9th April, 1888, for copy of report of the Chief Engineer on the breakwater at Bay Fortune, King's County, Prince Edward Island, with a view to its extension; together with copies of all petitions, letters, &c., in relation thereto. Presented to the House of Commons, 30th April, 1888.—*Mr. McIntyre*..... *Not printed.*
- 34d. Return to an Address of the House of Commons to His Excellency the Governor General, dated 6th June, 1887, for copies of all Orders in Council, or other documents, granting a power to construct any bridge, dam, breakwater, or other obstructions in the Rideau River, from its mouth to its source. Presented to the House of Commons, 14th May, 1888.—*Mr. Robillard*—
Not printed.
35. Return of the names and salaries of all persons appointed to or promoted in the Civil Service during the year 1887, specifying the office to which each has been appointed or promoted. Section 58, sub-section 2, "Civil Service Act." Presented to the House of Commons, 6th March, 1888, by Hon. J. A. Chapleau..... *Printed for Sessional Papers only.*
36. Copy of the Fishery Treaty between Great Britain and the United States, in relation to the fisheries of Canada and Newfoundland, signed at Washington on the fifteenth day of February, 1888; and the protocols of the various conferences, together with the protocols from the British plenipotentiaries offering to make a temporary arrangement for a period not exceeding two years in order to afford a *modus vivendi* pending the ratification of the treaty, and the protocol of the American plenipotentiaries expressing their satisfaction with the *modus vivendi* communicated by the British plenipotentiaries. Presented to the House of Commons, 7th March, 1888, by Sir Charles Tupper..... *Printed for Sessional Papers only.*
- 36a. Copy of the statement presented by the British plenipotentiaries to the Fisheries Commission at Washington, in relation to reciprocal trade relations between Canada and the United States, and the answer of the American plenipotentiaries thereto. Presented to the House of Commons, 7th March, 1888, by Sir Charles Tupper..... *Printed for Sessional Papers only.*
- 36b. Two communications in relation to the Fisheries Question—one, written "personally and unofficially," by the Hon. T. B. Bayard, Secretary of State, Washington, U.S., and dated the 31st May, 1887, and addressed to Sir Charles Tupper; and the other, the reply of Sir Charles to Mr. Bayard, also marked "personal and unofficial," and dated the 6th June, 1887. Presented to the House of Commons, 9th March, 1888, by Sir Charles Tupper—
Printed for both Distribution and Sessional Papers.
- 36c. Despatches and Documents having reference to the Fisheries Question. Presented to the House of Commons, 12th April, 1888, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.
37. Detailed statement of all Bonds and Securities registered in the Department of the Secretary of State of Canada, submitted to the Parliament of Canada under section 23, chapter 19, of the "Revised Statutes of Canada." Presented to the House of Commons, 7th March, 1888, by Hon. J. A. Chapleau..... *Not printed.*
38. List of Public Officers to whom Commissions have issued during the year 1887, under the provisions of chapter 19 of the "Revised Statutes of Canada," and submitted to the Parliament of Canada under section 2 of the said Act. Presented to the House of Commons, 7th March, 1888, by Hon. J. A. Chapleau..... *Not printed.*
39. Annual Report (new series) of the Geological and Natural History Survey of Canada, Volume II, 1886. Presented to the House of Commons, 23rd March, 1888, by Hon. Thos. White—
Printed for Distribution only.
40. Return to an Address of the House of Commons, to His Excellency the Governor General, dated 5th March, 1888, for copy of all reports of the commissioners appointed by Royal Commission to enquire into the losses sustained in the North-West Territories during the recent rebellion, and a statement of all payments made under the recommendation of such reports. Presented to the House of Commons, 8th March, 1888.—*Hon. Mr. Laurier*..... *Not printed.*

- 40a.** Return to an Order of the House of Commons, dated 28th March, 1888, for a Return showing the total amount of money disbursed by the Government in consequence of the North-West Rebellion. Presented to the House of Commons, 25th April, 1888.—*Mr. Mulock*.....*Not printed.*
- 40b.** Memorial of the Lieutenant-Governor of the North-West Territories in Council, to His Excellency the Governor General in Council, praying for the introduction of a new method of legislation in the North-West Territories. Presented to the House of Commons, 7th May, 1888, by Sir John A. Macdonald.....*Not printed.*
- 40c.** Return to an Order of the House of Commons, dated 5th March, 1888, for a Return showing the names and residences of each homestead inspector in Manitoba and the North-West; the number of inspections and reports made by each, in each month of the years 1882 '83, '84, '85, '86 and '87. 2. The name of each colonization inspector, his residence, the number of inspections and reports made by each, in each month of the years 1882, '83, '84, '85, '86 and '87, and copies of said reports. Presented to the House of Commons, 19th May, 1888.—*Mr. Watson*—*Not printed.*
- 40d.** Return to an Order of the House of Commons, dated 16th April, 1888, for a Return giving the names and dates of the appointment of each colonization inspector and homestead inspector in the North-West Territories, including Manitoba; the salary paid to each, also the travelling expenses per diem or month; the full amount for salary and travelling or other expenses paid to each from the date of his engagement up to the 1st of January, 1888. Presented to the House of Commons, 19th May, 1888.—*Mr. McMullen*..... *Not printed.*
- 40e.** Return to an Order of the House of Commons, dated 16th April, 1888, for a Return of all lessees of grazing lands under old form of leases. 2. The number of these who have fully complied with the terms of the leases. 3. The number who have partially complied, showing to what extent. 4. The number in arrears for rent, showing to what extent. 5. The number of old leases now entirely unoccupied. Presented to the House of Commons, 19th May, 1888.—*Mr. Davis*.....*Not printed.*
- 40f.** Return to an Order of the House of Commons, dated 28th March, 1888, for a Return giving: 1. The names of all leaseholders in the district of Alberta, North-West Territories. The number of cattle each have on their lease. The date of each latest return, showing the number. 2. Showing whether any are in arrears for rent. 3. Whether the land under lease is good agricultural land. 4. What, if any, return has been made of the loss and suffering of cattle during the winter of 1886-87 in this district. Presented to the House of Commons, 19th May, 1888 —*Sir Richard Cartwright*.....*Not printed.*
- 40g.** Return to an Order of the House of Commons, dated 9th April, 1888, for a Return containing copies of all letters, correspondence, affidavits, &c., connected with the location and sale or settlement of N. $\frac{1}{2}$, section 16, township 24, range 29, west, 4th meridian, North-West Territory. Presented to the House of Commons, 19th May, 1888.—*Mr. McMullen*.....*Not printed.*
- 40h.** Return to an Order of the House of Commons, dated 28th March, 1888, for a Return showing the number of Colonization Companies now in existence in Manitoba and the North-West, the number of settlers they have put on their lands during the years 1885-86-87, the amount of money paid by the several companies on account of lands purchased from the Crown during the same period, the amount of money paid to the Crown on account of purchase of land from the Crown by all other parties during the same years. Presented to the House of Commons, 19th May, 1888.—*Mr. McMullen*..... *Printed for Sessional Papers only.*
- 40i.** Return to an Order of the House of Commons, dated 1st March, 1888, to issue to the proper officer for a return giving copy of instructions to Dominion Land Agents in Manitoba and the North-West, regarding instructions furnished to intending settlers free of charge, and a copy of instructions as to information for which a fee is imposed; the amount of fees received at the several offices during the years 1885-86 and 1887, for such information; the amount of all fees collected from intending settlers during those years, and for which no credit was given in their purchase of Dominion lands. Presented to the House of Commons, 19th May, 1888.—*Mr. McMullen*.....*Not printed.*
- 41.** Return to an Order of the House of Commons, dated 25th April, 1887, for a Return of a copy of the lease from R. T. Wilson to the Dominion Government of the new public offices for the town of Dundas, in the county of Wentworth; report of the Post Office Inspector respecting the present and new post offices; also copies of petitions, correspondence and all other papers relating to the removal of the post office. Presented to the House of Commons, 8th March, 1888.—*Mr. Bain (Wentworth)*.....*Not printed.*

42. Return to an Order of the House of Commons, dated 6th June, 1887, for a copy of the contract with D. A. Duffy for the erection of the new wing of the penitentiary at Dorchester; also any claims or applications made for extras, and also any recommendations for allowance of such claims or any of them, and also all correspondence between the contractor and the Department of Public Works. Presented to the House of Commons, 8th March, 1888.—*Mr. Weldon (St. John)*—*Not printed.*
43. Return to an Order of the House of Commons, dated 27th April, 1887, for copies of all papers, documents, correspondence, &c., in relation to the building of a post office in the town of Montmagny, in the county of Montmagny. Presented to the House of Commons, 8th March, 1888.—*Mr. Choquette*..... *Not printed.*
- 43a. Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all correspondence in connection with the purchase of a site for the erection of a post office and custom house in the town of Arichat. Presented to the House of Commons, 8th March, 1888.—*Mr. Flynn*—*Not printed.*
- 43b. Return to an Order of the House of Commons, dated 28th March, 1888, for a Return of all reports, correspondence, petitions or documents relating to the proposed permanent building of a post office and custom house at Strathroy, including any recommendations made respecting its location, character, cost, &c. Presented to the House of Commons, 20th April, 1888.—*Mr. McMullen*..... *Not printed.*
- 43c. Return to an Order of the House of Commons, dated 9th April, 1888, for copies of all letters, memoranda, and other documents, respecting the building of the public edifices at the city of St. Hyacinthe—such as the post office and the customs warehouse, &c. Presented to the House of Commons, 1st May, 1888.—*Mr. Dupont*..... *Not printed.*
- 43d. Return to an Order of the House of Commons, dated 16th April, 1888, for a Return of all correspondence and petitions respecting the construction of building for post office, customs office and inland revenue office in the town of Picton. Presented to the House of Commons, 8th May, 1888.—*Mr. Platt*..... *Not printed.*
44. Return of statement of Dominion Statutes of Canada sold and officially distributed during the last two years, in terms of section 14 of chapter 2 of the Revised Statutes of Canada. Presented to the House of Commons, 13th March, 1888, by Hon. J. A. Chapleau..... *Not printed.*
45. Return to an Order of the House of Commons, dated 29th February, 1888, for a Return in the form used in the statements usually published in the *Gazette*, of the exports and imports from the 1st day of July, 1887, to the 1st day of March, 1888, distinguishing the products of Canada and those of other countries. Presented to the House of Commons, 14th March, 1888.—*Sir Richard Cartwright*..... *Not printed.*
46. Return of new rules and procedure of "the Exchequer Court of Canada," in terms of sections 55 and 56 of chapter 16—50-51 Victoria. Presented to the House of Commons, 19th March, 1888, by Hon. J. A. Chapleau..... *Not printed.*
- 46a. Return in terms of section 109 of the Supreme and Exchequer Court Act, Revised Statutes of Canada, chapter 135, with reference to General Order No. 83 which has been made by the Judges of the Supreme Court of Canada during the past year. Presented to the House of Commons, 4th April, 1888, by Hon. J. A. Chapleau..... *Not printed.*
- 46b. Return to an Order of the House of Commons, dated 2nd March, 1888, for a Return showing the names of all retired judges of superior courts of law or equity in the Dominion of Canada, with the dates of their respective patents, and a copy of the last patent issued to a retired judge of the Superior Court. Presented to the House of Commons, 9th April, 1888.—*Mr. Small*... .. *Not printed.*
47. Return of the Collingwood Marine and General Hospital, for the year 1887. Presented to the House of Commons, 19th May, 1888, by Hon. Mr. Speaker..... *Not printed.*
48. Statement of the affairs of the British Canadian Loan and Investment Company, on 31st December, 1886. Presented to the House of Commons, 19th May, 1888, by Hon. Mr. Speaker—*Not printed.*
49. Return to an Address of the Senate to His Excellency the Governor General, dated 1st March, 1888, praying for a copy of letters signed Jos. H. Bellerose, addressed to the Minister of Justice on the 27th and 28th November, 1887, with the replies thereto in connection with the destruction by fire of the property of Mr. Louis Guimond, of St. Vincent de Paul; also a copy of the

- evidence taken in this matter and of the report made by the Inspector of Penitentiaries after inquiry made and the facts mentioned in the said letters. Presented to the Senate, 21st March, 1888.—*Hon. Mr. Bellerose*.....*Not printed.*
- 49a. Return to an Address of the Senate to His Excellency the Governor General, dated 18th April, 1888, for copy of a letter of the 31st March last from the Honorable Joseph Bellerose, *in re* the burning of Mr. Louis Guimond's property at St. Vincent de Paul; also copy of a letter of James Devlin, Engineer, on the same subject; also copy of the different solemn declarations accompanying the above mentioned letters, and all other documents in correspondence relating to the same subject. Presented to the Senate, 21st May, 1888.—*Hon. Mr. Bellerose*...*Not printed.*
50. Return to an Order of the House of Commons, dated 2nd May, 1887, for a Return showing the names of all the parties who tendered for carrying the mails to and from the board ice at Cape Traverse, Prince Edward Island; the amount of each tender, and to whom contract given. Presented to the House of Commons, 21st March, 1888.—*Mr. Perry*.....*Not printed.*
51. Return to an Address of the House of Commons to His Excellency the Governor General, dated 5th March, 1888, for a Return showing copies of all applications, letters or other communications to the Government, or any department or minister, or any reports, in connection with the application on behalf of the York-Simcoe Battalion for kit allowance whilst on service in the North-West Territories, and of replies thereto. Presented to the House of Commons, 21st March, 1888.—*Mr. Mulock**Not printed.*
52. Return to an Address of the House of Commons, to His Excellency the Governor General, dated 1st March, 1888, for copies of regulations made by the Governor in Council respecting the registry of trade unions. Presented to the House of Commons, 28th March, 1888.—*Mr. Amyot*—*Not printed.*
53. Copies of despatches from Sir L. West to Lord Lansdowne; and from Sir L. West to Lord Salisbury; and also a certified copy of a Report of a Committee of the Honorable the Privy Council, approved by His Excellency the Governor General in Council, relative to the admission of certain articles free of duty when it appears to the satisfaction of the Governor in Council that similar articles from Canada may be imported into the United States free of duty. Presented to the House of Commons, 6th April, 1888, by Sir Charles Tupper...*Printed for Sessional Papers only.*
54. Return to an Order of the House of Commons, dated 28th March, 1888, for a copy of Mr. Parmelee's report to the Honorable Minister of Customs regarding the desirability of making Kamloops an outport of entry. Presented to the House of Commons, 9th April, 1888.—*Mr. Mara*...*Not printed.*
55. Return to an Order of the House of Commons, dated 2nd March, 1888, for a Return showing the date the steamer *Northern Light* commenced running between Prince Edward Island and Pictou, Nova Scotia; the number of trips made; the number of passengers crossed, and the date of last trip made up to date. Presented to the House of Commons, 10th April, 1888.—*Mr. Perry*—*Not printed.*
- 55a. Return to an Order of the House of Commons, dated 29th February, 1888, for a Return showing the names and salaries of all captains in charge of Government steamers, together with the salaries and allowances at present payable to and received by them, together with all petitions, correspondence, telegrams, &c., relative to the pay of the captain of the *Northern Light*, since 1st January, 1879; also for a Return showing the names and number of men employed in or about the *Northern Light* during last summer, from the time she ceased running in the spring of 1887, until she again resumed in the autumn of the same year. Presented to the House of Commons, 10th April, 1888.—*Mr. Welsh*.....*Not printed.*
- 55b. Supplementary Return to an Order of the House of Commons, dated 29th February, 1888, for a Return giving the names and number of men employed in or about the *Northern Light* during last summer, from the time she ceased running in the spring of 1887, until she again resumed in the autumn of same year. Presented to the House of Commons, 9th May, 1888.—*Mr. Welsh*.—*Not printed.*
56. Return to an Order of the House of Commons, dated 28th March, 1888, for a Return showing the total amount of money paid out by the Government in connection with the Liquor License Act. Presented to the House of Commons, 10th April, 1888.—*Mr. Mulock**Not printed.*
57. Return to an Order of the House of Commons, dated 6th June, 1887, for a statement showing the amount of the sums expended since 1867, for repairs and improvements on the wharf at St. Jérôme de Matane. Presented to the House of Commons, 10th April, 1888.—*Mr. Fiset*.....*Not printed.*

58. Return to an Order of the House of Commons, dated 2nd March, 1888, for a Return of the railway accidents which were reported to the Government during 1886, and in respect of which actions are not now pending. Presented to the House of Commons, 12th April, 1888.—*Mr. Denison*.—*Not printed.*
- 58a. Return to an Order of the House of Commons, dated 8th March, 1888, for a Return showing the amount voted each session since 1880 for subsidies to railways, also the amount to each province, and the amount that has been paid. Presented to the House of Commons, 13th April, 1888.—*Mr. Semple**Not printed.*
- 58b. Return to an Address of the House of Commons, to His Excellency the Governor General, dated 9th April, 1888, for copies of all correspondence exchanged with the Imperial Government concerning the disallowance of the Railways Acts of Manitoba. Presented to the House of Commons, 17th April, 1888.—*Mr. Laurier*.....*Printed for both Distribution and Sessional Papers.*
- 58c. Return to an Order of the House of Commons, dated 16th April, 1888, for copies of all correspondence, reports, &c., between Mr. Allan Knight and the Government; also the Railway Department and any of its officers, in relation to damages sustained by him in connection with the Derby Branch Railway, in the county of Northumberland, New Brunswick. Presented to the House of Commons, 2nd May, 1888.—*Mr. Jones (Halifax)* *Not printed.*
- 58d. Return to an Address of the House of Commons, to His Excellency the Governor General, dated 6th June, 1887, for copies of railway surveys from the Strait of Canso to Sydney *via* Grand Narrows, and from the Strait of Canso to Louisbourg *via* St. Peter's, during the summer of 1885, with the estimated cost of both lines. Also copies of surveys from Grand Narrows *via* Boisdale to North Sydney and Sydney. Also copies of surveys between East Bay and St. Peter's; copies of reports and surveys between Sydney and Loch Lomond *via* the Mira and Salmon River Valley, in the year 1886; copies of all telegrams to the Department of Railways during the time of the surveys. Also a copy of Minute of Council adopting the Grand Narrows route *via* Boisdale to North and South Sydney, with the engineer's report on the crossing of the Grand Narrows. Also a copy of all statements and arguments laid before the Government against the Grand Narrows route by the Cape Breton delegation in January last; and also a statement showing the particular route advocated by the said delegation. Presented to the House of Commons, 4th May, 1888.—*Mr. Flynn and Mr. McDougall (Cape Breton)*.....*Not printed.*
- 58e. Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all claims presented to the Department of Railways for lands expropriated for the construction of the St. Charles Branch Railway in the county of Lévis; also a statement showing the amount of each claim, the names of those whose claims have been settled up to 1st April, 1887, and the amount awarded to them, and the names of those whose claims are still pending. Presented to the House of Commons, 11th May, 1888.—*Mr. Guay*..... *Not printed.*
- 58f. Return to an Order of the House of Commons, dated 30th April, 1888, for copies of all correspondence between the Department of Railways and Messrs. A. Pion & Co., of Quebec, in relation to a claim for goods damaged on the Intercolonial Railway. Presented to the House of Commons, 11th May, 1888.—*Mr. Langelier (Quebec Centre)*.....*Not printed.*
- 58g. Return to an Order of the House of Commons, dated 18th April, 1888, for copies of correspondence between the Government, or any member thereof, and the municipal councils of the counties of Pictou, Antigonish and Guysboro', Nova Scotia, and any other persons; together with copies of resolutions passed by the said municipal councils relative to the repayment by the Government of moneys paid by the said municipal counties for the right of way for the Eastern Extension Railway, now owned by and in possession of the Government. Presented to the House of Commons, 15th May, 1888.—*Mr. Kirk**Not printed.*
- 58h. Return to an Order of the House of Commons, dated 16th April, 1888, for copies of all papers, writings and reports between Mr. Allan Bryanton and the Government of Canada, or anyone on his behalf, or between the officers of the Government and him or anyone on his behalf, or between the Government and their officers, in relation to the placing of a platform and switch near his place on the line of the Derby Branch Railway, in the county of Northumberland, N.B. Presented to the House of Commons, 15th May, 1888.—*Mr. Jones (Halifax)* *Not printed.*
- 58i. Return to an Order of the House of Commons, dated 16th April, 1888, for all correspondence between Mr. Albert Bryanton and the Railway Department and any of its officers, and anyone on his behalf; also all reports and instructions between said Department and its officers in reference to the placing of a switch and platform at said Bryanton's, on the Derby Branch Railway, in the

- county of Northumberland, New Brunswick. Presented to the House of Commons, 15th May, 1888.—*Mr. Jones (Halifax)*.....*Not printed.*
- 58j.** Papers, correspondence, &c, respecting subsidies to certain railway companies, and towards the construction of certain railways as follow: Quebec Central Railway; Quebec and Lake St. John Railway; Pontiac and Pacific Junction Railway; Montreal and Champlain Junction Railway; Port Arthur, Duluth and Western Railway; and Témiscouata Railway Company. Presented to the House of Commons, 18th May, 1888, by Sir Charles Tupper *Not printed.*
- 58k.** Return (in part) to an Order of the House of Commons, dated 9th April, 1888, for copies of all papers, documents, telegrams and correspondence as to the incorporation of the Great North-West Central Railway Company, or relating to any land grant thereto, or to the construction of the line of the said railway or any part thereof. Presented to the House of Commons, 19th May, 1888.—*Mr. Edgar*..... *Not printed.*
- 58l.** Return (in part) to an Order of the House of Commons, dated 9th April, 1888, for copies of all papers, documents, telegrams and correspondence in connection with the land grant to the Souris and Rocky Mountain Railway Company, or relating to the construction of said railway. Presented to the House of Commons, 19th May, 1888.—*Mr. Edgar*..... *Not printed.*
- 58m.** Return (in part) to an Order of the House of Commons, dated 9th April, 1888, for copies of all papers, documents, telegrams and correspondence in connection with the land grant to the North-West Central Railway Company, or relating to the construction of the said railway. Presented to the House of Commons, 19th May, 1888.—*Mr. Edgar*..... *Not printed.*
- 58n.** Return to an Order of the House of Commons, dated 16th April, 1888, for copies of all correspondence, reports, &c., between Mr. John Knight and the Government; also with the Railway Department and any of its officers, in relation to damages sustained by him in connection with the Derby Branch Railway, in the county of Northumberland, New Brunswick. Presented to the House of Commons, 22nd May, 1888.—*Mr. Jones (Halifax)*..... *Not printed.*
- 58o.** Return to an Order of the House of Commons, dated 16th April, 1888, for all correspondence between Mr. Samuel Russell and the Government of the Dominion, or of any of its officers, with all communications and reports from such officer or officers, in reference to a claim for damages to his property in connection with the Derby Branch Railway, in the county of Northumberland, N.B. Presented to the House of Commons, 22nd May, 1888.—*Mr. Jones (Halifax)*... *Not printed.*
- 58p.** Return to an Order of the House of Commons, dated 16th April, 1888, for copies of all correspondence, reports, &c., between Mr. Patrick Clancy and the Government or any of its officers; also with the Railway Department and any of its officers, in relation to damages sustained by him in connection with the Derby Branch Railway, in the county of Northumberland, New Brunswick. Presented to the House of Commons, 22nd May, 1888.—*Mr. Jones (Halifax)*..... *Not printed.*
- 59.** Return to an Order of the House of Commons, dated 2nd March, 1888, for a Return showing the quantity of rolling stock purchased for the Intercolonial Railway during the last six months ending 31st December, 1887, giving each kind of rolling stock, and whether purchased under contract or otherwise, the parties from whom bought and the cost of each kind; also a statement of what has been built in Government workshops. Presented to the House of Commons, 13th April, 1888.—*Mr. Weldon (St. John)* *Not printed.*
- 59a.** Return to an Order of the House of Commons, dated 8th March, 1888, for a Return giving details of the expenditure on the Intercolonial Railway charged to capital account for the years 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887. Presented to the House of Commons, 13th April, 1888.—*Mr. Jones (Halifax)*..... *Not printed.*
- 59b.** Return to an Order of the House of Commons, dated 28th March, 1888, for a Return of the proceedings of the inquest held at Ste. Flavie, on 23rd September, 1887, on the body of William L. Duncan, killed on the Intercolonial Railway on the previous day, with the evidence taken at such inquest; also any report of any investigation of the accident made by the railway authorities, or any report in connection with such accident made to the Department of Railways and Canals; and also any correspondence had with said Department relating to this matter. Presented to the House of Commons, 18th April, 1888.—*Mr. Weldon (St. John)*..... *Not printed.*
- 59c.** Return to an Order of the House of Commons, dated 16th April, 1888, for copies of all tenders received by the Government, in February last, for fencing the Eastern Extension Railway in Nova Scotia, and the Intercolonial Railway, from Pictou Landing to Windsor Junction; and also a statement showing the names of the party or parties to whom contracts have been awarded, if any have been awarded, and length of fence each has contracted for and amount to be paid for work. Presented to the House of Commons, 27th April, 1888.—*Mr. Kirk*..... *Not printed.*

- 59d. Return to an Order of the House of Commons, dated 18th April, 1888, for copies of all correspondence between J. C. Pottinger, Esq., Superintendent Intercolonial Railway, and Mr. Noël Fortin, of the parish of St. Fabien, respecting accident and damages caused to the latter. Presented to the House of Commons, 30th April, 1888.—*Mr. Fiset*..... *Not printed.*
- 59e. Return to an Order of the House of Commons, dated 2nd March, 1888, for a Return of all casualties to trains on the Intercolonial Railway arising from collisions, broken rails or any other cause from 1st April, 1887, to 1st March, 1888; the respective causes and dates; the names of the conductors, engine-drivers or other officials dismissed, suspended or fined for any such collisions or neglect of duty, the amount of damage (if any) to property in such cases, the amount of compensation paid to owners of property destroyed or damaged, as well as amount of claims for loss or damage to property unsettled (if any). Presented to the House of Commons, 27th April, 1888.—*Mr. Weldon (St. John)* *Not printed.*
- 59f. Return to an Address of the House of Commons, to His Excellency the Governor General, dated 20th April, 1887, for copies of all papers, documents, correspondence, &c., respecting the dismissal of Odias Corbonneau, Eudore Gaumont and Fidèle Pelletier, all three employed on the Intercolonial Railway; the first as telegraph operator at the Chaudière, county of Lévis, the second as section man at St. Thomas, county of Montmagny, and the third as station master at Cap St. Ignace, county of Montmagny. Presented to the House of Commons, 11th May, 1888.—*Mr. Choquette*..... *Not printed.*
60. Return to an Order of the House of Commons, dated 9th April, 1888, for a copy of the contract which now exists between the Government and the contractors for the printing of Dominion Notes, and copies of all correspondence relating to the awarding thereof. Presented to the House of Commons, 16th April, 1888.—*Mr. Edgar*..... *Not printed.*
61. Return to an Address of the Senate, to His Excellency the Governor General, dated 4th April, 1888, for a statement showing total cost of construction of various works for the descent of timber and sawlogs on the Ottawa River and its tributaries, up to the 30th June last; also statement showing the yearly expenditure for the maintenance of the said works for five years preceding the 30th June last, under the different heads of reconstruction, repairs and cost of management, at each of the stations, with the names of river or tributary where the same was expended; likewise copies of any or all applications, whether from individuals or chartered companies, to acquire by purchase or otherwise all or any portion of said works and improvements on the said Ottawa River and tributaries thereof. Presented to the Senate, 18th April, 1888.—*Hon. Mr. Clemow*.—*Not printed.*
- 61a. Return to an Order of the House of Commons, dated 16th April, 1888, for a statement showing total cost of construction of various works for the descent of timber and saw-logs on the Ottawa River and its tributaries, up to the 30th June last; also statement showing the yearly expenditure for the maintenance of the said works for five years preceding the 30th June last, under the different heads of reconstruction, repairs and cost of management, at each of the stations, with the names of river or tributary where the same was expended; likewise copies of any or all applications, whether from individuals or chartered companies, to acquire by purchase or otherwise all or any portion of said works and improvements on the said Ottawa River and tributaries thereof. Presented to the House of Commons, 26th April, 1888.—*Mr. Amyot*..... *Not printed.*
62. Return to an Order of the House of Commons, dated 16th April, 1888, for a Return of all Tenders for Militia Clothing since the 1st of January, 1883, showing the name of each firm or party tendering, the amount of each tender, and the name of the person or firm to whom the contract or contracts were awarded. Presented to the House of Commons, 17th May, 1888.—*Mr. Mc Mullen*.—*Not printed.*
- 62a. Papers relating to the pensions to Gunner Ryan, Montreal Garrison Artillery, and Sergeant Valiquette, 65th Battalion; the salary of Caretaker Bedford, Rifle Range, Quebec; cost of medicines, Infantry Schools at Fredericton, N.B., St. John's, Quebec, and Toronto, Ontario, in 1886-87; and pensions granted to representatives of Capt. F. T. Brown and Lieut. Charles Swinford. Also statement of militia pensions payable on account of rebellion, North-West Territories, 1885, with copies of regulations regarding the issue of active service pensions. Presented to the House of Commons, 17th May, 1888, by Sir Adolphe Caron *Not printed.*
63. Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all contracts entered into between the Government and John Harvey for the construction of slides and other improvements on the Mattawa River; also copies of all advertisements asking for tenders for such

- work, copies of such tenders, and all other papers, letters and correspondence between the Government and Harvey relating to such contracts and works. Presented to the House of Commons, 25th April, 1888.—*Mr. Lister*..... *Not printed.*
64. Return to an Order of the House of Commons, dated 28th March, 1888, for a Return of all correspondence, petitions and reports respecting the Chippawa and Ottawa Nation Indians' claim to certain lands in Lake Erie and the Detroit River. Presented to the House of Commons, 25th April, 1888.—*Mr. Patterson (Essex)*..... *Not printed.*
- 64a. Return to an Address of the House of Commons, to His Excellency the Governor General, dated 25th April, 1888, for a Return of copies of all correspondence, charges, papers and orders touching or relating to the dismissal of Archibald Culbertson from the office of Indian Councillor of the Mohawk Band. Presented to the House of Commons, 7th May, 1887.—*Mr. Burdett*.—
Not printed.
- 64b. Return to an Order of the House of Commons, dated 16th April, 1888, for copy of all correspondence between the Government and any person or persons relating to the claim of the Mississauga Indians, under the various treaties in reference to unsundered lands, together with any reports and plans in connection therewith. Presented to the House of Commons, 8th May, 1888.—*Mr. Madill*..... *Not printed.*
- 64c. Return to an Address of the House of Commons to His Excellency the Governor General, dated 9th April, 1888, for copies of all correspondence between the Governments of the Dominion and Ontario, in reference to a claim of the Six Nation Indians for compensation for lands flooded by the construction of a dam across the Grand River, at Dunnville, by the Welland Canal Company, in or about the year 1833; also all Orders in Council and all Departmental Reports bearing upon such claim or the payment thereof. Presented to the House of Commons, 9th May, 1888.—*Mr. Somerville*..... *Not printed.*
- 64d. Return to an Order of the House of Commons, dated 18th April, 1888, for copies of all letters, telegrams and petitions forwarded by Indians of the Caughnawaga Reserve to the Minister of the Interior, asking for an election of chiefs, in accordance with the provisions of the Indian Act; also of all correspondence on the subject between the said Indians, the Minister of the Interior, and the Agent of the Reserve. Presented to the House of Commons, 9th May, 1888.—*Mr. Doyon*..... *Not printed.*
65. Return to an Address of the House of Commons to His Excellency the Governor General, dated 9th April, 1888, for copies of all papers, correspondence, Orders in Council and Departmental Orders not already brought down with reference to: 1. The refusal of the United States authorities to allow Canadian wrecking vessels and machinery to assist Canadian vessels while in distress in United States waters. 2. The refusal of the Canadian authorities to allow United States wrecking vessels and machinery to assist United States vessels while in distress in Canadian waters. Presented to the House of Commons, 26th April, 1888.—*Mr. Edgar*.—
Printed for both Distribution and Sessional Papers.
- 65a. Correspondence relating to the seizure of British vessels in Behring's Sea. Presented to the House of Commons, 26th April, 1888, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.
- 65b. Further correspondence relating to the seizure of British vessels in Behring's Sea. Presented to the House of Commons, 27th April, 1888, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.
- 65c. Additional correspondence relating to the seizure of British vessels in Behring's Sea. Presented to the House of Commons, 18th May, 1888, by Hon. G. E. Foster—
Printed for both Distribution and Sessional Papers.
66. Certified copy of a Report of a Committee of the Privy Council, on the subject of railways in Manitoba, the North-West Territories and British Columbia; together with the report of the Minister of Railways and Canals on the subject, including a copy of a proposed agreement and schedule. Presented to the House of Commons, 30th April, 1888, by Sir Charles Tupper—
Not printed.
67. Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all surveys, reports and correspondence in connection with the survey of the Straits of Northumberland with the view of building a subway across the Straits. Also the names of engineers employed, with detailed account of expenses incurred in said survey during the year 1886. Presented to the House of Commons, 4th May, 1888.—*Mr. Perry*..... *Printed for Sessional Papers only.*

- 67a. Return to an Address of the Senate to His Excellency the Governor General, dated 27th March, 1888, for a copy of the plans and reports of the last survey concerning the proposed subway between Cape Traverse, Prince Edward Island, and Cape Tormentine, New Brunswick. Presented to the Senate, 18th April, 1888.—*Hon. Mr. Howland*.....*Printed for Sessional Papers only.*
68. Certified copies of Reports of Committees of the Honorable the Privy Council and other papers, relative to the disallowance of certain Acts passed by the Legislature of the Province of British Columbia. Presented to the House of Commons, 4th May, 1888, by Sir Hector Langevin—
Printed for both Distribution and Sessional Papers.
69. Report of the Quebec Harbor Commissioners, for the year 1887. Presented to the House of Commons, 7th May, 1888, by Sir Charles Tupper..... *Not printed.*
- 69a. Report of the Montreal Harbor Commissioners, for the year 1887. Presented to the House of Commons, 7th May, 1888, by Sir Charles Tupper..... *Not printed.*
- 69b. Return to an Order of the House of Commons, dated 16th April, 1888, for a Return of all correspondence, petitions, reports of engineers, and others, respecting the dredging of Picton Harbor, Bay of Quinté, not already brought down. Presented to the House of Commons, 14th May, 1888.—*Mr. Platt*..... *Not printed.*
70. Return to an Order of the House of Commons, dated 6th June, 1887, for copies of all papers and correspondence relating to any proposed change in the mode of ventilating the House of Commons Chamber. Presented to the House of Commons, 9th May, 1888.—*Mr. Charlton*—
Not printed.
71. Return to an Order of the House of Commons, dated 28th March, 1888, for a Return of the report made by Professor Saunders on the question of location of the Experimental Farm in the North-West, with all letters, documents and papers referring to the several proposed locations and his recommendations in connection therewith. Presented to the House of Commons, 11th May, 1888.—*Mr. McMullen*..... *Not printed.*
72. Return to an Order of the House of Commons, dated 16th April, 1888, for a copy of all correspondence, reports and recommendations having reference to the claim of Captain George H. Young, of Winnipeg, that he and Stretchermen Bailey and King, of the 90th Battalion, rescued the wounded Priest, Rev. Father Moulin, at Batoche, on the 11th May, 1885; and that the said rescue was not effected by Doctor Gravely, of Cornwall, as stated in the report of the Surgeon General of Militia as presented to Parliament in May, 1886. Presented to the House of Commons, 14th May, 1888.—*Mr. Daly*..... *Not printed.*
73. A certified copy of a Report of a Committee of the Honorable the Privy Council, approved by His Excellency the Governor General in Council on 23rd July, 1887, on a Memorandum dated 19th July, 1887, from the Minister of Public Works, concurring in the recommendation contained in the annexed report of the Superintendent of Government Telegraphy, and recommending that the necessary steps be taken to enable the Dominion to enter into the convention for the protection of submarine cables. Presented to the Senate, 6th April, 1888, by Hon. Mr. Abbott..... *Not printed.*
74. General statements and returns of baptisms, marriages and burials in the districts of Arthabaska, Chicoutimi, Gaspé, Iberville, Joliette, Montmagny and Saguenay, for the year 1887. Presented to the House of Commons, 19th May, 1888, by Hon. Mr. Speaker..... *Not printed.*
75. Return to an Order of the House of Commons, dated 16th April, 1888, for copies of all papers concerning the application of George J. McDonald, in connection with the Centennial Exhibition of 1878. Presented to the House of Commons, 21st May, 1888.—*Mr. Landerkin*—
Not printed.
76. Return to an Address of the Senate to His Excellency the Governor General, dated 27th March, 1888, praying that His Excellency will be pleased to cause to be laid before this House, a copy of the proceedings of the Colonial Conference at London, in 1887, so far as they relate to Imperial postal and telegraphic communications through Canada, together with any correspondence between the Imperial authorities and the Dominion Government or any of its Departments on that subject since the date of the Conference. Presented to the Senate, 18th May, 1888.—*Hon. Mr. Dickey*..... *Printed for both Distribution and Sessional Papers.*

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77. Return to an Address of the Senate to His Excellency the Governor General, dated 5th May, 1886, for copies of all applications for patents and a list of all patents issued, together with a list of persons who received such patents in: Township 8, ranges 1 and 2, east; township 8, ranges 1 and 2, west; township 9, range 1, east; township 9, ranges 1 and 2, west; township 10, ranges 1 and 2, east; township 10, ranges 1 and 2, west. Also sections 11 and 29 in township 10, range 2, west, and in all other lands comprised in the Goulet Rivière Salé survey. Also for copies of all applications for scrip, a list of scrip issued, and a schedule of the names of all persons receiving such scrip issued upon such applications for, in connection with, or in lieu of said lands. Presented to the Senate, 21st May, 1888.—*Hon. Mr. Schultz.....Not printed.*
78. Return to an Address of the Senate to His Excellency the Governor General, dated 10th April, 1888, showing the amount it has cost Canada to maintain the Governor General's office from Confederation to the first of January, 1888, for salaries, residence, travelling and all other incidental expenses, so made as to show the amount charged to each and every of them respectively. Presented to the Senate, 22nd May, 1888.—*Hon. Mr. O' Donohoe.....Not printed.*
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CANADA.

ANNUAL REPORT

OF THE

MINISTER OF PUBLIC WORKS

FOR THE

FISCAL YEAR 1886-87

ON THE WORKS UNDER HIS CONTROL.

SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER THIRTY-SIX
SECTION 37, OF THE REVISED STATUTES OF CANADA.

Printed by Order of Parliament.



OTTAWA:
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1887.

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CANADA.

—
REPORT

OF THE

MINISTER OF PUBLIC WORKS

FOR THE

FISCAL YEAR ENDED 30TH JUNE, 1887.

To His Excellency the Most Honourable Sir Henry Charles Keith Petty-Fitzmaurice, Marquis of Lansdowne, in the County of Somerset, Earl of Wycombe, of Chipping Wycombe, in the County of Bucks, Viscount Calne and Calnstone, in the County of Wilts, and Lord Wycombe, Baron of Chipping Wycombe, in the County of Bucks, in the Peerage of Great Britain; Earl of Kerry and Earl of Shelburne, Viscount Clanmaurice and Fitzmaurice, Baron of Kerry, Lixnaw and Dunkerron, in the Peerage of Ireland; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George; Governor General of Canada, and Vice Admiral of the same, &c.

MAY IT PLEASE YOUR EXCELLENCY :

In compliance with the requirements of Chapter 36, Section 37, Revised Statutes, I have the honour to submit herewith the Annual Report of the Department of Public Works for the year ended 30th June, 1887. The Report contains an abstract of the general expenditure of the Department showing the total amount available for each service, amount lapsed and amount expended, together with a description of the works executed and is accompanied by twenty-nine Appendices giving the Annual Reports of the Chief Engineer, Chief Architect and other officers of the Department, and, also, a number of tables and other statements containing information pertaining to this Department.

The works under the control of this Department are —

PUBLIC BUILDINGS, their construction and maintenance.
 HARBOURS AND PIERS, their improvement and construction.
 WORKS ON NAVIGABLE RIVERS.
 DREDGING AND DREDGE VESSELS.
 ROADS AND BRIDGES.
 SLIDES AND BOOMS.
 TELEGRAPHS.

GENERAL EXPENDITURE.

By the Act 49 Victoria, Chapter 1, assented to on the 2nd June, 1886, the sum of \$2,877,419.54 was appropriated for expenditure on Public Works, during the fiscal year ending 30th June, 1887; and by the Act 50-51 Victoria, Chapter 1, assented to on 23rd June, 1887, the further sum of \$269,026.15 was granted for the same purpose. In addition to these amounts, the sum of \$471,334.97, unexpended balance of appropriations for 1885-86, was carried forward; the sum of \$36,797.93 was contributed by Provincial Governments, Municipal and other Cor-

porations, towards the construction of works partly of a Provincial or Local character, and the sum of \$13,380.00 was transferred by Order in Council from the appropriation voted to the Department of Militia and Defence, for expenditure by this Department. The total amount available, therefore, from all sources, was \$3,667,958.59, of which the sum of \$2,699,761.17 was expended during the fiscal year; \$146,560.75 lapsed on 30th September, 1886, and the balance remained unexpended on 30th June, 1887, but was carried forward by special warrant for use on the unfinished works then in progress. The following table shows the total amount available for each service, amount lapsed and amount expended:—

	Total Amount available.	Lapsed on 30th September, 1886.	Expended in Fiscal Year 1886-87.
Public Buildings.....	\$1,888,456 80	\$112,970 09	\$1,485,318 22
Harbours and Rivers...	1,212,009 32	26,075 73	742,393 02
Dredges and Dredging.	153,990 34	1,840 45	143,403 42
Slides and Booms.....	137,778 19	.....	125,672 85
Roads and Bridges.....	48,768 46	.....	36,951 08
Telegraph Lines.....	164,493 71	5,239 28	105,498 29
Miscellaneous.....	62,461 77	435 20	60,524 29
	<u>\$3,667,958 59</u>	<u>\$146,560 75</u>	<u>\$2,699,761 17</u>

In addition to this expenditure, the following amounts have been paid under the authority of special Acts of Parliament:—

Ship Channel between Quebec and Montreal.....	\$191,000 00
Quebec Harbour Improvement.....	432,795 32
Lévis Graving Dock.....	20,000 00
Three Rivers Harbour.....	203 00
Total.....	<u>\$643,998 32</u>

Below will be found details of the expenditure, by Provinces, of the amounts available for Public Buildings, Harbours and Rivers, and Dredging.

PUBLIC BUILDINGS.

The amount granted by the Act 49 Victoria, Chapter 1, for the construction, repairs and maintenance of Public Buildings was \$1,434,652.43 and by the Act 50-51 Victoria, Chapter 1, the further sum of \$159,271.06 was voted for the same purpose. In addition to these sums, there was carried forward the unexpended

balance of appropriation for 1885-86, \$276,268.91, and the sums of \$3,914.40, balance of grants by the Provincial Government of Quebec and the City of Quebec towards the Drill Hall, and \$970.00, balance of grant by the City of Winnipeg towards the Drill Hall. The sum of \$13,380.00 was transferred by Order in Council from the Department of Militia and Defence on account of Infantry School at Winnipeg, Man. The total amount available, therefore, was \$1,888,456.88, of which the sum of \$1,485,318.22 was expended; \$112,970.09 lapsed on 30th September, 1886, and the balance remained unexpended on 30th June, 1887. The following table gives the total amount available for expenditure in each Province, together with the amount lapsed and amount expended:—

	Total Amount available.	Lapsed on 30th September, 1886.	Expended in Fiscal Year 1886-87.
Nova Scotia.....	\$109,974 19	\$ 12,427 20	\$76,714 03
Prince Edward Island....	54,226 51	355 27	48,150 64
New Brunswick.....	95,190 99	93 30	77,980 72
Quebec	275,296 71	8,203 38	236,206 30
Ontario	822,173 88	19,457 69	719,508 82
Manitoba.....	165,100 59	153 59	109,511 77
North-West Territories..	217,815 54	42,685 48	163,527 71
British Columbia.....	131,283 44	29,594 18	40,518 26
Public Buildings Gen....	17,394 95	.....	13,199 97
Total.....	<u>\$1,888,456 80</u>	<u>\$112,970 09</u>	<u>\$1,485,318 22</u>

HARBOURS AND RIVERS.

The amount granted by the Act 49 Victoria, Chapter 1, for the improvement and maintenance of harbours and rivers throughout the Dominion was \$980,757.11; and by the Act 50-51 Victoria, Chapter 1, the further sum of \$79,255.09 was voted for the same purpose. In addition to these sums, there was carried forward the unexpended balance of appropriation for 1885-86, \$120,083.59, and \$11,913.53 contributions from Municipalities, &c.; and the sums of \$10,000.00 and \$5,000.00 were contributed by the Midland Railway Company, and the Municipality of Midland, respectively, towards the improvement of Midland Harbour, and \$5,000.00 by the City of Montreal towards the expenses of the Commissioners appointed to investigate and report upon the floods at that place. The total amount available, therefore, was \$1,212,009.32, of which the sum of \$742,393.02 was expended; \$26,075.73

lapsed on 30th September, 1886, and the balance remained unexpended on 30th June, 1887. The following table gives the total amount available, by Provinces, together with the amount lapsed and amount expended :—

	Total Amount available.	Lapsed on 30th September, 1886.	Expended in Fiscal Year, 1886-87.
Nova Scotia.....	\$ 97,505 17	.....	\$ 59,409 39
Prince Edward Island....	18,960 66	132 03	11,315 24
New Brunswick.....	226,517 44	15,997 32	83,435 09
Maritime Prov. Generally.	15,590 09	.....	* .....
Quebec.....	222,957 48	2,899 71	196,512 57
Ontario.....	213,304 31	.....	136,488 81
Manitoba.....	7,958 43	848 58	7,547 39
North-West Territories..	15,084 08	.....	15,181 61
British Columbia.....	387,131 66	6,198 09	223,839 30
Harbours and Rivers Gen.	7,000 00	.....	8,663 62
	<u>\$1,212,009 32</u>	<u>\$26,075 73</u>	<u>\$742,393 02</u>

* Expenditure included in Nova Scotia, Prince Edward Island and New Brunswick.

DREDGES AND DREDGING.

By the Act 49 Victoria, Chapter 1, the sum of \$139,000.00 was voted for dredges and dredging; and the unexpended balance of appropriation for 1885-86, \$14,990.34, was carried forward, so that the total amount available was \$153,990.34. Of this \$1,840.45 lapsed on 30th September, 1886, the sum of \$143,403.42 was spent, and the balance remained unexpended on 30th June, 1887. The following table shows amount available and the amount expended, by Provinces :—

	Total Amount available.	Lapsed on 30th September, 1886.	Expended in Fiscal Year 1886-87.
New Plant.....	\$ 20,300 13	.....	\$ 10,135 47
Repairs	36,336 57	652 70	33,578 03
Nova Scotia.....	} 30,000 00	.....	18,522 55
Prince Edward Island....		.....	4,988 39
New Brunswick .....		.....	6,489 06
Quebec	18,062 06	.....	19,066 71
Ontario.....	16,660 07	.....	20,250 97
Manitoba	10,271 99	.....	9,501 18
British Columbia.....	15,020 30	.....	15,017 12
General Service.....	7,339 16	1,187 75	5,803 94
	<u>\$153,990 34</u>	<u>\$1,840 45</u>	<u>\$143,403 42</u>

 DESCRIPTION OF WORK DONE.

The following is a description of the work done during the fiscal year on Public Buildings, Harbours, Rivers and Dredging, arranged in alphabetical order, by Provinces, giving the amount available for expenditure, amount spent during the year, and total amount expended on the building or other work. Where no special appropriation is mentioned the amount was paid out of some general vote.

 PROVINCE OF NOVA SCOTIA.

 AMHERST.

Amherst, the chief town of Cumberland County, is situated at the head of Chignecto Bay, and is 138 miles north-west of Halifax.

At the Session of 1886 the further sum of \$4,600.00 was voted towards the completion of the building intended to accommodate the Postal, Customs and other offices, a full description of which appeared in my report for 1884-85; and the unexpended balance of \$434.82 was carried forward. On 20th July, 1886, a contract for counter, vault fittings, &c., was entered into with Messrs. Rhodes, Curry & Co., and during the fiscal year the building has been completed and occupied. Expenditure during the year, \$5,193.85. Total expenditure on this building, \$37,588.78.

 ANTIGONISH.

Antigonish is the county town of the County of Antigonish, and is situated on the Halifax and Cape Breton Railway, 41 miles east of New Glasgow.

During the fiscal year some repairs have been made to the Public Building at this place at a cost of \$333.12. Total expenditure on this building, \$5,520.30 for construction; and \$46.49 for repairs.

 ARISAIG.

Arisaig, in the County of Antigonish, is on the south-east shore of Northumberland Strait, 15 miles east of Merigomish, the nearest harbour.

At the Session of 1886, the sum of \$8,000.00 was voted for the purpose of repairing the breakwater at this place; and on the 30th October, 1886, a contract was
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entered into with A. McKinnon, for the sum of \$7,900.00. At the close of the fiscal year the repairs were nearly finished and preparations were being made for commencing an extension of the breakwater. Expenditure, \$3,376.93. Total expenditure since Confederation, \$7,468 93.

ASPY BAY.

Aspy Bay is in Victoria County, Cape Breton Island, about 100 miles from Baddeck.

On 10th September, 1886, the dredge "George McKenzie" commenced opening a channel into the pond to form a harbour for fishing boats, and continued at work, under great difficulties, until 4th October, removing 3,820 cubic yards of sand, at a cost of \$1,282.60.

BADDECK.

Baddeck is the chief town of Victoria Country, and is situated on the north side of the Great Bras d'Or Lake, about 40 miles from Sydney.

By the Act 49 Victoria, Chapter 1, the sum of \$5,900.00 was voted towards the completion of the Public Building at this place, described in my report for 1884-85, as being in course of erection for the accommodation of the Postal and other services. On 13th October, 1886, a contract was entered into with Mr. C. B. Thompson, for heating apparatus for the sum of \$490.00, and at the close of the fiscal year the building was completed and occupied. Expenditure during the year, \$5,059.09. Total expenditure on this building, \$13,113.99.

BAYFIELD.

Bayfield, in Antigonish County, is on the south coast of St. George's Bay, 8 miles east from Antigonish Harbour, and 15 miles west from the entrance to the Straits of Canso.

At the Session of 1886 the sum of \$6,000.00 was voted for the purpose of extending the breakwater built in 1879. On 12th November, 1886, a contract was entered into with Mr. J. McMillan for the construction of a further length to the breakwater for the sum of \$3,946.00, and at the close of the fiscal year the work was under way. Expenditure, \$118.93. Total expenditure at this place since Confederation, \$5,007.26.

BAY ST. LAWRENCE.

Bay St. Lawrence, Victoria County, is at the northern extremity of Cape Breton Island, between Capes North and St. Lawrence.

At the Session of 1886 the sum of \$2,000.00 was voted for the purpose of opening a channel from the head of the bay to a small pond separated from it by a shingle beach, and the work was within 15 feet of completion when it was filled in to its original height by a storm, and further work was discontinued. Expenditure, \$664.81.

BEAVER RIVER.

Beaver River, Yarmouth County, flows into the Bay of Fundy near the dividing line between the Counties of Yarmouth and Digby.

With the \$1,000.00 voted at the Session of 1886, a boat channel leading into a sheltered basin within the high gravel wall through which the river discharges, has been opened and the sides protected, the work proving very satisfactory.

BIRCH ISLAND.

Birch Island, in Richmond County, is in the River Inhabitants, 2 miles above its entrance into the bay of the same name.

During the fiscal year a boat channel 1,500 in length, 20 feet wide and $2\frac{1}{2}$ feet deep at low water, was opened from the mainland to the island, at a cost of \$500.00, which is the only expenditure made at this place since Confederation.

BLUE ROCK.

Blue Rock, Antigonish County, is on the south coast of St. George's Bay, $2\frac{1}{2}$ miles east from Tracadie Harbour.

At the Session of 1886 the sum of \$4,000.00 was voted towards building a breakwater; and, on 24th November, a contract was entered into with Mr. S. O'Donoghue, for the sum of \$6,980.00, for the construction of a breakwater $326\frac{1}{2}$ feet long, to extend in a south-westerly direction from Blue Cape, thus protecting an area of $3\frac{1}{2}$ acres, having an extreme low water depth varying from 5 to 12 feet. At the close of the fiscal year a portion of the material for the work had been delivered. Expenditure, \$1,534.41.

 BOULARDERIE.

Boularderie, in Victoria County, is on the south side of Boularderie Island, near Island Point.

At the Session of 1886 the sum of \$2,000.00 was voted for the construction of a wharf; and during the fiscal year a wharf 120 feet in length and 20 feet in width, with an L at the outer end, has been built. There is a depth of 11 feet of water on the channel face of the structure, and it has already proved of great benefit to the residents of the locality. Expenditure, \$722.88. Total expenditure at this place since Confederation, \$2,722.88.

 BROAD COVE.

Broad Cove Marsh, in Inverness County, is on the Gulf of St. Lawrence, 19 miles north of Mabou Harbour and 12 miles south from Margaree.

At the Session of 1886 the sum of \$8,000.00 was voted for a wharf at this place; and on 12th November, 1886, a contract was entered into with Messrs. Campbell & Boyle, for the sum of \$7,300.00 for the construction of a wharf 400 feet long, 25 feet wide on top, and having a depth of 7 feet of water at its outer end. At the close of the fiscal year about one quarter of the work had been completed. Expenditure, \$683.90. Total expenditure at this place since Confederation, \$3,683.90.

 BRULÉ.

Brulé, in Colchester County, is situated on Northumberland Strait, about midway between Tatamagouche and River John.

During the fiscal year the sum of \$499.19 was spent in repairing the public wharf, and raising it where it had settled.

 CANADA CREEK.

Canada Creek, in King's County, is situated on the south shore of the Bay of Fundy, 60 miles east of Digby Gut.

With the \$700.00 voted at the Session of 1886, the western pier has been put into as good order as possible. Total expenditure since Confederation, \$6,519.80.

 CAP LA RONDE.

Cap la Ronde, in Richmond County, is the extreme south-east point of Ile Madame.

At the Session of 1886 the sum of \$500.00 was voted for the purpose of opening the channel into a pond south of the Cape, used as a place of shelter by the fishermen during stormy weather. The work has been done, but has not proved permanent, the channel having filled up again. Experience shows that boat channels through beaches into ponds seldom prove permanent, the tide usually filling them up. Expenditure, \$497.50.

 CHESTER CANAL.

Chester Canal is a small boat channel, made by the Local Government in 1864-65, to enable the residents of the western shore of Chester Basin to reach the wharves at Chester Harbour, Lunenburg County.

The channel having become partly filled in, the sum of \$449.71 was spent during the fiscal year in cleaning it out. Total expenditure since Confederation, \$696.47.

 CHETICAMP.

Cheticamp, at the northern end of Inverness County, is situated on the south shore of the Gulf of St. Lawrence, 58 miles from Mabou.

The dredge "George McKenzie" worked from 1st July to 25th August, 1886, at this place, in deepening to 13 feet at low water the channel, 45 feet wide, which was opened in 1875-77, but which, owing to its exposed position, had become filled up. Quantity of material removed, 12,990 cubic yards of gravel, hard pan and sand. Expenditure during fiscal year, \$4,361.50. Total expenditure since Confederation, \$25,545.67.

 CHIPMAN'S BROOK.

Chipman's Brook, in King's County, is on the southern shore of the Bay of Fundy, 64 miles east of Digby Gut, and 3 miles west of Hall's Harbour.

With the \$300.00 voted at the Session of 1886 further repairs were made to the sheathing and covering of the pier, and a ledge of rock at the upper berth of the pier was removed. Total expenditure since Confederation, \$5,797.33.

 COW BAY.

Cow Bay, in the County of Cape Breton, is on the eastern coast of the island, about 18 miles south-east of Sydney.

The sum of \$9,600.00 was voted at the Session of 1886 for the purpose of making the most urgent repairs to this breakwater, and during the year the amount appropriated was expended in close-piling the seaward face of the breakwater and reconstructing portions of the counterforts which had been carried away by the storms of the previous fall and winter. This breakwater is 1,380 feet in length and is exposed to the full force of the Atlantic during eastern gales. It is also much weakened from the ravages of the sea worms. Total expenditure at this place since Confederation, \$155,138.15.

 CRANBERRY HEAD.

Cranberry Head, also called Sandford, is in Yarmouth County, about 6 miles to the north-west of Yarmouth.

During the fiscal year the pier has been generally repaired, and a "spur" 28 feet long, built at right angles from the seaward face, to arrest the gravel and prevent its being swept around the end of the pier. Total expenditure since Confederation \$3,709.03.

 DIGBY.

Digby, the shire town of Digby County, is situated at the western end of Annapolis Basin, and is the terminus of the Western Counties Railway.

At the Session of 1886 the sum of \$1,250.00 was voted for the purpose of completing repairs to the pier at this place, which was almost entirely destroyed by a severe storm on 27th December, 1885, and the temporary repairs were finished in the early part of the fiscal year. Expenditure, \$767.62. Total expenditure since Confederation, \$20,101.71.

 EAST RIVER.

East River, Pictou County, empties into Pictou Harbour below New Glasgow.

During the year a number of ledges and boulders which interfered with the passage of timber were removed over a distance of about 10 miles. Expenditure, \$499.99.

ECONOMY.

Economy, in Colchester County, is situated on the north side of the Basin of Minas.

At the Session of 1886 the sum of \$1,500.00 was voted towards the construction of a breakwater at this place. During the year work was commenced on a structure to be 200 feet in length by 24 feet wide; and at the close of the fiscal year it was nearly completed. Expenditure, \$951.19.

FOX ISLAND.

Fox Island, or Laurenceton, is in Halifax County, on the Atlantic coast, about 15 miles east of Halifax Harbour.

The island is connected with the mainland by a sand bar, 935 feet long, and forms a harbour for fishing boats. This bar was being washed away; and at the Session of 1886 the sum of \$2,500.00 was voted towards its preservation. On 6th September, 1886, a contract was entered into with Mr. D. Sutherland, for the sum of \$3,200.00 for protection works, and during the fiscal year the work has been carried out. Expenditure, \$2,563.69.

GRANTON.

Granton, in the County of Pictou, is situated on the Middle River of Pictou, about 10 miles from Stellarton.

The dredge "Cape Breton," which was at work here at the opening of the fiscal year finished on 14th July, 1886, having removed 2,125 cubic yards of mud at a cost \$816.27. Total expenditure at this place, \$4,027.19.

GREAT TANCOOK ISLAND.

Great Tancook Island, Lunenburg County, lies at the mouth of Mahone Bay, about 6 miles south of the town of Chester.

At the Session of 1886 the sum of \$2,500.00 was voted to repair the pier built in 1873 at the joint expense of the Dominion and Local Governments, and at the close of the fiscal year delivery was being made of the necessary materials. Expenditure, \$1,167.34. Total expenditure since Confederation, \$3,167.34.

GREAT VILLAGE RIVER (LONDONDERY)

Great Village River, Colchester County, empties into Cobequid Bay near its head, 18 miles from Truro.

At the Session of 1886 the sum of \$3,900.00 was voted to continue the work of straightening the channel referred to in last year's report, and during the fiscal year further progress has been made. Expenditure, \$2,900.00. Total expenditure at this place since Confederation, \$8,000.00.

GROS NEZ.

Gros Nez is a small fishing station at the eastern extremity of Petit de Gras Island, Richmond County.

With the unexpended balance of appropriation for 1885-86, carried forward, the protection work referred to in last year's report was completed. Expenditure, \$100.00. Total expenditure at this place since Confederation, \$1,750.00.

HALIFAX.

Halifax, the Capital of the Province, is situated on the west side of Chebucto Bay, or Halifax Harbour, a deep inlet of the Atlantic Ocean.

DOMINION BUILDING.

With the unexpended balance of appropriation for 1885-86 carried forward, the repairs mentioned in last year's report as being in progress were completed. Expenditure, \$1,183.49. Total expenditure since Confederation, \$105,114.95 for construction; and \$60,217.79 for repairs.

EXAMINING WAREHOUSE.

At the Session of 1887 the sum of \$6,000.00 was voted towards completing the alterations to the building leased from Mr. D. Falconer so as to fit it for use as an Examining Warehouse, mentioned in last year's report as being in progress; and during the year these alterations have been carried out at an expenditure of \$8,276.76 for construction; and \$1,526.65 for repairs. Total expenditure on this building, \$10,084.64 for construction; and \$2,109.98 for repairs.

HARBOUR.

The dredge "St. Lawrence" completed the work of deepening the channel at the head of the North-West Arm, on which she was engaged at the opening of the fiscal year, on 15th July, 1886, having removed 3,850 cubic yards of mud and boulders. She was then taken to Cunard's wharf, and there removed 1,400 cubic yards of mud and old logs. Expenditure, \$1,269.76. Total expenditure on dredging Halifax Harbour since Confederation, \$12,040.86.

HARBOURS GENERALLY, NOVA SCOTIA.

At the Session of 1886 the usual grant of \$12,000.00 was made for general maintenance of harbours in the Maritime Provinces, of which the sum of \$3,200.30 was chargeable to Nova Scotia.

HARBOURVILLE.

Harbourville, in King's County, is on the south shore of the Bay of Fundy, about 55 miles east of Digby Gut.

At the Session of 1886 the sum of \$1,500.00 was voted for repairing the two piers forming the harbour, and during the year the work has been done. Expenditure, \$2,970.30. Total expenditure at this place since Confederation, \$7,469.55.

INDIAN ISLANDS.

Indian Islands, Cape Breton County, are a group of small islands on the north side of East Bay, Great Bras d'Or Lake.

At the Session of 1886 the sum of \$1,000.00 was voted for the purpose of cleaning out the channel between the two most southerly islands, which was opened by the Department in 1881-82; and during the fiscal year the work has been done. Expenditure, \$1,000.00. Total expenditure since Confederation, \$3,196.45.

INGONISH.

Ingonish, in Victoria County, is on the north-east coast of the Island of Cape Breton, and midway between Sydney and Cape North.

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At the Session of 1886 the sum of \$2,000.00 was voted for the purpose of improving the entrance to the pond. A warping buoy has been placed to enable vessels to enter the harbour, at ebb tide, with greater ease; and beach protection works, 58 feet in length, 12 feet high and 20 feet wide, have been commenced, and were nearly completed at the close of the fiscal year. Expenditure, \$932.36. Total expenditure at this place since Confederation, \$88,488.90.

KINGSPORT.

Kingsport, formerly Oak Point, is in King's County, on the western shore of the Basin of Minas, between the mouth of Cornwallis River and Cape Blomidon.

At the Session of 1886 the sum of \$2,550.00 was voted for the purpose of repairing the pier, which was greatly damaged by a storm in 1885, and during the fiscal year the repairs were commenced. Expenditure, \$856.16. Total expenditure since Confederation, \$25,588.83.

LISMORE.

Lismore, in Pictou County, is on Northumberland Strait, 18 miles east from Pictou Harbour.

At the Session of 1886 the sum of \$2,500.00 was voted for the purpose of constructing a wharf, 150 feet long, with a depth of 12 feet at high water; and the work had been commenced, but was not completed at the close of the fiscal year. Expenditure, \$1,548.49.

LITTLE GLACE BAY.

Little Glace Bay, Cape Breton County, is on the Atlantic Coast, 14 miles from Sydney and 5 miles south-east from Lingan.

The dredge "St. Lawrence" worked here from 7th September to 6th October, 1886, improving the entrance to the harbour, and removed 4,025 cubic yards of clay, stone, mud, &c., at a cost of \$973.49. Much time was lost on account of bad weather. Total expenditure at this place since Confederation, \$9,661.09.

LUNENBURG.

Lunenburg, the Capital of the county of the same name, is situated on Lunenburg Bay, 45 miles by water, W. S. W. of Halifax, and 72 miles by land.

At the Session of 1886 the sum of \$4,000.00 was voted for the purchase of a site for a Public Building at this place, and on the 1st May, 1887, a lot, having a frontage of 120 feet on King street, by a depth of 80 feet and extending from Lincoln to Pelham streets, was purchased from Mrs. C. A. Creighton, for the sum of \$3,900.00

McNAIR'S COVE.

McNair's Cove, Antigonish County, is situated on the west side of St. George's Bay, about 5 miles south-west of Cape George.

At the Session of 1886, the sum of \$5,000.00 was voted towards repairing the breakwater built by the Department in 1873. On 1st April, 1887, a contract was entered into with Mr. A. McKinnon, for the sum of \$9,500.00 for the reconstruction of a length of 160 feet; but the work had not been commenced up to the close of the fiscal year. Total expenditure at this place since Confederation, \$38,202.65.

MABOU.

Mabou, in Inverness County, is situated on the Gulf of St. Lawrence, 6 miles south of Port Hood.

At the Session of 1886 the sum of \$2,000.00 was voted to continue the brick and stone protection work referred to in last year's report, and during the fiscal year it has been extended 500 feet. Expenditure \$1,931.05. Total expenditure since Confederation, \$113,413.34.

MARGARETVILLE.

Margaretville, in Annapolis County, is on the southern shore of the Bay of Fundy, about 42 miles east of Digby Gut.

At the Session of 1886 the sum of \$2,500.00 was voted for repairing the pier at this place which was badly damaged by a storm on 26th December, 1885, a breach of 120 feet being made clear through the work. This breach has been made good, and at the close of the fiscal year other works of repair were in progress. Expenditure, \$6,082.36. Total expenditure since Confederation, \$15,232.36.

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MORDEN PIER.

Morden, in King's County, is on the south shore of the Bay of Fundy, 30 miles to the eastward of Digy Gut.

During the year repairs were made to the block 60 feet in length and to the "break." Expenditure, \$400.00. Total expenditure since Confederation, \$5,450.06.

NEW GLASGOW.

New Glasgow, in the County of Pictou, is situated on the East River, near its entrance into Pictou Harbour, and is 104 miles from Halifax by the Intercolonial Railway.

At the Session of 1886 the further sum of \$8,000.00 was voted towards the completion of the building to accommodate the Postal, Customs and other services, a full description of which appeared in my Annual Report for 1882-84, and the unexpended balance of appropriation for 1885-86, \$1,507.88 was carried forward. In the autumn of 1886 the building was completed and occupied. Expenditure, \$6,909.30. Total expenditure on this building, \$43,285.61.

NORTH SYDNEY.

North Sydney, in Cape Breton County, is on the North West Arm of Sydney Harbour, 18 miles from Sydney.

The sum of \$15,000.00 was voted at the Session of 1886 for the erection of the building to accommodate the Postal, Customs and other services, mentioned in last year's report as being under contract, and the unexpended balance of appropriation for 1885-86, \$3,050.08 was carried forward. On 18th December, 1886, a contract for heating apparatus was entered into with the Truro Foundry and Machine Company, for the sum of \$1,275.00; and at the close of the fiscal year the building was so far advanced that it was expected it would be completed and occupied in the autumn. Expenditure, \$14,733.80. Total expenditure on this building, \$19,232.74.

PARRSBORO', OR PARTRIDGE ISLAND PIER.

Parrsboro', or Partridge Island Pier, in the County of Cumberland, is situated near the mouth of Partridge Island River on the north side of the Basin of Minas.

With the unexpended balance of appropriation for 1885-86 carried forward and the sum of \$1,074.76 voted at the Session of 1887, the following repairs have been made to the pier; the outer works were sheathed with hardwood and protected by iron straps, new fenders were placed and others secured, the top was re-ballasted, new floor stringers and flooring placed and a block was constructed at the inner end to prevent the sea from cutting through the bank. Expenditure, \$2,000.00 Total expenditure since Confederation, \$17,167.05.

PETITE RIVIÈRE.

Petite Rivière, in the County of Lunenburg, empties into Palmerston Bay, an inlet of the Atlantic.

With the grant of \$600.00 made at the Session of 1886 the outer end of the break-water at Cherry Point, referred to in the last year's report, was raised 18 inches; additional large stones were placed on the outer slope at end, and some of the large covering stones which had been displaced by the sea were put back in position. Expenditure, \$563.37. Total expenditure since Confederation, \$5,813.67.

PICKET'S PIER.

Picket's Pier, King's County, is about 2 miles below the village of Canning, near the mouth of the Habitant River, which flows into the western side of the Basin of Minas.

The sum of \$499.98 was expended in repairing the approach to and outer end of the pier at this place, built some years ago by the Local Government and the inhabitants of the locality. Total expenditure since Confederation, \$2,299.87.

PICTOU.

Pictou, the chief town of the County of Pictou, is situated on the harbour of the same name, which opens into the Strait of Northumberland.

During the year the sum of \$37.34 has been spent for necessary repairs to the Custom House. Total expenditure on this building, \$25,070.05 for construction; and \$5,036.89 for repairs.

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PORT GREVILLE.

Port Greville, in Cumberland County, is situated on Greville Bay, about 14 miles from Parrsboro'.

At the Session of 1886 the sum of \$6,000.00 was voted towards improving the entrance to the mouth of the river. On 12th July, 1886, a contract for an extension of the breakwater 250 feet was entered into with Mr. Moses Hatfield, for the sum of \$5,775.00, and the work has been completed. The outer 70 feet of the beach protection work was also rebuilt. Expenditure, \$4,929.18. Total expenditure since Confederation, \$11,002.10.

SHEET HARBOUR.

Sheet Harbour, in Halifax County, is situated on the Atlantic Ocean, 77 miles east of Halifax.

At the Session of 1886 the sum of \$5,000.00 was voted for the purpose of building a ballast wharf at this place, but up to the close of the fiscal year no work had been done, and the only expenditure made was \$78.84 for an examination. Since the close of the fiscal year a contract has been entered into.

SURETTE'S ISLAND.

Surette's Island, in Yarmouth County, is situated 13 miles south-east from the town of Yarmouth.

Out of the grant made at the Session of 1886 for Surette's Island and Beaver River, the sum of \$960.12 has been spent in constructing a wharf 100 feet long and 25 feet wide, which has already proved of great benefit to the locality.

SYDNEY.

Sydney, the shire town of Cape Breton County, is situated on the east coast of the Island of Cape Breton, at the head of Sydney Harbour, and is 285 miles north-east of Halifax.

MARINE HOSPITAL.

Out of the unexpended balance of appropriation for 1885-86, carried forward the sum of \$468.85 has been spent for building a small storehouse and making necessary repairs. Total expenditure, \$10,408.13 for construction; and \$302.50 for repairs.

PUBLIC BUILDING.

At the Session of 1886 the sum of \$3,500.00 was re-voted towards providing a building for the accommodation of the Postal, Customs and other offices, and at the close of the fiscal year plans for the building were being prepared with a view to calling for tenders. Total expenditure, \$1,513.49.

QUARANTINE STATION.

This building, a full description of which will be found in Annual Report 1882-83, has been completed and occupied. Expenditure during fiscal year, \$128.50. Total expenditure, \$6,453.50 for construction; and \$128.50 for repairs.

TATAMAGOUCHE.

The Tatamagouche River, in Colchester County, empties into the south-west corner of Tatamagouche Bay, Strait of Northumberland.

The dredge "Cape Breton" worked from 15th July to 27th September, 1886, opening a channel through the bar at the mouth of the river, and removed 14,255 cubic yards of mud and sand, at a cost of \$5,464.28. Total expenditure since Confederation, \$14,938.87.

THREE FATHOM HARBOUR.

Three Fathom Harbour, in Halifax County, is situated on the Atlantic coast, about 14 miles east from Halifax Harbour.

The sum of \$25.00 was spent on necessary repairs to beach protection works. Total expenditure at this place since Confederation, \$4,622.17.

TRURO.

Truro, the county town of Colchester County, is situated about 2 miles above the head of Cobequid Bay, and is an important point on the Intercolonial Railway.

At the Session of 1887 the further sum of \$4,000 00 was voted towards the completion of the Public Buildings at this place for the accommodation of the Postal, Customs and other offices, a full description of which will be found in Annual Report for 1883-84, and the unexpended balance of appropriation for 1885-86, \$4,883.61, was carried forward. The building has been completed and occupied. Expenditure, \$5,020.94. Total expenditure on this building, \$36,619.01 for construction; and \$31.00 for repairs.

WEST PUBNICO.

Pubnico is situated on the Atlantic Ocean, at the extreme western end of Yarmouth County, and is about 28 miles from the town of Yarmouth.

With the \$1,000.00 voted at the Session of 1886, the work referred to in last year's report has been extended 230 feet. Total expenditure at this place since Confederation, \$1,998.62.

WHITE POINT.

White Point, on the Atlantic coast of Queen's County, is about 8 miles south-east from the entrance to Liverpool Harbour.

The breakwater which was built some years ago by the Local Government, and extended and repaired by the Dominion Government in 1879 and 1884, being much exposed to the Atlantic storms, and being greatly injured by the ravages of the sea worm, which is very destructive at this point, was badly damaged in 1885. So much so that the outer blocks were carried away and the ballast they contained, as well as a portion of the stone slope, deposited in the area sheltered by the breakwater. At the Session of 1886 the sum of \$1,000.00 was voted for repairs; and during the fiscal year the ballast has been removed and some repairs made to the work remaining. Expenditure, \$1,004.92. Total expenditure since Confederation, \$8,473.83.

WHYCOCOMAGH.

Whycocomagh, in Inverness County, is situated on the south side of Whycocomagh Bay, an arm of the Great Rras d'Or Lake.

During the year the channel leading into the pond was straightened, and the east side protected by brush and stone work, at a cost of \$199.96. Total expenditure at this place since Confederation, \$2,809.14.

WINDSOR.

Windsor, the shire town of Hants County, is situated on an arm of the Basin of Minas, 45 miles north-west of Halifax.

The further sum of \$3,700.00 was voted at the Session of 1887 towards the completion of the building to accommodate the Postal and other services, a full description of which appeared in Annual Report for 1883-84; and the building has been fitted up, furnished and occupied. Expenditure, \$4,095.86. Total expenditure, \$32,347.29.

YARMOUTH.

Yarmouth, the shire town of Yarmouth County, is situated on a small bay setting up from the Atlantic, 205 miles south-east of Halifax, and is the terminus of the Western Counties Railway.

HARBOUR.

At the Session of 1886 the sum of \$2,000.00 was voted towards the improvement of the harbour. During the year the beach protection works, which had in places been undermined by the sea, were made good, and other portions received repairs. The work of widening the channel, referred to in last year's report, was continued, the dredge "Canada" working from 1st July to 30th September, first near the Lobster Rock, and afterwards in making a cut 60 feet wide and 14 feet deep at low water, about half way through the point at "The Crotch," removing 10,485 cubic yards of sand and mud. When this work is completed the entrance to the harbour will be greatly improved. Expenditure, \$4,931.24. Total expenditure since Confederation, \$43,143.71.

PUBLIC BUILDING.

At the Session of 1886 the further sum of \$10,000.00 was voted towards the completion of the building intended to accommodate the Postal, Customs and other offices, a full description of which will be found in my Report for 1884-85. On 1st November, 1886, a contract was entered into with Mr. Joseph Muirhead for heating apparatus, for the sum of \$2,440.00; and during the fiscal year the building has been completed and occupied. Expenditure, \$10,163.63. Total expenditure on this building, \$37,189.67.

 PROVINCE OF PRINCE EDWARD ISLAND.

 CASCUMPEC.

Cascumpec, in Prince County, is on the north side of Foxley River, an arm of Cascumpec Bay, and is about 20 miles south of North Cape.

At the Session of 1886 the sum of \$5,000.00 was voted towards continuing the work of opening a channel 100 feet wide and 14 feet deep at low water, through the inner sandstone bar, referred to in last year's report; and during the fiscal year the work has been carried on. Expenditure, \$3,154.72. Total expenditure at this place since Confederation, \$7,958.29.

 CHARLOTTETOWN.

Charlottetown, the Capital of the Province, is situated on a neck of land between the North and Hillsborough Rivers, in Queen's County.

DOMINION BUILDING (NEW.)

At the Session of 1886 the sum of \$33,700.00 was voted to continue work on the new Dominion Building mentioned in last year's report as being under contract. On 22nd September, 1886, a contract for hot water heating apparatus was entered into with Messrs. McKinnon & McLean, for the sum of \$4,923.12; and during the fiscal year the building has been completed, fitted up and occupied. Expenditure, \$33,914.94. Total expenditure on this building, \$86,441.57.

DOMINION BUILDINGS (TEMPORARY).

During the fiscal year the sum of \$2,066.04 has been spent on the various buildings throughout the city used for the temporary accommodation of the Postal, Customs and other offices. Total expenditure on these buildings, including rent, \$13,674.49.

 GEORGETOWN.

Georgetown, the shire town of King's County, is situated on the north side of Montague River, near its entrance into Cardigan Bay.

Portions of the Queen's pier have been newly planked. Expenditure, \$334.67. Total expenditure since Confederation, \$3,588.91.

 HARBOURS GENERALLY, P. E. I.

At the Session of 1886 the annual grant of \$12,000.00 was made for the general maintenance of harbours in the Maritime Provinces, of which the sum of \$3,200.29 was chargeable to Prince Edward Island.

 KIER'S SHORE PIER.

Kier's Shore is situated on the eastern side of Richmond or Malpeque Bay, Prince County.

The pier at this place is one of those taken over by the Dominion from the Provincial Government. Some trifling repairs were made at a cost of \$7.25. Total expenditure, \$5,591.46.

 MIMINIGASH.

North or Big Miminigash is in Prince County, about 20 miles from West Point and 18 from North Cape.

With the unexpended balance of appropriation for 1885-86 carried forward, the repairs referred to in last year's report were completed. Expenditure, \$215.97. Total expenditure at this place since Confederation, \$9,051.73.

 MONTAGUE.

Montague is in King's County, and is about 26 miles east of Charlottetown.

At the Session of 1886 the sum of \$3,800.00 was voted towards the construction of a building to accommodate the Postal and other services, a description of which will be found in last year's report, and the unexpended balance of the appropriation for 1885-86, \$2,269.90, was carried forward. During the year the building has been completed and occupied. Expenditure during the year, \$5,293.64. Total expenditure on this building, \$6,215.47.

 NEW LONDON.

New London, or Greville Bay, is in Queen's County, about 10 miles south-east of the entrance into Richmond Bay.

At the Session of 1886 the sum of \$2,500.00 was voted towards repairing the breakwater, and on 28th September, 1886, a contract was entered into with Mr. George McKay, for the construction of a length of 420 feet, for the sum of \$1,400.00; and the work was satisfactorily completed before the close of the fiscal year. Expenditure \$1,524.28. Total expenditure since Confederation, \$11,862.43.

NINE MILE CREEK.

Nine Mile Creek, in Queen's County, is on the north-west side of Hillsboro' Bay, in Lot No. 65.

During the fiscal year the sum of \$97.66 was expended on temporary repairs to the pier at this place, which is one of those taken over from the Local Government. Total expenditure since Confederation, \$579.66.

PORT SELKIRK.

Port Selkirk Pier is in Lot No. 57, Queen's County, and on the south side of Orwell River, near its entrance in Orwell Bay.

With the unexpended balance of appropriation, \$750.00, carried forward from 1885-86, the lower end of this pier at this place was levelled up for a distance of 40 feet, piles were driven every five feet along its face to prevent an outward movement of the structure, and the upper block and connecting span were torn down, it being impossible to repair them. Expenditure \$729.80. Total expenditure since Confederation, \$4,319.18.

RED POINT.

Red Point Pier is in Queen's County, and is situated on the eastern side of Hillsboro' River, about six miles north-east of Charlottetown.

During the fiscal year the sum of \$199.97 was spent for necessary repairs. Total expenditure on this pier since it was taken over from the Local Government, \$799.07.

RUSTICO.

Rustico, in Queen's County, is situated on the northern side of the island, about midway between North and East Points.

Some slight repairs have been made to the outer end of the breakwater, at a cost of \$70.00. Total expenditure since Confederation, \$18,849.91.

SOURIS.

Souris is on Colville Bay, King's County, 16 miles to the eastward of East Point, and is the eastern terminus of the Prince Edward Island Railway.

At the Session of 1886 the sum of \$7,000.00 was voted to continue the repairs to the breakwater at this place; and during the fiscal year it has been strengthened by close pilling and a quantity of ballast has been put in. Expenditure, \$1,730.63. Total expenditure since Confederation, \$110,187.63.

STURGEON PIER.

Sturgeon Pier is on the south side of Cardigan Bay, about 6 miles from Georgetown, King's County.

During the fiscal year the roadway was repaired and the outer block replanked. Expenditure, \$50.09. Total expenditure on this pier, \$897.92.

SUMMERSIDE.

Summerside, Prince County, is the principal seaport in the western end of Prince Edward Island, and is the objective point for the steamers plying from Shediac, N.B., in connection with the Intercolonial Railway.

At the Session of 1886 the further sum of \$3,000.00 was voted to continue work on the Public Building intended to accommodate the Postal, Customs and other offices, a full description of which will be found in Annual Report for 1883-84, and the unexpended balance of appropriation for 1885-86, \$1,402.61, was carried forward. The building has been completed and occupied. Expenditure during the fiscal year, \$3,292.15. Total expenditure on this building, \$34,260.64.

 TIGNISH.

Tignish is situated at the mouth of the Big Tignish River, Prince County, about 8 miles east of North Point.

The dredge "Prince Edward," which was at work between the piers forming the entrance to the harbour at the opening of the fiscal year, continued her operations until 25th September, 1886, when she was taken into winter quarters, up to which time she had removed 6,137 cubic yards of clay, sand and rock, at a cost of \$4,988.39. Total expenditure since Confederation, \$34,797.59.

 PROVINCE OF NEW BRUNSWICK.

 BATHURST.

Bathurst, the shire town of Gloucester County, is on Bathurst Bay, which opens into the Baie des Chaleurs, and is about 175 miles from St. John.

At the Session of 1886 the further sum of \$9,000.00 was voted to continue work on the building intended to accommodate the Postal and other services, a description of which will be found in my report for 1884-85, and the unexpended balance of appropriation for 1885-86, \$2,408.60, was carried forward. On 6th September, 1886, a contract for Post Office fittings was entered into with Mr. S. Gammon, for the sum of \$1,300.00, and on 15th October, 1886, a contract was entered into with Messrs. Wisdom & Fish, for the sum of \$1,550.00. Work on the building has been steadily carried on, and at the close of the fiscal year it was expected that it would be occupied in the autumn. Expenditure, \$13,111.02. Total expenditure on this building, \$26,773.37.

 CAPE TORMENTINE.

Cape Tormentine, in Westmoreland County, is situated on the Strait of Northumberland, and is the point from which the crossing to Prince Edward Island is generally made during the winter.

At the Session of 1886 the sum of \$130,000.00 was voted for the purpose of continuing work on the wharf mentioned in last year's report as being under contract. The contractors made very little progress, having only completed some 230 feet of the inshore portion, out of a total length of 2,500 feet; and since the close of the fiscal year the work has been taken out of their hands. Expenditure, \$7,705.74. Total expenditure since Confederation, \$14,147.29.

CARLETON.

Carleton is situated in the County of St. John, on the western side of St. John Harbour and is in the Electoral Division of the City of St. John.

With the unexpended balance of appropriation for 1885-86, carried forward, the works referred to in last year's report have been completed. Expenditure during the year, \$144.45. Total expenditure on this building, \$14,058.64.

CHATHAM.

Chatham, in the County of Northumberland, is situated on the Miramichi River, about 12 miles above its mouth.

During the fiscal year the sum of \$34.18 has been spent for repairs to the Public Building at this place. Total expenditure on this building, \$13,781.77 for construction; and \$4,828.11 for repairs.

CLIFTON.

Clifton, Gloucester County, is situated on the southern shore of the Baie des Chaleurs, about 19 miles eastward of the entrance to Bathurst Harbour.

At the Session of 1886 the sum of \$582.11 was voted for the purpose of paying Messrs. Read & Co. for repairs made to the breakwater in 1883, and during the fiscal year the money has been paid. Total expenditure at this place since Confederation, \$10,263.86.

COCAGNE.

Cocagne, in Kent County, is on the south-west coast of the Strait of Northumberland, about 10 miles west of Shediac.

The dredge "St. Lawrence" worked here from 2nd to 28th August, 1886, opening a channel 14 feet deep through the bar at the entrance to the harbour, removing 12,600 cubic yards of sand, clay and shells, at a cost of \$3,047.46. Total expenditure since Confederation, \$8,196.36.

DALHOUSIE.

Dalhousie, the chief town in Restigouche County, is situated on the south shore of the Restigouche River at its entrance into the Baie des Chaleurs.

The sum of \$5,000.00 having been voted at the Session of 1886 for a ballast wharf at this place, a contract was entered into on 13th December, 1886, with Mr. George Gordon for the construction of a wharf 300 feet in length, for the sum of \$7,600.00, and at the close of the fiscal year the work was in progress. Expenditure, \$213.85, which is the only expenditure at this place since Confederation.

DORCHESTER

Dorchester, the shire town of Westmoreland County, is situated on the left bank of the Petitcodiac River, near its entrance into Shepody Bay.

At the Session of 1886 the further sum of \$20,000.00 was voted to continue work on the new cell-wing, mentioned in previous reports as being under contract. On 31st August, 1886, a lot of land containing $24\frac{1}{2}$ acres, required for Penitentiary purposes, was purchased from C. E. Knapp and wife, for \$548.80. During the fiscal year the cell wing and boiler house have been completed, the steam heating apparatus extended to the cell wing, fittings for cells supplied, porches built, and other work done,—a full description of which will be found in Appendix No. 2, pages 25 and 26. Expenditure during the year, \$19,351.44. Total expenditure on this building, \$454,858.00 for construction; and \$260.00 for repairs.

ELM TREE RIVER.

Elm Tree River is a small stream in Gloucester County, emptying into the Baie des Chaleurs, about 10 miles north of Bathurst.

Several boulders which made the entrance difficult and dangerous have been removed at a cost of \$25.00, which is the only expenditure at this place since Confederation.

FREDERICTON.

Fredericton, the Capital of the Province of New Brunswick, is situated in the County of York, on the River St. John, about 60 miles from the City of St. John.

At the Session of 1886 the sum of \$1,400.00 was voted for the purpose of repairing the Public Building at this place, and at the Session of 1887 a further sum of \$600 00 was granted for the same purpose. During the year a quantity of painting, kalsomining, &c., was done, new asphalt sidewalks laid, the vault fitted up and additional fittings supplied. Expenditure, \$1,266.21. Total expenditure on this building, \$30,521.57 for construction; and \$2,850.39 for repairs.

GRANDE ANSE.

Grande Anse, in Gloucester County, is a small indent on the southern shore of the Baie des Chaleurs, about midway between Bathurst and Shippegan.

At the Session of 1886 the sum of \$1,500.00 was voted for the purpose of repairing the breakwater built at this place by the Department, in 1875, the top of which was carried away by an ice shove on 22nd January, 1886, and during the year the damaged portion has been rebuilt. Expenditure during the fiscal year, \$1,743.84. Total expenditure at this place, \$13,837.05.

HARBOURS GENERALLY, NEW BRUNSWICK.

At the Session of 1886 the usual grant of \$12,000.00 was made for the maintenance of harbours and rivers in the Maritime Provinces, of which the sum of \$3,200.29 was chargeable to New Brunswick.

HOPEWELL CAPE.

Hopewell Cape, in Albert County, is on the western side of the Petticodiac River, 7 miles below Hillsboro', and 7 miles above Grindstone Island, at the mouth of the river.

During the year the small stream running near the ballast wharf was deepened and straightened, and a cut made at the end of the wharf for the better accommodation of vessels in ballast. Expenditure, \$299.94. Total expenditure since Confederation, \$7,543.52.

KINGSTON.

Kingston, in Kent County, is on the Richibucto River, 3 miles from its mouth, and 36 miles from Shediac.

At the Session of 1886 the sum of \$1,000.00 was voted for repairs to the Marine Hospital which is situated about midway between Kingston and Richibucto, and at the Session of 1887 a further sum of \$500.00 was granted. During the year extensive repairs and alterations have been made, at a cost of \$1,406.81.

MONCTON.

Moncton, Westmoreland County, is situated at the head of navigation of the Petitcodiac River, and is 80 miles from St. John by Intercolonial Railway.

At the Session of 1887 the further sum of \$1,200.00 was voted for sidewalks, &c., to the Public Building, a full description of which will be found in my Annual Report for 1883-84, and during the fiscal year the works have been carried out. Expenditure, \$1,122.11. Total expenditure on this building, \$44,960.59 for construction; and \$115.51 for repairs.

NEWCASTLE.

Newcastle, the shire town of Northumberland County, is situated on the left bank of Miramichi River, about 18 miles from its entrance into Miramichi Bay.

At the Session of 1886 the sum of \$10,450.00 was voted towards the completion of the building to accommodate the Postal, Customs and other offices, mentioned in last year's report as being under contract, and a full description of which will be found in my report for 1884-85. The building has been completed and occupied. Expenditure, \$6,816.27. Total expenditure on this building, \$43,363.94.

PORTLAND.

Portland is situated in the County of St. John and adjoins the City of St. John. During the year the sum of \$315.90 was spent for repairs to the Public Building at this place. Total expenditure, \$9,853.35.

PARTRIDGE ISLAND.

Partridge Island, in the County of St. John, lies directly off the Harbour of St. John.

Many years ago two small piers were built to facilitate the landing of supplies

for the lighthouse which is on the island. During a severe south-easterly storm in February, 1887, the east pier was almost entirely destroyed, and the wreckage swept into the harbour formed by the two piers. This wreckage has been removed, and the west pier is available for vessels and boats.

QUACO.

Quaco is on the north coast of the Bay of Fundy, in the County of St. John, about 30 miles east of St. John Harbour.

During the year the sum of \$198.63 was spent in repairing the breakwaters at the entrance to the harbour. Total expenditure at this place since Confederation, \$33,505.15.

RIVER ST. FRANCIS.

The River St. Francis is a tributary of the St. John into which it flows at a point about 30 miles west of Edmundston, Victoria County.

At the Session of 1886 the sum of \$500.00 was voted for the improvement of the river, and during the fiscal year the sum of \$474.67 has been spent for the removal of sand banks, large rocks, &c., over a distance of about 12 miles, and the tow path was put in order.

RIVER ST. JOHN.

The St. John River rises in the highlands which separate Maine from Canada, and for part of its course forms the boundary between Canada and the United States.

At the Session of 1886 the sum of \$8,000.00 was voted for the improvement of Grand Lake; for the river from River des Chutes to Bear Island; for the section between Bear Island and Fredericton; for the river above Grand Falls, and for the section between Fredericton and Woodstock; and at the Session of 1887 the sum of \$800.00 was voted for the completion of the dam above Grand Falls. At the opening of the fiscal year the dredge "New Dominion" was at work at Belleisle Bay, and remained there until 28th September, removing 28,035 cubic yards of sand and clay, at a cost of \$2,308.72. On the 3rd October the dredge commenced at Grand Lake and worked there until 29th October, removing 9,555

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cubic yards of clay and sawdust. On the 28th June, 1887, the dredge resumed work at Belleisle Bay. Between Fredericton and Bear Island boulders and rocks were removed at Burden's Landing and in the vicinity of Spring Hill, and the channel was widened at the head of Hart's Island. From Bear Island upwards to River des Chutes the channel was improved by the removal of boulders and bars. From River des Chutes to Grand Falls blasting was done and rock removed at White Rapids and Larlee Rock, below Andover Bridge. On the Tobique improvements were effected at Nictau Bar, Little Nictau Bar, Hammond Bar and other points. Above Grand Falls to River St. Francis the tow path was repaired, and some rocks and sand bars removed from the channel at Baker's Brook, while immediately above the falls a "shear dam," 230 feet in length, to guide timber and logs over the falls, was commenced. Expenditure during the year, \$8,918.19. Total expenditure on this river (including the Tobique) since Confederation, \$97,410.29.

ST. JOHN.

St. John, the commercial metropolis of the Province, is situated at the mouth of the St. John River, and is, as is well known, an important seaport.

CUSTOM HOUSE.

At the Session of 1886 the sum of \$3,350.00 was voted for repairs to roof, &c. the repairs have been made. Expenditure, \$2,548.83 for construction; and \$222.56 for repairs. Total expenditure on this building, \$326,190.47 for construction; and \$3,329.24 for repairs.

HARBOUR.

At the Session of 1886 the further sum of \$35,500.00 was voted towards continuing the work of reconstructing Negro Point Breakwater, referred to in previous reports, at the Session of 1887 the further sum of \$18,000.00 was granted and the balance of contractors' security forfeited, \$3,068.03, was carried forward, so that the whole amount available was \$56,568.03. The work of rebuilding the breakwater at Negro Point was brought to a conclusion in January, 1887, and the work taken off the contractors' hands. The protection work at the inner end of the breakwater, and around the foot of the cliff on which Fort Dufferin stands, having been damaged by a severe storm in the early part of February last, steps were taken to repair the same, and about half the required work was done before the close of the fiscal year. The dredge "New Dominion" worked at the wharf of the International S.S. Company in December and January. Expenditure during the year, \$56,621.14 on breakwater; and \$1,132.88 on dredging. Total expenditure since Confederation, \$422,001.05 on breakwater; and \$58,095.02 on dredging.

MARINE HOSPITAL.

During the fiscal year the sum of \$522.90 was spent on repairs to this building. Total expenditure, \$49,603.24.

PENITENTIARY.

The sum of \$60.00 was spent for repairs. Total expenditure since Confederation, \$3,835.09 for repairs.

POST OFFICE.

At the Session of 1886 the sum of \$1,400.00 was voted for the purpose of placing a ventilating shaft in this building, and for painting, whitewashing, &c., and during the year the improvements have been carried out. Expenditure, \$1,880.00 for construction, and \$95.30 for repairs. Total expenditure on this building, \$176,704.68 for construction; and \$3,084.36 for repairs.

SAVINGS BANK.

During the year some small repairs have been made at a cost of \$8.64. Total expenditure on this building, \$45,022.03 for construction; and \$1,373.99 for repairs.

ST. STEPHEN.

St. Stephen, in Charlotte County, is situated at the head of navigation of the Ste. Croix River, which forms part of the boundary between New Brunswick and the United States.

At the Session of 1886 the sum of \$10,000.00 was voted to continue work on the Public Building intended to accommodate the Customs, Postal and other services, a full description of which will be found in my report for 1884-85. On 21st September, 1886, a contract was entered into with Mr. J. E. Fitzgerald for heating apparatus, for the sum of \$1,290.00; and during the fiscal year the building was completed and occupied. Expenditure, \$3,025.41. Total expenditure on this building, \$26,650.49.

SHIPPEGAN.

Shippegan Harbour, Gloucester County, is situated at the southern extremity of Shippegan Sound, an arm of the Baie des Chaleurs.

At the Session of 1886, the sum of \$1,200.00 was voted for repairing the breakwater at this place, and during the year the work has been done. Total expenditure at this place since Confederation, \$31,284.24.

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 SUSSEX.

During the year the sum of \$8.05 has been spent on repairs to the Public Building at this place. Total expenditure, \$23,325.26 for construction; and \$99.39 for repairs.

 TYNEMOUTH.

Tynemouth Creek, St. John County, is on the north coast of the Bay of Fundy, twenty miles east of the entrance to St. John Harbour.

At the Session of 1886 the sum of \$1,000.00 was voted for repairing and strengthening the protection works at this place; and during the year the work has been done. Total expenditure since Confederation, \$5,498.07.

 UPPER SALMON RIVER.

Upper Salmon River, Albert County, empties into Salisbury Bay, about 4 miles north-east of Mathews Head.

At the Session of 1886 the sum of \$3,000.00 was voted for the extension of the breakwater commenced in 1883-84. On 25th October, 1886, a contract was entered into with Messrs. Wallace, Appleby & Appleby for the construction of a further length of 245 feet, for the sum of \$4,570.00, and at the close of the fiscal year the work was well advanced towards completion. Expenditure, \$2,453.82. Total expenditure since Confederation, \$6,722.58.

 WOODSTOCK.

Woodstock is the shire town of the County of Carleton, and is situated on the left bank of the St. John River, 63 miles from Fredericton by New Brunswick Railway.

At the Session of 1886 the sum of \$5,500.00 was voted for the purpose of grading and fencing the grounds about the Public Building at this place, and the unexpended balance of appropriation for 1885-86, \$1,292.29, was carried forward, so that the whole amount available was \$6,792.29. On the 29th September, 1886, a contract for the work was entered into with Mr. Hugh Hay, for the sum of \$3,625.00, and during the fiscal year it has been completed. Expenditure, \$5,397.51. Total expenditure on this building, \$36,874.42 for construction; and \$216.42 for repairs.

 PROVINCE OF QUEBEC.

 ANSE A L'EAU.

Anse à l'Eau is situated on the north-east side of the Saguenay River, in the County of Chicoutimi, about 2 miles above Tadousac.

During the fiscal year some small repairs were made to the flooring and slip of the pier built a few years ago to accommodate the steamers plying between Quebec and Chicoutimi. Total expenditure on this pier, \$1,011.19.

 ANSE ST. JEAN.

Anse St. Jean, in the County of Chicoutimi, is on the south-west shore of the River Saguenay, about 25 miles from its mouth.

During the year the sum of \$865.28 has been expended on the construction of a movable slip, building an open shed 40 by 28 feet, and renewing a part of the flooring. Total expenditure since Confederation, \$7,658.28.

 BAIE ST. PAUL.

Baie St. Paul, in the County of Charlevoix, is on the north shore of the St. Lawrence, 60 miles below Quebec.

At the Session of 1886 the sum of \$5,000.00 was voted for further improvement of the pier at Cap aux Corbeaux, and during the year an abutment was built to connect the shore end with the road made by the Municipality. Expenditure, \$1,170.60. Total expenditure at this place since Confederation, \$32,996.25, of which \$37,186.47 was for pier at Cap aux Corbeaux, and \$25,809.78 was for the isolated block.

 BARACHOIS DE LA MALBAIE.

Barachois de la Malbaie is in the County of Gaspé, on the north shore of the Baie des Chaleurs, about midway between Percé and Point St. Peter.

At the Session of 1886 the sum of \$1,300.00 was voted for the improvement of the entrance to the river at this place and the Newport River, and the unexpended
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balance of appropriation for 1885-86, \$772.75, was carried forward. During the fiscal year the work of removing the obstructions which render the navigation of the channel unsafe, and which was referred to in my report for 1883-84, was resumed, and a further quantity of rocks was removed, but a considerable quantity yet remains. Expenditure, \$470.45. Total expenditure at this place since Confederation, \$2,014.43.

BEAUPORT.

Beauport, in Quebec County, is situated on the north shore of the St. Lawrence, a few miles below the City of Quebec.

At the Session of 1886 the sum of \$500.00 was voted for the purpose of building a small wharf at the mouth of the river, to facilitate the shipment of stone; but up to the close of the fiscal year work had not been commenced and there had been no expenditure

BERTHIER (*EN BAS*).

Berthier (*en bas*), in the County of Bellechasse, is situated on the south shore of the St. Lawrence, 24½ miles below Quebec.

With the unexpended balance of appropriation, carried forward from 1885-86, the work referred to in last year's report has been completed. Expenditure, \$500.00. Total expenditure since Confederation, \$30,848.54.

BERTHIER (*EN HAUT*).

Berthier (*en haut*), in County of the same name, is on the north shore of the St. Lawrence, 45 miles north-east of Montreal.

At the Session of 1886 the sum of \$2,000.00 was voted for the purpose of building an ice pier; and on 7th October, 1886, a contract was entered into with Mr. Dennis O'Brien, for the sum of \$1,369.00. The work was completed in the fall of 1886 and has answered all expectations. Expenditure, \$1,611.04.

BIC

In the County of Rimouski, on the south shore of the St. Lawrence, about 170 miles below Quebec.

At the Session of 1886 the sum of \$750.00 was voted towards completing the flooring of the pier at this place, mentioned in last year's report as being in progress; and during the fiscal year the work has been finished. Expenditure, \$767.01. Total expenditure at this place since Confederation, \$15,931.08.

CAP A L'AIGLE.

Cap à l'Aigle, in the County of Charlevoix, is on the north shore of the St. Lawrence, about three miles east of the village of Malbaie.

During the fiscal year the sum of \$168.83 has been spent on repairs to the wharf at this place. Total expenditure since Confederation, \$3,710.08.

CASCADES.

The Cascades wharf is situated on the Ottawa River, in the County of Vaudreuil, about six miles east of Cedars village.

At the Session of 1886 the sum of \$3,000.00 was voted for a wharf at this place; and during the fiscal year a wharf 100 feet in length, 25 feet in width, has been built, at a cost of \$3,013.49.

CEDARS.

Cedars Village, in the County of Soulanges, is on the north shore of the St. Lawrence, about 30 miles west of Montreal.

During the fiscal year the sum of \$50.09 has been spent on repairs to the pier at this place. Total expenditure since Confederation, \$3,820.95.

CHATEAU RICHER.

Chateau Richer is in the County of Montmorency, on the north shore of the St. Lawrence, 15 miles below Quebec.

At the Session of 1866 the sum of \$1,000.00 was voted to continue the removal of boulders, referred to in last year's report, and during the year a further portion of the beach between high and low water has been cleared. Expenditure, \$1,052.04. Total expenditure at this place since Confederation, \$6,043.17.

 CHICOUTIMI.

Chicoutimi, in the County of the same name, is situated on the south side of the Saguenay River, at the head of navigation, and 71½ miles from Tadousac.

MARINE HOSPITAL.

During the fiscal year a covered way from the hospital to the chapel was built, and the hospital and outbuilding; were generally repaired. Expenditure during the fiscal year, \$1,525.61. Total expenditure on this building, \$19,496.45 for construction; and \$660.34 for repairs.

PIER.

At the Session of 1886 the sum of \$1,225.00 was voted for further improvement of this pier, and during the fiscal year the sum of \$1,390.35 was spent on building a slip, painting the waiting room and general repairs. Total expenditure on this pier since Confederation, \$22,884.19.

 COATICOOK.

Coaticook, in the County of Stanstead, is on the Coaticook River, 122 miles south-east of Montreal.

At the Session of 1886 the sum of \$4,000.00 was voted towards providing a Public Building to accommodate the Postal, Customs and other services. On 22nd December, 1886, a site at the corner of Main and Cutting streets, containing 7,500 superficial feet, was purchased from Mr. Lucius Kilburn, for the sum of \$2,000.00, and at the close of the fiscal year plans for a building were being prepared. Expenditure, \$2,132.66.

 DUNDEE.

Dundee, in Huntingdon County, is situated on Salmon River, 10 miles from Summertown, and 70 miles south-west of Montreal.

At the Session of 1886 the sum of \$500.00 was voted for repairs to the Custom House at this place, a wooden building built in 1846-47; and during the fiscal year the sum of \$954.94 has been spent on repairs. Total expenditure since Confederation, \$1,352.83 for repairs.

DITCHFIELD.

Out of the votes of \$1,200.00 and \$1,113.02 passed at the Sessions of 1836 and 1887 for piers, Lake Megantic, the sum of \$1,484.75 has been spent on building a small pier at this place.

DOUCET'S LANDING.

Doucet's Landing, in the County of Nicolet, is on the south shore of the St. Lawrence, opposite the city of Three Rivers.

At the Session of 1886 the sum of \$2,000.00 was voted for the purpose of deepening the waters at the wharf, which had become much shoaled; and during the fiscal year 6,500 cubic yards of mud were removed, at a cost of \$1,836.53.

ÉTANG DU NORD.

Étang du Nord, in the County of Gaspé, is situated at the western end of Grindstone Island, one of the Magdalen Group, Gulf of St. Lawrence.

At the Session of 1886, the sum of \$7,000.00 was voted to continue work on the breakwater, mentioned in previous report as having been commenced at Isle aux Goélans, and the unexpended balance of appropriation for 1885-86, \$3,399.71 was carried forward. During the fiscal year a further length of 200 feet of the breakwater has been completed, and at the close of the fiscal year another crib 100 feet long, 32 feet wide and 18 feet high, had been constructed and was ready to sink. Expenditure \$9,906.13. Total expenditure, \$54,484.83.

FATHER POINT.

Father Point, in the County of Rimouski, is on the south shore of the St. Lawrence, about 6½ miles from the Village of Rimouski.

At the Session of 1887 the sum of \$2,500.00 was voted for the purpose of recouping the expenditure of a survey made during the season of 1886, on account of a petition received from the Quebec Harbour Commissioners and the others for establishment of a Harbour of Refuge at this place. The survey showed that it would require a pier 1,050 feet long to reach 20 feet depth at low water; and the Chief Engineer estimated the cost of the work at \$140,000.00. Expenditure on survey, \$2,501.69.

 GATINEAU POINT.

Gatineau Point, in the County of Ottawa, is situated at the confluence of the Gatineau and Ottawa Rivers, about 2 miles below the City of Ottawa.

During the fiscal year some damage done to the sheathing and fenders of the wharf at this place was made good, at a cost of \$216.14. Total expenditure at this place since Confederation, \$4,066.98.

 GRANDES BERGERONNES

Grandes Bergeronnes, in Saguenay County, is on the north shore of the St. Lawrence, 14 miles from Tadousac.

The work of clearing the channel of the river of the rocks which obstructed it was begun, and a length of 1,000 feet by a breadth of 40 feet was finished, at a cost of \$250.01. There remains about a mile of river yet to be improved.

 GRAND PABOS.

Grand Pabos in the County of Gaspé, is on the north shore of the Baie des Chaleurs, about 30 miles from Percé.

At the Session of 1886 the sum of \$1,000.00 was voted for the improvement of this harbour. The work of removing by blasting the large rocks which formed obstructions was commenced in July, 1886, and discontinued in August, up to which time 173 tons of rock had been removed, at a cost of \$702.14.

 GROSSE ISLE

An Island in the St. Lawrence River, about 33 miles below Quebec, in the County of Montmagny.

At the Session of 1886 the sum of \$8,000.00 was voted for the purpose of repairing the quarantine buildings at this place. On 10th August and 11th October, 1886, contracts were entered into with Mr. George Beaucage for general repairs to the buildings, for the sum of \$6,900.00, and during the fiscal year the work has been carried on. Expenditure, \$7,468.82. Total expenditure since Confederation, \$77,695.66.

HARBOURS AND RIVERS GENERALLY, QUEBEC.

At the Session of 1886 the sum of \$10,000.00 was voted for repairs, &c., to harbours and rivers generally in the Province of Quebec, the unexpended balance of appropriation for 1885-86, \$535.28, was carried forward, and at the Session of 1887 the further sum of \$4,340.00 was granted, so that the total amount available was \$14,875.28, out of which the sum of \$11,736.12 was expended during the fiscal year.

HULL.

The City of Hull is in the County of Ottawa, on the north shore of the Ottawa River, and connected with the City of Ottawa by the Union Suspension Bridge.

POST OFFICE (NEW).

Immediately after the burning of the old Post Office on 8th May, 1886, the work of removing the débris was commenced, and preparation made for rebuilding on the same site; and Parliament having, at the Session of 1886, made a grant of \$22,000.00 for the purpose, a contract was entered into on 3rd August, 1886, with Messrs. Stewart & McCullough, for re-erecting the building for the sum of \$15,450.00. On the 4th February, 1887, a contract for heating apparatus was entered into with Messrs. Garth & Co., for the sum of \$1,047.00; and on 3rd May, 1887, a contract for the fittings was entered into with M. W. Stuart, for the sum of \$2,200.00. The building is of stone, two and a half storeys high, with wood floor and roof, the latter covered with slate. The main building is 53 by 37 feet with two stone porches, and a stone clock tower at west end, and a one storey annex 32 by 20 feet in rear. The ground floor of the main building is for the Post Office; the annex for Weights and Measures Offices, and the upper storey for the Postmaster's residence. Work on the new building has been steadily carried on, and at the close of the fiscal year it was nearly completed, since which date it has been fitted up and occupied. Expenditure during the fiscal year, \$20,681.84. Total expenditure on the new building, \$26,442.27.

POST OFFICE (TEMPORARY).

The sum of \$465.02 was spent in fitting up a temporary office during the rebuilding of the Post Office.

ISLE PERROT.

Isle Perrot in the County of Vaudreuil, is in the St. Lawrence River, between Lake of Two Mountain and Lake St. Louis.

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At the Session of 1886 the sum of \$6,000.00 was voted towards building a wharf at this place, and on 20th April, 1887, a contract for a block of crib work was entered into with Mr. D. O'Brien, for the sum of \$4,065.00 and work was commenced shortly before the close of the fiscal year and has since been completed. Expenditure, \$383.51.

KAMOURASKA.

Kamouraska, in the County of the same name, is on the south shore of the St. Lawrence, 90 miles below Quebec.

At the Session of 1886 the sum of \$3,000.00 was voted for an extension of the pier at this place, purchased from Dame L. E. Taché on 21st January, 1887, for the sum of \$1,000.00; and an addition of 100 feet was commenced, but was not completed at the close of the fiscal year. Expenditure, \$3,279.93.

LANORAIE.

Lanoraie is in the County of Berthier, on the north shore of the St. Lawrence, about 46 miles north-east of Montreal.

At the Session of 1886 the sum of \$3,000.00 was granted for the purpose of connecting with the shore the isolated block built in 1884. A further grant of \$3,400.00 was made at the Session of 1887, and the unexpended balance of appropriation for 1885-86, \$340.40, was carried forward, so that the whole amount available was \$6,740.40. During the year an approach 240 feet in length has been built to connect the block with the shore. Expenditure, \$1,726.76. Total expenditure on this pier \$11,903.37.

LAPRAIRIE.

Laprairie, the *chef-lieu* of the County of the same name, is on the south shore of the St. Lawrence, 7 miles above Montreal.

At the Session of 1887 the sum of \$6,660.00 was voted for the purpose of building two ice piers at this place to prevent damage being done to property during the breaking up of the ice in the spring. The piers have been built and have proved thoroughly satisfactory. Expenditure, \$6,736.19. The dredge "Queen" commenced work on a shoal between the old and new channels on 26th May, 1887, and was still at work at the close of the fiscal year, up to which time 3,316 cubic yards of clay and stone had been removed, at a cost of \$1,257.72. Total expenditure at this place since Confederation, \$19,277.95.

 LES EBOULEMENTS.

Les Eboulements, in the County of Charlevoix, is on the north shore of the St. Lawrence, about 69 miles below Quebec.

During the fiscal year repairs were made to the face timbers and floor stringers of the wharf, and the flooring was renewed in places, at a cost of \$597.11. Total expenditure at this place since Confederation, \$18,94.63.

 LÉVIS.

Lévis, the *chef lieu* of the County of the same name, is situated on the south shore of the St. Lawrence immediately opposite the City of Quebec.

At the Session of 1887 the sum of \$751.50 was voted for the purpose of paying Charles Veilleux's account for work done at the wharf used in connection with the Immigrant Building which was burnt in 1884; and during the year the account has been paid.

 LONGUEUIL.

Longueuil, the *chef lieu* of the County of Chambly, is situated on the south shore of the St. Lawrence, 3 miles from Montreal.

At the Session of 1886 the sum of \$10,000.00 was voted for the purpose of building a wharf at this place. On 6th November, 1886, a contract was entered into with Mr. J. Burns, for the sum of \$7,390.00, and the work was in progress at the end of the fiscal year. Expenditure, \$2,160.24.

 MALBAIE.

Malbaie, or Murray Bay, in the County of Charlevoix, is on the north shore of the St. Lawrence, 84 miles below Quebec.

The sum of \$54.65 was spent on repairs to the movable slip of the pier at this place. Total expenditure since Confederation, \$20,634.25.

 MATANE.

Matane is situated on the south shore of the St. Lawrence, about 240 miles below Quebec, in the County of Rimouski.

At the Session of 1886 the sum of \$500.00 was voted to continue the break-water on the eastern side of the harbour, and during the year further work has been done. Expenditure, \$500.21. Total expenditure since Confederation, \$23,179.91.

MONTREAL.

Montreal, the largest city in Canada, is situated at the head of ocean navigation of the St. Lawrence, and is the principal port of imports and exports in the Dominion.

ARMOURIES.

At the Session of 1886 the sum of \$45,000.00 was voted to continue work on the two Armouries adjoining the Drill Hall, a description of which will be found in last year's report. At the close of the fiscal year the buildings were nearly completed, and it was expected they would shortly be occupied. Expenditure during the year, \$46,496.70. Total expenditure on these Armouries, \$104,496.70.

CUSTOM HOUSE.

During the fiscal year the damage done by the flood of 1886 was made good, and general repairing and cleaning done. Expenditure, \$1,838.95. Total expenditure on this building, \$239,007.50 for construction; and \$54,813.98 for repairs.

DELL HALL.

The small sum of \$71.83 was spent for repairs. On 22nd December, 1885, a contract was entered into with Mr. E. Chanteloup for heating apparatus, for the sum of \$9,400.00, but up to the close of the fiscal year work had not been commenced. Total expenditure on this building \$110,001.14 for construction; and \$71.83 for repairs.

EXAMINING WAREHOUSE.

During the fiscal year the sum of \$930.23 has been spent on making good the damage done by flood, and in extending the fittings in every Department. Total expenditure on this building, \$337,640.09 for construction; and \$18,294.91 for repairs.

INLAND REVENUE BUILDING.

During the year the sum of \$924.99 was spent in making good damage done by flood. Total expenditure on this building, \$49,603.87 for construction; and \$3,971.00 for repairs.

 POST OFFICE.

At the Session of 1886 the sum of \$5,500.00 was voted for repairs and alterations to this building, and during the fiscal year alterations have been made to the fittings of the Money Order Office and the Post Office, and general repairing done. Expenditure during the year, \$6,163.02 for construction; and \$990.65 for repairs. Total expenditure on this building, \$529,210.91 for construction; and \$10,669.99 for repairs.

 NEW CARLISLE.

New Carlisle, the *chief-lieu* of Bonaventure County, is on the north shore of the Baie des Chaleurs, 65 miles below Campbellton, N. B.

At the Session of 1886 the sum of \$12,000.00 was voted for the purpose of extending the pier at this place, and work was actively prosecuted during the fiscal year, but is not yet completed. Expenditure, \$11,460.77. Total expenditure at this place since Confederation, \$44,578.76.

 NEWPORT RIVER.

The Newport River is in the County of Gaspé, and empties into the Baie des Chaleurs on its northern shore.

At the Session of 1886 the sum of \$1,300.00 was voted towards improving the mouth of this river, and the unexpended balance of appropriation for 1885-86, \$772 75, was carried forward. During the year two protection piers have been built, one on each side of the channel, to prevent it from being filled with sand during heavy storms. Expenditure, \$2,101.78. Total expenditure at this place, \$2,778.79.

 PERCÉ.

Percé, in the County of Gaspé, is situated on the north shore of, and at the entrance to, the Baie des Chaleurs.

At the Session of 1886 the sum of \$7,000.00 was voted towards the construction of a wharf 200 feet long, and having a depth of 12 feet at low water, for the accommodation of the steamers calling at this port. The further quantity of tim-

ber required and referred to in last year's report has been supplied ; and on 14th February, 1887, a contract for the construction of the wharf was entered into with Mr. A. Lortie, for the sum of \$12,500.00. Expenditure, \$2,705.92. Total expenditure at this place, \$6,497.07.

PORT DANIEL.

Port Daniel, in the County of Bonaventure, is on the north shore of the Baies Chaleurs, about 75 miles below Campbelton, N. B.

At the Session of 1886 the sum of \$6,000.00 was voted for the construction of a landing pier at this place. On 14th February, 1887, a contract was entered into with Mr. A. Lortie, for the sum of \$18,875.00, and the work was in progress at the end of the fiscal year, since which time the contract has been completed. Expenditure during the fiscal year, \$285.29.

QUEBEC.

Quebec, the Capital of the Province of the same name, is situated on the north shore of the St. Lawrence River, at its confluence with the River St. Charles, 160 miles below Montreal.

CITADEL BUILDINGS.

During the year the sum for \$1,493.11 was spent for repairs, alterations, furniture, &c., for the quarters of His Excellency the Governor General. Total expenditure since Confederation, \$6,428.00 for construction ; and \$73,534.83 for repairs.

CITADEL CLIFF.

During the fiscal year the sum of \$5,320.90 was spent for removing a quantity of loose shale which was liable to damage property, and, perhaps, cause loss of life, on Champlain street. Total expenditure on this cliff, \$48,577.75.

CLERK OF WORKS' OFFICE.

During the fiscal year the sum of \$536.03 was spent for repairs.

CULLERS' OFFICE.

The hot water heating apparatus referred to in last year's report as being in course of construction, has been completed. Expenditure, \$1,181.53. Total expenditure since Confederation, \$5,183.09.

CUSTOM HOUSE.

At the Session of 1886 the sum of \$1,500.00 was voted to continue the work of altering the heating apparatus, referred to in last year's report as being under contract, the unexpended balance of appropriation for 1885-86, \$4,671.29, was carried forward, and at the Session of 1887 the further sum of \$900.00 was voted, so that the total amount available was \$7,071.29. On 21st July, 1886, a contract was entered into with Mr. A. Mulholland for alterations to heating apparatus, for the sum of \$641.00, and during the fiscal year the changes in heating apparatus have been completed and other repairs made. Expenditure, \$4,342.00 for construction; and \$465.48 for repairs. Total expenditure on this building, \$312,659.12 for construction; and \$22,125.28 for repairs.

CUSTOM HOUSE WHARF.

The repairs referred to in last year's report have been completed, at a cost of \$567.83.

DRILL HALL.

At the Session of 1886 the sum of \$22,000.00 was voted towards the completion of this building, a full description of which will be found in my report for 1883-84. At the close of the fiscal year the building was approaching completion. Expenditure during the year, \$15,962.62. Total expenditure on this building, \$79,644.59.

EXAMINING WAREHOUSE.

With the unexpended balance of appropriation for 1885-86, carried forward, the works of putting in an elevator and steam heating apparatus, referred to in last year's report as being in progress, were completed. Expenditure, \$6,571.58. Total expenditure on this building, \$75,212.53 for construction; and \$146.15 for repairs.

IMMIGRANT BUILDING.

At the Session of 1885 the sum of \$15,500.00 was voted for the purpose of completing the Immigrant building referred to in last year's report as being under contract, and of providing for the erection of another building on the Louise Embankment. The first building was completed early in the fiscal year. On 14th January, 1887, a contract for the new building was entered into with Mr. A. Lortie, for the sum of \$21,200.00, and at the close of the fiscal year the work was well under way. The new building is L shaped, consisting of a main portion 320 feet long, and a return of 110 feet, both 32 feet in width, exclusive of verandahs, 10 feet in width, which completely surround the building. The main building consists of a one storey portion, 88 feet long, for offices, and a two storey portion, 232 feet long, for waiting room below and dormitories above; the return of 110 feet being for dining room, kitchen and baths. Expenditure during fiscal year, \$12,617.03. Total expenditure on these two buildings, \$20,807.34.

MARINE HOSPITAL.

The repairs referred to in last year's report as being in progress have been completed. Expenditure, \$403.98 for construction; and \$1,853.15 for repairs. Total expenditure on this building, \$168,931.27 for construction; and \$14,839.93 for repairs.

OBSERVATORY.

On the 16th September, 1886, a contract was entered into with Mr. G. T. Phillips for a heating apparatus, for the sum of \$715.00, and during the fiscal year the work has been done, and extensive repairs made to the building outside and inside. Expenditure, \$2,623.10. Total expenditure on this building since Confederation, \$10,054.76 for construction; and \$1,778.80 for repairs.

POST OFFICE.

The repairs referred to in last year's report have been completed. On 25th November, 1886, a contract was entered into with Mr. J. Perry for alterations in the fittings of Money Order, Savings Bank and Registered Letter Offices, for the sum of \$600.00, and during the fiscal year the changes have been made. Expenditure, \$1,190.92. Total expenditure on this building since Confederation, \$95,648.24 for construction; and \$20,375.71 for repairs.

QUEEN'S WHARF.

During the fiscal year the work of rebuilding the face of this wharf, referred to in previous reports, has been completed. Expenditure, \$4,159.94. Total expenditure since Confederation, \$17,363.91.

QUEEN'S WHARF BUILDINGS.

During the fiscal year the sum of \$1,500.77 has been expended on repairs to these buildings.

RIVER A LA GRAISSE (RIGAUD.)

This river flows through the County of Vaudreuil, emptying into the Ottawa on its southern shore, about 45 miles above Montreal. The town of Rigaud is situated about 3 miles up the river.

The deepening of the channel referred to in last year's report was continued by the dredge "Queen of Canada" which worked from the commencement of the fiscal year to 9th August, 1886, removing 6,834 cubic yards of clay and sand, and completing the channel as well as making a turning basin for vessels. Expenditure during the fiscal year, \$2,022.83. Total expenditure at this place since Confederation, \$14,954.46.

 RIVER BLANCHE.

The River Blanche flows through the County of Rimouski, and empties into the St. Lawrence on its southern shore, 9 miles above Matane, and about 25 miles east of Métis.

At the Session of 1886 the sum of \$2,000.00 was voted for repairing the pier at this place; and during the fiscal year a block 50 by 30 feet was added to the eastern end of the head of the pier, and the work generally repaired and strengthened. Expenditure, \$2,139.26. Total expenditure at this place since Confederation, \$14,820.32.

 RIVER BRAS ST. NICHOLAS.

This river is in the County of Montmagny and empties into the River du Sud at the town of St. Thomas de Montmagny, 35 miles below Quebec.

At the Session of 1886 the sum of \$1,200.00 was voted for improving the navigation of this river; and during the fiscal year that amount has been expended in removing the boulders lying under and above the Intercolonial Railway bridge from the bed of the river, and blasting the rock ledges below the bridge, so that the water now has no obstruction to meet with, and the periodical flooding of the lands above the bridge will no longer take place. Total expenditure since Confederation, \$2,420.56.

 RIVIERE DES PRAIRIES.

This is one of the mouths of the Ottawa, and forms part of the boundary of the Island of Montreal, dividing it from the County of Laval.

During the fiscal year, the sum of \$336.38 was spent on removing boulders from the rapids about 2 miles above the village of Sault au Recollet to facilitate the descent of timber.

 RIVER DU LIÈVRE.

The River du Lièvre, in the County of Ottawa, empties into the Ottawa River on its north shore, about 18 miles below the City of Ottawa.

At the Session of 1886 the further sum of \$10,000.00 was voted towards continuing the works for improving the navigation of this river, mentioned in last year's [1887] lxvii

report as being in progress, and on 29th December, 1886, a contract for the construction of a lock and dam at Little Rapids was entered into with Messrs. Thomson & Poupore, but up to the close of the fiscal year work had not been commenced. Since that date, however, good progress with the work has been made. Expenditure during the fiscal year, \$2,029.56. Total expenditure on this river since Confederation, \$22,070.44.

RIVER DU LOUP (EN BAS) OR FRASERVILLE.

River du Loup, or Fraserville, the *chef lieu* of the County of Témiscouata, is situated on the south side of the St. Lawrence, about 114 miles below Quebec.

PIER.

With the unexpended balance of appropriation for 1885-86 carried forward repairs were made to the flooring and hand rail, and a waiting room and freight shed erected on the head of the pier. Expenditure, \$3,169.76. The channel of the river was deepened and some boulders were removed therefrom. Expenditure, \$1,306.02. Total expenditure since Confederation, \$55,002.29.

PUBLIC BUILDINGS.

At the Session of 1886 the sum of \$4,000.00 was voted towards providing a Public Building at this place to accommodate the Postal Customs and other offices; but up to the close of the fiscal year a site had not been obtained, and no expenditure had taken place.

RIVER DU LOUP (EN HAUT.)

This river, in the County of Maskinongé, empties into the St. Lawrence (Lake St. Peter), on its northern shore, 21 miles above Three Rivers.

The dredge "Queen" was engaged from 16th September to 23rd October, 1886, in dredging a channel through the bar at the mouth of the river to a depth of 6 feet, and 6,424 cubic yards of clay, sand and mud were removed, at a cost of \$1,749.07. Total expenditure since Confederation, \$3,749.07.

RIVER NICOLET.

The River Nicolet, in the county of the same name, flows into the St. Lawrence on its southern shore, at the foot of Lake St. Peter.

At the Session of 1886 the sum of \$9,000.00 was voted for the purpose of con-
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tinuing the protection works at this place, and during September and October, 1886, a length of 560 feet was driven and completed, with the exception of the stone slope, at a cost of \$6,778.32. Total expenditure at this place since Confederation, \$76,814.54.

RIVER OTTAWA.

The River Ottawa flows from Lake Temiscamingue and falls into the St. Lawrence at St. Anne de Bellevue, forming for a great part of its length the boundary between Ontario and Quebec.

During the fiscal year the sum of \$1,206.10 was spent for dredging above Pembroke.

RIVER OUELLE.

The River Ouelle flows through the County of Kamouraska and empties into the St. Lawrence on its southern shore, 75 miles below Quebec.

The further sum of \$3,000.00 was granted at the Session of 1886 to continue the work of repairing the pier at Point aux Orignaux, and during the year a length of 759 feet has been sheathed with hardwood to protect it from the action of the ice. A number of boulders were removed from the channel of the river. Expenditure, \$3,609.83. Total expenditure since Confederation on this pier, \$28,704.67.

RIVER RICHELIEU.

The River Richelieu flows from Lake Champlain to the St. Lawrence, about 80 miles, and passes through the Counties of St. John, Iberville, Chambly, Verchères, St. Hyacinthe and Richelieu.

On the 21st May, 1887, the dredge "Nipissing" commenced work at St. Antoine making a cut through the shoals, to a depth of 9 feet at low water, and was still at work at the close of the fiscal year, up to which time 6,450 cubic yards of hard pan, boulders, clay and stone had been removed, at a cost of \$1,118.95. Total expenditure on this river since Confederation, \$53,824.09.

 RIVER RIMOUSKI.

The River Rimouski, in the County of the same name, empties into the St. Lawrence on its southern side, about 180 miles below Quebec.

At the Session of 1886 the sum of \$1,000.00 was voted to continue the work of removing boulders from the channel of this river, which was referred to in last year's report, and during the fiscal year some further work has been done. Total expenditure since Confederation, \$8,894.59.

 RIVER SAGUENAY.

The River Saguenay rises in Lake St. John and flows through the Counties of Chicoutimi and Saguenay, emptying into the St. Lawrence at Tadousac.

CHANNEL BELOW CHICOUTIMI.

A vote of \$5,000.00 having been made at the Session of 1886 for the continuance of the work of improving the channel, it was resumed during the fiscal year and good progress made. Expenditure, \$4,799.31. Total expenditure on this work, \$35,991.82.

LA GRANDE DÉCHARGE.

At the Session of 1886 the sum of \$5,000.00 was voted to continue the work of widening this, the largest of the two outlets by which Lake St. John empties into the Saguenay River, with a view to increasing the off-take capacity of the channel and thus permit a quicker subsidence of the waters of the lake at the time of freshets; and during the fiscal year a cut has been made 1,500 feet long, 15 feet wide, with a mean depth of 6½ feet. Expenditure, \$4,787.70. Total expenditure on this work, \$19,425.53.

 RIVER STE. ANNE DE BEAUPRÉ.

This river flows through the County of Montmorency, and empties into the St. Lawrence on its north shore, about 22 miles below Quebec.

The sum of \$2,000.00 was voted at the Session of 1886 to continue the works mentioned in last year's report as being in progress to facilitate the descent of timber, and during the year further progress has been made. Expenditure, \$937.85. Total expenditure since Confederation, \$4,850.71.

 RIVER ST. FRANCIS.

The River St. Francis rises in the County of Wolfe, and after a course of about 100 miles, empties into Lake St. Peter, on its southern shore.

A dredge was employed during the fiscal year deepening the channel at the mouth of the river, and cutting through the first shoal above Tourville's mill. Expenditure, \$4,233.08. Total expenditure since Confederation, \$31,671.34.

 RIVER ST. LAWRENCE.

REMOVAL OF CHAINS, &C.

At the Session of 1886 the sum of \$5,000.00 was voted for the purpose of continuing the work of removing chains, anchors, &c., in the harbour of Quebec. During the summer of 1886 the lifting barge was employed removing boulders from the Fly Bank above the City of Quebec, and was, after September, continued at work, by and under the directions of the Harbour Commissioners of Quebec. Expenditure, \$4,791.82. Total expenditure on this work, \$126,170.43, including cost of lifting barge (\$35,000.00).

HYDRAULIC SURVEY.

At the Session of 1887 the sum of \$3,000.00 was voted for the purpose of continuing the hydraulic survey commenced in 1881-82, and during the fiscal year some preliminary work has been done. Expenditure, \$2,761.03. Total expenditure on this work, \$10,279.10.

 RIVER ST. LOUIS.

The River St. Louis flows eastwardly through the County of Beauharnois, and empties into the St. Lawrence at the Town of Beauharnois.

With the unexpended balance of appropriation for 1885-86, carried forward, some repairs were made to the head gates at the entrance to the feeder; and to afford an easier flow to the water during freshets the dam at Symon's Mill, at St. Louis de Gonzague, 10 miles from the mouth of the river, was removed. Expenditure, \$1,608.37. Total expenditure, \$20,195.32.

 RIVER ST. MAURICE.

The River St. Maurice rises near the height of land dividing Quebec from the North-West Territories, and after a course of about 450 miles through the Counties of Champlain and St. Maurice, falls into the St. Lawrence at Three Rivers.

Between the 5th July and 26th August, 1886, a dredge operated in the western channel of the river, cutting a passage 60 feet wide and 6 feet deep at extreme low water, as far as the St. Maurice Bridge. Expenditure, \$4,091.99.

 RIVER VERTE.

River Verte, in Témiscouata County, empties into the St. Lawrence on its southern side, about 9 miles from Rivière du Loup (*en bas*).

At the Session of 1886 the sum of \$1,000.00 was voted for the purpose of improving the navigation of this river, and during the fiscal year the bed of the river has been cleared of boulders. Expenditure, \$1,003.48.

 RIVER YAMASKA.

The River Yamaska is in the county of the same name, and empties into the St. Lawrence on its southern shore, at the head of Lake St. Peter.

At the Session of 1886 the sum of \$7,000.00 was voted for the purpose of continuing the works mentioned in last year's report as being in progress. At the Session of 1887 a further grant of \$7,000.00 was made, and the unexpended balance of appropriation for 1885-86, \$11,036.10, was carried forward, so that the total amount available was \$25,036.30. During the fiscal year dredging to a depth of 5½ feet was done through shoals obstructing free navigation of the river. The western abutment of the dam was raised one course of timber, and the upper eastern protecting wing extended 60 feet. Expenditure during the fiscal year \$26,219.09. Total expenditure at this place since Confederation, \$113,684.52.

 STE. AGNES.

Ste. Agnes (late Morinville) is situated at the mouth of the Chaudiere River, which empties into Lake Megantic, in the County of Beauce, 69 miles from Sherbrooke.

During the year the sum of \$59.00 was spent on repairs to the pier at this place built by the Department in 1832-83. Total expenditure since Confederation, \$6,039.23.

STE. ANNE DE BELLEVUE.

Ste. Anne de Bellevue, in the County of Jacques Cartier, is situated at the confluence of the Rivers Ottawa and St. Lawrence, 21 miles west of Montreal, by Grand Trunk Railway.

During the fiscal year some necessary alterations were made to the pier recently built by the Department. Expenditure, \$736.29. The dredge "Queen" worked here from 29th October to 10th November, 1886, to get a depth of 9 feet at the pier, and removed 861 cubic yards of boulders, clay, gravel and stone, at a cost of \$554.26. Total expenditure at this place since Confederation, \$7,473.84.

STE. ANNE DE LA POCATIERE.

Ste. Anne de la Precatière is on the south shore of the St. Lawrence, 70 miles below Quebec, in the County of Kamouraska.

At the Session of 1886 the sum of \$2,000.00 was voted for the purpose of continuing work on the pier mentioned in last year's report as being in course of construction; and at the close of the fiscal year there was but little remaining to be done to complete the work. Expenditure, \$2,125.07. Total expenditure, \$9,893.15.

STE. ANNE DE RESTIGOUCHE.

Ste. Anne de Restigouche, in the County of Bonaventure, is on the River Restigouche, 1 mile from Cross Point.

At the Session of 1886 the sum of \$750.00 was voted for the purpose of repairing the chapel at the Indian Mission here; and during the year the repairs have been made, at a cost of \$745.70.

STE. ANNE DE SOREL.

Ste. Anne de Sorel, in the County of Yamaska, is on the south-east shore of the St. Lawrence, about 3 miles below Sorel.

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At the Session of 1886 the sum of \$1,200.00 was voted for the purpose of building an additional ice pier at this place; and during the year another pier, No. 6, has been built between Piers Nos. 4 and 5, to afford further protection during the run of ice in the spring. Expenditure during the fiscal year, \$836.66. Total expenditure on ice piers at this place and along the Chenal du Moine, \$8,836.60.

ST. ALPHONSE DE BAGOTVILLE.

St. Alphonse de Bagotville is in the County of Chicoutimi, at the head of Ha! Ha! Bay, River Saguenay.

During the fiscal year the flooring of the pier was repaired in places, and a freight shed 50 by 30 feet and a waiting room 24 by 18 feet were built. Expenditure, \$1,263.47. Total expenditure at this place since Confederation, \$24,025.76.

STE. FAMILLE.

Ste. Famille, in the County of Montmorency, is on the north shore of the Island of Orleans, 17 miles below Quebec.

During the fiscal year the pier at this place has been thoroughly repaired, at a cost of \$300.04. Total expenditure since Confederation, \$9,623.90.

ST. FRANÇOIS (ILE D'ORLEANS.)

St. François is situated at the extreme eastern end of the Island of Orleans, about 21 miles below Quebec, in the County of Montmorency.

The sum of \$1,000.00 was voted at the Session of 1886 to continue work on the pier mentioned in last year's report as being in course of construction; and the unexpended balance of appropriation for 1885-86, \$432.70, was carried forward. The necessary materials for the completion of the piers have been procured. Expenditure, \$1,203.95. Total expenditure on this pier, \$16,646.87.

ST. IRÉNÉE.

St. Irénée, in the County of Charlevoix, is on the north shore of the St. Lawrence, 78 miles below Quebec.

On 2nd September, 1886, a contract was entered into with Mr. G. Lavoie for the removal of a block 80 feet long, 30 feet wide and 18 feet high, from Les Eboulements to this place, for the sum of \$2,911.00. and during the fiscal year the work has been done. Expenditure, \$3,284.87.

ST. JEAN (ILE D'ORLÉANS).

St. Jean is situated on the south-east side of the Island of Orleans, in the County of Montmorency.

At the Session of 1886 the sum of \$1,000.00 was voted for the purpose of repairing the pier at this place, and during the fiscal year the repairs were made. Expenditure, \$1,009.20. Total expenditure at this place since Confederation, \$10,424.12.

ST. JÉRÔME.

St. Jerome, the *chef lieu* of the County of Terrebonne, is situated on the North River, 23 miles north of Montreal.

At the Session of 1886 the sum of \$4,000.00 was voted towards providing a site for a Public Building at this place, for the accommodation of the Postal and other offices; and on 13th February, 1887, Cadastral Lot No. 219, on Main Street, containing 1 arpent, $8\frac{1}{2}$ perches, was purchased from La Fabrique de St. Jérôme for that sum. At the close of the fiscal year plans for the building were being prepared, and tenders have since been invited. Expenditure, \$4,052.50.

ST. JOHN'S.

St. John's, the *chef-lieu* of the County of the same name, is situated in the Richelieu River, 27 miles from Montreal by railway.

PUBLIC BUILDING.

During the fiscal year the sum of \$9.75 has been spent in [repairs to] this building. Total expenditure since Confederation, \$16,224.21 for construction; and \$392.85 for repairs.

ST. LAURENT.

St. Laurent, on the Island of Orleans, County of Montmorency, is 14 miles north-east of Quebec.

At the Session of 1886 the sum of \$1,600.00 was voted for repairing the wharf at this place; and during the fiscal year the sum of \$1,304.67 has been expended for that purpose.

ST. MICHEL.

St. Michel, in the County of Bellechasse, is on the south shore of the St. Lawrence, 16 miles below Quebec.

During the fiscal year the sum of \$815.44 was expended in completing the repairs to the pier at this place, referred to in my last report. Total expenditure at this place since Confederation, \$2,078.10.

ST. PLACIDE.

St. Placide, in the County of Two Mountains, is situated on the north shore of the Ottawa, about 18 miles above its junction with the St. Lawrence.

At the Session of 1886, the sum of \$5,000.00 was voted for the purpose of dredging this harbour. A dredge worked here from 15th July to 1st September, 1886, in enlarging the basin in front and at the side of the wharf, and in making a channel from the eastward, about 800 feet of which was completed to a depth of 10 feet. Expenditure, \$4,786.87. Total expenditure at this place since Confederation, \$16,131.11.

ST. RÉGIS.

St. Régis, in the County of Huntington, is situated on the south shore of the St. Lawrence, 6 miles from Cornwall, Ont.

The small sum of \$10.00 was spent on repairs to the Custom house. Total expenditure on this building since Confederation, \$226.75 for repairs.

ST. THOMAS DE MONTMAGNY.

St. Thomas de Montmagny is in the County of Montmagny, on the south side of the St. Lawrence, 35 miles below Quebec.

With the grant of \$2,000.00 made at the Session of 1886 the work of removing boulders from around the end of the wharf, referred to in last year's report, was continued and good progress made. Expenditure, \$1,999.96. Total expenditure at this place since Confederation, \$9,863.88.

ST. VINCENT DE PAUL.

St. Vincent de Paul is situated on the River des Prairies, in the County of Laval, 13 miles from Montreal.

At the Session of 1886 the further sum of \$19,500.00 was voted towards carrying on the works at the Penitentiary mentioned in last year's report as being in progress, and at the Session of 1887 an additional grant of \$16,525.00 was made. During the fiscal year the keeper's hall has been completed, the lighting of the new workshop improved, steam heating apparatus put in, and other work done, a full description of which will be found in Appendix No. 2, pages 29-30. The number of new dormitory cells being sufficient for the accommodation of the prisoners, the 138 dormitory cells of the original wing have been demolished, and the wing flagged with stone and converted into a prison kitchen, wash house and dry room. The kitchen has been supplied with steam cooking apparatus, effecting a substantial saving in fuel and time over the system of cooking by range. On 11th August, 1886, a contract was entered into with Mr. J. McDougall for a steam boiler, for the sum of \$935.00, and it has been delivered. With the exception of the heating apparatus for the Warden's residence, which was put in by Mr. E. Chanteloup, all the works carried out during the year were done by convict labour. Expenditure during the fiscal year, \$35,028.37. Total expenditure on this building since Confederation, \$322,484.58.

ST. ZOTIQUE.

St. Zotique is in the County of Soulanges, at the foot of Lake St. Francis, 3 miles from Côteau Landing.

The sum of \$1,000.00 was voted at the Session of 1886 to continue work mentioned in last year's report as being in course of construction; and during the
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year a crib 18 by 20 feet, carrying a shed of the same dimension, was built, and general repairs made to other portions of the wharf. Two of the ice piers were rebuilt from the water line. Expenditure, \$1,165.23. Total expenditure, \$12,914.94.

SHERBROOKE.

Sherbrooke, the chief town in the county of the same name, is situated on the Magog River, 101 miles east of Montreal, by the Grand Trunk Railway.

At the Session of 1886 the sum of \$3,500.00 was voted to provide a clock for the Public Building at this place. On the 26th July, 1886, a contract for the clock was entered with Mr. R. J. Spearing, for the sum of \$1,130.00, and during the year the clock—which is a striking one, with four illuminated dials—has been put up in a small turret constructed for it on one of the angle pavilions. Expenditure during the fiscal year, \$3,557.26. Total expenditure on this building, \$65,846.32 for construction; and \$50.40 for repairs.

SOREL.

Sorel, the *chef lieu* of the County of Richelieu, is situated on the right bank of the Richelieu River, at its confluence with the St. Lawrence, 45 miles below Montreal

At the Session of 1886 the sum of \$11,500.00 was voted to continue work on the Public Buildings to accommodate the Postal and other offices, a full description of which will be found in my report for 1884–85, and the unexpended balance of appropriation for 1885–86, \$4,796.50, was carried forward. On 22nd July, 1866, a contract was entered into with Mr. George Beaucage for walls, fences, and sidewalks, for the sum of \$3,069.00, and during the fiscal year the building has been completed and occupied. Expenditure during the year, \$15,973.70. Total expenditure on this building, \$43,747.16.

THREE RIVERS.

The City of Three Rivers, which forms the Electoral District of the same name, is situated at the head of tide water in the St. Lawrence, 72 miles above Quebec.

CUSTOM HOUSE.

At the Session of 1886 the sum of \$830.00 was voted for repairs to this build-

ing, and at the Session of 1887 a further grant of \$2,200.00 was made. During the fiscal year the walls have been repaired, new drains laid, the inside of the building painted and repairs made to the roof. Expenditure, \$3,607.43. Total expenditure on this building since Confederation, \$17,670.36 for construction; and \$6,305.78 for repairs.

POST OFFICE.

At the Session of 1886 the sum of \$645.00 was voted for repairs to this building, and at the Session of 1887 a further grant of \$800.00 was made. During the fiscal year the sum of \$1,772.03 has been spent for painting the inside of the building, putting up double sashes, &c. Total expenditure on this building since Confederation, \$26,221.42 for construction; and \$4,366.45 for repairs.

TROIS PISTOLES.

Trois Pistoles is in the County of Témiscouata, on the south shore of the St. Lawrence, 158 miles below Quebec.

The sum of \$4,000.00 was voted at the Session of 1886 to construct a break-water to protect the pier built at this place by the Department; and during the fiscal year the work was commenced but not completed. Expenditure, \$4,359.56. Total expenditure since Confederation, \$7,657.46.

VALLEYFIELD.

The sum of \$107.10 was spent on the office of the Collector of Inland Revenue. Total expenditure on this building, \$1,707.10.

VAUDREUIL.

Vaudreuil, in the County of the same name, is situated on the Ottawa River, about 25 miles above Montreal.

The dredge "Queen" worked here from 10th August to 9th September, 1886, continuing the channel leading from deep water to the proposed wharf, and removed 5,019 cubic feet of clay, at a cost of \$339.84. Total expenditure at this place since Confederation, \$1,065.36.

PROVINCE OF ONTARIO.

AMHERSTBURG.

Amherstburg, in the Electoral District of South Essex, is situated on the Detroit River, five miles above its junction with Lake Erie, and is the western terminus of the Canada Southern Railway.

At the Session of 1886 the sum of \$1,500.00 was voted to continue work on the Public Building at this place, and during the year the sum of \$638.90 has been expended. Total expenditure on this building \$34,510.53 for construction; and \$23.76 for repairs.

BARRIE.

Barrie, in the Electoral District of North Simcoe, is situated on Kempenfeldt Bay, an arm of Lake Simcoe, 60 miles north of Toronto.

The sum of \$4,500.00 was voted [at the Session of 1886, to continue work on the Public Building at this place, a full description of which appeared in my report for 1884-85, the unexpended balance of appropriation for 1885-86, \$1,587.64, was carried forward, and at the Session of 1887 the further sum of \$955.65 was voted, so that the whole amount available was \$7,043.29. During the year this building has been completed, fitted up and occupied. Expenditure, \$6,772.14. Total expenditure on this building, \$41,331.59 for construction; and \$122.21 for repairs.

BAYFIELD.

Bayfield is in the Electoral District of South Huron, on the east shore of Lake Huron, 12 miles south of Goderich.

Some small repairs were made to the pier at this place, at a cost of \$150.00. Total expenditure at this place since Confederation, \$68,199.37.

BELLE RIVER.

Belle River flows through the County of Essex and empties into Lake St. Clair midway between the mouths of the Thames and Detroit Rivers.

The sum of \$196.50 was expended on some necessary repairs to the pier at the mouth of the river. Total expenditure at this place since Confederation, \$3,499.00.

BELLEVILLE.

Belleville, in the Electoral District of West Hastings, is situated at the mouth of the River Moira, which empties into the Bay of Quinté, 43 miles west of Kingston.

HARBOUR.

At the Session of 1886 the sum of \$10,000.00 was voted towards dredging a channel as an outlet for the waters of the River Moira during freshets. On 22nd September, 1886, a contract for dredging was entered into with Mr. C. A. Munson, and work was prosecuted from 30th September to 30th November, 1886, when it was suspended for the season, and had not been resumed up to the close of the fiscal year. Expenditure, \$1,755.51. Total expenditure since Confederation, \$35,614.17.

PUBLIC BUILDING.

At the Session of 1886 the sum of \$700.00 was voted towards renewing the heating apparatus, which had been damaged by the spring freshet, and at the Session of 1887 a further grant of \$850.00 was made. On 19th July, 1886, a contract was entered into with Messrs. Garth & Co., for the sum of \$1,310.00, for alterations and repairs to heating apparatus; and during the fiscal year new furnaces have been put in and various necessary repairs made. Expenditure, \$1,688.71. Total expenditure on this building, \$63,633.99 for construction; and \$533.40 for repairs.

BERLIN.

Berlin, in the Electoral District of North Waterloo, is situated on the Grand River, and is 62 miles from Toronto by Grand Trunk Railway.

During the year the sum of \$148.50 has been spent on the Public Building at this place. Total expenditure on this building, \$36,225.10 for construction; and \$125.10 for repairs.

BRANTFORD.

Brantford, in the Electoral District of South Brant, is situated on the Grand River, which empties into Lake Erie.

The sum of \$1,000.00 was voted at the Session of 1886 for general repairs to the Public Building at this place; and during the year the sum of \$84.94 has been expended for painting, &c. Total expenditure on the building, \$31,157.47 for construction; and \$2,425.39 for repairs.

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 BROCKVILLE.

Brockville, the chief town of the United Counties of Leeds and Grenville, is situated at the foot of the Lake of a Thousand Islands, on the north shore of the St. Lawrence, 125 miles from Montreal.

With the unexpended balance of appropriation for 1885-86, \$2,914.99, carried forward, and the vote of \$350.00 at the Session of 1887, a granolithic sidewalk has been put down in front of the Public Building at this place, alterations made in fittings of Post Office, and furniture supplied. The building has been finished and occupied. Expenditure, \$2,127.65. Total expenditure on this building, \$54,869.94 for construction; and \$259.94 for repairs.

 BURLINGTON CHANNEL.

Burlington Channel, lately known as Burlington Bay Canal, is a channel through Burlington Beach, connecting Lake Ontario with the Harbour of Hamilton.

During the year the sum of \$807.98 has been paid for repairs and maintenance of this channel. Total expenditure by this Department, \$1,031.68.

 CHANTRY ISLAND.

Chantry Island is in the Electoral District of North Bruce, on the east coast of Lake Huron, about $1\frac{3}{4}$ miles west south-west from the mouth of the Saugeen River.

At the Session of 1886 the sum of \$500.00 was voted towards completing the work referred to in last year's report, and at the Session of 1887 a further grant of \$2,038.60 was made. The work has been completed. Expenditure during fiscal year, \$2,538.60. Total expenditure at this place since Confederation, \$243,843.59.

 CHATHAM.

Chatham, the chief town in the County of Kent, is situated on the River Thames, and is 67 miles south-west of London by Great Western Railway.

At the Session of 1886 the sum of \$1,500.00 was voted for a clock for the Public Building at this place, but up to the close of the fiscal year the clock had not been supplied. Expenditure for necessary repairs during the year, \$305.75. Total expenditure on this building, \$58,140.41 for construction; and \$330.49 for repairs.

CLIFTON.

Clifton, or Niagara Falls, is in the County of Welland, and is situated on the west bank of the Niagara River, 12 miles from St. Catharines.

During the year the sum of \$61.40 has been expended on repairs to the Public Building at this place. Total expenditure on this building, \$43,614.85 for construction; and \$107.01 for repairs.

COBOURG.

Cobourg, in the Electoral District of West Northumberland, is situated on the north shore of Lake Ontario, 96 miles west of Kingston.

At the Session of 1886 the sum of \$3,500.00 was voted to continue the harbour works referred to in last year's report, and at the session of 1887 the further sum of \$891.73 was granted. During the year, the superstructure of the outer crib of the east pier was built to the proper height, and that of the next 300 feet of the same pier was rebuilt where required. Repairs were also made to the west pier. Expenditure \$4,891.73. The dredge "Ontario" was engaged here from 1st July to 7th August continuing the deepening along the wharves and the breakwater referred to in last year's report, giving a depth of 15 feet in the basin, and 17 feet along the western pier. Total quantity of material dredged, 13,740 cubic yards of clay, sand and stone, at a cost of \$2,657.90. Total expenditure at this place since Confederation, \$154,562.49.

COLLINGWOOD.

Collingwood, in the Electoral District of North Simcoe, is situated on the south shore of Lake Huron, 94 miles from Toronto by railway.

At the Session of 1886 the further sum of \$5,000.00 was voted to continue the dredging of this harbour, and during the fiscal year a further quantity of work has been done. Expenditure \$4,884.00. Total expenditure on this harbour since Confederation, \$194,654.61.

CORNWALL.

Cornwall, the chief town in the Electoral District of Cornwall and Stormont, is situated on the St. Lawrence River, 67 miles west of Montreal.

During the year the sum of \$141.90 has been spent on repairs to the Public Building at this place. Total expenditure on this building, \$59,952.97 for construction; and \$192.65 for repairs.

DUNDAS.

Dundas, in the Electoral District of North Wentworth, is at the head of Burlington Bay, on the Great Western Division of the Grand Trunk Railway, 5 miles west of Hamilton.

Representation having been made that the public interest would be best served by having the public offices in this town in one building, the ground floor of the large brick building known as the Elgin House was leased from Mr. R. J. Wilson, for a term of ten years, at \$500.00 per annum. At the Session of 1887 the sum of \$2,200.00 was voted for fitting up and furnishing offices for the Customs, Postal and Inland Revenue Services; but up to the close of the fiscal year no expenditure had been made.

GALT.

Galt, in the Electoral District of South Waterloo, is situated on the Grand River, 25 miles north-west of the City of Hamilton.

At the Session of 1886 the sum of \$10,000.00 was voted towards the completion of the Public Building at this place, a full description of which will be found in my report for 1884-85. During the year the building has been completed, fitted up and occupied. Expenditure, \$9,419.33. Total expenditure on this building, \$33,303.56.

GANANOQUE.

Gananoque, in the Electoral District of South Leeds, is situated at the mouth of the Gananoque River, which empties into the St. Lawrence, about 20 miles north-east of Kingston.

During the year the sum of \$42.75 was spent on the Custom House at this place. Total expenditure on this building, \$14,467.22.

GODERICH.

Goderich, in the Electoral District of West Huron, is on the east shore of Lake Huron, at the mouth of the River Maitland.

The dredging referred to in last year's report was completed, at a cost of \$565.21. Total expenditure at this place since Confederation, \$513,070.32.

GUELPH.

Guelph, in the Electoral District of South Wellington, is situated on the River Speed, and is about 48 miles from Toronto by Grand Trunk Railway.

During the fiscal year the sum of \$22.90 was spent for repairs to the Public Building at this place. Total expenditure, \$38,339.48 for construction; and \$1,810.18 for repairs.

HAMILTON.

The City of Hamilton, comprising an Electoral District returning two members, is in the County of Wentworth, on Burlington Bay, at the western extremity of Lake Ontario.

CUSTOM HOUSE.

During the fiscal year the sum of \$5.00 has been spent for repairs. Total expenditure on this building, \$46,188.45 for construction; and \$6,029.57 for repairs.

DRILL SHED.

On 23rd April, 1887, a contract was entered into with Mr. M. A. Piggot for the erection of a Drill Hall on the site of the building which was destroyed by fire on 22nd May, 1880, and work was commenced shortly before the close of the fiscal year, and prosecuted with such vigour that the building was roofed in before the close of the season. The building is of brick, with stone dressings, on a stone foundation, and is 250 feet in extreme length by 116 feet in breadth, exclusive of a detached residence for the Caretaker. The Drill Hall is 200 feet in length, 80 feet in width, 31 feet high from the floor to the beam of principals, and 50 feet from floor to apex of roof. The main entrance is on James street, and is flanked on the right by two store rooms and on the left by two orderly rooms and the main stairway; above these are a gallery 50 feet by 20 feet, a cloak room, a store room and a main stairway. On the south side of the Drill Hall are the side

entrances, ten Company Armouries, the Artillery Gun Shed, a kitchen and a stairway; and over these are a reception room and two band rooms. To the rear of this Drill Hall on the ground floor are four harness rooms, two store rooms and the rear entrance hall, above which are two orderly rooms and two spare rooms. A boiler and fuel room is provided under three of the armouries on the south side, from whence a pipe duct for passage of main pipes is carried around three sides of the building. Fronting on James street, 16 feet from the building, and constructed of the same materials as is a two storey dwelling, 23 by 30 feet, for Caretaker's residence. Expenditure during fiscal year, \$87.25.

PUBLIC BUILDING.

At the Session of 1886 the sum of \$28,000.00 was voted towards the completion of the building intended to accommodate the Postal, Customs and other services, a full description of which will be found in my report of 1882-83, and the unexpended balance of appropriation for 1885-86, \$25,208.86, was carried forward. On 15th July, 1886, a contract was entered into with Messrs. Miller Bros. & Mitchell for a passenger and freight elevator, for the sum of \$2,500.00, and on 1st December, 1886, a contract was entered into with Mr. John Fensom for entrances, gates and guards to elevators, for the sum of \$993.00. During the fiscal year the building has been completed, fitted up, furnished and occupied by the different Departments. Expenditure, \$45,697.69. Total expenditure on this building, \$343,907.89.

HARBOURS AND RIVERS GENERALLY, ONTARIO.

At the Session of 1886 the usual vote of \$8,000.00 was made for maintenance of harbours and rivers in Ontario; and during the fiscal year the sum of \$6,516.60 has been expended.

HILTON, OR MARKSDALE.

Hilton, or Marksdale, in Algoma County, is on the north side of St. Joseph Island, nearly opposite Bruce Mines, and about 50 miles from Sault Ste. Marie.

At the Session of 1886 the sum of \$5,000.00 was voted towards building the wharf at this place. On 7th December, 1886, a contract for crib-work was entered into with Messrs. Tobin & O'Keefe, for the sum of \$9,700.00, and at the close of the fiscal year the work was in progress. Expenditure, \$3,301.99, which is the only expenditure at this place since Confederation.

KINCARDINE.

Kincardine, in the Electoral District of West Bruce, is situated at the mouth of the River Penetangore, which empties into Lake Huron, 31 miles north of Goderich.

At the Session of 1886 the sum of \$3,000.00 was voted for the purpose of repairing the south pier, and during the fiscal year the work has been done. Expenditure, \$3,086.42. On 2nd June, 1887, the dredge "Challenge" commenced the work of dredging a channel from the salt works to deep water in the lake, and up to the close of the fiscal year 4,380 cubic yards of sand had been removed, at a cost of \$430.99. Total expenditure at this place since Confederation, \$98,477.89.

KINGSTON.

Kingston, in the Electoral District of the same name, is situated on the eastern shore of Lake Ontario, 172 miles west of Montreal.

CUSTOM HOUSE.

During the fiscal year the sum of \$9.35 has been spent for repairs. Total expenditure on this building since Confederation, \$41,805.52 for construction; and \$9,341.68 for repairs.

HARBOUR.

At the Session of 1886 the sum of \$4,000.00 was voted for the purpose of continuing the work at Point Edward Shoal referred to in last year's report; and during the fiscal year a further quantity of 2,421 cubic yards of rock has been removed, at a cost of \$4,347.02. Total expenditure on this harbour since Confederation, \$45,271.28.

PENITENTIARY.

At the Session of 1886 the sum of \$17,000.00 was voted towards the completion of the works referred to in last year's report, and at the Session of 1887 the sum of \$2,500.00 was granted for the same purpose. During the year the following works have been carried on: A new verandah was built to the Warden's residence and an addition made to the greenhouse. The farm house, which was only one storey and a-half high and too small, was enlarged and repaired. The roof was raised and the walls carried 6 feet higher, making the building two stories high; a two-storey wing, 18 feet by 8 feet 6 inches, was built on the north-east corner, the roof was sheeted anew and covered with metallic shingles, and the wooden

one-storey kitchen wing was taken down and rebuilt in stone, with roof covering similar to that of the main building. A new implement shed, 62 by 27 feet, has been built of stone, the roof covered with metallic shingles. A new piggery has been built of stone, and other works done, a full description of which will be found in Appendix No. 2, pages 32-33. Expenditure during the fiscal year, \$20,713.52 for construction; and \$14.16 for repairs. Total expenditure on this building, \$341,121.47 for construction; and \$17,848.95 for repairs.

POST OFFICE.

The small sum of \$6.18 was spent on repairs. Total expenditure on this building, \$51,462.99 for construction; and \$6,667.78 for repairs.

KINGSVILLE.

Kingsville, in the Electoral District of South Essex, is situated on Lake Erie, between Point Pelée and the Detroit River, about 25 miles east of Amherstburg.

At the Session of 1886 the sum of \$4,000.00 was voted for repairing the harbour works at this place, and during the fiscal year extensive repairs have been made. Expenditure, \$3,564.81. Total expenditure at this place, \$51,174.76.

LINDSAY.

Lindsay, in the Electoral District of South Victoria, is on the River Scugog, 42 miles from Port Hope and 65 from Toronto.

At the Session of 1886 the sum of \$4,000.00 was voted for the purpose of providing a Public Building to accommodate the Postal, Customs and other offices; but up to the close of the fiscal year a site had not been obtained and no expenditure had taken place.

LION'S HEAD.

Lion's Head, in the Electoral District of North Bruce, is situated on Georgian Bay, about 35 miles north-east of Wiarton.

The dredge "Challenge" worked here from 18th August to 15th September, 1886, cutting a channel 175 feet long, 130 feet wide and 14 feet deep through a shoal behind the breakwater, 7,020 cubic yards of gravel being removed, at a cost of \$616.53. Total expenditure at this place since Confederation, \$8,399.73.

 LITTLE BEAR CREEK.

Little Bear Creek is in the Counties of Kent and Bothwell, and empties into the Chenal Bearté, Lake St. Clair, about 16 miles from Chatham.

Owing to deposit brought down by the Creek one of the winding basins and some points in the dredged channel had become shoaled, and this deposit has been removed, at a cost of \$826.71. Total expenditure at this place since Confederation, \$10,448.54.

 LITTLE CURRENT.

Little Current, in the Electoral District of Algoma, is the channel between La Cloche and Manitoulin Islands, on the route to Sault Ste. Marie from Georgian Bay ports, and is about 140 miles north-west of Collingwood.

At the Session of 1886 the sum \$2,000.00 was voted to continue the blasting of the rock in this channel referred to in previous reports, and at the Session of 1887 a further grant of \$5,000.00 was made. The work of increasing the width of the channel at its upper end was carried on during the fiscal year, but is not yet completed. Expenditure during the fiscal year, \$6,353.02. Total expenditure at this place since Confederation, \$50,697.26.

 LITTLE NATION RIVER.

The Little Nation River is a tributary of the Ottawa, and flows through the Counties of Dundas and Prescott. The sum of \$1,000.00 was paid to the united counties of Stormont, Dundas and Glengarry to assist them in improving this river.

 LONDON.

London, in the County of Middlesex, and itself comprising the Electoral Division of London, is situated on the River Thames, 121 miles west of Toronto.

 CUSTOM HOUSE.

At the Session of 1886 the sum of \$34,000.00 was voted towards carrying out the additions to this building, a full description of which will be found in my report for 1884-85; and during the fiscal year the work of reconstruction has been in progress and it was expected at its close that the building would be completed [1887] lxxxix

and ready for occupation in the autumn. Expenditure, \$29,006.15. Total expenditure on this building since Confederation, \$93,381.75 for construction; and \$11,416.04 for repairs.

INFANTRY SCHOOL.

At the Session of 1886 the sum of \$30,000.00 was voted towards continuing work on this building, a description of which will be found in my report for last year. At the Session of 1887 the further grant of \$24,000.00 was made, and the unexpended balance of appropriation for 1885-86, \$16,733.36, was carried forward, so that the whole amount available was \$70,733.36. Satisfactory progress has been made on the building, and at the close of the fiscal year it was expected that it would be completed and occupied in the autumn. Drawings and specifications for a hot water heating apparatus had been prepared, and since the close of the fiscal year a contract for this work has been entered into. Expenditure, \$74,595.15. Total expenditure on this building, \$82,961.79.

POST OFFICE.

During the year the sum of \$249.43 has been spent on repairs. Total expenditure on this building, \$54,042.37 for construction; and \$12,361.63 for repairs.

McGREGOR'S CREEK.

McGregor's Creek runs through the town of Chatham, County of Kent, and empties into the River Thames.

On 19th January, 1887, a contract was entered into with Messrs. Flook & Babcock, for the construction of 300 feet of pile protection work on the south side of the creek, and at the close of the fiscal year the work was nearly completed. Expenditure, \$3,014.31. Total expenditure at this place since Confederation, \$3,061.41.

MIDLAND.

Midland, in the Electoral District of East Simcoe, is at the foot of Gloucester Bay, an arm of Georgian Bay, and is the terminus of the Midland Division of the Grand Trunk Railway.

At the Session of 1866 the sum of \$10,000.00 was voted towards the improvement of the harbour, and the sums of \$10,000.00 and \$5,000.00 were contributed by the Grand Trunk Railway and the Municipality of Midland respectively. On 17th February, 1887, a contract was entered into with Mr. P. Navin, and the work was in progress at the close of the fiscal year. Expenditure, \$4,688.68.

NAPANEE.

Napanee, the chief town of the County of Lennox, is situated on the Napanee River, 26 miles west of Kingston by the Grand Trunk Railway.

At the Session of 1886 the sum of \$4,000.00 was voted towards providing a site for a Public Building to be erected at this place to accommodate the Postal, Customs and other offices. On 22nd December, 1886, Lot No. 5 on the east side of John street, containing 250 chains, was purchased from Mr. G. Wilson, for the sum of \$3,000.00, and at the close of the fiscal year plans for the building were being prepared. Expenditure, \$3,060.60.

OAKVILLE.

Oakville, in the County of Halton, is on Lake Ontario, 22 miles west of Toronto, and 18 miles east of Hamilton.

At the Session of 1886, the sum of \$8,000.00 was voted towards the improvement of this harbor, the municipality voting an equal amount. On 20th November, 1886, a contract was entered into with Mr. E. Murphy for rebuilding the outer 360 feet of the east pier, which had been carried away by a severe storm, for the sum of \$12,150.00, and at the end of the fiscal year the work was in progress. Expenditure, \$4,457.25, which is the only expenditure at this place since Confederation

ORANGEVILLE.

Orangeville, in the Electoral District of Centre Wellington, is situated on a branch of the Credit River, and is 40 miles from Toronto by the Toronto, Grey and Bruce Railway.

At the Session of 1886 the sum of \$5,500.00 was voted towards the construction of the Public Building at this place, a full description of which will be found in report for 1884-85, and at the Session of 1887 a further grant of \$1,500.00 was made. During the fiscal year the building has been completed and occupied. Expenditure, \$6,879.28. Total expenditure on this building, \$20,754.86.

OTTAWA.

Ottawa, the Capital of the Dominion, comprises an Electoral District returning two members. It is situated on the south shore of the Ottawa River, and is 117 miles from Montreal by Canadian Pacific Railway.

CARTIER SQUARE.

On the western and northern side of the Square 1,525 feet of sidewalk 8 feet wide, and 1,350 feet of boulevard 5 feet wide were laid; and 560 feet of fence was built. Expenditure, \$2,597.38.

CENTRAL EXPERIMENTAL FARM.

During the autumn of 1886 a small wooden temporary office was constructed, repairs made to a stone cottage on the premises, to render it habitable for the Farm Superintendent, and a propagating house 50 by 10 feet built. These works were done under the following contracts with Mr. E. Palen: 15th November, 1886, office and store, \$225.00; 2nd December, 1886, propagating house, \$575.00; 16th December, 1886, repairs to store house, \$460.14. On 15th January, 1887, a contract was entered into with Messrs. Blyth & Kerr for heating apparatus for the propagating house, for the sum of \$196.00, and the work has been carried out. On 4th February, 1887, a contract was entered into with Messrs. Tobin & O'Keefe for erecting a fence of about 3,000 8-foot panels formed of buckthorn wire and turned cedar posts, at \$1.29 per panel, and the work was in progress at the close of the fiscal year, at which time plans for a barn and for a dwelling for the Superintendent were being prepared, and contracts for these works have since been let. Expenditure, \$3,401.54.

CHAUDIÈRE SLIDE BRIDGE.

The sum of \$91.50 was spent on repairs to the bridge over the Government Slide at the Chaudière.

DUFFERIN BRIDGE.

During the fiscal year the roadway timbers and planking were removed and new material substituted throughout, new sidewalks were laid, and the deck or roadway made up of tarred blocks packed with gravel, carefully fitted and bedded. Expenditure, \$4,273.66.

EXAMINING WAREHOUSE.

At the Session of 1886 the sum of \$10,000.00 was voted for the purpose of erecting an Examining Warehouse on part of the Rideau Canal reserve adjoining Sappers' Bridge, and plans and specifications were prepared and tenders called for, but the cost of the building proving to be higher than anticipated, no tender was accepted and the matter was postponed for the present.

FISHERIES EXHIBITION.

At the Session of 1887 the sum of \$10,000.00 was voted to purchase the building known as the Victoria Hall, the ground floor of which has been rented for several years for the purpose of displaying the Fisheries Exhibit which was shown at the London, England, Exhibition of 1883 ; but up to the close of the fiscal year the purchase had not been made. Since that time, however, the money has been paid and the property vested in the Crown.

GEOLOGICAL MUSEUM.

During the fiscal year the courtyard was refloored, several offices and a portion of the Caretaker's quarters were cleaned, distempered and painted, and general repairs made to drains and roofs. Expenditure, \$598.32. Total expenditure on this building, \$54,138.03 for construction ; and \$8,538.15 for repairs.

MAJOR'S HILL PARK.

During the fiscal year the improvements referred to in last year's report have been continued. Expenditure, \$10,453.81. Total expenditure since the Government resumed control of the Park, \$14,603.06.

MARIA STREET BRIDGE.

This is one of the three bridges within the City of Ottawa, the maintenance of which was assumed by the Government under Order in Council of 17th June, 1885. During the fiscal year a dump of 630 yards of earth was made to widen the roadway leading to the western end of the bridge. Expenditure, \$223.06.

NATIONAL ART GALLERY.

At the Session of 1886 the sum of \$1,000.00 was voted towards the maintenance of this Gallery ; and during the fiscal year, the sum of \$780.50 has been expended. Appendix No. 25 contains the report of the Curator by which it appears that four pictures have been added during the year, making the total number of works of Art in the Gallery over one hundred. During the year 11,943, visitors have registered their names at the Gallery.

NEW DEPARTMENTAL BUILDING (WELLINGTON STREET).

At the Session of 1886 the sum of \$110,000.00 was voted to continue work on this building, a full description of which appeared in my report for 1883-84. Work was steadily carried on during the fiscal year, and since its close the building has been roofed in. Expenditure, \$93,057.95. Total expenditure on this building, \$371,225.88, which includes the cost of the site.

NEW EDINBURGH BRIDGE.

At the Session of 1886 the sum of \$2,000.00 was voted to assist the County Council of Russell in rebuilding the bridge across the Rideau River (which was seriously damaged by the freshet in the spring of 1885), connecting the City of Ottawa with the Village of New Edinburgh, and during the fiscal year the money has been paid over.

POST OFFICE, &c.

At the Session of 1886 the sum of \$5,100.00 was voted for the purpose of repairing this building; and during the fiscal year the roof was generally repaired, a number of offices cleaned, distempered and painted, and several offices supplied with new furniture. Expenditure, \$671.48. Total expenditure on this building, \$259,496.82 for construction; and \$4,176.49 for repairs.

PRINTING BUREAU.

Parliament having decided on the establishment of a Printing Bureau, plans and specifications for a suitable building were prepared and tenders invited. On 6th June, 1887, a contract for the brick and stone work was entered into with Mr. John E. Askwith, for the sum of \$94,000.00; and on the 15th June, 1887, a contract was made with Messrs. Rousseau & Mather for iron joists and girders for the sum of \$32,775.00. The building is to be erected on a part of the Government reserve, Nepean Point, the entrance being from St. Patrick Street, opposite Major Hill Park. The foundation of the building is to be of limestone, faced above ground with Nepean stone, and is to carry three storeys of brick walls, having Nepean stone dressings. The roof framing is to be of wood, and the floors are to be of iron joists, with brick arches between, carried on iron girders supported by iron columns. The building will be E shaped, with a front portion 207 feet long, and 54 feet wide; two end wings or returns each 70 feet long by 54 feet wide, exclusive of two stairways 16 by 13 feet each; and a central projection in the rear 41 feet deep by 45 feet wide, which is a one storey boiler house. Work had not been commenced up to the close of the fiscal year; but since that time the foundations of the building have been put in. Expenditure, \$702.80.

PUBLIC BUILDINGS.

At the Session of 1886 the sum of \$13,000.00 was voted for extending the electric light system, and \$1,000.00 for fitting up the old pump house on the Ottawa River, below the Lover's Walk, as an electric light station, and at the Session of 1887 the sum of \$4,000.00 was voted for the improvement of the ventilation of the House of Commons. The usual vote for repairs to these buildings was also included in the grant of \$175,000.00 at the Session of 1886 for rents and repairs Dominion Public Buildings. In the Parliament Building the

walls and ceilings of the public lobby of the Senate corridor were painted and decorated; alterations of the seats in House of Commons galleries, and of the House of Commons Post Office were made; the roofs and skylights of both Chambers were repaired; new floors were laid in several rooms, and the usual and ordinary furniture, fittings, repairs, &c., were supplied and executed. A further extension of the "Edison" incandescent electric light has been made. One 64 light electrolier has been placed in the Commons Chamber, four 28 light electroliers in the Senate Chamber, and twelve 2-light brackets on the columns in the Senate gallery, making 783 sixteen candle power lamps now in use. Increased power has been obtained by the removal of the whole electrical apparatus to the old Government waterworks building at the foot of the Rideau Canal, and by the addition of one new engine and boiler and two new dynamos. The main connecting wires were laid through the ducts from this building to the Parliament Building. The whole electrical apparatus is now placed on a permanent and economical basis. In the Eastern and Western Departmental Buildings a large number of offices were cleaned, distempered and painted, and furniture, &c., supplied where required. The grounds were efficiently maintained during the year. New asphalt pavements were laid at the east side of Senate and portion of Eastern block, part of the wooden pavement was retarred and repaired, and a number of cess pools were rebuilt and enlarged. Expenditure during the fiscal year, \$15,183.63 for construction; and \$142,635.50 for repairs. Total expenditure on these buildings, \$4,226,211.21 for construction; and \$1,822,837.24 for repairs.

RIDEAU HALL.

The usual annual cleaning, partial repainting, repairing, whitewashing, distempering, minor alterations and repairs were done. The remaining half of the wooden sidewalk referred to in last year's report, and about 1,000 yards of wooden fences were renewed and about 200 yards of the fence painted. The Bay Road Bridge was repaired, replanked and raised 15 inches, and the crib work of the Bay Road was partly renewed and raised a foot throughout the entire length and gravelled up to new level. The storehouse and the conservatory were repainted throughout and reglazed with rolled glass; the camelia house was repainted and reglazed with ordinary glass, and the vinery repainted. The floors of the Tennis Court and the basement corridor were relaid. About 100 yards of the gas pipe trench was opened and refilled and about 18 inches of the gasometer pit rebuilt and various repairs made to gasometer house throughout. The garden house, potting sheds, tool house, green house and furnace room were reshingled. Expenditure, \$29,550.71. Total expenditure on this building, \$236,785.48 for construction; and \$601,066.77 for repairs, furniture, &c.

RIDEAU RIVER.

A revetment wall 540 feet in length was built on the western side of the river
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to protect property annually damaged by the spring freshets. Expenditure, \$3,078.55.

SAPPER'S BRIDGE.

Under an agreement with the Corporation of the City of Ottawa the maintenance of the three bridges over the Rideau Canal within the City of Ottawa was assumed by the Government; and during the fiscal year the sum of \$656.55 was spent on repairing the sidewalk on this bridge. Total expenditure on this bridge since its maintenance was assumed by the Government, \$992.54.

ST. PATRICK'S STREET.

By the resumption of Major's Hill Park from the City of Ottawa the lower end of this street, from Sussex Street to the Ottawa River, which runs between Major's Hill Park and Nepean Point, reverted to the care of the Government, and during the fiscal year the sum of \$210.27 has been spent in putting it in a good state of repair. Since the Government assumed the maintenance of this portion of the street it has been levelled, macadamized, provided with a new sidewalk and the fences repaired. Total expenditure, \$1,045.10.

SUPREME COURT.

During the year the sum of \$600.71 was spent for repairs. Total expenditure on this building, \$64,212.39 for construction; and \$3,103.81 for repairs.

UNION SUSPENSION BRIDGE.

During the fiscal year the sum of \$2,074.30 was spent on necessary repairs to the approaches to, and flooring of, this bridge. Total expenditure since Confederation in repairing this bridge, which was built in 1841, \$18,871.52. As part of the agreement with the City of Ottawa an Act was passed at the Session of 1886 abolishing tolls on this bridge.

WELLINGTON STREET.

By the terms of the Order in Council of 17th June, 1885, the Government agreed to maintain and keep in repair the roadway and sidewalks on that part of Wellington Street extending from Bank Street to Dufferin Bridge, in front of the Parliament Buildings; and during the fiscal year the macadamizing of the street from Metcalfe to Bank Street was completed, four new stone coverings and stone gutters were put down, and the north side was boulevarded and planted with trees. Expenditure, \$10,555.50. Total expenditure since the maintenance of this street was assumed by the Government, \$19,819.80.

 OWEN SOUND.

Owen Sound, in the Electoral District of North Grey, is situated at the mouth of the Sydenham River, which empties into Georgian Bay.

At the Session of 1886 the sum of \$10,000.00 was voted to continue the dredging of this harbour, and during the fiscal year the sum of \$9,977.20 was spent in dredging as far as the steamboat wharf. Total expenditure at this place since Confederation, \$94,491.46.

 PEMBROKE.

Pembroke, in the Electoral District of North Renfrew, is situated on Allumette Lake, an expansion of the Ottawa River, and is 86 miles from Ottawa by the Canadian Pacific Railway.

At the Session of 1886 the sum of \$4,000.00 was voted for the purpose of providing a site for a Public Building to accommodate the Postal, Customs and other offices; and on 9th July, 1887, the west part of Lot No. 1, Block A, 132 by 76 feet, on Pembroke Street, at the north-east end of the bridge over the Muskrat River, was purchased from Thomas Dean, for the sum of \$2,500.00. Expenditure, \$2,667.25.

 PETERBORO'.

Peterboro, in the Electoral District of West Peterboro', is situated on the Otonabee River, and is about 94 miles north-east of Toronto.

At the Session of 1886 the sum of \$10,000.00 was voted to continue work on the Post Office at this place mentioned in last year's report as being under contract; and the unexpended balance of appropriation for 1885-86, \$4,975.73, was carried forward. On the 18th October, 1886, a contract was entered into with Mr. J. E. Askwith for a tower on the building, for the sum of \$2,300.00. Work has progressed steadily, and at the close of the fiscal year the building was nearing completion. Plans for a hot water heating apparatus were being prepared, and a contract for that work has since been let. Expenditure, \$15,984.92. Total expenditure on this building, \$28,008.92.

 PORT ARTHUR.

Port Arthur, in the County of Algoma, is on Thunder Bay, Lake Superior, and is the terminus of the Tunder Bay Branch of the Canadian Pacific Railway.

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At the Session of 1886 the sum of \$70,000.00 was voted to continue work on the breakwater, referred to in previous reports. On 30th October, 1886, a contract was entered into with Mr. A. Stewart for the extension of the breakwater eastwardly 1,600 feet, and at the close of the fiscal year the work was well under way. Expenditure, \$19,205.94. Total expenditure on this work, \$174,868.54.

PORT ELGIN.

Port Elgin, in the Electoral District of North Bruce, is on the eastern shore of Lake Huron, 24 miles north of Kincardine.

At the Session of 1886 the sum of \$2,500.00 was voted to continue the harbour improvements at this place. On 22nd November, 1886, a contract was entered into with Mr. D. Porter, for the sum of \$9,995.00 for a groyne extending from the present landing pier a distance of 300 feet, to arrest the travel of sand which tends to shoal the water in the harbour, and at the close of the fiscal year the work was well under way. Expenditure, \$2,731.32. On the 1st July, 1886, the dredge "Challenge" was at work in this harbour and so continued until 11th August. Work was resumed on 16th May, 1887, and completed on 1st June. Quantity of material removed 19,105 cubic yards of clay and sand, at a cost of \$1,428.62. Total expenditure at this place since Confederation, \$34,105.57.

PORT HOPE.

Port Hope, in the Electoral District of East Durham, is on Lake Ontario, 63 miles east of Toronto.

HARBOUR.

At the Session of 1886 the sum of \$1,000.00 was voted to continue the repairs to the harbour works, mentioned in last year's report as being in progress. During the year a portion of the superstructure of the west pier was rebuilt and stone and planking placed in and on the breakwater for a distance of 100 feet. Expenditure, \$970.06. The dredge "Ontario" worked here from 7th August to 23rd October, 1886, deepening the harbour inside the piers and the basin to a general depth of 15 feet, and to 17 feet along the western pier. Work was resumed by the dredge on 22nd June, 1887, on a bar which had formed off the entrance to the harbour, and at the close of the fiscal year she was still engaged on the work. Quantity of material removed, 35,540 cubic yards of sand and 1,200 cubic yards of clay, at a cost of \$2,624.50. Total expenditure since Confederation, \$74,388.25.

PUBLIC BUILDING.

At the Session of 1886 the sum of \$2,200.00 was voted towards the completion of this building, a full description of which will be found in my report for 1882-83, and the unexpended balance of appropriation for 1885-86, \$2,497.69, was carried forward, making the total amount available, \$4,697.69. During the fiscal year the building has been completed and occupied by the various Departments. Expenditure, \$4,569.51. Total expenditure on this building, \$47,877.85 for construction; and \$30.50 for repairs.

PRESCOTT.

Prescott, in the Electoral District of South Grenville, is situated on the north shore of the St. Lawrence, 112 miles west of Montreal.

At the Session of 1886 the sum of \$8,000.00 was voted for the purpose of providing a building to accommodate the Postal and other services; but up to the close of the fiscal year a site had not been obtained and no expenditure had taken place.

RIVER AUX PÊCHES.

The River aux Pêches flows through the County of Essex and empties into Lake St. Clair.

During the fiscal year the sum of \$2,232.50 was spent on pile protection work on each side of the mouth of the river, which is the only expenditure at this place since Confederation.

RIVER KAMINISTIQUIA.

The River Kaministiquia rises in Dog Lake, Algoma County, and empties into Thunder Bay, Lake Superior, near Port Arthur.

With a portion of the appropriation of \$70,000.00 for Port Arthur and River Kaministiquia, passed at the Session of 1886, the deepening of the river up to the large elevator and docks was carried on during the working season, and when this channel is completed large vessels will have no difficulty in getting up to Fort William. Expenditure, \$21,763.55. Total expenditure on this work, \$71,409.70.

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RIVER OTTAWA.

The Ottawa River flows from Lake Temiscamingue and empties into the St. Lawrence at Ste. Anne de Bellevue, forming for a great part of its length the boundary between Ontario and Quebec.

The work of improving the navigation of this river at the Narrows, above Pembroke, in the County of North Renfrew, was resumed on 20th September, and continued until 16th November, 1886, during which time 540 cubic yards of boulders and 75 of rock were removed. Fifteen buoys were also placed in position. Expenditure, \$2,313.60. Total expenditure at this place since Confederation, \$3,634.69.

SAUGEEN RIVER PIER.

This pier is situated at the mouth of the Saugeen River, which empties into Lake Huron at the village of Southampton.

At the Session of 1886 the sum of \$7,000.00 was voted for improving this pier. On 29th December, 1886, a contract was entered into with Mr. D. Porter, for the sum of \$6,500.00 for the reconstruction of a length of 544 feet of the superstructure of the old pier and the construction of an additional crib 100 feet in length, and at the close of the fiscal year the work was nearly finished. Expenditure, \$3,930.36.

SAULT STE. MARIE.

Sault Ste. Marie, the shire town of Algoma County, is situated at the head of the St. Mary's River, which connects Lakes Huron and Superior.

At the Session of 1883 the sum of \$4,000.00 was voted to continue dredging at this place, but up to the close of the fiscal year work had not been resumed. Total expenditure at this place since Confederation, \$8,270.84.

SOUTHAMPTON.

Southampton, in the Electoral District of North Bruce, is situated at the mouth of the Saugeen River, which empties into Lake Huron.

The dredging at the landing pier, commenced last year, was completed. Expenditure, \$1,191.45. Total expenditure at this place since Confederation, \$21,491.61.

STRATFORD.

Stratford, in the Electoral District of North Perth, is situated on the River Avon, about 90 miles west of Toronto.

During the fiscal year the sum of \$162.50 was spent on repairs to the Public Building at this place. Total expenditure on this building, \$46,216.97 for construction; and \$250.05 for repairs.

SUMMERSTOWN.

Summerstown, in the County of Glengarry, is on the north shore of the St. Lawrence, 10 miles below Cornwall.

At the Session of 1886 the sum of \$3,000.00 was voted to continue the dredging of a channel from the St. Lawrence to the wharves referred to in last year's report, and at the Session of 1887 a further grant of \$6,000.00 was made. The dredge "Nipissing," which was at work here at the opening of the fiscal year, remained until the close of navigation, removing 29,115 cubic yards of hard pan, boulders, clay, stone and sand. The dredge "St. Louis" also worked here from 26th July to 30th October, 1886, and removed 12,425 cubic yards of clay. Expenditure, \$12,130.24. Total expenditure at this place since Confederation, \$14,000.14.

ST. CATHARINES.

St. Catharines, in the Electoral District of Lincoln and Niagara, is situated on the Welland Canal, about 32 miles east of Hamilton.

During the fiscal year the sum of \$59.65 was spent on repairs to the Public Building at this place. Total expenditure on this building, \$57,050.19 for construction; and \$92.15 for repairs.

ST. THOMAS.

St. Thomas, in the Electoral District of East Elgin, is on the Great Western Division of the Grand Trunk Railway and on the Canada Southern Railway, and is about 15 miles from London.

At the Session of 1886 the sum of \$2,400.00 was voted towards the completion of the Public Building at this place, which is fully described in my report for 1882-83, at the Session of 1887 a further grant of \$400.00 was made, and the [1887] ci

[unexpended balance of appropriation for 1835-86, \$251.36, was carried forward, so that the total amount available was \$3,051.36. During the fiscal year the attic has been fitted up for caretaker's quarters, and paving and grading done. Expenditure, \$3,141.84. Total expenditure on this building, \$69,667.80.

THORNBURY.

Thornbury, in the Electoral District of East Grey, is situated at the mouth of the Beaver River which flows into Georgian Bay, 13 miles from Collingwood.

At the Session of 1886 the sum of \$3,000.00 was voted towards improving this harbour. During the year a row of piling was driven from the inner end of the pier, in a south-westerly direction, to prevent the beach being cut through by the sea. Expenditure, \$1,813.48. The dredge "Challenge" worked here from 16th September to 27th October, 1886, opening a channel in the shoal between the dock and the breakwater, removing 8,820 cubic yards of boulders, gravel and sand, at a cost of \$1,185.55. Total expenditure at this place since Confederation, \$26,441.12.

TORONTO.

Toronto, the principal city in the Province of Ontario, is situated on Lake Ontario, 161 miles west of Kingston, and comprises the Electoral Districts of East, Centre and West Toronto.

CUSTOM HOUSE.

During the fiscal year some necessary alterations and repairs have been made. Expenditure, \$1,081.57. Total expenditure on this building, \$236,052.23 for construction; and \$7,826.93 for repairs.

EXAMINING WAREHOUSE.

At the Session of 1886 the sum of \$12,000.00 was voted towards the erection of an engine house and other works in connection with this building, and at the Session of 1887 the further sum of \$11,200.00 was granted. During the fiscal year progress was made with the new boiler house, the ground floor of the main building was repaired, new coils supplied to heating apparatus, &c. Expenditure during the fiscal year, \$9,253.23 for construction; and \$1,360.39 for repairs. Total expenditure on this building, \$321,705.45 for construction; and \$17,188.91 for repairs. On 30th June, 1887, the following contracts were entered into: J. Fletcher, for alterations and additions, \$7,200.00; J. Fensom, for elevator, \$3,450.00; Inglis & Hunter, for boilers, \$4,250.00.

FORTS.

During the fiscal year the sum of \$61.43 has been expended for repairs to the Old Fort. Total expenditure on these forts since Confederation, \$22,245.88 for construction; and \$3,610.41 for repairs.

HARBOUR.

At the Session of 1886 the sum of \$10,000.00 was voted to continue the works referred to in last year's report, and at the Session of 1887 an additional grant of \$1,000.00 was made. During the fiscal year a further quantity of very large sized stones was placed at exposed points on the island breakwater. Expenditure, \$11,374.41. Total expenditure on this harbour since Confederation, \$536,363.09.

IMMIGRANT SHED.

During the fiscal year the sum of of \$159.43 was spent for repairs. Total expenditure on this building, \$12,257.97 for construction; and \$5,028.20 for repairs.

INLAND REVENUE BUILDING.

At the Session of 1886 the sum of \$3,717.43 was voted for alterations and repairs to this building, and during the fiscal year the work has been carried out. Expenditure, \$1,675.49 for construction; and \$270.41 for repairs. Total expenditure on this building, \$37,776.56 for construction; and \$27,847.67 for repairs.

POST OFFICE.

At the Session of 1886, the sum of \$3,000.00 was voted for alterations and repairs to this building, and at the Session of 1887 a further grant of \$3,000.00 was made. On 4th March, 1887, a contract was entered into with Mr. Thos. Pells, for the sum of \$2,275.00, for the erection of a small building in the yard, to be used as a Customs office for packages received by mail, and the work was in progress at close of the fiscal year. It being necessary to have more room in the yard, the west half of lot No. 6, on the south side of Lombard street, was obtained by expropriation, for the sum of \$6,896.97. Total expenditure on this building, \$163,872.37 for construction; and \$15,712.46 for repairs.

TRENTON.

Trenton, in the Electoral District of West Hastings, is on the Trent River, at its entrance into the Bay of Quinté, 101 miles east of Toronto.

At the Session of 1886 the sum of \$4,000.00 was granted to purchase a site for a Public Building at this place, to accommodate the Postal, Customs and other serv-

ices. On 1st February, 1887, a site on south side of Dundas street, containing 7,500 square feet, was purchased from Mr. D. R. Murphy, for the sum of \$4,875.00; and at the close of the fiscal year plans and specifications for the building were being prepared, and since that date a contract for its construction has been entered into. Expenditure during the fiscal year, \$1,058.49.

WINDSOR.

Windsor, in the Electoral District of North Essex, is situated on the Detroit River, immediately opposite the City of Detroit, Mich., and 110 miles west of London, Ont.

At the Session of 1886 the sum of \$2,960.00 was voted towards altering the sidewalk, &c., around the Public Building at this place, and during the fiscal year the work has been completed. Expenditure, \$2,003.54. Total expenditure on this building, \$70,098.14 for construction; and \$2,459.59 for repairs.

PROVINCE OF MANITOBA.

ASSINIBOINE RIVER.

The Assiniboine River rises in the District of Saskatchewan and discharges into the Red River at Winnipeg.

At the Session of 1887 the sum of \$4,200.00 was voted for the purpose of defraying the expense of an examination of this river made during the season of 1886, with a view to ascertaining the causes of the annual floods in certain parts of it. Expenditure on this river since Confederation, \$19,673.86.

BIRTLE.

Birtle, in the Electoral District of Marquette, is situated on Bird Tail Creek, in Township 17, Range 26 West, and is 40 miles from Moosomin on the Canadian Pacific Railway, and 219 miles west of Winnipeg.

During the fiscal year the sum of \$29.50 was spent for repairs to the Immigrant Building at this place, the cost of constructing which was paid by the Department of Agriculture. Total expenditure by this Department, \$47.00 for repairs.

RED RIVER.

The Red River takes its rise in the United States, and flows for about 140 miles through Manitoba, emptying into Lake Winnipeg.

Out of the vote of \$10,000.00 for dredging in Manitoba, passed at the Session of 1886, the sum of \$7,571.11 was spent on continuing the work at the mouth of this river, referred to in last year's report. Total expenditure on this river since Confederation, \$49,922.40.

STONY MOUNTAIN.

Stony Mountain, in the Electoral District of Lisgar, is situated on the Stone-wall Branch of the Canadian Pacific Railway, 13 miles north-east of Winnipeg.

At the Session of 1886 the sum of \$75,000.00 was voted for alterations and additions to the Penitentiary; and during the fiscal year the following works have been carried out: The Warden's residence has been completed and occupied; a brick building 51 by 51 feet and 25 feet high has been built for Catholic and Protestant chapels; wood sheds, pump houses, &c., have been supplied to the Guards cottages; three wells of an average depth of 90 feet were bored and a well house erected over each; a windmill and tank for irrigating gardens were supplied and erected, and other works performed. On 25th January, 1887, a contract was entered into with the Vulcan Iron Company for a steel boiler to replace the older of the heating boilers, and it has been supplied. On 20th June, 1887, a contract was entered into with Messrs. Rourke & Cass for the erection of a hospital and wash house, for the sum of \$28,500.00. Up to the close of the fiscal year work had not been commenced, but since that date it has progressed so that it is expected it will be completed in the winter of 1887. The hospital is of brick, 113 feet by 46 feet, two storeys and basement; the laundry is also of brick, 30 by 60 feet, with boiler house attached, 16 by 21 feet. Expenditure during the fiscal year, \$40,731.73. Total expenditure on this building, \$346,321.01 for construction; and \$5,104.41 for repairs.

WINNIPEG.

Winnipeg, the Capital of Manitoba, and forming the Electoral District of Winnipeg, is situated at the confluence of the Red and Assiniboine Rivers.

ARCHITECT'S OFFICE.

During the fiscal year the sum of \$798.22 was spent for rent and repairs. Total expenditure, \$4,837.07.

CUSTOM HOUSE.

At the Session of 1886 the sum of \$3,000.00 was voted for the purpose of providing new heating apparatus, and at the Session of 1887 a further grant of \$1,000.00 was made. A contract for heating apparatus was entered into with Messrs. Garth & Co., for the sum of \$2,720.25, and the work has been done. On the completion of the new Post Office building, the Inland Revenue Offices were removed to it from the Custom House, and the various rooms vacated were repaired, tinted, &c., before being occupied by the Customs' officials. The ground floor having sunk, through dry rot destroying the joist ends built in the walls, the floor was jacked up and carried on new beams resting on oak templates. The store and fuel shed in rear of the temporary Post Office was removed to the rear of the Custom House, made good and painted. Expenditure during the fiscal year, \$5,164.85. Total expenditure on this building, \$45,020.66 for construction; and \$5,856.75 for repairs.

DOMINION LANDS OFFICE.

At the Session of 1886 the sum of \$8,500.00 was voted for the purpose of providing a new office for the Dominion Lands Branch of the Department of the Interior; but on the completion of the new Post Office it was found that the upper storey could be utilized for the present for the Dominion Lands Office, and the construction of a new building was not commenced. During the fiscal year the sum of \$473.59 has been expended on repairs. Total expenditure on this building, \$16,426.41 for construction; and \$5,421.76 for repairs.

DRILL HALL.

With the \$1,645.09, balances of appropriation for 1885-86 and of contribution by the City of Winnipeg, carried forward, the fitting up and furnishing of this building was completed. Expenditure, \$1,491.90. Total expenditure on this building, \$24,619.06.

IMMIGRANT STATION.

The greater portion of this building was destroyed by fire in March, 1887; and at the close of the fiscal year arrangements were being made for fitting up an unused brick schoolhouse, as a temporary station during the re-building of the Immigrant Station. Total expenditure on this building, \$28,625.08 for construction; and \$86.73 for repairs.

INFANTRY SCHOOL.

It having been decided by the Department of Militia and Defence that an Infantry School of Instruction was to be established at Winnipeg, the sum of \$13,380.00 was transferred, by Order in Council, from the appropriations of that Department, and plans and specifications prepared for the necessary alterations and additions to Fort Osborne Barracks, to make them suitable for the purpose.

On 25th November, 1886, contracts were entered into with Messrs. Murray & McDiarmid for the construction of Officers' Quarters, for the sum of \$10,775.00, and of stables, for the sum of \$3,975.00; and at the close of the fiscal year the buildings were nearly completed. Expenditure, \$12,971.90. Total expenditure on these buildings, \$14,276.15 for construction; and \$6,126.05 for repairs.

POST OFFICE (NEW).

At the Session of 1886 the sum of \$40,000.00 was voted towards fitting up and furnishing this building, a full description of which will be found in my report for 1883-84, and at the Session of 1887 a further grant of \$4,500.00 was made. On 12th July, 1886, contracts were entered into with Messrs. J. E. Gelley & Co. for fitting up Savings Bank Branch, for \$3,200.00, and for fitting up Post Office Inspector's rooms, for \$2,200.00; and on 4th May, 1886, a contract for fitting up the Post Office was entered into with the same parties, for the sum of \$9,500.00. On 23rd August, 1886, a contract was entered into with the Vulcan Iron Works for removal of vault lining &c., from temporary office, for the sum of \$690.00, and on 24th January, 1887, another contract was made with these parties for a boiler, for the sum of \$550.00. All these contracts have been carried out; and during the fiscal year the building has been completed, fitted up, furnished and occupied. Expenditure, \$44,812.45. Total expenditure on this building, \$196,883.40.

POST OFFICE (OLD).

During the fiscal year the sum of \$180.00 has been spent for repairs. Total expenditure on this building, \$5,578.79.

POST OFFICE (TEMPORARY).

At the Session of 1886 the sum of \$6,000.00 was voted for the purpose of altering and fitting up this building when it was vacated on the completion of the new Post Office, so as to fit it for use as an Examining Warehouse, but up to the close of the fiscal year the alterations had not been commenced and only \$114.25 had been spent for ordinary repairs. Total expenditure on this building, \$11,859.23.

POWDER MAGAZINE.

At the Session of 1887 the sum of \$975.50 was voted to pay Messrs. Rourke & Cass the balance due on their contract, but up to the close of the fiscal year payment had not been made. Total expenditure on this building, \$6,808.45.

 NORTH-WEST TERRITORIES.

 BATTLEFORD.

Battleford, in the District of Saskatchewan, is situated on the north-west branch of the River Saskatchewan, about 250 miles north of Swift Current, which is 511 miles west of Winnipeg by Canadian Pacific Railway.

BARRACKS.

During the fiscal year the following baloon-framed wooden buildings were erected: A hospital, 71 by 26 feet, with kitchen and sergeant's room attached; a mess room, 82 by 31 feet, with kitchen attached; two barracks, each 102 by 32 feet, and two stables, each for 32 horses. Of these the hospital building is to be permanently used for that purpose, but the mess room and barracks are to be converted into stabling when permanent barracks are erected. A log stable which had fallen, was rebuilt, a well was dug, the bake oven was rebuilt, storm sashes were furnished, chimneys built and plastering repaired in the kitchen and rooms generally. The following contracts were entered into in connection with the work; on 26th September, 1886, with Mr. W. J. Barker for one barrack and hospital, \$2,200.00, and for stables, \$1,600.00; with Messrs. Smart & Mitchell for one barrack and mess room, \$1,700.00. Expenditure during the fiscal year, \$30,184.20. Total expenditure on these buildings, \$37,751.57.

IMMIGRANT SHED.

During the fiscal year the sum of \$100.00 was spent on this building.

INDUSTRIAL SCHOOL.

During the fiscal year the sum of \$300.00 has been spent on this building. Total expenditure, \$3,382.00.

REGISTRAR'S OFFICE.

The sum of \$1,274.50 was spent during the fiscal year on repairs to this building.

 CALGARY.

Calgary, in the District of Alberta, is situated on the Bow River, 839 miles west of Winnipeg by the Canadian Pacific Railway.

BARRACKS.

During the fiscal year the sum of \$2,246.63 was spent for erecting a new store-house and making general repairs to these buildings.

 IMMIGRANT SHED.

During the fiscal year the sum of \$580.00 has been spent on general repairs. Total expenditure on this building, \$5,776.50.

 FORT McLEOD.

Fort McLeod, in the District of Alberta, is situated on Old Man's River, 102 miles south of Calgary and 30 miles from Lethbridge, which is the nearest railway station.

During the fiscal year the Barracks at this place have been generally repaired, all the buildings painted, and a new stable built. Expenditure, \$6,258.75.

 FORT QU'APPELLE.

Fort Qu'Appelle, in the District of Assiniboia, is situated on the Qu'Appelle River, 20 miles from Qu'Appelle Station on the Canadian Pacific Railway.

At the Session of 1886 the sum of \$4,000.00 was voted for the purpose of enlarging the Indian Industrial School at this place, a full description of which will be found in my report for 1883-84; and during the fiscal year an addition, 30 feet long by 60 feet deep, has been built, corresponding with the old building in height of floors, construction, material, &c., and containing on the ground floor a school-room, and on the first and attic floors dormitories. Expenditure, \$4,256.44. Total expenditure on this building, \$21,676.47.

 FORT SASKATCHEWAN.

Fort Saskatchewan, in the District of Alberta, is 200 miles from Calgary, the nearest railway station.

The sum of \$1,500.04 has been spent on repairing the Mounted Police Barracks at this place.

 HIGH RIVER.

High River, in Alberta District, is about 38 miles from Calgary, which is the nearest railway station.

The attics of the Indian Industrial School building have been completed and new outbuildings erected at a cost of \$3,793.30. Total expenditure on this building, \$21,684.95.

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LETHBRIDGE.

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Lethbridge, in Alberta District, is the terminus of the North-West Coal and Navigation Company's Railway from Danmore on the C.P.R., from which it is 110 miles distant.

During the fiscal year Barracks have been erected at this place for the accommodation of the North-West Mounted Police, the cost being defrayed out of the vote of \$75,000 00 granted at the Session of 1886 for new Barracks for North-West Mounted Police. Part of the work was done under a contract dated 29th November, 1886, with Messrs. Scott & Merrill, for \$4,386.60, and part by the Department. The works executed consist of a one-storey building, composed of a front portion 157 by 28 feet, with a T in the rear, 88 by 28 feet, containing six barrack rooms, four sergeants rooms, mess room, kitchen, wash room, bath room and store room; two officers' quarters, each one and a-half storey high, 37 by 24 feet 6 inches, with a one storey kitchen wing, 18 feet 6 inches by 21 feet; a one storey wooden stable 102 by 28 feet, containing 38 stalls and one loose box; a one storey stone house 60 by 30 feet; a one storey blacksmith shop 24 feet square, and a guard house 41 by 24 feet, containing a guard room and six cells. Expenditure, \$23,855.34.

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MAPLE CREEK.

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Maple Creek, in the District of Assiniboia, is a station on the main line of the C. P. Railway, 596 miles west of Winnipeg.

The Mounted Police Barracks at this place have been repaired during the fiscal year at a cost of \$1,597.67.

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MEDICINE HAT.

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Medicine Hat, in the District of Assiniboia, is on the main line of the Canadian Pacific Railway, 660 miles west of Winnipeg.

BARRACKS,

During the fiscal year the sum of \$140.85 has been spent on repairs to the Mounted Police Barracks.

 IMMIGRANT BUILDING.

The sum of \$620.00 was spent for repairs. Total expenditure on this building, \$6,757.78.

POST OFFICE.

During the fiscal year the small sum of \$10.25 has been spent on repairs to the building used as a Post Office.

 PRINCE ALBERT.

Prince Albert, in the District of Saskatchewan, is situated on the Saskatchewan River, about 200 miles north-west of Qu'Appelle, the nearest station on the Canadian Pacific Railway.

BARRACKS.

Out of the appropriation of \$75,000.00 made at the Session of 1886 for new Barracks for North-West Mounted Police, suitable buildings were commenced at this place and were in progress at the close of the fiscal year. They consist of a one storey wooden barracks, 157 by 28 feet, with a T in the rear, 88 feet long by 28 feet wide; two one and a-half storey wooden residences for officers; a stable, storehouse, &c. Expenditure during the fiscal year, \$10,169.62.

COURT HOUSE AND JAIL.

At the Session of 1886 the sum of \$15,500.00 was voted to continue work on this building, a full description of which will be found in my report for last year. During the fiscal year work has been steadily carried on, and at its close the building was completed and ready to be fitted up and furnished for occupation. Expenditure, \$20,031.88. Total expenditure on this building, \$20,627.51.

 PUBLIC BUILDINGS GENERALLY, N. W. T.

At the Session of 1886 the sum of \$5,000.00 was voted for the maintenance and repairs of Public Buildings generally in the North-West, and during the year the sum of \$2,768.70 has been expended.

 QU'APPELLE STATION.

Qu'Appelle Station, in the District of Assiniboia, is on the main line of the Canadian Pacific Railway, 324 miles west of Winnipeg.

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During the year the sum of \$6.10 was spent for repairs to the Immigrant Shed at this place. Total expenditure, \$12,305.15 for construction; and \$523.04 for repairs.

REGINA.

Regina, the Capital of the North-West Territories, is in the District of Assiniboia, 356 miles west of Winnipeg by Canadian Pacific Railway.

BARRACKS.

Included in the vote of \$75,000.00 for Barracks for North-West Mounted Police, voted of the Session of 1886, was a sum for suitable buildings at this place. On 11th September, 1886, contracts were entered into with Mr. R. H. Williams for the barracks, for the sum of \$30,935.00, and for a residence for the Commissioner for the sum of \$5,935.00; and on 10th November, 1886, a contract was entered into with Mr. J. McCrea for an hospital and residence for the Surgeon, for the sum of \$10,600.00. The barracks consist of a two-storey main building, 266 feet long by 32 feet broad, with a one-storey building in rear, 66 feet by 52 feet, all of wood; the main building contains six barrack rooms, 30 by 22 feet on each floor, and the rear building a mess room, kitchen, scullery and washrooms. The Commissioner's residence is a two-storey and attic wooden building, 42 by 32 feet, with a wing 36 by 25 feet, containing on the ground floor a dining room, library, stairway, hall, kitchen and pantry and six bedrooms, with closets, &c., on the first floor. The hospital is a two-storey and attic building, 29 feet 10 inches by 71 feet 10 inches, exclusive of a projection in front 12 by 30 feet, and having a one-storey annex, 28 by 30 feet, in the rear. The ground floor consists of a large main hall, a surgery, hospital sergeant's room, mess room, kitchen and two hospital wards; and on the first floor are two wards, hall, hospital orderly's room and a nurse's room. The surgeon's residence is a wooden building, two storeys and attic, of irregular shape, measuring 63 feet in extreme length by 27 feet in extreme breadth, exclusive of a two storey annex 17 feet by 17 feet 6 inches, and a one-storey saddle room. The ground floor is devoted to entrance hall, drawing room, dining room, office and kitchen; and the first floor contains five bedrooms, a hall and closets. Work has been steadily prosecuted on all the buildings, and at the close of the fiscal year they were nearing completion. Expenditure, \$45,547.95.

COUNCIL CHAMBER.

At the Session of 1886 the sum of \$500.00 was voted for repairs, and at the Session of 1887 a further grant of \$1,100.00 was made; and during the fiscal year general repairing has been done at a cost of \$1,642.74.

COURT HOUSE.

At the Session of 1886 the sum of \$350.00 was voted for outbuildings, and during the fiscal year they have been supplied at a cost of \$464.89.

DOMINION LANDS OFFICE.

During the year the sum of \$10.00 has been spent for alterations and repairs.

JAIL AND LUNATIC ASYLUM.

At the Session of 1886 the sum of \$7,000.00 was voted towards the completion of this building, a full description of which will be found in my report for 1884-85. The building has been completed. Expenditure during the fiscal year, \$1,663.27. Total expenditure on this building, \$46,588.86.

LIEUT. GOVERNOR'S RESIDENCE.

During the fiscal year the sum of \$547.72 has been spent on painting and repairing this building.

POST OFFICE.

At the Session of 1886 the sum of \$3,500.00 was voted to continue work on this building, a full description of which will be found in my report for 1884-85, and during the year the building has been completed, fitted up and occupied. Expenditure during fiscal year, \$1,907.41. Total expenditure, \$8,361.12.

RIDING AND DRILL HALL.

During the fiscal year the sum of \$219.07 has been expended on this building. Total expenditure, \$26,350.50.

SASKATCHEWAN RIVER.

The Saskatchewan River rises in the Rocky Mountains, and after a course of about 1,200 miles empties into Lake Winnipeg.

At the Session of 1886 the sum of \$15,000.00 was voted to carry on the work of improving the navigation of this river referred to in last year's report as being in progress, and during the year the sum of \$15,134.08 has been spent on the removal of boulders and sand bars obstructing the channel of the North Branch between Edmonton and the Forks. Total expenditure on this river, \$48,754.71.

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 PROVINCE OF BRITISH COLUMBIA.

 COWICHAN RIVER.

At the Session of 1886 the sum of \$1,000.00 was voted to continue the improvement of this river, and at the Session of 1887 the further grant of \$760.00 was made. During the autumn of 1886 some further work was done. Expenditure, \$1,760.00. Total expenditure on this river, \$5,579.72.

 ESQUIMALT.

Esquimalt, in the Electoral District of Victoria, is situated on the Strait of San Juan de Fuca, about 3 miles from the City of Victoria.

At the Session of 1886 the sum of, \$295,000.00 was voted towards the completion of the Graving Dock at this place; and work has been prosecuted in such a manner that the dock was ready for the reception of vessels at the close of the fiscal year. Expenditure during the fiscal year, \$207,308.24. Total expenditure on this work, \$1,058,418.77, of which the sum of \$250,000.00 is to be refunded by the Imperial Government.

 FRASER RIVER.

The Fraser, the largest river in British Columbia, rises in the Rocky Mountains, and after a course of about 700 miles empties into the Gulf of Georgia.

At the Session of 1886 the sum of \$8,000.00 was voted for the purpose of improving the North Channel through the Sand Heads at the mouth of the river. During the fiscal year a submerged dam 2,000 feet long by 25 feet wide by about 7 feet in depth has been built of logs, snags, stone, &c., across the north end of the south channel, for the purpose of directing the south channel current towards the north channel, in order that the scouring action of the current might be increased and a greater depth of water thereby obtained. It is believed that during the heavy freshets of the past summer this result was achieved, but the result cannot be definitely ascertained without carefully sounding the north channel. Expenditure, \$8,035.41. The dredging referred to in last year's report as being in progress at Ladner's Landing, was continued during the year, and some work was also done at Woodward's. Expenditure, \$10,355.78. Total expenditure on this river since Confederation, \$73,012.73.

KICKING HORSE RIVER, OR KOOTENAY.

During a fiscal year a small dam to improve this river was built at a cost of of \$535.68.

NANAIMO.

Nanaimo, in the Electoral District of Vancouver, is on the eastern coast of Vancouver Island, on the Gulf of Georgia, 70 miles from Victoria.

During the year the sum of \$741.52 has been spent on excavating in rock a boat channel 10 feet wide through Bigg's Portage, in this harbor; and the work has proved to be a great benefit to those living in the vicinity and in the different islands, having occasion to visit Nanaimo.

NEW WESTMINSTER.

New Westminster, in the Electoral District of the same name, is situated on the north bank of the Fraser River, about 75 miles from Victoria.

PENITENTIARY.

At the Session of 1886 the sum of \$50,000.00 was voted for additions and alterations to this building. On the 27th October, 1886, a contract was entered into with Mr. Joshua Holland for the erection of two pairs of semi-detached cottages, for guards residences, for the sum of \$8,500.00; and on 9th February, 1887, a contract was entered into with the same party for the construction of a laundry and bake house, for the sum of \$4,500.00. These contracts, as well as that with Messrs. Scoullar & Co., referred to in last year's report, have been completed. More land being required lots Nos. 1, 2 and 3, in Block No. 13, were purchased on 16th May, 1886, from Mr. A. G. Gamble, for the sum of \$2,300.00. Expenditure during the fiscal year, \$34,640.98. Total expenditure on this building, \$232,943.50.

PUBLIC BUILDING.

At the Session of 1886 the sum of \$1,000.00 was voted for repairing the Post Office portion of this building, and during the fiscal year the sum of \$403.00 has been expended for that purpose. Total expenditure on this building, \$25,811.18 for construction; and \$,1,303.90 for repairs.

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 NICOMEKLE RIVER.

With the unexpended balance of appropriation for 1835-36, carried forward, and the grant of \$875.00 made at the Session of 1837, the work of improving this river, referred to in last year's report, has been completed. Expenditure, \$912.50. Total expenditure on this river, \$1,874.93.

 SHOAL HARBOUR, SAANICH.

The "Dredger" worked at this place from 10th February to 13th April, 1887, making a berth for steamers alongside the wharf, giving 8 feet at low water, and a channel thereto 400 feet long by 80 feet wide, with the same depth. No greater width or depth could be obtained, owing to the bed rock being met with. Expenditure, \$2,259.34.

 VICTORIA.

Victoria, the Capital of British Columbia, is situated at the south-east extremity of Vancouver Island, and forms an Electoral District returning two members.

CUSTOM HOUSE.

During the year the small sum of \$2.00 has been spent for repairs. Total expenditure on this building, \$39,164.76 for construction; and \$1,299.44 for repairs.

HARBOUR.

At the Session of 1886 the sum of \$8,500.00 was voted towards the removal of "Dredger Rock," referred to in last year's report as being under contract; and during the fiscal year the work has been completed. Expenditure, \$4,490.00. The work of dredging the harbour was continued from 13th April to 14th June, 1887, in the vicinity of "Dredger Rock." Expenditure, \$2,402.00. Total expenditure on this harbour since Confederation, \$130,071.36.

IMMIGRANT BUILDING.

During the fiscal year the building near the outer wharf, purchased for an Immigrant Shed, has been put in thorough repair at a cost of \$346.33.

POST OFFICE.

During the year the sum of \$560.20 has been expended on additions, alterations and repairs to this building. Total expenditure, \$40,701.81 for construction; and \$7,851.69 for repairs.

 QUARANTINE STATION.

At the Session of 1886 the sum of \$5,500.00 was voted towards the completion of this building, at Albert Head, which was described in my report for 1884-85, and during the year the work of grading a road from the highway to the hospital, referred to in last year's report, has been completed and other work done. Expenditure, \$1,337.33. Total expenditure on this building, \$12,127.61.

 PUBLIC BUILDINGS GENERALLY.

At the Session of 1886 the usual sum of \$15,000.00 was voted to pay salaries, travelling expenses, &c., in connection with the Chief Architect's staff, and during the year the sum of \$11,550.98 has been expended.

 CIVIL SERVICE EXAMINATIONS.

During the year examinations for admission to the Civil Service were held in the various cities of the Dominion, as required by the Civil Service Act of 1882; and the following amounts, for expenses incurred in connection with buildings in which examinations were held, were paid by this Department:—

St. John, N.B.	\$ 6 00
Montreal.....	20 00
Kingston.....	19 02
Toronto.....	47 28
	<hr/>
Total.....	\$92 30
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 SALARIES OF ENGINEERS, FIREMEN, &c.

At the Session of 1886 the sum of \$37,000.00 was voted to pay the salaries of Engineers, Firemen and Caretakers employed in Public Buildings throughout the Dominion, a list of whom, with salaries, &c., will be found in Appendix No. 3,
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pages 43-46. The following statement shows amount appropriated and amount expended by Provinces, details of which will be found in Appendix No. 1, pages 9-11 :—

	Appropriation.	Expenditure.
Nova Scotia.....	\$ 4,236 00	\$ 4,487 19
Prince Edward Island.....	2,504 00	1,957 33
New Brunswick	5,850 00	5,431 56
Quebec	7,890 00	7,818 89
Ontario.....	14,780 00	16,665 67
Manitoba .....	.....	541 50
North-West Territories.....	540 00	615 00
British Columbia.....	1,200 00	1,200 00
	<u>\$37,000 00</u>	<u>\$38,717 14</u>

HEATING DOMINION BUILDINGS.

At the Session of 1886 the sum of \$50,000.00 was voted for heating Dominion Buildings. The following statement shows the amount appropriated and amount expended by Provinces, details of which will be found in Appendix No. 1, pages 9-11 :—

	Appropriation.	Expenditure.
Nova Scotia.....	\$ 3,550 00	\$ 1,974 36
Prince Edward Island.....	2,250 00	1,026 39
New Brunswick	6,300 00	4 305 11
Quebec.....	14,800 00	9,541 95
Ontario.....	16,300 00	11,529 59
Manitoba.....	4,300 00	1,918 00
North-West Territories.....	1,800 00	984 69
British Columbia	700 00	594 49
Generally.....	.....	1,648 99
Total	<u>\$50,000 00</u>	<u>\$33,523 57</u>

LIGHTING DOMINION BUILDINGS.

At the Session of 1886 the sum of \$25,000.00 was voted for lighting Dominion Public Buildings. The following statement shows the appropriation and amount
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expended, by Provinces, details of which will be found in Appendix No. 1, pages 9-11:—

	Appropriation.	Expenditure.
Nova Scotia	\$2,200 00	2,265 72
Prince Edward Island	600 00	579 40
New Brunswick.....	3,400 00	3,641 23
Quebec.....	6,200 00	5,587 66
Ontario	11,650 00	9,731 06
Manitoba	500 00	535 12
North-West Territories.....	50 00	9 80
British Columbia	400 00	802 87
Total.....	\$25,000 00	\$23,152 86

WATER FOR DOMINION BUILDINGS.

At the Session of 1886 the sum of \$8,500 00 was voted for supplying water to Public Buildings throughout the Dominion. The following statement shows the appropriation and amount expended, by Provinces, details of which will be found in Appendix No. 1, pages 9-11:—

	Appropriation.	Expenditure.
Nova Scotia.....	\$ 550 00	942 04
Prince Edward Island	700 00	20 75
New Brunswick	800 00	1,250 13
Quebec	4,400 00	1,506 89
Ontario	1,600 00	1,573 89
Manitoba	300 00	252 25
North-West Territories	50 00	8 00
British Columbia.....	100 00	114 00
Total.....	\$8,500 00	\$5,667 95

DREDGES.

At the Session of 1886 the sum of \$32,000.00 was voted for repairs to dredge vessels, and \$17,000.00 for new dredging plant, and the unexpended balances of appropriations for 1885-86, \$4,336.57 and \$3,300.13 respectively were carried forward, so
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that the total amount available was \$56,636.70. The expenditure has been \$33,578.03 for repairs, and \$10,185.47 for new dredging plant. A full description of the work done by each dredge will be found in Appendix No. 5, pages 75-79, and Appendix No. 6, pages 103-6, contains a list of the dredging plant belonging to the Department.

SURVEYS AND EXAMINATIONS.

At the Session of 1886 the sum of \$20,000.00 was voted for Surveys and Examinations, and at the Session of 1887 a further amount of \$13,300.00 was granted. During the year surveys or examinations have been made at 108 places, a list of which will be found in Appendix No. 5, pages 73-75. Expenditure, \$35,315.93.

SLIDES AND BOOMS.

At the Session of 1886 the sum of \$125,000.00 was voted for the construction, repairs and maintenance of the Dominion Slides and Booms, and the unexpended balance of appropriations for 1885-86, amounting to \$12,773.19, were carried forward. In Appendix No. 15, pages 161-164, will be found a statement of the staff employed on the various slides and booms; and the following table shows the amount expended during the fiscal year in each district:—

District.	Construction.	Repairs.	Staff and Maintenance.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Saguenay District	3,145 12	221 32	1,245 22	4,611 66
St. Maurice do	25 12	18,751 96	19,198 46	37,975 54
Ottawa do	28,851 60	20,630 40	23,567 31	73,049 31
Newcastle do .....	.....	7,379 14	2,657 20	10,036 34
Total.....	32,021 84	46,982 82	46,668 19	125,672 85

SAGUENAY DISTRICT.

The slide and booms to facilitate the descent of timber from Lake St. John to the River Saguenay are situated on La Petite Décharge, the smaller of the two outlets from the lake to the river. The slide is 5,840 feet long, and the booms 1,344 feet.

During the fiscal year a further length of 523 feet of the slide has been repaired, and other work done, a description of which will be found in Appendix No. 11, pages 141-144.

ST. MAURICE DISTRICT.

The works on the St. Maurice are situated at seven stations, from the mouth of the river to La Tuque Falls, a distance of 100 miles; and there are also two stations on the Vermillion River, a tributary of the St. Maurice.

The excessive height of water in the spring of 1887, caused considerable damage to the booms, but there was scarcely any loss of logs. Only a portion of the cut reached the mouth of the St. Maurice, a large quantity of logs being stuck in the tributaries of the river until next year. Full particulars of repairs made, &c., will be found in Appendix No. 12, pages 146-150.

OTTAWA DISTRICT.

This district embraces the Ottawa River and its tributaries, the Gatineau, Madawaska, Coulonge, Black, Petewawa and Dumoine Rivers. There are in it altogether eighty-three stations, and the works for facilitating the descent of timber aggregate about one mile of canal, over three miles of slides, nearly thirteen miles of booms and over seventeen thousand lineal feet of dams, with bulkheads, piers, glance piers, &c., in proportion.

The timber drives, during the season of 1886, were generally successful in reaching the main stream, and only a few parcels of logs and square and flatted timber were laid up or stuck by the falling of the water in the tributaries. During the autumn, after the bulk of the timber had passed, the slide and dam foundations were examined, and such repairs as were required made. A full description of the work done at the different stations will be found in Appendix No. 13, pages 151-156.

 NEWCASTLE DISTRICT.

The works in this district are of two classes: Those connected with navigation, which are under the control of the Department of Railways and Canals, and those constructed to facilitate the descent of timber down the River Trent and its tributaries, which are under the control of the Department of Public Works.

The water during the spring was above the average, but did not come to within six inches of the height of last year. The average height of water was maintained on the several stretches throughout the season. The weather kept cool until the spring was well advanced, causing the ice, which was very thick, to come down in immense fields when it moved, and more or less damage was done at every station on the route. A full description of repairs made, &c., will be found in Appendix No. 14, pages 157-160.

 ROADS AND BRIDGES.

At the Session of 1886 the sum of \$24,500.00 was voted for the construction, repairs and maintenance of such roads and bridges as are under the control of this Department, at the Session of 1887 the further grant of \$1,300.00 was made, and the unexpended balance of appropriation for 1885-86, \$2,968.46, was carried forward, so that the whole amount available was \$28,768.46. This does not include the roads and bridges within the limits of the City of Ottawa, which are referred to in pages 92-96 of this report. The following table shows amount available, and amount expended, by Provinces:—

	Amount available.	Expended in fiscal year, 1886-87.
Quebec	\$ 6,134 23	\$ 6,155 26
Ontario.....	6,134 23	6,155 27
North-West Territories.....	16,500 00	4,549 69
	<hr/>	<hr/>
Total.....	\$28,768 46	\$16,860 22
	<hr/>	<hr/>

 ROADS.

TEMISCOUATA ROAD.

During the fiscal year the sum of \$749.76 was spent on repairing thirty-nine culverts between the 9th and 60th miles and the bridge over the Petite Rivière.

 BRIDGES.

BOW RIVER.

At the Session of 1886 the sum of \$12,000.00 was voted towards building a bridge over the Bow River, at Calgary, N.W. T. On 2nd May, 1887, a contract was entered into with Messrs. Kennedy & Heney for the construction of the bridge, and the work was in progress at the close of the fiscal year. Expenditure, \$1,805.93.

CALUMET CHANNEL.

At the Session of 1886 the sum of \$2,000.00 was voted to aid the Municipalities of Calumet and Bryson towards the construction of a high level suspension bridge over the Calumet Channel, Ottawa River, and the unexpended balance of appropriation for 1885-86 was carried forward. During the fiscal year the sum of \$5,000.00 was paid. The bridge is 585 feet in length from abutment to abutment, with long approaches on each side.

DES JOACHIMS.

During the fiscal year the small sum of \$28.50 was paid on account of this bridge.

ELBOW RIVER.

At the Session of 1886 the sum of \$2,000.00 was voted towards the construction of a bridge over the Elbow River at Calgary, N.W.T.; and during the fiscal year the amount has been paid.

OLD MAN'S RIVER.

At the Session of 1886 the sum of \$2,500.00 was voted towards the construction of a bridge over the Old Man's River at Fort M. Leod, N.W.T., but up to the close of the fiscal year no expenditure had been made.

PORTAGE DU FORT.

At the Session of 1886 the sum of \$6,000.00 was voted to continue the repairs to the bridge across the Ottawa River at this place, mentioned in last year's report as being in progress, and at the Session of 1887 a further grant of \$1,300.00 was made. During the year the superstructure of this bridge, which is 1,000 feet in length, was completed. Expenditure, \$7,281.88.

 TELEGRAPHS.

At the Session of 1886 the sum of \$120,750.00 was voted for the construction, repairs, maintenance and working expenses of the Government telegraph lines
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under the control of this Department. At the Session of 1887 a further grant of \$1,000.00 was made, and the sum of \$12,743.71 was carried forward from 1885-86, making a total of \$164,493.71 available. Of this sum \$15,239.28 lapsed on 30th September, 1887, the expenditure was \$105,498.29 and the balance remained unexpended on 30th June, 1887. The following statement shows the total amount available for each section, the amount lapsed, and the amount expended:—

	Total Amount Available.	Lapsed on 30th September, 1886.	Expended in Fiscal Year 1886-87.
Gulf of St. Lawrence and Maritime Provinces.....	\$12,212.10	.....	\$26,828.99
North Shore St. Lawrence	7,234.27	488.06	7,435.75
Quebec to Grosse Ile Quar- antine Station.....	1,500.00	.....
Amherst Island, Bay of Quinté, to Bath, Ont.....	.....	.....	74.07
North-West Territories.....	61,924.71	4,751.22	53,871.86
British Columbia.....	40,706.82	.....	11,078.41
Generally.....	10,915.81	.....	6,209.18
	<u>\$164,493.71</u>	<u>\$5,239.28</u>	<u>\$105,498.29</u>

GULF OF THE ST. LAWRENCE AND MARITIME PROVINCES.

On 9th August, 1886, a contract was entered into with Messrs. McInnes & McLellan for the construction of a line from Cheticamp, Cape Breton, to Mabou, to connect with the Western Union system at the latter place and the contract was completed on 7th January, 1887. An intermediate office was established at Margaree Harbour. This line is being maintained in working order by the Department. An interruption in the cable between Grand Manan and Campobello, Bay of Fundy, occurred on 15th January, 1887, and continued until 14th May, when the damage, which was caused by abrasion on the rocks near Campobello, was repaired by Capt. Guildford, with the steamship "Newfield." The cable connecting the Island of Anticosti with Gaspé was damaged by ice at South-West Point in April, 1887, but was at once temporarily repaired by the District Superintendent, and the damaged portion was replaced by a new cable in the following month.

 NORTH SHORE OF THE ST. LAWRENCE.

During the months of September, October and November, 1886 the land line along the north shore of the St. Lawrence was extended to Birch River, 45 miles below Moisie. As the portion of country through which this line thus far extends below Moisie is wholly uninhabited, no new stations have been established. The next settlement is Sheldrake, about 30 miles further down the coast. In October, 1886, the construction of a loop line from a point near Tadousac to St. Etienne, a distance of 17 miles, was begun. The work was carried on under the superintendence of Mr. H. J. McHugh, Inspector of the Signal Service, and was completed in November. Offices have been opened at Rivière aux Canards, St. Etienne and Baie des Rochers.

 QUEBEC TO GROSSE ILE.

The cable connecting the Quarantine Station at Grosse Isle with the Island of Orleans, which had been relaid in May, 1886, and became interrupted on 19th July following, was repaired on the 1st September and continued in operation until the Station was closed for the winter of 1886-87. The cable was allowed to remain submerged and in consequence of its having become interrupted and broken by ice and rocks, a new cable of lighter make was laid in June. Both cables have been taken up for the winter of 1887-88. The land lines on the Island of Orleans and connecting with Quebec have continued in good working order.

 AMHERST ISLAND, ONT.

The land line and cable connecting this island, by telephone, with the telegraph office at Bath, Ont., has been maintained without interruption during the year.

 NORTH-WEST TERRITORIES.

The construction of the new line between Battleford and Edmonton *via* Fort Pitt was begun in August and continued until winter set in. A line with iron poles was erected from Battleford towards Fort Pitt, for a distance of 33 miles, and a line with tamarac poles from Edmonton to Victoria, a distance of 73 miles. Offices were opened at Fort Saskatchewan in December, 1886, and at Victoria in January, 1887. The poles furnished for this line—with the exception of 2,860 iron poles for the Battleford-Fort Pitt section—were contracted for as follows, the contract providing for proper distribution along the route:—February, 1886, [1887] CSXV

Edmonton to Fort Saskatchewan, Messrs. Ashen & McKinnon, 721 tamarac poles at 98 cents each; July, 1886, Fort Saskatchewan to Saddle Lake, Ashen & Shields, 2,549 tamarac at \$1.55 each; January, 1887, Saddle Lake to Fort Pitt, W. J. Barker, 3,400 tamarac at \$1.16 each. The work of construction, which was done by days' labour, was resumed early in the current year, and the following contracts were entered into for work to be done under the appropriation for 1887-88; April, 1887, Qu'Appelle to Humboldt, A. C. Vaughan, 2,000 cedar poles at \$1.45 each, delivered at Qu'Appelle; June, 1887, W. H. Duncan, for distributing the same, \$1,360.00; April, 1887, Humboldt to Clark's Crossing, B. Boyer, 1,800 tamarac poles, distributed, \$2 each; April, 1887, Clark's Crossing to Battleford, G. F. Tupper, 2,800 tamarac poles, distributed, at \$1.85 each.

BRITISH COLUMBIA.

In consequence of the completion of the Canadian Pacific Railway to British Columbia and the establishment of its accompanying telegraph system, which would necessarily be in competition with the lines operated over the same territory by the Government for the purpose of affording telegraphic facilities to the public, it was decided to accept an offer made by the Railway Company for the purchase by them of the lines which had been heretofore maintained by the Government, along or in proximity to the railway route. The amount offered was 15,780.00, and the lines sold were:—

	Miles.
Victoria to Dungeness, branch, including cable.....	19½
Victoria to Caché Creek, main line.....	356
New Westminster to Port Moody, branch.....	7½
Caché Creek to Kamloops, branch.....	48
	431

An arrangement, terminable at any time, was also made with the Company for operating the following lines which remain the property of the Government:—

	Miles.
Ashcroft to Caché Creek.....	4
Caché Creek to Barkerville, main line.....	272½
New Westminster to Ludner's Landing, branch.....	18
	294½

 ARBITRATION AND AWARDS.

At the Session of 1886 the sum of \$5,000.00 was voted, as usual, to meet one-half of the expenses of the Board of Official Arbitrators—the other half being paid by the Department of Railways and Canals. The unexpended balance of appropriation for 1885–86, \$591.78, was carried forward, and at the Session of 1887 the sum of \$8,000.00 was granted to recoup Messrs. Call, Sadler & Co., for the loss of the steam tug “Sultan.” The report of the Secretary of the Board of Official Arbitration will be found in Appendix No. 26, pages 241–244. Expenditure, \$13,543.02. The Report of the Secretary of the Board will be found in Appendix No. 23. Expenditure during the fiscal year, \$3,378.38.

 LIST OF ENGINEERS, FIREMEN, &c.

In Appendix No. 3, pages 43–46, will be found a list of the Engineers, Firemen and Caretakers employed in Public Buildings throughout the Dominion; and in Appendix No. 1, pages 9–11, will be found details of the expenditure at each place.

 STATEMENT OF DREDGING PLANT.

Appendix No. 6, pages 103–106, contains a statement showing the number of dredges, dredge tugs and scows owned by this Department, with the cost of construction, number of crews, average wages per month, &c.

 MONTREAL FLOOD COMMISSION.

Applications having been received from the City Council of Montreal, and the Board of Trade and Corn Exchange Association for the appointment of a Commission to examine into and report upon the causes of the annual floods at Montreal, such a Commission was appointed by Order in Council dated 28th May, 1886; and the three reports made by the Commissioners will be found in Appendix No. 7, pages 107–118, together with a memorandum made by the Chief Engineer of this Department on the last report, in which the Commission recommended the building of piers and booms across the foot of Lake St. Louis so as to retain the ice in that lake until the harbour of Montreal and the river below is clear of ice. Expenditure on account of the Commission up to the close of the fiscal year, \$11,984.60, towards which the City of Montreal had contributed \$5,000.00.

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LAKE ST. JOHN.

In Appendix No. 8, pages 119-130, will be found the reports of the Chief Engineer of this Department and of Mr. Thomas Guerin, C. E., on examinations of this lake made by the latter in the seasons of 1835 and 1836 with reference to the annual overflow of the banks of the lake and the best means of preventing its recurrence.

SHIP CHANNEL BETWEEN MONTREAL AND QUEBEC.

By the Act 46 Vic., chap. 38, assented to 25th May, 1883, authority was given to advance to the Montreal Harbour Commissioners the further sum of \$900,000.00 to enable them to continue the deepening of the ship channel between Montreal and Quebec, so as to obtain a depth of $27\frac{1}{2}$ feet at low water. Dredging was commenced on the 14th of June, 1883, and the result of the year's operations will be found in Appendix No. 9, pages 131-136.

QUEBEC HARBOUR IMPROVEMENTS.

In Appendix No. 10, pages 137-140, will be found the report of the Quebec Harbour Commissioners on the harbour improvements at Quebec and the Graving Dock at Lévis.

STAFF EMPLOYED ON SLIDES AND BOOMS.

Appendix No. 15, pages 161-164, contains a list of the staff employed on the different slides and booms, giving date of appointment, salary, &c.

GOVERNMENT PIERS AND WHARVES.

Appendix No. 18, pages 197-204, contains a statement of the Government piers and wharves in Ontario and Quebec, showing their location, dimensions, &c.
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OPENING AND CLOSING OF NAVIGATION.

Appendix No. 19, pages 205-208, contains tabular statements showing the dates of the opening and closing of navigation for a series of years, at the principal ports of Canada, on the seaboard and on the Gulf and River St. Lawrence, and the Great Lakes; as well as the ports which are always open.

ARRIVALS FROM SEA, &c.

In Appendices Nos. 20, 21, and 22, pages 209-222, will be found statements of the number of vessels which have arrived from sea, from 1868 to 1886 at Halifax, St. John, Charlottetown, Quebec, Montreal and Victoria; the number and tonnage of vessels constructed at the principal ship-building ports of Canada, from 1868 to 1886, and the number of vessels wrecked on the sea-coast and in the Gulf, River and Lakes of the St. Lawrence, from 1863 to 1886.

CONTRACTS, PROPERTY PURCHASED, &c.

Appendix No. 23, pages 223-232, contains statements of the contracts entered into by the Department; of property purchased by the Department, and of property leased by or to the Department, during the fiscal year.

ACTS RELATING TO PUBLIC WORKS.

Appendix No. 24, pages 233-236, contains a list of some of the Public Acts of the Parliament of Canada, passed at the Session of 1887, and having reference to the Public Works Department or works under its charge.

DEPARTMENTAL STAFF.

Appendix No. 27, pages 245-248, contains a list of the Members, Commissioners, and Assistant Commissioners of the Board of Works of the Provinces of Canada from 1841 to 1867; and of the Ministers, Deputy Ministers, Secretaries, Chief Engineers and Chief Architects of the Department of Public Works, from Confederation to 30th June, 1887.

OFFICIAL CORRESPONDENCE.

Appendix No. 28, pages 249-252, contains a statement of the official correspondence of the Department from 1867 to 30th June, 1887.

TABLES OF DISTANCES.

Appendix No. 29 contains a number of tables relating to the inland navigation of Canada, ocean routes to foreign countries, Canadian land routes to the seaboard, Government railway and telegraph lines, &c., &c. The fourth part of this Appendix contains some carefully prepared tables showing the distances from Liverpool, England, to Yokohama, Japan, by the shortest ocean routes, and by the shortest trunk lines of railway in Canada and the United States; and also by the Suez and Panama Canals. From these tables it appears that the longest railway route through Canada, from ocean to ocean, is shorter than the shortest route through the United States; and that the shortest route between Liverpool and Yokohama is across Canadian territory.

HECTOR L. LANGEVIN,
Minister of Public Works.

OTTAWA, 19th December, 1887.

APPENDICES.

APPENDIX No. 1.

STATEMENT OF EXPENDITURE

DURING FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

O. DIONNE, ACCOUNTANT.

APPENDIX No. I.

STATEMENT showing the Amount expended by the Department of Public Works,
Dominion of Canada, during the Fiscal Year ended 30th June, 1887.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
DOMINION BUILDINGS.				
GENERALLY		11,550 98		11,550 98
<i>Nova Scotia.</i>				
Amherst Post Office, &c.....	5,193 85			5,193 85
Antigonish do		333 12		333 12
Baddeck do	5,059 09			5,059 09
Halifax Dominion Building.....	1,017 14	166 35		1,183 49
do Examining Warehouse	8,276 76	1,526 65		9,803 41
Lunenburg Post Office, &c	3,900 00			3,900 00
New Glasgow do	6,909 30			6,909 30
North Sydney do	14,733 80			14,733 80
Pictou Custom House		37 34		37 34
Sydney Mariae Hospital	468 85			468 85
do Quarantine Hospital.....		128 50		128 50
do (South) Post Office, &c	13 49			13 49
Truro Post Office, &c.....	4,989 94	31 00		5,020 94
Windsor do	4,095 86			4,095 86
Yarmouth do	10,163 68			10,163 68
<i>Prince Edward Island.</i>				
Charlottetown Dominion Building (New).....	33,914 94			33,914 94
do do (Temporary)		2,066 04		2,066 04
Montague Post Office, &c	5,293 64			5,293 64
Summerside do	3,292 15			3,292 15
<i>New Brunswick.</i>				
Bathurst Post Office, &c	13,111 02			13,111 02
Cape Tormentine Boat Houses.....	8 10			8 10
Carleton, St. John, Post Office	144 45			144 45
Chatham Post Office.....		34 18		34 18
Dorchester Penitentiary.....	19,351 44			19,351 44
Fredericton Post Office, &c.....		2,266 21		2,266 21
Kingston Marine Hospital	1,406 81			1,406 81
Moncton Post Office, &c	1,008 69	115 51		1,122 11
Newcastle do	6,816 27			6,816 27
Portland do		315 90		315 90
St. John Civil Service Examination Office		6 00		6 00
do Custom House.....	2,548 83	222 56		2,771 39
do Marine Hospital.....		522 90		522 90
do Penitentiary		60 00		60 00
do Post Office.....	1,880 00	95 30		1,975 30
do Savings Bank		8 64		8 64
Carried forward	153,596 01	19,487 18		173,083 19

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APPENDIX No. 1—Continued.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward.....	153,596 01	19,487 18	.....	173,083 19
PUBLIC BUILDINGS—Continued.				
<i>New Brunswick—Concluded.</i>				
St. Stephen's Post Office, &c.....	8,025 41	.....	.....	8,025 41
Sussex do .....	.....	8 05	.....	8 05
Woodstock do	5,397 51	.....	.....	5,397 51
<i>Quebec.</i>				
Chicoutimi Marine Hospital	1,000 02	523 59	.....	1,523 61
Coaticook Post Office, &c.....	2,132 66	.....	.....	2,132 66
Durdee Custom House .....	.....	954 94	.....	954 94
Grosse Ile Quarantine Station.....	7,468 82	.....	.....	7,468 82
Hull Post Office, &c. (New)	20,681 84	.....	.....	20,681 84
do (Temporary).....	.....	465 02	.....	465 02
Montreal Armouries.....	46,736 65	.....	.....	46,736 65
do Civil Service Examination Offices .....	.....	20 00	.....	20 00
do Custom House .....	.....	1,838 95	.....	1,838 95
do Drill Shed .....	.....	71 83	.....	71 83
do Examining Warehouse.....	229 00	701 23	.....	930 23
do Inland Revenue Building.....	.....	924 99	.....	924 99
do Post Office	6,163 02	990 65	.....	7,153 67
do Public Buildings .....	.....	900 00	.....	900 00
Quebec Citadel Buildings.....	.....	1,493 11	.....	1,493 11
do do "Olliv".....	5,320 90	.....	.....	5,320 90
do Clerk of Works Office.....	.....	536 03	.....	536 03
do Culler's Office .....	.....	1,181 53	.....	1,181 53
do Custom House	4,342 00	465 48	.....	4,807 48
do Drill Hall.....	15,962 62	.....	.....	15,962 62
do Examining Warehouse.....	6,425 43	146 15	.....	6,571 58
do Immigrant Building	12,617 03	.....	.....	12,617 03
do Marine Hospital .....	.....	403 98	.....	403 98
do Observatory	887 00	1,736 20	.....	2,623 20
do Post Office .....	.....	1,190 93	.....	1,190 93
do Public Buildings.....	.....	875 00	.....	875 00
do Queen's Wharf Building .....	.....	1,500 77	.....	1,500 77
Sherbrooke Post Office, &c.....	3,526 38	30 98	.....	3,557 36
Sorel do	15,973 70	.....	.....	15,973 70
St. Anne de Restigouche Indian Building	745 70	.....	.....	745 70
St. Jérôme Post Office, &c.....	4,052 00	.....	.....	4,052 00
St. John's do .....	.....	9 75	.....	9 75
St. Régis Custom House	10 00	.....	.....	10 00
St. Vincent de Paul Penitentiary.....	35,028 37	.....	.....	35,028 37
Three Rivers Custom House .....	.....	3,607 43	.....	3,607 43
do Post Office .....	.....	1,772 03	.....	1,772 03
Valleyfield Inland Revenue Building.....	107 10	.....	.....	107 10
<i>Ontario.</i>				
Amherstburg Post Office, &c.....	638 90	.....	.....	638 90
Barrie do	6,683 84	108 30	.....	6,792 14
Belleville do	1,595 16	93 55	.....	1,688 71
Berlin do	48 70	99 80	.....	148 50
Carried forward	365,375 77	42,137 45	.....	407,513 22

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward.....	365,375 77	42,137 45	.....	407,513 22
PUBLIC BUILDINGS—Continued.				
<i>Ontario—Continued.</i>				
Brantford Post Office &c.....	69 49	15 45	.....	84 94
Brockville do	1,945 51	182 14	.....	2,127 65
Ohatham do	262 50	43 25	.....	305 75
Clifton do	16 50	44 90	.....	61 40
Cornwall do	46 50	95 40	.....	141 90
Galt do	9,419 33	.....	.....	9,419 33
Gananoque do .....	.....	42 75	.....	42 75
Guelph do .....	.....	22 90	.....	22 90
Hamilton Custom House .....	.....	5 00	.....	5 00
do Drill Hall	87 25	.....	.....	87 25
do Post Office, &c.....	45,697 69	.....	.....	45,697 69
Kingston Civil Service Examination Offices .....	.....	19 02	.....	19 02
do Custom House .....	.....	9 35	.....	9 35
do Penitentiary	20,713 52	14 16	.....	20,727 68
do Post Office .....	.....	6 18	.....	6 18
London Custom House	28,431 11	575 04	.....	29,006 15
do Infantry School	74,595 15	.....	.....	74,595 15
do Military Buildings .....	.....	51 33	.....	51 33
do Post Office .....	.....	249 43	.....	249 43
Napanee do &c.....	3,060 60	.....	.....	3,060 60
Orangeville Post Office, &c.....	6,879 28	.....	.....	6,879 28
Ottawa Examining Warehouse.....	2,728 53	116 10	.....	2,844 63
do Experimental Farm	3,401 54	.....	.....	3,401 54
do Geological Museum .....	.....	598 32	.....	598 32
do National Art Gallery .....	.....	.....	780 50	780 50
do Post Office, &c.....	671 48	.....	.....	671 48
do Printing Bureau	702 80	.....	.....	702 80
do Public Buildings	922 88	142,685 50	.....	143,608 38
do do Electric Lighting	14,260 83	.....	.....	14,260 83
do do Gas.....	.....	.....	24,646 72	24,646 72
do do Grounds .....	.....	.....	12,992 04	12,992 04
do do Heating.....	.....	.....	48,439 52	48,439 52
do do Removal of Snow .....	.....	.....	3,226 16	3,226 16
do do Telephonic Service.....	.....	.....	2,288 61	2,288 61
do do Water .....	.....	.....	12,878 28	12,878 28
do do Wellington Street Block.....	98,057 95	.....	.....	98,057 95
do Supreme Court.....	.....	600 71	.....	600 71
Pembroke Post Office, &c.....	2,667 25	.....	.....	2,667 25
Peterborough do	15,984 70	.....	.....	15,984 70
Port Hope do	4,357 26	12 25	.....	4,369 51
Rideau Hall.....	.....	29,550 71	.....	29,550 71
do Fuel and Light.....	.....	.....	8,000 00	8,000 00
do Removal of Snow .....	.....	.....	542 40	542 40
St. Catharines Post Office, &c.....	.....	59 65	.....	59 65
St. Thomas do	3,141 84	.....	.....	3,141 84
Stratford do .....	.....	162 50	.....	162 50
Toronto Civil Service Examination Offices.....	.....	47 28	.....	47 28
do Custom House.....	.....	1,081 57	.....	1,081 57
do Examining Warehouse.....	9,258 28	1,360 39	.....	10,618 67
do Immigrant Shed.....	.....	159 48	.....	159 48
do Inland Revenue Building	3,675 49	270 47	.....	3,945 96
do Old Forts.....	61 43	.....	.....	61 43
do Post Office.....	8,654 29	1 80	.....	8,656 09
Carried forward.....	725,146 75	220,220 48	113,794 23	1,059,161 46

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward	725,146 75	220,220 48	113,794 23	1,059,161 46
PUBLIC BUILDINGS—Continued.				
<i>Ontario—Concluded.</i>				
Trenton Post Office, &c	4,058 49			4,058 49
Windsor do	1,939 64	63 90		2,003 54
<i>Manitoba.</i>				
Stony Mountain Penitentiary	40,681 73	50 00		40,731 73
Winnipeg Architect's Office		798 22		798 22
do Custom House	5,082 05	82 80		5,164 85
do Drill Hall	1,491 50			1,491 50
do Infantry School	12,971 90			12,971 90
do Post Office (New)	44,812 45			44,812 45
do do (Old)		180 00		180 00
do do (Temporary)		114 25		114 25
<i>North-West Territories.</i>				
Barracks generally	165 50			165 50
Battleford Barracks	30,184 20			30,184 20
do Immigrant Shed		100 00		100 00
do Industrial School	300 00			300 00
do Registrar's Office		1,274 50		1,274 50
Birtle Immigrant Shed		29 50		29 50
Calgary Barracks	2,246 63			2,246 63
do Immigrant Shed	580 00			580 00
Fort McLeod Barracks	6,258 75			6,258 75
Fort Saskatchewan Barracks	1,500 04			1,500 04
High River Industrial School	3,793 30			3,793 30
Lethbridge Barracks	23,855 34			23,855 34
Maple Creek do	1,597 57			1,597 57
Medicine Hat do	140 85			140 85
do Immigrant Shed	620 00			620 00
do Post Office		10 25		10 25
Pincher Creek Barracks	15 00			15 00
Prince Albert Barracks	10,169 62			10,169 62
do Court House and Jail	20,031 88			20,031 88
Public Buildings generally		2,768 70		2,768 70
Qu'Appelle Immigrant Shed		6 10		6 10
do Industrial School	4,256 44			4,256 44
Regina Barracks	45,547 95			45,547 95
do Council Chamber	1,642 74			1,642 74
do Court House	449 49	15 40		464 89
do Dominion Land Office		10 00		10 00
do Jail and Lunatic Asylum	1,666 27			1,666 27
do Lieut.-Governor's residence	547 72			547 72
do Post Office	1,907 41			1,907 41
do Riding Hall	219 07			219 07
<i>British Columbia.</i>				
Albert Head Quarantine Station, Vancouver	1,337 33			1,337 33
New Westminster Penitentiary	34,640 98			34,640 98
do Post Office		403 00		403 00
Victoria Custom House		2 00		2 00
do Immigrant Shed		861 33		861 33
do Post Office		562 26		562 26
Carried forward	1,029,858 59	227,552 69	113,794 23	1,371,205 51

APPENDIX No. 1—Continued.

		Con- struction.	Repairs.	Staff and Maintenance	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
PUBLIC BUILDINGS.					
Brought forward.....		1,029,858 59	227,552 69	113,794 23	1,371,205 51
	Salaries of Engineers &c.	Heating.	Lighting.	Water.	
EXPENDITURE ON ACCOUNT SER- VICES MENTIONED.	\$ cts.	\$ cts.			
<i>Nova Scotia.</i>					
Amherst Post Office, &c.....	266 64	251 94	47 92		566 50
Antigonish do	15 00	111 60			126 60
Baddeck do	104 46	84 65	2 45		191 56
Halifax Dominion Building....	2,234 46	735 34	1,887 00	736 46	5,593 26
do Examining Warehouse.....	183 32	31 80	21 45	100 00	336 57
do Penitentiary.....	450 00	32 25			482 25
New Glasgow Post Office, &c...	266 67	170 37	36 66		473 70
Pictou Custom House.....		135 60			135 60
do Marine Hospital.....		32 85			32 85
Truro Post Office, &c.....	400 03	93 00	40 62	43 34	576 99
Windsor do	366 63	65 36	88 50	26 24	546 73
Yarmouth do	199 98	229 60	141 12	36 00	606 70
<i>Prince Edward Island.</i>					
Charlottetown Dom. Building..	1,523 96	732 86	565 37	20 75	2,842 94
Montague Post Office, &c.....		51 12			51 12
Summerside do	433 37	242 41	14 03		689 81
<i>New Brunswick.</i>					
Bathurst Post Office, &c.....		16 50			16 50
Carleton, St. John, P. Office, &c		101 22	75 00	36 67	212 89
Chatham Post Office, &c.....		146 70	72 80		219 50
Fredericton do	399 96	300 90	244 09	26 50	971 45
Moncton do	399 96	256 81	556 51	117 42	1,330 70
Newcastle do	299 97	457 16	131 40		888 53
Portland do	45 00				45 00
St. John Custom House	1,645 04	1,489 41	97 66	458 90	3,691 01
do Marine Hospital.....		356 82	251 20	25 86	633 88
do Penitentiary.....	450 03	46 00	7 50		503 53
do Post Office.....	1,212 50	466 61	2,142 17	532 41	4,353 69
do Public Buildings gene- rally.....				18 37	18 37
do Savings Bank.....		182 97	50 00		232 97
St. Stephen's Post Office, &c....	145 83	161 06			306 89
Sussex do	399 96	37 83	0 60		438 39
Woodstock do	433 34	286 12	12 30	34 00	765 76
<i>Quebec.</i>					
Hull Post Office, &c.....		157 25	24 32	60 00	241 57
Montreal Custom House.....	1,220 00	1,340 41	278 70		2,839 11
do Drill Shed.....	502 50				502 50
do Exam. Warehouse....	925 00	1,869 10	291 90		3,086 00
do Inland Revenue Office	720 00	250 77	146 80		1,117 57
do Post Office.....	1,007 48	1,089 08	3,369 55	1,184 51	6,650 62
Carried forward.....	16,251 08	12,013 47	20,597 62	3,457 43	42,319 58

APPENDIX No. 1--Continued.

		Construction.	Repairs.	Staff and Maintenance	Total.	
PUBLIC BUILDINGS--Continued.		\$ cts.	\$ cts.	\$ cts.	\$ cts.	
Brought forward.....		1,029,858 59	227,552 69	113,794 23	1,371,205 51	
EXPENDITURE ON ACCOUNT SERVICES MENTIONED--Con.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.		
	\$ cts.	\$ cts.	\$ cts.	\$ cts.		
<i>Quebec--Concluded.</i>						
Brought forward.....		16,251 06	12,013 47	10,597 62	3,457 43	42,319 58
Montreal Post Office, Notre Dame St.....				10 25	14 00	24 25
do do St. Lawrence St.....				9 95		9 95
Montreal Post Office, St. Catharines St.....				13 10	7 00	20 10
Quebec Citadel Buildings.....		46 25	168 02	95 50		369 77
do Cullens' Office.....		382 50	43 03			424 50
do Custom House.....			1,155 20	62 61	20 00	1,237 81
do Examining Warehouse.....		900 00	526 17			1,426 17
do Marine Hospital.....			1,293 35			1,293 35
do Post Office.....			345 10	605 02		950 12
Sherbrooke Post Office, &c.....		399 96	269 93	340 49	55 00	1,065 38
Sorel do.....		309 96	319 00	21 98		650 94
St. John's do.....		337 42	152 00	14 43		503 85
St. Vincent de Paul Penitentiary.....			69 28			69 28
Three Rivers Custom House.....		699 99	325 29		36 38	1,061 65
do Post Office.....		367 84	170 00	303 16	130 00	971 00
<i>Ontario.</i>						
Amherstburg Post Office, &c.....		400 03	233 00			633 03
Barrie do.....		399 66	420 75	279 18	50 00	1,149 59
Belleville do.....		600 00	313 25	391 80	13 00	1,318 05
Berlin do.....		400 03	229 38	161 65		791 26
Braniford do.....		600 00	358 39	291 49		1,249 79
Brockville do.....		400 03	336 88	392 85	142 43	1,272 19
Chatham do.....		849 96	370 37	237 37		1,457 70
Clifton do.....		399 96	337 00	51 67	36 25	824 88
Cobourg do.....		345 00	62 50	101 87		509 37
Cornwall do.....		365 04	300 72	262 49	10 75	939 00
Galt do.....		308 85	295 00			603 85
Gananoque Custom House.....			130 60			130 60
Guelph Post Office, &c.....		399 96	4 00	299 35	19 89	723 20
Hamilton Custom House.....		45 00	40 86	30 32		116 12
do Post Office.....		809 72	1,409 80	1,164 12	100 00	3,483 64
Kingston Custom House.....			426 99	20 30	20 00	467 29
do Inland Revenue.....				18 20	13 51	31 71
do Military College.....		1,440 00				1,440 00
do Penitentiary.....		779 15				779 15
do Post Office.....			304 50	241 21	45 00	591 71
London Custom House.....		999 99	693 40	303 15	27 73	2,024 27
do Post Office.....		570 06	729 23	648 55	36 00	1,943 78
Orangeville Post Office, &c.....		316 63	235 93	85 08		637 64
Ottawa do.....				493 60		493 60
Carried forward.....		30,124 28	24,080 90	17,548 27	4,234 37	75,987 82

APPENDIX No. 1—Continued.

		Con- struction.	Repairs.	Staff and Maintenance	Total.	
PUBLIC BUILDINGS—Concluded.		\$ cts.	\$ cts.	\$ cts.	\$ cts.	
Brought forward.....		1,029,858 59	227,552 69	113,794 23	1,371,205 51	
EXPENDITURE ON ACCOUNT SERVICES MENTIONED—Con.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.		
	\$ cts.	\$ cts.	\$ cts.	\$ cts.		
<i>Ontario—Concluded.</i>						
Brought forward.....		30,124 28	24,080 90	17,548 27	4,234 37	75,987 82
Port Hope Post Office, &c.....	399 96	270 00	225 05	.....	895 01
Stratford do	650 00	261 12	445 14	70 89	1,427 15	
St. Catharines do	399 96	220 36	267 25	50 63	938 20	
St Thomas do	399 96	390 02	212 62	44 40	1,047 00	
Toronto Custom House.....	695 95	752 47	186 75	60 00	1,695 17	
do Examining Warehouse	786 00	496 10	15 51	70 00	1,367 61	
do Inland Revenue Office.	665 00	472 07	104 37	40 50	1,281 94	
Toronto Post Office.....	1,239 50	947 01	2,161 12	659 71	5,007 34	
Windsor do &c.....	1,000 03	445 35	638 99	63 20	2,147 57	
Wolfe Island Custom House.....	.....	42 00	.....	.....	42 00
<i>Manitoba.</i>						
Winnipeg Custom House.....	.....	255 00	18 00	.....	273 00
do Dominion Land Office	.....	538 00	42 60	.....	580 60
do Post Office.....	541 50	1,125 00	415 11	252 25	2,333 86	
do do (temporary)	.....	.....	59 41	.....	59 41
<i>North-West Territories.</i>						
Battleford, Lieut. Governor's residence.....	75 00	.....	.....	.....	75 00
Prince Albert Court House.....	.....	6 00	.....	.....	6 00
Regina Clerk of Works Office.....	.....	40 00	.....	.....	40 00
do Court House.....	405 00	416 58	.....	8 00	829 58
do Jail and Lunatic Asylum.....	135 00	120 00	9 80	.....	264 80
do Post Office.....	.....	402 11	.....	.....	402 11
<i>British Columbia.</i>						
Nanaimo Post Office.....	550 00	95 00	.....	99 00	744 00
New Westminster Post Office...	650 00	81 37	.....	.....	731 37
Victoria Custom House.....	.....	83 00	.....	.....	83 00
do Post Office.....	.....	335 12	802 87	15 00	1,152 99
PUBLIC BUILDINGS GENERALLY.....	.....	1,648 99	.....	.....	1,648 99
		38,717 14	33,523 57	23,152 86	5,667 95	101,061 52
Carried forward.....		1,029,858 59	227,552 69	214,855 75	1,472,267 03	

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.		Repairs.		Staff and Maintenance		Total.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Brought forward.....	1,029,858	59	227,552	69	214,855	75	1,472,267	03
HARBOURS AND BREAKWATERS.								
<i>Nova Scotia.</i>								
Arisaig Pier.....			3,376	93			3,376	93
Bayfield Pier.....			118	98			118	98
Bay St. Lawrence.....	664	81					664	81
Birch Islands.....	500	00					500	00
Blue Rock.....	1,534	41					1,534	41
Boularderie.....	722	88					722	88
Broad Cove.....	683	90					683	90
Brulé.....	499	19					499	19
Canada Creek.....	672	72					672	72
Cap la Ronde.....	497	50					497	50
Chester Canal.....	449	71					449	71
Chipman's Brook.....			299	77			299	77
Cow Bay.....	9,301	85					9,301	85
Digby Pier.....	767	62					767	62
East River.....	499	99					499	99
Economy Breakwater.....	951	19					951	19
Fox Island or Laureceton.....	2,563	69					2,563	69
Great Tancook Island.....	1,167	34					1,167	34
Great Village River.....	2,900	00					2,900	00
Gros Nez.....	100	00					100	00
Harbours Generally—proportion of expenditure.....			3,200	30			3,200	30
Harbourville.....	2,970	30					2,970	30
Indian Islands.....	1,000	00					1,000	00
Kingsport.....	856	16					856	16
Lismore.....	1,548	49					1,548	49
Mabou Harbour.....	1,931	05					1,931	05
Margaretville Breakwater.....	6,082	36					6,082	36
Morden Pier.....			400	00			400	00
McNair's Cove.....			79	31			79	31
Parrsboro' Pier.....	2,000	00					2,000	00
Petite Rivière.....	563	37					563	37
Picket's River.....			499	98			499	98
Port Greville.....	4,929	18					4,929	18
Sheet Harbour.....	78	84					78	84
South Ingonish.....			932	36			932	36
Surette's or Far Point Island and Beaver River.....	960	12					960	12
Three Fathom Harbour.....			25	00			25	00
West Pubnico.....	998	62					998	62
White Point.....	1,004	92					1,004	92
Whycomagh.....	499	96					499	96
Yarmouth Harbour—Removal of rock.....	576	59					576	59
<i>Prince Edward Island.</i>								
Cascumpec.....	3,154	72					3,154	72
Georgetown Queen's Pier.....			334	67			334	67
Harbours Generally.....			3,200	29			3,200	29
Keirs' Shore.....			7	25			7	25
Miminegash.....			215	97			215	97
New London.....	1,524	28					1,524	28
Nine Mile Creek.....			97	66			97	66
Carried forward.....	1,085,014	35	240,341	16	214,855	75	1,540,211	26

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward.....	1,085,014 35	240,341 16	214,855 75	1,540,211 26
HARBOURS AND BREAKWATERS—Continued.				
<i>Prince Edward Island—Concluded.</i>				
Port Selkirk.....	729 80			729 80
Red Point.....		199 97		199 97
Rustico.....		70 00		70 00
Souris.....	1,730 63			1,730 63
Sturgeon River.....		50 00		50 00
<i>New Brunswick.</i>				
Cape Tormentine Harbour.....	7,705 74			7,705 74
Olifton Breakwater.....	582 11			582 11
Dalhousie Ballast Wharf.....	213 85			213 85
Elm Tree.....		25 00		25 00
Grande Anse.....	1,743 84			1,743 84
Grand Lake, Jemseg.....	1,000 00			1,000 00
Harbours Generally.....		3,200 29		3,200 29
Hopewell Caps.....		299 94		299 94
Quaco.....		198 63		198 63
River St Francis.....	474 67			474 67
St. John Harbour.....	56,621 14			56,621 14
St. John River.....	3,892 29			3,892 29
do Removal of snags.....		250 00		250 00
do Rivière des Chûtes to Bear Island.....	1,895 58			1,895 58
do Bear Island and Fredericton.....	998 41			998 41
do Fredericton and Woodstock.....	881 91			881 91
Shippegan Harbour.....	1,200 00			1,200 00
Tynemouth or Ten Mile Creek.....	998 07			998 07
Upper Salmon River.....	2,453 82			2,453 82
<i>Quebec.</i>				
Agnes Pier, Lake Mégantic.....		59 00		59 00
Anse St. Jean Pier.....	865 28			865 28
Barachois de Malbale.....	470 45			470 45
Bagotville Pier (St. Alphonse).....	1,060 72	202 75		1,263 47
Bas St. Paul Pier.....	1,170 60			1,170 60
Belleil Piers.....		254 65	116 00	370 65
Berthier (en bas) Pier.....		500 00		500 00
do (en haut) Pier.....	1,611 04			1,611 04
Bic Pier.....	767 01			767 01
Cap à l'Aigle Pier.....		168 83		168 83
Cascades Pier.....	3,013 49			3,013 49
Cedars Pier.....		50 09		50 09
Château Richer Pier.....	1,052 04			1,052 04
Chicoutimi Pier.....	1,390 35			1,390 35
Ditchfield Pier, Lake Megantic.....	1,484 75			1,484 75
Doncet's Landing.....	1,826 53			1,826 53
Étang du Nord Pier, Magdalen Islands.....	9,906 13			9,906 13
Father Point—Examination for Deep Water Pier.....			2,501 69	2,501 69
Gatineau Point—Protection Pier.....	216 14			216 14
Carried forward.....	1,192,970 74	245,870 31	217,473 44	1,656,314 49

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.		Repairs.		Staff and Maintenance		Total.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Brought forward	1,192,970	74	245,870	31	217,473	44	1,656,314	49
HARBOURS AND BREAKWATERS—Continued.								
<i>Quebec—Continued.</i>								
Grand Pabos.....	762	14					762	14
Grandes Bergeronnes.....	250	01					250	01
Harbours generally.....			11,736	12			11,736	12
Ile Perrot Pier.....	383	51					383	51
Kamouraska Pier.....	3,279	93					3,279	93
Lanoraie Pier.....	6,726	76					6,726	76
Laprairie Ice Piers.....	6,736	19					6,736	19
Les Eboulements Pier.....			597	11			597	11
Levis Immigrant Shed Wharfing.....	751	50					751	50
Longueuil Wharf.....	2,169	24					2,169	24
Malbaie Pier.....			54	65			54	65
Matane Pier.....			500	21			500	21
New Carlisle Pier.....	11,460	77					11,460	77
Newport River—Mouth of.....	2,101	78					2,101	78
Percé Pier.....	2,705	92					2,705	92
Piers below Quebec.....			7,041	63			7,041	63
Port Daniel Pier.....	285	29					285	29
Quebec Custom House Wharf.....			567	83			567	83
do Harbour.....					694	38	694	38
do Queen's Wharf.....			4,159	94			4,159	94
Rivière Blanche Pier.....	2,139	26					2,139	26
do Bras St. Nicholas.....	1,200	00					1,200	00
do des Prairies.....	336	38					336	38
do du Lièvre.....	2,029	56					2,029	56
do du Loup (<i>en bas</i>) Pier.....			3,169	76			3,169	76
do Nicolet.....	6,778	32					6,778	32
do Ouelle Pier—Pointe aux Orignaux.....	3,609	83					3,609	83
do Richelieu—Wharf at Lacolle.....	340	00					340	00
do Rimouski.....	1,000	00					1,000	00
do Saguenay—Channel below Chicoutimi....	4,799	31					4,799	31
do do Grande-Décharge.....	4,787	70					4,787	70
do Ste. Anne de Beaupré.....	937	85					937	85
do St. Lawrence.....					48	53	48	53
do do removal of chains and anchors.....	4,791	82					4,791	82
do do Hydraulic Survey.....					2,761	03	2,761	03
do do Montreal spring floods exami- nation.....					11,984	60	11,984	60
do St. Louis.....	1,608	37					1,608	37
do St. Placide.....	4,608	00					4,608	00
do Touladie Tow path.....	197	82					197	82
do Verte.....	1,033	48					1,033	48
do Yamaska.....	26,219	09			77	50	26,296	59
Ste. Anne de Bellevue Pier.....	736	29					736	29
do de la Pocatière Pier.....	2,125	07					2,125	07
do de Sorel Pier.....	836	66					836	66
Ste. Famille Pier.....	300	04					300	04
St. François Pier (Ile d'Orléans).....	1,203	95					1,203	95
St. Irénée Pier.....	3,284	87					3,284	87
St. Jean Pier (Ile d'Orléans).....	1,009	20					1,009	20
St. Laurent Pier.....	1,304	67					1,304	67
St. Michel Pier.....			815	44			815	44
St. Thomas Pier.....	1,999	96					1,999	96
Carried forward.....	1,309,771	28	274,513	00	233,039	48	1,817,323	76

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward.....	1,309,771 28	274,513 00	233,039 48	1,817,323 6
HARBOURS AND BREAKWATERS—Continued.				
<i>Quebec—Concluded.</i>				
St. Zotique Pier.....	1,165 23			1,165 23
Three Rivers Harbour.....			90 77	90 77
Trois Pistoles Pier.....	4,359 56			4,359 56
<i>Ontario.</i>				
Bayfield Harbour.....		150 00		150 00
Belle River.....	196 50			196 50
Belleville Harbour.....	1,755 51			1,755 51
Burlington Bay Channel.....		295 79	512 19	807 98
Chantry Island.....	2,538 60			2,538 60
Cobourg Harbour.....	4,891 73			4,891 73
Collingwood Harbour.....	4,884 00			4,884 00
Goderich Harbour.....			22 50	22 50
Harbours generally.....		6,151 60		6,151 60
Hilton or Marksdale, Lake Huron.....	3,301 99			3,301 99
Kaministiquia River.....	21,763 55			21,763 55
Kincardine Harbour.....	3,086 42			3,086 42
Kingston Harbour.....	4,347 02			4,347 02
Kingsville Harbour.....	3,564 81			3,564 81
Little Bear Creek.....	326 71			326 71
Little Current.....	6,353 02			6,353 02
Little Nation River.....	1,000 00			1,000 00
McGregor's Creek.....	1,714 31			1,714 31
Midland Harbour.....	4,688 68			4,688 68
Oakville do.....	4,437 25			4,437 25
Owen Sound do.....	9,977 20			9,977 20
Port Arthur do.....	18,205 94			18,205 94
Port Elgin do.....	2,731 32			2,731 32
Port Hope do.....	970 06			970 06
Rivière aux Pêches.....	2,232 50			2,232 50
River Rideau, Ottawa—Protection Pier.....	3,078 55			3,078 55
Saugeen River Pier.....	3,930 38			3,930 38
Sault Ste. Marie.....	16 74			16 74
Summerstown Harbour.....	6,171 05			6,171 05
Thornbury do.....	1,818 48			1,818 48
Toronto do.....	11,374 41			11,374 41
<i>Manitoba.</i>				
Assiniboine River—Floods examination.....			4,170 39	4,170 39
Harbours generally.....		3,377 00		3,377 00
<i>North-West Territories.</i>				
North Saskatchewan River.....	15,134 08			15,134 08
St. Laurent Ferry.....	47 53			47 53
Carried forward.....	1,459,834 41	284,487 39	237,835 33	1,982,157 13

APPENDIX No. 1—*Concluded.*

Name of Work.	Con- struction.		Repairs.		Staff and Maintenance		Total.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Brought forward.....	1,459,834	41	284,487	39	237,835	33	1,982,157	13
HARBOURS AND BREAKWATERS—<i>Concluded</i>								
<i>British Columbia.</i>								
Cowichan River.....	1,760	00					1,760	00
Esquimalt Graving Dock.....	207,308	24					207,308	24
Fraser River.....	8,035	41					8,035	41
Harbours generally.....			56	55			56	55
Kicking Horse River, or Kootenay.....	535	08					535	08
Nanaimo Harbour—Bigg's Portage.....	741	52					741	52
Nicomeckel River—Removal of snags.....	912	50					912	50
Victoria Harbour—"Dredger Rock".....	4,490	00					4,490	00
HARBOURS GENERALLY.....					8,663	62	8,663	62
DREDGE VESSELS.....	10,185	47	33,578	03			43,763	50
DREDGING.								
<i>Nova Scotia.</i>								
Aspy Bay.....	\$1,282	60						
Cheticamp.....	4,361	50						
Granton.....	816	27						
Halifax.....	1,269	76						
Little Glace Bay.....	973	49						
Tatamagouche.....	5,464	28						
Yarmouth.....	4,854	65						
							\$18,522	55
<i>Prince Edward Island.</i>								
Tignish.....			4,988	39				
<i>New Brunswick.</i>								
Belle Isle.....	\$2,308	72						
Cocagne.....	3,047	48						
St. John Harbour.....	1,132	88						
					6,489	06		
GENERALLY.....						22	41	
Total, Maritime Provinces....							\$30,022	41
<i>Quebec.</i>								
Laprairie Harbour.....	\$1,257	72						
Rivière à la Graisse (Rigaud).....	2,022	83						
do du Loup (<i>en bas</i>)....	1,308	02						
do do (<i>en haut</i>).....	1,749	07						
do Ottawa—Above Pembroke.....	1,206	10						
Carried forward.....	7,541	74	30,022	41	1,693,802	63	318,121	97
					246,498	95	2,258,423	55

APPENDIX No. 1—Continued.

Name of Work.	Construction.	Airs.	Staff and Maintenance	Total.	
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
Brought forward.....	\$7,541 74 \$30,022 41	1,693,802 63	318,121 97	246,498 95	2,258,423 55
DREDGING—Concluded.					
<i>Quebec—Concluded.</i>					
Riviere Richelieu.....	1,118 95				
do Ste. Anne de Belle- vue	554 26				
do St. François.....	4,233 08				
do St. Louis.....	69 25				
do St. Maurice.....	4,091 99				
do St. Placide.....	178 87				
Yaudreuil	339 84				
Generally	938 73				
	<u>19,066 71</u>				
<i>Ontario.</i>					
Cobourg.....	\$2,657 90				
Goderich	565 21				
Oincardine	430 99				
Lion's Head.....	646 53				
Little Bear Creek.....	500 00				
McGregor's Creek	1,300 00				
Port Elgin	1,428 62				
Port Hope.....	2,624 50				
River Ottawa—Above Pem- broke	1,107 50				
Southampton.....	1,191 45				
Summerstown	5,959 19				
Thornbury.....	1,185 55				
Generally	653 53				
	<u>20,250 97</u>				
<i>Manitoba.</i>					
Lake Winnipeg—Mouth of White Mud River	\$1,497 86				
Red River—At mouth.....	7,571 11				
Generally	432 21				
	<u>9,501 18</u>				
<i>British Columbia.</i>					
Fraser River, above New Westminster.....	\$10,355 78				
Shoal Bay.....	2,259 34				
Victoria Harbour	2,402 00				
	<u>\$15,017 12</u>				
GENERALLY.....	5,781 53				
	<u>99,639 92</u>				
Carried forward.....	1,793,442 55	318,121 97	246,498 95	2,358,063 47	

APPENDIX No. 1—Continued.

Name of Work.	Con- struction.	Repairs.	Staff and Maintenance	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward.....	1,793,442 55	318,121 97	246,498 95	2,358,063 47
SLIDES AND BOOMS.				
Saguenay District Slides	3,145 12	221 32	1,245 22	4,611 66
St. Maurice do	25 12	18,751 96	19,198 46	37,975 54
Ottawa do			23,567 31	23,567 31
do River Slides	\$11,857 19	7,444 33		7,444 33
do do (Carillon Slide)	2,309 02			2,309 02
do do (Rapides des Quinze)	2,500 00			2,500 00
Gatineau River Slides.....	719 63	5,201 25		5,201 25
Madawaska do	6,050 93	20,630 40		20,630 40
Black do	101 19	1,322 01		1,322 01
Coulonge do	349 20	10,074 99		10,074 99
Petewawa do	1,552 26			
Newcastle District Slides		7,379 14	2,657 20	10,036 34
ROADS AND BRIDGES.				
Calumet Channel Bridge, Ottawa River.....	5,000 00			5,000 00
Portage du Fort Bridge	7,281 88			7,281 88
Des Joachims Bridge.....	28 65			28 65
Ottawa Chaudière Slide Bridge.....		91 50		91 50
do Dufferin Bridge.....		4,273 66		4,273 66
do Maria Street Bridge.....		223 06		223 06
do Sapper's Bridge		656 55		656 55
do Union Suspension Bridge.....		2,074 32		2,074 32
do St. Patrick Street.....		210 27		210 27
do Wellington do		10,555 50		10,555 50
Rideau River Bridge, New Edinburgh.....	2,000 00			2,000 00
Bow River Bridge, near Calgary.....	1,805 93			1,805 93
Elbow do do	2,000 00			2,000 00
Témiscouata Road.....		749 76		749 76
TELEGRAPH LINES.				
<i>Nova Scotia.</i>				
East Coast Cape Breton to New Haven or Neill's Harbour	279 01			279 01
Halifax and Canso.....	1,000 00			1,000 00
Mabou to Cheticamp.....	3,995 38			3,995 38
<i>Prince Edward Island.</i>				
Prince Edward Island and Mainland (Subsidy).....			1,946 66	1,946 66
<i>Quebec.</i>				
North Shore, St. Lawrence, towards Pointe aux Esquimaux.....	7,435 75			7,435 75
<i>Victoria.</i>				
Bath and Amherst Island.....			74 07	74 07
Carried forward.....	1,856,290 99	383,939 41	295,187 87	2,535,418 27

APPENDIX No. 1—*Concluded.*

Name of Work.	Con- struction.		Repairs.		Staff and Maintenance		Total.	
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
Brought forward.....	1,856,290	99	383,939	41	295,187	87	2,535,418	27
TELEGRAPH LINES—<i>Concluded.</i>								
<i>North-West Territories.</i>								
Battleford to Edmonton <i>via</i> Fort Pitt.....	33,568	83					33,568	83
Dunmore to Fort McLeod, Moose Jaw to Wood Mountain.....	3,609	46					3,609	46
Telegraph Lines generally.....					16,693	57	16,693	57
<i>British Columbia.</i>								
Telegraph Lines generally.....					11,078	44	11,078	44
Land and Cable Telegraph Lines, Lower St. Law- rence and Maritime Provinces.....					19,607	94	19,607	94
Telegraph Service Generally.....					6,209	18	6,209	18
MISCELLANEOUS.								
Ottawa Cartier Square.....	2,597	38					2,597	38
do Major's Hill Park.....	10,453	81					10,453	81
Surveys and Inspections.....					35,315	93	35,315	93
Arbitrations and Awards.....					13,548	02	13,548	02
Monument to Joseph Brant.....	5,000	00					5,000	00
Agent and Contingencies, British Columbia.....					5,086	52	5,086	52
Colonial Exhibition.....					78	72	78	72
Allowance to S. McLaughlin for photograph work.....					400	00	400	00
Gratuity to widow of late Michael Scanlon.....					110	00	110	00
do Thomas Townsend, additional.....					150	00	150	00
returns, House of Commons.....					835	10	835	10
Totals.....	1,911,520	47	383,939	41	404,301	29	2,699,761	17
WORKS AUTHORIZED BY SPECIAL ACTS OF PARLIAMENT.								
St. Lawrence River—Deepening between Quebec and Montreal.....	191,000	00					191,000	00
Quebec Harbour Improvement.....	432,795	32					432,795	32
Lévis Graving Dock.....	20,000	00					20,000	00
Three Rivers Harbour.....	203	00					203	00
Totals.....	643,998	32					643,998	32
Grand Totals.....	2,555,518	79	383,939	41	404,301	29	3,343,759	49

O. DIONNE,
Accountant.DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 27th October, 1887.

APPENDIX No. 2.

REPORT

ON

PUBLIC BUILDINGS

THROUGHOUT THE DOMINION,

FOR THE FISCAL YEAR ENDED 30th JUNE, 1887,

BY

THOS. FULLER, CHIEF ARCHITECT.

APPENDIX No. 2

REPORT OF THE CHIEF ARCHITECT.

Ref. No. 82,208.

CHIEF ARCHITECT'S OFFICE,
OTTAWA, 22nd September, 1887.

SIR,—I have the honour to transmit herewith the annual report on public buildings and works under my charge, for the fiscal year ended 30th June, 1887.

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

THOMAS FULLER,
Chief Architect.

A. GOBEL, Esq.,
Secretary Dept. Public Works, Ottawa.

PROVINCE OF NOVA SCOTIA
AMHERST.
PUBLIC BUILDING.

This building, which was described in my report for 1885-86, is completed, fitted up and occupied.

Plans, &c., prepared and work supervised by this Department.

Clerk of Works, Mr. Geo. Thompson, Amherst, N.S.

Contractors for the building and the fittings, Messrs. Rhodes, Carrie & Co., Amherst, N.S.

Contractors for the heating apparatus, Messrs. Wisdom & Fish, St. John, N.B.

ANNAPOLIS.
PUBLIC BUILDING.

An amount has been placed in the Estimates, 1887-88, for the purchase of a site and towards the erection of a public building.

BADDECK.
POST OFFICE, &c., BUILDING.

This building has been completed, fitted up and occupied.

Plans and specifications prepared and work supervised by this Department.

Clerk of Works, Mr. Neil W. Mackenzie, Baddeck, N.S.

Contractor for the building, Mr. R. H. Hill, Hull, P.Q.

Contractor for post office fittings, Mr. Hector McNeil, Baddeck, N.S.

Contractor for heating apparatus, Mr. Geo. Thompson, New Glasgow, N.S.

[1887]

LUNenburg.

PUBLIC BUILDING.

A site for a new public building has been purchased, with frontages of 120 feet on King street and 80 feet each on Lincoln and Pelham streets.

NEW GLASGOW.

PUBLIC BUILDING.

This building was completed, fitted up and occupied last autumn.

NORTH SYDNEY.

PUBLIC BUILDING.

Since the date of my last report the construction of the building has been carried on steadily ; contracts have been entered into for the supply of fittings and heating apparatus and it is expected to be ready for occupation this autumn.

Plans, &c , prepared and work supervised by this Department.

Clerk of Works, Mr. Chas. P. Moffat.

Contractor for the construction of building and office fittings, Messrs. Macdonald, Treen & Henderson, Pictou, N.S.

Contractors for heating apparatus, The Truro Manufacturing Co.

PICTOU.

CUSTOM HOUSE.

An appropriation was made at the last Session of Parliament, for a hot water heating apparatus for this building.

It is intended to prepare plans and specifications, and invite tenders at an early date.

MARINE HOSPITAL.

An amount was appropriated last Session of Parliament for the construction of a hot water heating apparatus, for which plans and specifications are to be prepared and tenders invited at an early date.

SYDNEY, N.S.

PUBLIC BUILDING.

A site is secured on the corner of Charlotte and Dorchester streets, with frontages of 103 feet 6 inches, and 155 feet respectively.

YARMOUTH.

PUBLIC BUILDING.

Since the date of my last report this building has been completed and occupied. Plans, &c., prepared by this Department.

Clerk of Works, Mr. J. B. Kenney, Yarmouth, N.S.

Contractor for building and fittings, Messrs. A. E. Milliken & Co., Moncton, N.B.

Contractor for heating apparatus, Mr. Joseph Muirhead, Halifax.

 PROVINCE OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN.

DOMINION BUILDING.

This building is completed, fitted up and occupied.

Plans, &c., prepared by this Department.

Superintending architects, Messrs. Stirling & Harris, Charlottetown, P. E. I.

Clerk of Works, Mr. Chas. Dalziel.

Contractor for building and office fittings, Mr. T. C. Conner, N.B.

Contractor for gas fixtures, Messrs. A. Hermans & Son, Charlottetown, P.E.I.

Contractor for heating apparatus, Messrs. McKinnon & McLean, Charlottetown, P. E. I.

MONTAGUE.

POST OFFICE.

This building is completed.

Before it is occupied sundry fittings, grading and footpaths will be required.

Plans, &c., prepared by this Department.

Superintending Architects, Messrs. Stirling & Harris, Charlottetown, P. E. I.

Contractor, Mr. L. A. Wilmot, Dorchester, N. B.

 PROVINCE OF NEW BRUNSWICK.

BATHURST.

POST OFFICE, &c., BUILDING.

Building completed and furnished with a hot water apparatus, Contracts for fittings, furniture, &c., are made, and it is expected that the building will be occupied before the coming autumn.

Plans and specifications prepared and work supervised by this Department.

Clerk of Works, Mr. Henry White, Bathurst, N. B.

Contractor for the construction of building, Mr. John Black, Hull, P. Q.

Contractor for Post Office and Customs fittings, Mr. Samuel Gammon, Bathurst, N. B.

Contractor for furniture, Mr. Henry Bishop, Bathurst, N.B.

Contractor for heating apparatus, Messrs. Wisdom & Fish, St. John, N. B.

The sidewalks are now being laid, and the property fenced on two sides, which will be completed this autumn.

DORCHESTER.

MARITIME PENITENTIARY.

The cell wing and boiler house were completed; the steam-heating apparatus extended to heat the cell wing; fittings for cells nearly all supplied, and a large number of the cells occupied. Two porches were built to protect the doorways of cells from rain drip and snowslide.

The cell door hinges, locks, &c., lock bars were extensively repaired and made secure.

The mill and its engine, boiler, and machinery were repaired, and new belts, saws, &c., furnished.

The bakery was furnished with a new porch and closet, tools and hoisting gear, and painted.

One wing of the hospital was divided by an iron screen to provide a ward for invalided insane.

A wooden piggery was erected, 20 feet long by 25 feet broad, with brick chimney, feed boiler, appliances for slaughtering, &c.

The farmer's cottage was painted outside and supplied with a new chimney.

A new chimney was built in the root house.

The plastering and painting of the steward's house was repaired and a new chimney built.

Painting was done to the Public Works' office, Deputy Warden's quarters, engineer's house and prison, winter sashes, &c.

The rear fence of the prison yard has been strengthened.

Five new porches were put up at the guard's cottages, where a large quantity of general repairs were done.

The shoe shop was enlarged and improved.

General repairs and improvements to the laundry and the tailor shops were effected.

The tank-acre fence has been repaired, new stop cock boxes put in, fire hydrants drained, and a permanent cattle watering place put in in field at rear of prison enclosure.

A large part of the woodwork and painting was done by the convicts.

Resident Clerk of Works, Mr. Jno. E. Turnbull.

KINGSTON (KENT).

MARINE HOSPITAL.

Sundry repairs and renewals were done to the buildings, under the superintendence of Mr. E. Hutcheson.

NEWCASTLE.

PUBLIC BUILDING.

Building occupied.

WOODSTOCK.

POST OFFICE, CUSTOM HOUSE, &c.

The rear portion of the grounds was graded up by cribwork, filled with stone and covered with screened gravel; granite steps the full breadth of the building were laid and the north and south sides inclosed by heavy cut granite copings with granite piers and wrought iron gates.

The chimney was heightened with pressed brick capped with freestone.

Iron gratings were placed in basement corridors of examining warehouse.

Plans, &c., prepared by this Department.

Superintending architect, Mr. H. N. Black, Woodstock.

Contractor, Mr. Hugh Hay, Woodstock.

ST. STEPHEN.

PUBLIC BUILDING.

Building completed, fitted up and occupied.

Plans and specifications prepared by this Department.

Clerk of Works, Mr. D. F. Maxwell, St. Stephen, N. B.

Contractor for the building and fittings, Mr. Jno. Macpherson, St. Stephen, N.B.

Contractor for hot water heating apparatus, Mr. Jno. E. Fitzgerald, St. John, N.B.

PROVINCE OF QUEBEC.

COATICOOK.

PUBLIC BUILDING.

A site has been secured on the corner of Maria and Cutting streets, and plans are to be prepared for the building.

JOLIETTE.

POST OFFICE, &C., BUILDING.

An amount toward the purchase of a site has been appropriated.

MARIA.

INDIAN MISSION.

An amount of \$500 is voted for repairs to the Roman Catholic chapel.

MONTREAL.

ARMOURIES.

These buildings which were described in my report of last year are nearly completed and are expected to be ready for occupation shortly.

Plans, &c., prepared by this Department.

Superintending Architect, Mr. A. Raza, Montreal, P. Q.

Contractors for masonry, brickwork, woodwork, &c., Messrs. Shirley, Brennan & Starrs, Ottawa, Ont.

Contractors for ironwork, Messrs. Rousseau & Mather, Montreal, P. Q.

QUEBEC.

DRILL HALL.

Building approaching completion.

Plans, &c., prepared and work superintended by Mr. E. E. Taché, Architect, Quebec, P.Q.

Clerk of Works, Mr. W. J. Peters, Quebec, P.Q.

Contractors for the building, Messrs. Costellow & Lortie, Quebec, P.Q.

Contractor for the roadway, Mr. A. Lortie, Quebec, P.Q.

IMMIGRANT BUILDING.

The immigrant building referred to in my report of last year was completed during the spring of 1886, and a contract has been entered into with Mr. Alf. Lortie for the construction of another and similar building on the Louise Embankment. The building now in course of construction is L shaped, consisting of a main portion 320 feet long, and a return of 110 feet, both 32 feet in width, exclusive of verandahs 10 feet in width, which completely surround the building. The main portion consists of a one-storey portion, 88 feet long, for offices, and a two-storey portion, 232 feet long, for waiting room below and dormitories over: the return of 110 feet long being for dining room, kitchen and baths.

Plans, specifications, &c., prepared by this Department.
Clerk of Works, Mr. Jos. Garneau, Quebec, P.Q.

EXAMINING WAREHOUSE.

The elevator and steam heating apparatus referred to in my report of last year are completed and in operation.

Plans, &c., prepared and work supervised by this Department.
Clerk of Works, Mr. Adolphe Huot, Quebec, P.Q.
Contractors for boilers and elevator, Messrs. Carrier, Laine & Co., Lévis, P.Q.
Contractor for steam heating apparatus, Mr. James Maguire, Quebec, P.Q.

CULLERS' OFFICE.

The hot water heating apparatus which was in course of construction at the date of my last report was completed during the summer of 1886, and was in operation last firing season.

Clerk of Works, Mr. Adolphe Huot, Quebec, P.Q.
Contractor, Mr. Z. Vandry, Quebec, P.Q.

OBSERVATORY.

A new hot water heating apparatus was put in during the summer of 1886, and the buildings were repaired inside and out.

Contractor for heating apparatus, Mr. Geo. T. Philips, Quebec, P.Q.
Contractor for repairs, &c., Mr. Fred. Poitras, Quebec, P.Q.

CUSTOM HOUSE.

The heating apparatus referred to in my last report is completed and in working order.

Plans, &c., prepared and work supervised by this Department.
Clerk of Works, Mr. Adolphe Huot, Quebec, P.Q.
Contractor, Mr. Andrew Mulholland, Quebec, P.Q.

RIVIÈRE DU LOUP (FRASERVILLE, P.Q.).

.POST OFFICE, CUSTOM HOUSE, &c.

An amount is appropriated in Estimates 1887-88, for the construction of this building for which plans, &c., are to be prepared at an early date.

SHERBROOKE.

PUBLIC BUILDING.

A new striking clock with four illuminated dials has been put up in a small turret constructed for it on one of the angle pavillions.

Contractor for the clock, Mr. R. Spearing, Sherbrooke.

Contractor for woodwork, J. & J. Bryant, Sherbrooke.

SOREL.

PUBLIC BUILDING.

Building completed and occupied.

Plans, &c., prepared by this Department.

Superintending Architect, Mr. L. Z. Gauthier, Sorel, P.Q.

Clerk of Works, Mr. J. Chenevert, Sorel, P.Q.

Contractor for construction of building, fittings, footpaths and fences, Mr. Geo. Beaucage, Quebec, P.Q.

Contractor for heating apparatus, Mr. E. Chanteloup, Montreal, P.Q.

STE. ANNE DE RESTIGOUCHE.

INDIAN MISSION.

The Roman Catholic Chapel, and the priests' residence were thoroughly repaired. An amount is included in Estimates, 1887-88, to execute repairs to the Mission Buildings.

ST. JEROME.

PUBLIC BUILDING.

A site was obtained on Main Street, opposite the Fabrique buildings, and plans for the building are in course of preparation.

ST. VINCENT DE PAUL.

PENITENTIARY.

The lighting of the new workshop wing (which was originally intended for a dining hall,) as described in my report of last year being defective, twelve new windows were opened in the south-west wall. Six water closets, a boiler plate water tank, of 9,600 gallons capacity, and a steam heating apparatus were put in.

In the workshop basement fourteen shower baths for the prisoners and one tub bath for the officers were fitted up.

The Keepers' hall, of which the stonework was completed at the date of my last report, was roofed in wood, covered with metallic shingles.

The number of new dormitory cells being sufficient for the accommodation of the prisoners, the 138 dormitory cells of the original wing were demolished and the wing flagged with stone and converted into a prison kitchen, wash-house and dry-room. The kitchen was supplied with steam cooking apparatus, effecting a substantial saving in fuel and time over the system of cooking by a range, and supplies steam to laundry for washing and drying purposes and to some extent for heating.

A new boiler and engine house for and adjoining the new workshops was begun in October, 1886, and is in course of construction and will probably be completed by Christmas, 1887. It is of stone, 40 feet by 39 feet, and will be 23 feet in height, roofed with wood, and have a chimney extending 50 feet above roof.

A new steam pump auxiliary to the water service was placed in the pump house.

The lower end of main drain was extended five yards and the outlet grated with a heavy barrier.

A large crystal chandelier was provided and hung before the High Altar of the Roman Catholic Chapel.

The Warden's residence was repainted and repapered inside, a wooden summer kitchen, 24 by 18 feet, added, a hot water heating apparatus put in, and 60 yards of the 9-inch drain pipe renewed.

The Deputy Warden's residence received general repairs and had a new copper boiler put in.

The Guards' cottages were generally repaired, and 70 feet of 9-inch drain pipe taken up and relaid.

An open paling fence, 15 feet high and 150 feet long was put up between the Warden's residence and the adjoining property.

The piggery, which is of a temporary character, was extensively repaired and will serve until a permanent structure is erected.

The walls of the prison buildings were pointed and repaired.

The external woodwork and metal roof coverings of the prison building were painted two coats white lead; and the cells doors, window gratings, barriers, &c., two coats japan.

The works, with the exception of the heating apparatus, Warden's house, which was put in by Mr. E. Chanteloup, of Montreal, were performed by convict labour.

Plans, &c., prepared and work superintended by Mr. John Bowes, Architect, Ottawa, Ont.

THREE RIVERS.

CUSTOM HOUSE.

An amount was voted last session of Parliament for the construction of a hot water heating apparatus, for which tenders are to be asked at an early date.

POST OFFICE.

An amount was appropriated last session of Parliament for the construction of a heating apparatus, tenders for which are to be asked at an early date.

PROVINCE OF ONTARIO.

BARRIE.

POST OFFICE, &c.

Building completed, fitted up and occupied.

Architects, Messrs. Kennedy, Gaviller & Holland, Barrie, Ont.

Clerk of Works, Mr. Edward Byrne, Barrie, Ont.

Contractor for building, fittings and furniture, Mr. Wm. Toms, Ottawa.

Contractor for heating apparatus, Messrs. McGuire & Bird, Toronto, Ont.

[1887]

BELLEVILLE.

POST OFFICE.

Owing to the destruction of the hot water furnaces, through the flooding of the basement, new furnaces were put in and various necessary repairs made.

Contractor for furnaces and repairs, Messrs. Garth & Co., Montreal, Que.

COBOURG.

POST OFFICE, CUSTOM HOUSE, &c.

An amount for alteration of the first floor for a Custom House was appropriated in Estimates 1887-88, and plans are to be prepared at an early date.

DUNDAS.

POST OFFICE.

An agreement was entered into with M. R. J. Wilson to lease for ten years from 24th June, 1886, the ground floor of the Elgin House, Dundas, a brick building, three stories and attic, and measuring 40 feet by 37 feet 6 inches on plan. During the last fiscal year the ground floor was fitted up and furnished for the accommodation of the Post Office, Custom House and Inland Revenue Office.

GALT.

PUBLIC BUILDING.

Building completed, fitted up and occupied.

Plans and specifications prepared and work supervised by this Department.

Clerk of Works, Mr. Geo. J. Jaffreys, Galt, Ont.

Contractor for building and fittings, Mr. M. A. Pigott.

Contractor for heating apparatus, Messrs. McGuire & Bird, Toronto, Ont.

GANANOQUE.

POST OFFICE.

The town corporation having given a lot on the corner of Pine and Stone streets, near King, the principal street, for a site, plans, &c., for a building are to be prepared at an early date.

HAMILTON.

POST OFFICE, &c.

Building completed and occupied.

Plans, specifications, &c., prepared and work supervised by this Department.

Clerk of Works, Mr. Geo. Sharpe.

Contractor for building and fittings, Messrs. VanAllan, Brown & Co.

Contractor for heating apparatus of main building, Mr. J. J. Blackmore, St. Thomas, Ont.

Contractor for heating apparatus for Examining Warehouse, Mr. Adam Clark, Hamilton, Ont.

DRILL SHED.

This building, for the erection of which a contract was entered into on the 23rd April, 1887, is being constructed on a site bounded by James, Robert and Hugh streets, and the parade ground the site of the former drill shed which was destroyed by fire 22nd May, 1880.

The walls are of brick with stone dressings and on stone foundation. The building is 250 feet in extreme length by 116 feet in breadth exclusive of a detached residence for the caretaker.

The drill hall is 200 feet in length, 80 feet in width, 31 feet from the floor to the beam of principals, and 50 feet from floor to apex of roof. Excepting on Robert street front the drill hall has a continuous lean to, which, excepting a one-storey portion 60 feet long at the middle of the south elevation, is two storeys in height.

The main entrance is on James street, and is flanked on the right by two store rooms and on the left by two orderly rooms, and the main stairway; above these are a gallery 50 feet by 20 feet, a cloak room, a store room and the main stairway. On the south side of the drill hall are the side entrances, ten company armouries, the artillery gun shed, a kitchen and a stairway; and over these are a reception room and two band rooms. To the rear of the drill hall on the ground floor are four harness rooms, two store rooms and the rear entrance hall; above which are two orderly rooms and two spare rooms.

A boiler room and fuel room is provided under 3 of the armouries on the south side from whence a pipe duct for passage of main pipes is carried around the three sides of the building.

Fronting on James street 16 feet from the building, and constructed of the same materials is a two-storey dwelling, for the caretaker, 28 feet by 30 feet.

Plans and specifications prepared by Mr. H. James, Architect, Department of Militia.

Superintending Architect, Mr. C. W. Mulligan, Hamilton, Ont.

Clerk of Works, Mr. Wm. Casey.

Contractor, Mr. M. A. Pigott.

KINGSTON.

PENITENTIARY.

Warden's Residence.—A new verandah, on the south side, 48 feet long by 7 feet 9 inches wide connected with the old one, and a 14 feet by 14 feet addition, were made to the greenhouse.

Old Farm House.—This building, which was a one and a half storey stone dwelling, 29 feet by 28 feet, was in bad repair and too small. The roof was raised and the wall carried 6 feet higher, making the building 2 storeys high; a two storey wing, 18 feet by 8 feet 6 inches, was built on the north-east corner; the roof was sheeted anew and covered with metallic shingles; and the wooden one-storey kitchen wing was taken down and rebuilt in stone with roof covering similar to that of main building.

Implement Shed.—This is a new stone building 62 feet by 27 feet, erected on the south side of the stone barn; having stone walls 12 feet high, strongly trussed wooden roof and covering of metallic shingles. There is a loft, well floored and lighted, the entire size of the building.

New Piggery.—This is a new stone building having a main portion 252 feet by 24 feet, containing 36 styes and two small wings mid-length, each 24 feet by 32 feet, one of which is used as a slaughter house. The floors are of 6 inch dressed stone and the roof of wood covered with metallic shingles. Over head is a loft floored with wood, providing storage for bedding, straw, &c., and three wrought iron tanks of 2,400 gallons capacity. Every two styes has an open yard 14 feet square enclosed by a stone wall 4 feet high.

Dining Hall Chimney.—This has been taken down and replaced by a ventilating shaft of 10 feet area, containing the smoke flue of boiler and ventilating flues.

Closets and Baths.—Twenty-four hopper closets complete were put up in the workshops; two hopper closets and two baths in the Steward's department.

General Repairs.—These consists of general repairs to buildings, railway, wharf and pointing boundary wall.

Plans, &c., prepared and work superintended by Mr. J. Bowes, Architect, Ottawa, Ont.

LONDON.

CUSTOM HOUSE ENLARGEMENT.

Since the date of my last report the works in connection with the superstructure of this work have been in progress and are expected to be completed the coming autumn.

Plans for an extension of the heating apparatus are in course of preparation, and tenders will be asked for at an early date.

Architects, Messrs. Durand & Moore, London, Ont.

Contractor for superstructure, Mr. F. Toms, Ottawa, Ont.

INFANTRY SCHOOL.

In April, 1886, a contract was entered into for the erection of this building, which is now in course of construction on Carling Farm, at the corner of Pall Mall and Elizabeth streets.

The building consists of a basement of stone, with a two storey brick superstructure, surmounted by a wooden unfinished mansard. The plan is a hollow square, the front portion being 230 feet long by 30 feet broad, and two flank portions each 198 feet long by 42 feet broad. In the court yard is a boiler house measuring 40 feet by 23 feet on plan, exclusive of a smoke-stack which is 6 feet square, 77 feet high from base and 55 feet high from ground line.

The Commandant's residence occupies 40 feet at the extreme right of the front; the residence for one of the unmarried officers, the adjoining 38 feet; and the rooms for single officer's, mess, billiards, commandant's office, staff sergeant's office, quartermaster's stores and orderly rooms occupy the remaining portions of the front, except the first floor of the extreme left, which is for men's rooms. The front portion has six stairways and a like number of entrances from the street.

The left wing basement contains a men's kitchen, 20 feet by 38 feet, a men's dining room, 41 feet by 38 feet, four store rooms, 20 feet by 38 feet each, and four staircase halls; the ground floor and first floor each have three men's rooms, and four store rooms of a uniform size of 20 feet 6 inches by 40 feet, and four staircase halls.

The right wing basement contains two workshops, a canteen and a mess and hospital kitchen, each 20 feet by 40 feet, a surgeon's room, 15 feet by 20 feet, four staircase halls and two small compartments for fuel storage; the ground floor contains an hospital ward, a sergeant's mess, a reading room and a recreation room, each 20 feet by 40 feet, three brick cells, a prisoner's room, 14 feet by 20 feet, two small kitchens, two small bedrooms and four staircase halls; and the first floor contains an hospital ward and three spare rooms, each 20 feet 6 inches by 40 feet, a lecture room, 18 feet by 28 feet, a museum, 18 feet by 20 feet, a lecture room, 26 feet by 20 feet, two spare rooms, each 20 feet by 14 feet, four small rooms for quartermaster sergeant and four staircase halls.

The building has progressed satisfactorily and is expected to be completed this autumn.

Drawings and specifications for a hot water heating apparatus are prepared, and tenders will shortly be asked for its erection.

[1887]

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Plans and specifications of the building prepared by Mr. H. James, Architect, Department of Militia and Defence.

Superintending Architects, Messrs. Durand & Moore, London, Ont., who also prepared the plans and specifications of the heating apparatus.

Contractors for the erection of this building, Messrs. Hook & Toll.

NAPANEE.

POST OFFICE AND CUSTOM HOUSE.

Lot No. 5, on the east side of John street, has been acquired for a site, and an amount has been included in the Estimates, 1887-88, towards the erection of the building.

OTTAWA.

NEW DEPARTMENTAL BUILDINGS, WELLINGTON STREET.

A contract for the iron roof framing has been entered into with the contractor for the building, and it is expected that the stonework will soon be ready for placing the iron roof principals.

Plans, &c., prepared and works superintended by this Department.

Clerk of Works, Mr. Samuel Adams, Ottawa, Ont.

Contractor, Mr. A. Charlebois, Quebec, P. Q.

PRINTING BUREAU.

A contract for the construction of this building was entered into with Mr. John E. Askwith on 6th June, 1887; and a contract for the ironwork, *i. e.*, iron columns, girders, joists, &c., was entered into with Messrs. Rousseau & Mather, on 15th June, 1887.

The foundation of the building is to be limestone, faced above ground with Nepean stone, and is to carry three stories of brick walls, having Nepean stone dressings. The roof framing is to be of wood; and the floors are to be of iron joists, with brick arches between, carried on iron girders supported by iron columns.

The building is **E** shaped, with a front portion 207 feet long and 54 feet wide; two end wings or returns, 70 feet long by 54 feet wide, exclusive of two stairways 16x13 each; and a central projection in rear 41 feet deep by 45 feet wide, which is a one storey boiler house, of which a portion, 10 feet wide next the main building, is carried up for W. C.'s, smoke stack and ventiducts.

The basement is not to be excavated. The middle 100 feet of the ground floor is to contain a corridor, the main staircase and 6 offices; the remaining portions of the front form, with the wings, two large rooms and an office, 16 by 25 feet.

The first floor has one side and a portion of the middle 100 feet devoted to stationery and bookbinding.

Plans and specifications prepared, and work to be supervised by this Department.

Contractor, Mr. John E. Askwith, Ottawa, Ont.

CENTRAL EXPERIMENTAL FARM.

During the autumn of 1886, a small wooden temporary office was constructed; repairs were done to a stone cottage on the premises to render it habitable for the Farm Superintendent, and a propagating house, 50 feet by 10 feet, built.

On the 4th February, 1887, a contract was entered into for the construction of about 3,000—8 feet panels of fencing formed of buckthorn wire and turned cedar posts, and the work is now in progress.

Drawings for a dwelling for the manager and for a barn are being prepared, and tenders will be invited at an early date.

Plans and specifications prepared and work supervised by this Department.

Clerk of Works, Mr. J. Beckett.

Contractors for fencing, Messrs. Tobin & O'Keefe.

POST OFFICE.

The roof was generally repaired, a number of the offices were cleaned, distempered and painted, and several offices supplied with new furniture.

EASTERN BLOCK, DEPARTMENTAL BUILDINGS.

A large number of the offices were cleaned, distempered and painted, furniture, fittings, &c., were furnished, and usual ordinary repairs executed under the superintendence of this Department.

PARLIAMENT BUILDINGS.

The walls and ceilings of the Public Lobby and of the Senate corridor were painted and decorated; alteration of the seats in House of Commons galleries, and of the House of Commons Post Office were executed, the roofs and skylights of the Senate and House of Commons were repaired, new floors were laid in several rooms, and usual and ordinary furniture fittings, repairs, &c., were supplied and executed.

Work executed under the superintendence of this Department.

WESTERN BLOCK, DEPARTMENTAL BUILDINGS.

Essential repairs, cleaning, distemporing, furnishing and fittings were executed under the superintendence of this Department.

PARLIAMENT GROUNDS, &C.

These have been maintained efficiently, new asphalt pavements were laid at the east side of Senate and portion of Eastern Block, a portion of wooden pavement was retarred and repaired, and a number of cess pools were rebuilt and enlarged.

St. Patrick street from Mackenzie Avenue to the Ottawa River was levelled, macadamized, provided with a new sidewalk, and the fences repaired. On the western and northern sides of Cartier Square 1,525 feet of sidewalk, 8 feet wide, and 1,350 feet of boulevard, 5 feet wide, were laid; and 560 feet of fence was built, four street crossings, and four gate bridges were put down as well as a dump of 630 yards of earth to widen Maria Street roadway at the western end of Maria Street bridge.

On Wellington Street four new stone crossings and stone gutters were put down, and the south side was boulevarded and planted with trees.

RIDEAU HALL.

The remaining half of the wooden sidewalk referred to in my last report and about 1000 yards of wooden fences were renewed, and about 200 yards of the fence painted.

The Bay Road bridge was repaired, replanked and raised 15 inches, and the crib work of the Bay Road was partly renewed and raised a foot higher throughout the entire length, and gravelled up to new level.

The stove house and the conservatory were repainted throughout, and reglazed with rolled glass; the camelia house was repainted and reglazed with ordinary glass, and the vinery repainted.

The floor of the Tennis Court and that of the basement corridor were relaid.

About 100 yds. lin. of the gas pipe trench was reopened and refilled, and about 18 inches of the wall of the gasometer pit rebuilt and various repairs done to gasometer house throughout.

The garden house, potting sheds, tool house, greenhouse, furnace room were reshingled.

The usual annual cleaning, minor alterations, &c., repairs, partial repainting, whitewashing, distempering, repairs to furniture, &c., at the Government House, and the various buildings connected with it were carried out under the superintendence of this Department.

GEOLOGICAL MUSEUM.

The courtyard was refloored, several offices and a portion of the caretaker's quarters were cleaned, distempered and painted; and general repairs effected to drains and roofs.

Work done under the superintendence of this Department.

OLD PUMP HOUSE.

This building was altered to render it suitable for new electric light machinery, provided with new hardwood floor, new doors, windows, galvanized iron roof covering, &c., and with an addition to chimney, and a new coal shed.

Work done under the superintendence of this Department.

ORANGEVILLE.

POST OFFICE.

Building completed and occupied.

Plans, &c., prepared by this Department.

Superintending Architect, Mr. F. J. Rastrick, Hamilton, Ont.

Clerk of Works, Mr. Robert Hewitt, Orangeville, Ont.

Contractor for building, fittings, &c., Mr. M. A. Pigott, Hamilton, Ont.

Contractor for heating apparatus, Messrs. McGuire & Bird, Toronto, Ont.

Contractor for gasoline lighting apparatus, Mr. Jos. Phillips, Toronto, Ont.

PEMBROKE.

POST OFFICE.

A site has been purchased on Pembroke street at the north-east end of the bridge over the Muskrat River

PETERBOROUGH.

POST OFFICE.

This building which was described in my report of last year is nearly completed and fitted up. Tenders for the construction of a hot water heating apparatus will be invited at an early date, and the building is expected to be ready for occupation the coming autumn.

Plans, &c., prepared by this Department.

Superintending Architect, Mr. John E. Belcher, Peterborough, Ont.

Clerk of Works, Mr. Thos. Rutherford, Peterborough, Ont.

Contractor, Mr. Jno. E. Askwith, Ottawa, Ont.

PORT HOPE.

POST OFFICE, CUSTOM HOUSE, &c.

Building completed, fitted up and occupied.
 Plans, &c., prepared and work supervised by this Department.
 Clerk of Works, Mr. Joseph G. King, Port Hope, Ont.
 Contractor for building, fittings and furniture, Mr. Wm. Toms, Ottawa, Ont.
 Contractor for heating apparatus, Mr. E. Chanteloup, Montreal, P.Q.

PRESCOTT.

Negotiations are pending for the purchase of a site.

TRENTON.

POST OFFICE, &c.

A lot situated on the corner of Perry and Albert street has been purchased, and an amount included in the Estimates, 1887-88, towards the erection of the building.

PROVINCE OF MANITOBA.

WINNIPEG.

POST OFFICE.

Completed, fitted up and occupied.
 Plans, &c., prepared by this Department.
 Resident Clerk of Works, Mr. D. Smith.
 Contractor for building and fittings for offices, Messrs. J. E. Gelley & Co., Winnipeg, Man.
 Contractors for heating apparatus, Messrs. Garth & Co., Montreal, P.Q.
 Contractor for hoist and machinery, Mr. Jno. Fensom, Toronto.

IMMIGRANT SHED.

The greater portion of this building was destroyed by fire in March last, and the remainder cannot be utilized without repairs. The temporary use of an unused brick schoolhouse has been secured, which has been repaired and furnished.
 Works supervised by Mr. D. Smith, Resident Clerk of Works.

CUSTOM HOUSE.

On removal of the Inland Revenue Offices to the new Post Office Building, the various rooms were repaired, tinted, &c., and new W.C. and gas fixtures were provided before occupation by the Customs Officials. The ground floor having sunk, through dry rot destroying the joist ends built in the walls, the floor was jacked up and carried on new beams resting on oak templates.

A new hot water heating apparatus was supplied.
 The store and fuel shed in rear of the temporary post office was removed to the rear of the Custom House, made good and painted.
 Trees were planted and additional fencing done.
 Plans, &c., prepared and work supervised by this Department.
 Resident Clerk of Works, Mr. D. Smith.

[1887]

STONY MOUNTAIN.

MANITOBA PENITENTIARY.

Warden's Residence.—This building was described in my report of last year and is now occupied.

New Chapels.—A brick building 51 feet by 51 feet, containing 2 chapels, the walls 25 feet high; roofed with wood, covered with galvanized iron; and having a passage or cloister leading from the prison. They were commenced, completed, fitted up and occupied during the fiscal year 1886-87.

Guards' Cottages.—Woodsheds, W.C., storage room, winter sash, pump houses, &c., were provided for the cottages, referred to in my report of last year.

Hospital and Laundry.—A contract for the erection of these buildings was entered into on 20th June, 1887, and the work is progressing so that it is expected to be completed before the winter of 1887. The hospital is of brick, 113 feet by 46 feet, two storeys and a basement.

The laundry is also of brick, 30 feet by 60 feet, with boiler house attached, 16 feet by 21 feet.

General.—Three wells of an average depth of 90 feet were bored and a well house erected over each.

A windmill and tank for irrigating gardens were supplied and erected.

The older of the heating boilers was replaced by a new steel boiler.

Various essential and ordinary repairs were executed to the buildings, fences, &c. Works done under the supervision of Mr. D. Smith, resident Clerk of Works, Winnipeg, Man.

Contractors for Hospital and Laundry, Messrs. Rourke & Cass, Winnipeg, Man.

Contractors for hot water heating; Warden's residence, Messrs. Garth & Co., Montreal, P.Q.

The remaining works were principally carried out by convict labor, with a small contingent of hired workmen.

NORTH-WEST TERRITORIES.

BIRTLE AND MINNEDOSA.

IMMIGRANT SHEDS.

Completed and handed over to the Department of Agriculture.

LETHBRIDGE.

MOUNTED POLICE BUILDINGS.

Officer's Quarters.—Two one and a half storey wooden residences, each 37 feet by 24 feet 6 inches, with a one-storey kitchen wing, 18 feet 6 inches by 21 feet.

Barracks.—This is a one storey wooden building, consisting of a front portion, 157 feet by 28 feet, with a T in the rear, 88 feet long by 28 feet; containing six barrack rooms, four sergeants rooms, a mess room, a kitchen, a wash room, a bath room, a pantry and a store room.

Stable Building.—A wooden building, 102 feet by 28 feet, containing thirty-eight stalls and one loose box.

Store House.—A one-storey wooden building, 60 feet by 30 feet.

Blacksmith Shop.—A one-storey wooden building, 24 feet square.

Guard House—A one-storey wooden building, 41 feet by 24 feet, containing a guard room and six cells.

Plans, &c., prepared and work supervised by this Department.

Clerk of Works, Mr. Wm. Henderson.

Contractors, Messrs. Scott & Merrill.

BATTLEFORD.

MOUNTED POLICE BUILDINGS.

The following baloon-framed wooden buildings were erected during the fiscal year 1886-87.

Hospital, 71 feet by 26 feet, with kitchen and sergeant's room attached; mess room, 82 feet by 31 feet, with kitchen attached; two barracks, each 102 feet by 32 feet, and two stables, each for 32 horses. Of these the hospital building is to be permanently used for that purpose; but the mess room and barracks are to be converted into stabling when permanent barracks are erected.

A log stable which had fallen, was rebuilt, a well was dug, the bake oven was rebuilt, storm sashes were furnished, chimneys built, and plastering repaired in the kitchen and rooms generally.

Plans, &c., prepared and work supervised by this Department.

Resident Clerk of Works, Mr. A. F. Berthiaume, Battleford.

Contractor for one barrack building, hospital, &c., Mr. Wm. J. Barker.

Contractors for one barrack building and the mess room, Messrs Smart & Macdonald.

REGINA.

MOUNTED POLICE BUILDINGS.

Barracks.—These comprise a two-storey main building, 266 feet long by 32 feet broad, with a one-storey building in rear, 66 feet by 52 feet, all of wood. The main building contains 6 barrack rooms 30 feet by 22 feet on each floor, and the rear building a mess room, a kitchen, a scullery, and two washrooms.

Commissioner's Residence.—A two-storey and attic wooden building, 42 feet by 32 feet, with a wing 26 feet by 25 feet, containing on the ground floor a drawing room, dining room, library, stairway hall, kitchen and pantries; and on the first floor 6 bedrooms, closets, &c. There is a verandah 100 feet in length extending along the front and left flank of the main building.

Hospital.—A two-storey and attic building, 29 feet 10 inches by 71 feet 10 inches, exclusive of a 12 feet by 29 feet 10 inches projection in front, and having a one-storey annex, 28 feet by 29 feet 10 inches in the rear. The ground floor consists of a large main hall, a surgery, an hospital sergeant's room, a mess room, a kitchen, and two hospital wards; and the first floor two wards, a hall, an hospital orderly's room, and a nurse's room.

Surgeon's Residence.—A wooden building, two storeys and attic, of irregular shape, measuring 63 feet in extreme length by 27 feet in extreme breadth, exclusive of a two-storey annex, 17 feet by 17 feet 6 inches, and a one-storey saddle room and latrines. The ground floor is devoted to entrance hall, drawing room, dining room, office and kitchen, and the first floor to five bedrooms, a hall and closets.

Plans, &c., for these buildings prepared and work carried out under the supervision of this Department.

Resident Clerk of Works, Mr. Jno. Morrison.

Contractor for Commissioner's house and barracks, Mr. R. H. Williams.

Contractor for hospital and surgeon's house, Mr. John McCrea.

PRINCE ALBERT.

COURT HOUSE AND JAIL.

A contract was entered into on 22nd January, 1886, for the erection of this building, which is now completed, ready to be fitted up, furnished and occupied.

The walls are of brick on a stone foundation, and the floors and roof of wood, excepting the floors of the cell wing, which are of brick arches levelled up with cement and covered with wood.

The building is two-storeys in height, 33 feet broad by 84 feet long, of which the administrative portion is 50 feet, and contains on the ground floor the offices of the Sheriff, Registrar, Clerk of the Peace, Jailer and Caretaker, as well as a kitchen and store room; and on the first floor a Court Room, a Jury Room, and offices for the Judge and Clerk of the County Court. The prison portion contains 10 cells on each floor.

Plans, &c., prepared by this Department.

Clerk of Works, Mr. H. J. Peters, Prince Albert.

Contractor, Mr. Thos. Doddridge, Brockville, Ont.

NORTH-WEST MOUNTED POLICE BUILDINGS.

Are similar to the buildings at Lethbridge. The construction was by day's work, under the resident Clerk of Works, Mr. H. J. Peters.

QU'APPELLE.

INDUSTRIAL SCHOOL.

An addition, 30 feet long by 60 feet deep, was made to the school building, corresponding with it in height of floors, construction, material, &c., and containing on the ground floor a schoolroom, and on the first and attic floors dormitories.

Plans, &c., prepared by this Department.

Clerk of Works, Mr. Wm. Henderson.

Contractors, Messrs. Thompson & Nelson.

BRITISH COLUMBIA.

NEW WESTMINSTER.

PENITENTIARY.

Guards' dwellings.—The three pairs of guards' dwellings referred to in my last report, and also two additional pairs contracted for during the last fiscal year, were completed.

Laundry.—A contract was entered into for a detached laundry, which was completed excepting the heating and fittings, which are now being proceeded with. The building is of wood, consisting of a main portion 62 feet long by 31 feet broad containing a wash room and an ironing room, each 30 feet by 25 feet, a drying closet, a boiler room and a stairway lobby with mending rooms 15 feet wide by 60 feet long in attic; in the rear is a one storey fuel shed 16 feet by 16 feet.

Repairs.—Various necessary repairs to the main building and fencing were effected.

Works carried out under the supervision of the Hon. Jos. W. Trutch, C.M.G.

Contractors for cottages, Messrs. Scouller & Co., Victoria, B.C.

Contractor for laundry, Mr. Joshua Holland, Victoria, B.C.

VICTORIA.

IMMIGRANT SHED.

The building near the outer wharf, Victoria, and which was purchased for use as an immigrant shed, has been put in thorough repair.

GENERALLY.

In addition to the foregoing are the ordinary and essential repairs to a large and increasing number of buildings; the supply of fuel, light and water, as well as the management of the engineers, firemen, caretakers, &c., at the various Dominion Public Buildings.

APPENDIX No. 3.

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LIST

OF

ENGINEERS, FIREMEN AND CARETAKERS

OF

PUBLIC BUILDINGS THROUGHOUT THE DOMINION,

GIVING

DATE OF APPOINTMENT, SALARY PAID, ETC.

APPENDIX No. 3.

Ref. No. 82,028.

STATEMENT showing the Engineers, Firemen, Caretakers and Watchmen Employed at Dominion Public Buildings, on 30th June, 1887, giving Date of Appointment, Salary, &c.

Place.	Building.	Name.	Position.	Date of Appointment.	Salary per Month.	Time employed per Annum.	Total Amount Paid per Annum.
					\$ cts.		\$ cts.
Halifax... N.S.	Dominion Building	John Powell	Engineer	1st October, 1871	62 50	12 months	750 00
	do	Richard Power	Fireman	.....	50 00	6 do	300 00
	do	M. Sullivan	Watchman	31st do 1883	33 33	12 do	400 00
	Examining Warehouse	Wm. Power	Caretaker	26th January, 1887	41 67	12 do	500 00
Truro N.S.	Penitentiary	M. Kennedy	do	31st October, 1880	37 50	12 do	450 00
Windsor N.S.	Post Office	G. Johnson	do	8th do 1885	33 33	12 do	400 00
	do	J. W. Smith	do	30th July, 1886	33 33	12 do	400 00
New Glasgow N.S.	do	Jas. Fraser	do	8th November, 1886	33 33	12 do	400 00
Amherst N.S.	do	Jas. Morrison	do	2nd do 1886	33 33	12 do	400 00
Yarmouth N.S.	Public Building	Robt. Speers	do	23rd December, 1887	33 33	12 do	400 00
Antigonish N.S.	do	H. P. Hill	do	1st March, 1887	3 75	12 do	45 00
Charlottetown P.E.I.	Dominion Building	D. McLeod	Engineer	12th September, 1872	33 33	12 do	400 00
	do	E. Fleming	Fireman	7th October, 1882	28 00	12 do	336 00
	do	Jas. Grant	Watchman	18th August, 1881	37 50	12 do	450 00
Summerside P.E.I.	do	Geo. Walker	do	.....	37 50	12 do	450 00
St. John N.B.	do	Jas. Brazel	do	5th November, 1885	33 33	12 do	400 00
	do	G. H. Jones	Engineer	17th February, 1880	60 00	12 do	720 00
	Custom House	Christopher White	Fireman	9th November, 1885	50 00	6 do	300 00
	do	F. W. Shaw	Caretaker	8th December, 1881	41 67	12 do	500 00
	Post Office	Henry Howe	Engineer	4th November, 1881	55 00	12 do	660 00
	do	Ed. Haney	do	27th do 1882	45 00	12 do	540 00
	Penitentiary	Geo. Campbell	Caretaker	29th October, 1880	37 50	12 do	450 00
	Savings Bank	P. Dawson	Engineer	28th January, 1879	45 00	6 do	270 00
Dorchester N.B.	Penitentiary	Jas. Percy	do	21st November, 1882	50 00	6 do	300 00
Fredrickton N.B.	Post Office	Jas. Perkins	Caretaker	31st May, 1883	33 33	12 do	400 00
Sussex N.B.	do	Thomas Asbill	do	19th October, 1883	33 33	12 do	400 00
Moncton N.B.	do	Ezra B. Hicks	do	11th January, 1886	33 33	12 do	400 00
Newcastle N.B.	do	Patrick Keating	do	2nd October, 1886	33 33	12 do	400 00
Woodstock N.B.	do	Richard Maxted	do	8th do 1885	33 33	12 do	400 00
Quebec Que.	do	P. Donéchaud	Engineer	27th June, 1874	45 00	6 do	270 00

Location	Post Office	Person	Occupation	Date	Amount
St. Johns	Examining Warehouse	Jas. Matthews	do	4th December, 1885	660 00
	do	Wm. Stephens	Fireman	29th October, 1886	240 00
	do	John O'Neil	do	8th September, 1886	360 00
	do	C. Juneau	Engineer	1st July, 1876	270 00
	do	Jos. Ferrant	Caretaker	29th September, 1882	260 00
	do	Wm. Comper	Watchman	December, 1881	16 67
	do	M. Boyer	Fireman	4th March, 1882	12 50
	do	John Watson	Engineer	18th October, 1876	600 00
	do	F. Greene	do	1st January, 1885	780 00
	do	Thomas Ryan	do	4th March, 1882	720 00
	do	W. Wallace	Fireman	1st October, 1882	960 00
	do	J. H. Marchand	do	2nd December, 1882	400 00
	do	J. B. Emond	Caretaker	11th January, 1886	400 00
	do	R. G. Lejoie	do	1st March, 1883	547 50
	do	Jos Carbonneau	do	27th July, 1883	700 00
	do	T. Rawson	do	12th December, 1884	400 00
	do	P. St. Michel	do	23rd September, 1886	400 00
	do	J. A. Wills	Engineer	23rd August, 1873	1,200 00
	do	Jas. Humphreys	Fireman	16th November, 1831	300 00
	do	Jas. Cosgrove	Engineer	28th December, 1874	720 00
	do	Mat. Stewart	do	11th March, 1876	330 00
	do	Henry L. Bell	do	9th May, 1885	300 00
	do	Fred. Simons	Fireman	21st January, 1887	300 00
	do	Jas. Olaxton	do	25th October, 1882	300 00
	do	Wm. Hornby	Engineer & Caretaker	9th do 1886	500 00
	do	John Drysdale	do	9th March, 1880	1,080 00
	do	W. Johnson	do	31st May, 1881	750 00
	do	M. Madden	do	12th October, 1878	330 00
	do	Jas. Devlin	Engineer	9th April, 1873	*550 00
	do	Chas. Munro	Fireman	23rd July, 1883	60 00
	do	Chas. MacAvoy	do	do	720 00
	do	Thomas Bayley	Engineer	27th November, 1873	600 00
	do	John Price	Fireman	14th January, 1884	600 00
	do	Wm. Greer	Caretaker	1st February, 1885	400 00
	do	John Squire	do	27th October, 1880	600 00
	do	John Hannon	do	7th do 1880	600 00
	do	Wm. Curtis	Caretaker	9th November, 1880	400 00
	do	Henry Dunn	Engineer	23rd September, 1884	350 00
	do	W. W. Mitchell	Caretaker	7th January, 1885	400 00
	do	J. P. Reeves	do	17th October, 1883	600 00
	do	W. Bryson	do	3rd August, 1883	400 00
	do	A. H. Goodeve	do	11th do 1884	400 00
	do	Aug. Menke	do	1st November, 1885	400 00
	do	Levi Reynolds	do	17th do 1885	400 00
	do	J. H. Roberts	do	do	600 00
	do	Gilbert Campbell	do	do	400 00
	do	Thos. Murphy	do	8th October, 1885	400 00
	do	do	do	7th March, 1885	365 04

* Also \$750 paid by Department of Justice.

(APPENDIX No. 3.)—STATEMENT showing the Engineers, Firemen, Caretakers and Watchmen Employed at Dominion Public Buildings, on 30th June, 1887, giving date of Appointment, Salary, &c.—Concluded.

Place.	Building.	Name.	Position.	Date of Appointment.	Salary per Month.	Time employed per Annum.	Total Amount Paid per Annum.
					\$ cts.		\$ cts.
Brockville..... Ont...	Public Building	Chas. Stevenson	Caretaker	21st March, 1885...	33 33	12 months...	400 00
Amherstburg..... Ont...	do	John Lovegrove	do	5th do 1885...	33 33	12 do	400 00
St. Thomas..... Ont...	do	Jas. Russell	do	4th September, 1885...	33 33	12 do	400 00
Barrie..... Ont...	do	Fred. Edwards	do	2nd March, 1886...	33 33	12 do	400 00
Galt..... Ont...	do	Wm. Kilgour	do	2nd do 1886...	33 33	12 do	400 00
Orangeville..... Ont...	do	John Wilkins	do	23rd September, 1886...	33 33	12 do	400 00
Nanaimo..... B.C...	do	John Thompson	do	10th November, 1883...	50 00	12 do	600 00
New Westminster. B.C...	do	John McMurphy	do	1st October, 1884...	50 00	12 do	600 00

R. STECKEL.

OTTAWA, 11th October, 1887.

APPENDIX No. 4.

REPORT

ON THE

HEATING APPARATUS, GAS, WATER & BELL SERVICES, ETC.

IN THE

PUBLIC BUILDINGS, OTTAWA,

For the Fiscal Year Ended 30th June, 1887

BY

JOHN R. ARNOLDI, MECHANICAL ENGINEER.

 APPENDIX No. 4.

 REPORT OF THE CHIEF MECHANICAL ENGINEER.

Ref. No. 79,633.

 CHIEF MECHANICAL ENGINEER'S OFFICE,
 OTTAWA, 1st August, 1887.

SIR,—I have the honour to report as follows in reference to the Public Buildings, Ottawa, during the fiscal year ended the 30th June, 1887, viz. :—

PARLIAMENT BUILDING.

A further extension of the "Edison" incandescent electric light was made during recess. One 64-light electrolier having been placed in the Commons Chamber, four 28-light electroliers in the Senate Chamber, also twelve 2-light brackets on columns in Senate Gallery, making 783-sixteen candle power lamps now in use in this building, the dynamo house, and the grounds.

Increased power has been obtained by the removal of the whole electrical apparatus to the old Government waterworks building at the foot of the Rideau Canal, and by the addition of one new engine and boiler and two new dynamos. The main connecting wires were laid through the ducts from this building to the Parliament Building. The whole electrical apparatus now being placed on a permanent and more economical basis, which proved highly successful and efficient during the last Session of Parliament.

A few temporary experimental outside electrical lamps were put up along the terrace wall.

Nothing was required to be done to the heating apparatus, boilers, gas or bells of this building, beyond ordinary maintenance.

Improved water closets were called for in the Senate premises by a resolution of that House during Session of 1886, and in conformity therewith, sixteen old pan water closets were replaced by new ones of a modern and approved kind, and the general ventilation of all these apartments in the Senate was improved by new ducts and other means.

EAST AND WEST BLOCKS.

Nothing was required to be done beyond the ordinary maintenance to the heating apparatus, boilers, gas, water and bell service.

SUPREME COURT.

Nothing but ordinary maintenance was required in this building to the heating apparatus, boilers, gas, water and bell service.

OTTAWA POST OFFICE AND CUSTOM HOUSE.

Four new closets were put in this building, and general improvements of these premises effected. The drain pipes of the building also received an overhaul. Maintenance to the heating apparatus, gas, water and bell services was all that was required.

GEOLOGICAL MUSEUM.

Nothing but the ordinary repairs to the water, gas and bell services were required in this building.

PARLIAMENT GROUNDS—FLOWER PROPAGATING HOUSE.

No work was required in this building.

INDIAN AFFAIRS (LEASED).

Nothing beyond the ordinary maintenance to water, gas and bell services was required to be done in this building.

POST OFFICE DEPARTMENT (LEASED), SAVINGS BANK BRANCH.

Nothing but the ordinary maintenance was required in connection with the water, gas and bell services.

MAJOR'S HILL PARK.

No work was required here further than ordinary repairs to the water mains, hose, &c., used for watering the flowers.

RIDEAU HALL.

A complete overhaul of the gas holder was made, otherwise, ordinary maintenance only was found necessary to the heating apparatus, gas, water and bell services.

I have the honour to be, Sir,

Your obedient servant,

JNO. R. ARNOLDI,
Chief Mechanical Engineer.

A. GOBEL, Esq.

Secretary Department of Public Works.

APPENDIX No. 5.

REPORT

ON

HARBOURS AND RIVERS, DREDGES, DREDGING AND SURVEYS

THROUGHOUT THE DOMINION,

FOR THE FISCAL YEAR ENDED 30TH JUNE, 1887.

BY

HENRY F. PERLEY, CHIEF ENGINEER.

APPENDIX No. 5.

REPORT OF THE CHIEF ENGINEER.

Ref. No. 83,344.

CHIEF ENGINEER'S OFFICE,

OTTAWA, 31st August, 1887.

SIR,—I have the honour to submit herewith my annual report on the harbour works under my charge during the last fiscal year.

I am, Sir,

Your obedient servant,

HENRY F. PERLEY,
Chief Engineer.

A. GOBEIL, Esq.,
Secretary Public Works Department.

PRINCE EDWARD ISLAND.

CASCUMPEC.

Cascumpec Harbour, Prince County, is on the north coast of the island, about 20 miles south of North Cape.

The work of forming a channel through the rocky bar which obstructs the entrance to this commodious harbour, referred to in the report of last year, was continued during the past fiscal year.

GEORGETOWN PIER.

Georgetown, the shire town of King's County, is situated on the north side of Montague River, near its entrance into Cardigan Bay.

Portions of this pier were newly planked, extensive repairs having been made in 1884.

NEW LONDON.

The harbour of New London is on the north side of the island and about 10 miles south-east from Richmond Bay.

A contract having been entered into for the reconstruction of 410 feet of the pile and brush and stone breastwork on the eastern side of the harbour, the work was satisfactorily completed at the close of the fiscal year.

[1887]

NINE MILE CREEK.

Nine-Mile Creek, Queen's County, is on the north-west side of Hillsboro' Bay. Temporary repairs were made to the pier at this place.

PORT SELKIRK PIER

Is on Lot 57, Queen's County, and on the south side of Orwell River, near its entrance into Orwell Bay.

The lower end of the pier was levelled up for a distance of 110 feet, piles were driven every 5 feet along its face to prevent an outward movement of the structure, while the upper block and connecting span had to be torn down, it being impossible to repair them.

RUSTICO.

Rustico is on the northern side of the island, about midway between North and East Points.

Some slight repairs were made to the outer end of the breakwater.

SOURIS.

Souris, the eastern terminus of the railway, is in King's County, and about 16 miles south of East Point.

During the fiscal year the breakwater at this place was strengthened by close piling, and a quantity of ballast was put in.

STURGEON.

Sturgeon pier is on the south side of Cardigan Bay, and about 6 miles south of Gergetown, King's County.

The roadway was repaired and the outer block re-planked.

TIGNISH.

At the mouth of Big Tignish River, Prince County, about 8 miles east of North Point.

The dredge "Prince Edward," which was engaged at the close of the last fiscal year in dredging the channel between the piers, continued working until the 25th September, when it was placed in winter quarters.

NOVA SCOTIA.

ARISAIG.

Arisaig, Antigonish County, is on the south-east shore of Northumberland Strait, 15 miles to the eastward from Merigomish, the nearest harbour.

In October, 1886, a contract was entered into for repairs to the existing pier and the construction of a breakwater, and at the close of the fiscal year the repairs were nearly finished and preparations made for commencing the breakwater.

ASPY BAY.

Aspy Bay is in Victoria County, Island of Cape Breton.

The "Geo. McKenzie" commenced work at this place in opening a channel into the pond. Work continued under great difficulties till 4th October, when 3,820 cubic yards of sand had been removed. The work was however of little benefit, the sand filling up the cut made by the dredge.

BAYFIELD.

Antigonish County, is on the south coast of St. George's Bay, 8 miles east from Antigonish Harbour, and 15 miles west from the entrance to the Straits of Canso.

A contract has been entered into for the construction of a further length of breakwater, and at the close of the fiscal year the work was well under way.

BAY ST. LAWRENCE.

Bay St. Lawrence, Victoria County, is at the northern extremity of the Island of Cape Breton, between Capes North and St. Lawrence.

Near the head of the bay is a small pond, separated from the bay by a shingle beach.

A channel was cut from low water outside through this beach and had reached within 15 feet of the pond when it was filled in to its original height by a storm, and further work was discontinued.

BEAVER RIVER.

Beaver River, Yarmouth County, flows into the Bay of Fundy near the dividing line between the Counties of Yarmouth and Digby.

A boat channel leading into a sheltered basin within the high gravel wall through which the river discharges with difficulty has been opened and the sides protected, and the work done has proved satisfactory.

BIRCH ISLANDS.

In Richmond County, C. B., and on the River Inhabitants, 2 miles above its entrance into the Bay of the same name.

During the early part of the fiscal year a boat channel 1,150 feet in length, 20 feet wide, with an average depth of $2\frac{1}{2}$ feet at low water, was opened from the mainland to the island.

BLUE ROCK.

Blue Rock, Antigonish County, is on the south coast of St. George's Bay, $2\frac{1}{2}$ miles east from Tracadie Harbour.

In November, 1886, a contract was entered into for the construction of a breakwater, 326 $\frac{1}{2}$ feet in length, to extend in a south-westerly direction from Blue Cape, thus protecting an area of $3\frac{1}{2}$ acres having at extreme low water a depth varying from 5 to 12 feet.

At the close of the year, nothing had been done beyond the delivery of materials on the site.

BOULARDERIE.

Near Island Point, on the south side of Boularderie Island, Victoria county, C.B.

During the year a public wharf, 120 feet in length, 20 feet in width, with an L at the outer end, was built. There is a depth of water on the channel face of the structure of 11 feet at ordinary lake level, and the work has proved of great benefit to the residents.

BROAD COVE MARSH.

Broad Cove Marsh, Inverness County, is situated on the Gulf of St. Lawrence, 19 miles north of Mabou Harbour and 12 miles south from Margaree.

In November, 1886, a contract was entered into for the construction of a wharf 400 feet in length, 25 feet in width on top, with a depth at low water, at its outer end, of 7 feet 9 inches.

At the end of the fiscal year the contractors had built 93 feet of the shore end, and were ready to place the next block in position.

BRULÉ.

Brulé, Colchester County, is situated on Northumberland Strait, about midway between Tatamagouche and River John.

The public wharf at this place was repaired generally, and raised where it had settled.

CANADA CREEK.

Canada Creek, King's County, is on the southern shore of the Bay of Fundy, 4 miles east of Harbourville, and 60 miles east of Digby Gut.

The western pier, which had got much out of repair, was put in as good order as the amount appropriated would permit being done.

CAP LA RONDE.

Cap La Ronde, Richmond County, is the extreme south-east point of Ile Madame. Improvements to the boat channel leading into a pond south of the Cape, were made; they have not, however, proved permanent, and experience shows that boat channels through beaches into ponds are rarely permanent.

CHÉTICAMP.

Chéticamp is at the northern end of Inverness County.

At the close of the last fiscal year the dredge "Geo. McKenzie" was engaged in continuing the improvement of the entrance to Chéticamp Harbour, and by the 25th of August a channel 45 feet wide and 13 feet deep at low water had been made.

CHIPMAN'S BROOK.

Chipman's Brook, King's County, empties into the Bay of Fundy on its south shore, about 3 miles west of Hall's Harbour.

Further repairs were made to the sheathing and covering of the pier, and a ledge of rock at the upper berth of the pier was removed.

COW BAY.

Cow Bay is on the eastern coast of Cape Breton, about 18 miles south-east from Sydney.

During the fiscal year the amount appropriated was expended in close piling the seaward face of the breakwater and reconstructing portions of the counterforts which had been carried away by the storms of the previous fall and winter.

The structure is 1,380 feet in length, and is directly exposed to the sweep of the Atlantic during easterly gales. It is much weakened by the attacks of the *teredo*.

CRANBERRY HEAD.

Cranberry Head, Yarmouth County, is situated on the Bay of Fundy, about 6 miles north of the town of Yarmouth.

During the past season the pier was generally repaired, and a "spur" 28 feet long was built at right angles from the seaward face to arrest the gravel and prevent its being swept around the end of the pier.

DIGBY.

Digby is the shiretown of the county of that name and is situated at the western end of Annapolis Basin.

During the early part of the fiscal year the temporary accommodation for the landing of passengers and freight referred to in the report of last year was completed.

EAST RIVER.

East River, Pictou County, empties into Pictou Harbour below New Glasgow.

During the year a number of ledges and boulders which interfered with the passage of timber and fish were removed over a distance of about 10 miles.

ECONOMY.

Economy, Colchester County, is situated on the north side of the Basin of Minas.

During the year the construction of a public wharf, 200 feet in length and 24 feet wide, was commenced and at the close of the fiscal year the work was well advanced towards completion.

FOX ISLAND.

Fox Island, Halifax County, is on the Atlantic coast of Nova Scotia, about 15 miles east of Halifax Harbour.

A bar connects the island with the mainland and forms a harbour for fishing boats. This was being washed away by the sea and the usefulness of the harbour impaired.

To prevent this washing away, a contract was entered into in September, 1886, for the construction of beach protection works over the whole length of the bar, viz., 935 feet, and the work was satisfactorily completed at the end of the fiscal year.

GRANTON.

Granton is on the Middle River of Pictou.

The dredge "Cape Breton," which was operating near the coal wharves at this place continued working until 14th July, when the work was closed.

HALIFAX.

The "St. Lawrence" continued the work of deepening the channel at the head of the North-West Arm, and on completion of this work was moved to Cunard's wharf, where she removed 1,400 cubic yards of mud and old logs.

HARBOURVILLE.

Harbourville, King's County, is on the south shore of the Bay of Fundy, about 55 miles east of Digby Gut.

The two piers forming the harbour at this place were, during the fiscal year, generally repaired and put in good order.

INDIAN ISLANDS.

Indian Islands, Cape Breton County, are a group of small islands on the north side of East Bay, Great Bras d'Or Lake.

The two outer or most southerly of these islands are joined to each other and to

the mainland by beaches of sand and gravel, forming a boat harbour opening to the eastward.

Through one of these beaches a channel, the sides of which were protected by cribwork, was opened by the Department in 1881-82. This channel, however, had become closed by an accumulation of sand and gravel, which had been washed round the end of the east pier.

With the amount appropriated the channel was again cleared of this accumulation, and the eastern pier extended a distance of 75 feet.

INGONISH.

Ingonish, Victoria County, is on the north-east coast of the Island of Cape Breton, and midway between Sydney and Cape North.

With the amount appropriated a warping buoy was placed to enable vessels to enter the harbour at ebb tide with greater ease, and beach protection works, 58 feet in length, 12 feet in height and 20 feet wide, were commenced and nearly completed at the end of the fiscal year.

KINGSFORT.

Kingsfort, formerly Oak Point, is on the western shore of the Basin of Minas, between the mouth of the Cornwallis River and Cape Blomidon.

The pier at this place, which had been greatly damaged by a storm in, 1885 was repaired.

LISMORE.

Lismore, Pictou County, is on Northumberland Strait, 18 miles east from Pictou Harbour.

During the fiscal year the construction of a wharf was commenced but the work was not completed.

LITTLE GLACE BAY.

Little Glace Bay, Cape Breton County, is 5 miles south-east from Lingan.

The "St. Lawrence" was engaged from 7th September to 5th October in improving the entrance to the harbor at this place. Much time was lost, however, owing to bad weather.

M'NAIR'S COVE.

McNair's Cove, Antigonish County, is situated about 5 miles south-west of Cape George. It is exposed to winds from south-west to south-east and lies open to St. George's Bay.

The breakwater built by the Department in 1873 has, from time to time, been much damaged by the sea and ice and repaired, and in April last, a contract for the reconstruction of 160 feet was entered into. No work was, however, done at the close of the fiscal year.

MABOU.

Mabou, Inverness County, is on the west coast of Cape Breton, 6 miles to the north of Port Hood.

The brush and stone wall referred to in the report of last year was extended a distance of 500 feet, and repairs were made to the pier.

MARGARETVILLE.

Margaretville, Annapolis County, is on the southern shore of the Bay of Fundy about 42 miles east of Digby Gut.

During the storm of 27th December, 1885, the pier at this place was seriously damaged, a breach of 150 feet being made completely through the work. This breach has been made good, and at the close of the fiscal year other works of repair were in progress.

MORDEN.

Morden, Kings County, is on the Bay of Fundy, 30 miles to the eastward of Digby Gut.

During the year repairs were made to the block, 60 feet in length, and to the "break."

PARRSBORO'.

Parrsboro', Cumberland County, on the north side of the Basin of Minas, near the mouth of the Partridge Island River.

During the fiscal year the following repairs were executed on the wharf at this place.

The outer corners were sheathed with hardwood and protected by iron straps. New fenders were placed and others secured. The top reballasted, new floor stringers and flooring placed. A block was constructed at the inner end to prevent the sea cutting through the bank.

PETITE RIVIÈRE.

Petite Rivière, Lunenburg County, empties into Green Bay, about 7 miles to the westward of La Have River.

During the fiscal year the outer end of the breakwater which had settled, was raised 18 inches. Additional large stones were placed on the outer slope and end, and some of the large covering stones which had been displaced by the sea were put in place.

PICKET'S PIER.

This pier is about two miles below the Village of Canning, King's County, and near the mouth of the Habitant River, which flows into the western side of the Basin of Minas.

The approach to and the outer end of the wharf at this place were raised.

PORT GREVILLE.

Port Greville, Cumberland County, is on the southern arm of the Bay of Fundy, 15 miles from Parrsboro'.

The outer 70 feet of the beach protection work was rebuilt, and a breakwater, 250 feet in length, was built to prevent the gravel being swept by westerly gales into the mouth of the river.

SURETTE'S ISLAND.

Surette's Island, Yarmouth County, is situate 13 miles south-east from the town of Yarmouth.

During the fiscal year a wharf 100 feet in length and 25 feet in width has been built, and has already proved of great benefit to the locality.

TANCOOK ISLAND.

Great Tancook Island, Lunenburg County, is in Mahone Bay, about eight miles south from the town of Chester.

The pier constructed at the joint expense of the Dominion and Local Governments in 1873, having fallen out of repair, an appropriation was made for the purpose of putting it in good order. At the close of the fiscal year delivery was being made of the necessary materials.

TATAMAGOUCHE.

The "Cape Breton" was engaged for a few weeks in opening a narrow channel through the bar at Tatamagouche, Colchester County.

THREE FATHOM HARBOUR.

Three Fathom Harbour, Halifax County, is situated on the Atlantic coast, about 14 miles east from Halifax Harbour.

Some slight necessary repairs were made to the beach protection works.

WEST PUBNICO.

West Pubnico is at the extreme end of Yarmouth County, and about 30 miles from the town of Yarmouth.

The work referred to in the report of last year has been extended a distance of 230 feet, the extension consisting of a pile wharf 25 feet wide.

WHITE POINT.

White Point, Queen's County, is on the Atlantic coast of Nova Scotia, about 8 miles south-west from the entrance to Liverpool Harbour.

During the past year the ballast which had been washed out of the wrecked breakwater was removed, and some repairs made to the work remaining.

WHYCOCOMAGH.

Campbell's Pond, Inverness County, is situated on the south side of Whycocomagh Bay.

The channel leading into the pond was straightened during the year, and the east side protected by brush and stone work.

YARMOUTH.

Yarmouth is the shiretown of the county of that name.

The beach protection works which had in places been undermined by the sea were made good, and other portions received repairs.

The work of widening the channel referred to in last year's report was continued, by the dredge "Canada," and when completed, the entrance to this harbour will be greatly improved.

NEW BRUNSWICK.

CAPE TORMENTINE.

Cape Tormentine is on the New Brunswick coast of the Strait of Northumberland, and is opposite Cape Traverse, Prince Edward Island.

During the fiscal year the contractors constructed but 230 feet of the inshore portion of the wharf at this place.

COGAGNE.

The Harbour of Cocagne, Kent County, is on the south-west coast of the Strait of Northumberland, about 10 miles north of Shediac. The entrance is obstructed by a bar of sand and gravel, to make a channel through which the "St. Lawrence" commenced operations on 2nd August, 1886, and by the 28th of that month a channel having a depth of 14 feet had been dredged.

DALHOUSIE.

Dalhousie Harbour is situated at the head of the Baie des Chaleurs.

In December, 1886, a contract was entered into for the construction of a ballast wharf, 300 feet in length, to extend in a westerly direction from the upper side of the railway wharf, and at the close of the fiscal year the work was in progress.

ELM TREE RIVER.

Elm Tree River is a small stream emptying into the Baie des Chaleurs, about 10 miles to the northward of the entrance to Bathurst Harbour.

Several boulders, which made it dangerous for vessels to enter and leave, were removed.

GRANDE ANSE.

Grande Anse, Gloucester County, is a small cove on the south shore of Baie des Chaleurs, about midway between the harbours of Bathurst and Shippegan.

The upper portion of the breakwater, which was carried away by the ice on the 22nd January, 1886, and referred to in the report of last year, has been rebuilt over a length of 100 feet.

HOPEWELL CAPE.

Hopewell Cape, Albert County, is on the Petitcodiac River, about 7 miles below Hillsboro'.

During the year the small stream running near the ballast wharf was deepened and straightened and a cut made at the end of the wharf for the better accommodation of vessels in ballast.

PARTRIDGE ISLAND.

Partridge Island lies directly off the entrance to St. John Harbour.

Many years ago two small piers were built to facilitate the landing of supplies for the lighthouse and other stations of the Marine Department on the island.

During a severe south-easterly storm, in the early part of February last, the east pier was almost entirely destroyed, and the wreckage swept into the harbour formed by the two piers.

This wreckage has been removed, and the west pier is available for vessels and boats.

QUACO.

Quaco is on the north coast of the Bay of Fundy, and about 30 miles east of the Harbour of St. John.

During the year the breakwaters at the entrance of this harbour were repaired and strengthened.

RIVER ST. FRANCIS.

The St. Francis is a tributary of the St. John, flowing into it at a point about 30 miles west of Edmunston.

During the fiscal year the river for a distance of 12 miles from its mouth was improved by the removal of sand banks, large rocks and boulders, and the tow-path was put in order.

RIVER ST. JOHN.

Between St. John and Fredericton 204 snags were removed from different parts of the river.

On the 1st July, 1886, the dredge "New Dominion" was operating at Bellisle Bay, and by the 28th September had removed 28,035 cubic yards of material.

On the 3rd October work was commenced by the above dredge in re-opening the channel at Grand Lake, Queen's County, and continued till the 29th October, 9,555 cubic yards having been removed.

The work at Bellisle was resumed on the 28th June, and at the close of the fiscal year 1,510 cubic yards had been removed.

Between Fredericton and Bear Island boulders and rocks were removed at Burden's Landing and in the vicinity of Spring Hill, and the channel was widened at the head of Hartt's Island.

From Bear Island upwards to River des Chutes the channel was improved by the removal of boulders and bars.

From River des Chutes to Grand Falls blasting was done and rock removed at White Rapids and Larlee Rock below Andover Bridge.

On the Tobique improvements were effected at Nictau Bar, Little Nictau Bar, Hammond Bar, Perdue Bar, Miller's Bar, Gaunce's Bar, Riley Brook Bar, Hartly Brook Bar, Swift Island Bar, Horse Island Bar, Gulquack Bar, Plaster Rock Bar, and other points.

Above Grand Falls to River St. Francis the tow path has been repaired, and some rocks and sand bars removed from the channel at Baker's Brook, while immediately above the Falls a "shear dam," 230 feet in length, to guide timber and logs over the Falls, was commenced on the west side of the river, but not finished.

ST. JOHN HARBOUR.

The work of re-building the breakwater at Negro Point, at the entrance to the harbour, was brought to conclusion, and the work taken off the contractor's hands at the end of January last.

The protection work at the inner end of the breakwater, and around the foot of the cliff on which stands Fort Dufferin, having been damaged by a severe storm in the early part of February last, steps were taken to repair the same, and with the amount authorized for expenditure about half the work required was done.

The dredge "New Dominion," worked at the wharf of the International S.S. Co. during the last days of December and up to the 8th of January last, removing 450 cubic yards of material.

SHIPPEGAN.

Shippegan Harbour, Gloucester County, is situated at the southern extremity of Shippegan Sound, an arm of Baie des Chaleurs.

General repairs were executed on the breakwater at this place.

TYNEMOUTH CREEK.

Tynemouth Creek, St. John County, is on the north coast of the Bay of Fundy, 20 miles east of the entrance to St. John Harbour.

The protection works built at this place by the Department in 1875, 1882, 1883 and 1884, were repaired and strengthened.

UPPER SALMON RIVER.

Upper Salmon River, Albert County, empties into Salisbury Bay, about 4 miles north-east of Mathews Head.

In October, 1886, a contract was entered into for the construction of a further length of 245 feet to the breakwater built by the Department in 1883, 1884, and at the close of the fiscal year the work was well advanced towards completion.

 QUEBEC.

ANSE À L'EAU

Near Tadousac, at the mouth of the Sauguenay.
Some small repairs were made to the flooring and slip.

ANSE ST. JEAN.

Anse St. Jean is on the south-western shore of the Sauguenay, and about 25 miles from its mouth.

During the fiscal year a movable slip was constructed, an open shed 40 by 28 feet built, and a part of the flooring renewed.

These renewals of flooring from year to year are due to the quantities of cord-wood piled on the wharf.

BARACHOIS DE MALBAIE

On the northern shore of the Baie des Chaleurs.

A further quantity of rocks were removed from the channel, and a considerable amount remains yet to be removed.

BAY ST. PAUL

In the County of Charlevoix, on the north shore of the St. Lawrence, about 60 miles below Quebec.

An abutment was built to connect the shore end of the new wharf with the road made by the municipality.

BERTHIER (EN HAUT).

The village of Berthier *en haut* is on the north shore of the St. Lawrence, 45 miles north-east of Montreal and opposite Sorel.

An ice pier for the protection of property at the village was built under contract, and has fully answered all expectations.

BIC

In the County of Rimouski, is 170 miles below Quebec.
The wharf at this place was completed during the fiscal year.

BRYSON BRIDGE.

The Bryson bridge crosses the Ottawa at the village of Bryson and connects the said village and north shore of the Ottawa with Calumet Island.

Towards the construction of this bridge the Dominion has contributed \$5,000. The bridge is 585 feet in length from abutment to abutment with long approaches on each side.

THE CASCADES.

The Cascades wharf is situated on the Ottawa River, in the County of Vaudreuil, and six miles east of Cedars Village.

A wharf 100 feet in length, 25 feet in width, the top being 5½ feet above low water, with two approaches, has been built, and a shed 40 feet by 24 feet erected thereon.

CHATEAU RICHER

In the County of Montmorency, 15 miles below Quebec.

During the fiscal year the work of clearing the beach of boulders was continued.

CHICOUTIMI

At the head of navigation of the Saguenay.

Some general repairs were made to the wharf, a slip built and the waiting-room was painted.

DOUCET'S LANDING

On the south shore of the St. Lawrence, opposite the city of Three Rivers.

The water, which had become much shoaled at the wharf at this place, was deepened by dredging, the material removed amounting to 6,500 cubic yards of mud.

ÉTANG DU NORD

At the western end of Grindstone, one of the group of islands in the Gulf of St. Lawrence known as the Magdalens.

During the fiscal year a further length of 200 feet of the breakwater was built, and another crib 100 feet long, 32 feet wide and 18 feet high; has been constructed and is ready to sink.

GATINEAU POINT

At the mouth of the Gatineau River, 2 miles below the city of Ottawa.

The damage done to the sheathing and fenders of the wharf was made good.

GRANDES BERGERONNES

In Saguenay County, on the north shore of the St. Lawrence, 14 miles from Tadousac.

The work of clearing the channel of the river of the rocks which obstruct it was begun, and a length of 1,000 by 60 feet in breadth finished.

There remains about a mile of river yet to be improved.

GRAND PABOS.

Grand Pabos is in Gaspé County and 30 miles from Percé.

Work was commenced in July, 1886, in removing by blasting the large rocks which form obstructions in the harbour. Work was discontinued in August, up to which time 173 tons of rock had been removed.

KAMOURASKA.

Kamouraska is on the south shore of the St. Lawrence, 90 miles below Quebec.

During the fiscal year an extension of 100 feet to the existing wharf was commenced, but not quite completed.

LA GRANDE DÉCHARGE,

The larger of the two outlets of Lake St. John, through which its waters are discharged into the Saguenay.

During the year a cut 1,500 feet long, 15 feet wide, with a mean depth of $6\frac{1}{2}$ feet, was made in order to facilitate the off flow of the waters of Lake St. John.

LAKE MEGANTIC.

During the fiscal year a pier was built at Ditchfield, and some slight repairs made to the wharf at Agnes.

LANORAIE.

Lanoraie, County of Berthier, is on the north shore of the St. Lawrence, $36\frac{1}{4}$ miles below Montreal.

An approach 240 feet in length, to connect the shore with the block constructed in 1884, has been built.

LAPRAIRIE.

Laprairie is the *chef-lieu* of the county of the same name, and is on the south shore of the St. Lawrence, 7 miles above Montreal.

The "Nipissing" commenced work on a shoal between the old and new channels on the 26th May, and was still so engaged at the close of the fiscal year.

Two ice piers were built during the year to prevent damage being done to property during the breaking up of the ice in the spring. They have proved thoroughly satisfactory.

LES ÉBOULEMENTS

In the County of Charlevoix, on the north shore of the St. Lawrence, 69 miles below Quebec.

Repairs were made to the face timbers and floor stringers of the wharf, and the flooring was renewed in places.

MONTMAGNY.

St. Thomas is the *chef-lieu* of the County of Montmagny, and is on the south shore of the St. Lawrence, 35 miles below Quebec.

The work of clearing the basin of boulders was continued during the fiscal year, good progress being made.

MURRAY BAY

In the county of Charlevoix, on the north shore of the St. Lawrence, 84 miles below Quebec.

Repairs were made to the movable slip.

NEW CARLISLE.

New Carlisle, Bonaventure County, is on the northern shore of Baie des Chaleurs and about 65 miles east of Campbellton.

The work of constructing this pier was carried on during the fiscal year with vigour and is nearly completed.

NEWPORT RIVER

In the County of Gaspé, empties into the Baie des Chaleurs, 25 miles to the westward of Percé.

During the fiscal year two protection piers have been built, one on each side of the channel, to prevent it from being filled with sand during heavy storms.

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NICOLET.

The River Nicolet empties into the St. Lawrence on its southern shore at the foot of Lake St. Peter.

During September and October, 1886, 560 feet of pile protection work was driven, and completed with the exception of the stone slope.

PERCÉ

The *chef lieu* of the County of Gaspé.

The further quantity of timber required and referred to in the report of last year has been delivered.

PORTAGE DU FORT BRIDGE.

This bridge crosses the Ottawa at Portage du Fort, 60 miles above the City of Ottawa.

The superstructure of this bridge, which is 1,000 feet in length, was completed in April last.

RIVIÈRE À LA GRAISSE.

This river flows through the County of Vaudreuil and empties into the Ottawa on its southern side, about 45 miles above Montreal.

The work of deepening the channel which was in progress at the close of last fiscal year, was completed, and a turning basin for vessels dredged.

RIVER BLANCHE.

This river flows through the County of Rimouski and empties into the St. Lawrence on its southern shore.

The work at this place was repaired and strengthened and a block 50 by 30 feet added to the eastern end of the head of the wharf.

RIVIÈRE BRAS ST. NICHOLAS.

This river empties into the Montmagny Basin at St. Thomas.

The boulders lying under and above the Intercolonial Railway Bridge were removed from the bed of the river, and the rocky ledge below the bridge was blasted so that the water has now no obstructions to meet with and the periodical flooding of the lands above the bridge will no longer take place.

RIVER DU LIÈVRE

Empties into the Ottawa, 18 miles below the city of Ottawa.

In December last a contract was entered into for the construction of a lock and dam at the Little Rapids, and up to the end of the fiscal year work had not been commenced.

RIVER DU LOUP (EN BAS).

The village of River du Loup (or Fraserville) is situated on the south shore of the St. Lawrence, 114 miles below Quebec.

Repairs were made to the flooring and hand-rail, and a waiting room and freight shed erected on the head of the pier.

The channel of the river was deepened and some boulders were removed therefrom.

RIVER DU LOUP (EN HAUT.)

This river, in the County of Maskinongé, empties into the St. Lawrence (Lake St. Peter) on its northern side, 21 miles above Three Rivers.

The "Nipissing" was engaged in cutting a channel 1,100 feet in length, 40 in breadth and to a depth of 6 feet through the sand bar obstructing its mouth in Lake St. Peter.

RIVIÈRE OUELLE

Empties into the southern side of the St. Lawrence, 75 miles below Quebec.

A large number of boulders were removed from the channel of the river.

During the year the work of sheathing the wharf at Point aux Orignaux was continued, 759 feet being done.

RIVER RICHELIEU.

The dredge "Nipissing" commenced work on the 31st May at St. Antoine, being engaged in straightening and deepening to 9 feet the crooked channel between the island and the western shore, and at the close of the fiscal year was still engaged on this work.

RIVER RIMOUSKI.

This river flows into the St. Lawrence on its southern shore, in the County of Rimouski.

The work of removing boulders from the channel at the mouth of the river was continued during the past year.

RIVER SAGUENAY.

The work of deepening and improving the channel of the river below Chicoutimi, which had been discontinued, was resumed and good progress made.

RIVER ST. LAWRENCE.

Removal of anchors, chains, &c.

The Lifting Barge was employed during the summer of 1886 by the Department in the removal of boulders from the Fly Bank, Quebec Harbour, and was, after September, continued at work by and under the directions of the Harbour Commissioners of Quebec.

RIVIÈRE STE. ANNE DE BEAUPRÉ.

This river empties into the St. Lawrence on its northern side, in the Parish of Ste. Anne, County of Montmorency.

The work of improvements on this river, to facilitate the descent of logs, was continued. They consist in the removal of rocks and the construction of dams.

RIVER ST. FRANCIS.

This river empties into Lake St. Peter, 3 miles below the mouth of the River Yamaska.

A dredge was employed in cutting through the shoal at the mouth of the river, and through the first shoal above Tourville's Mills.

RIVER ST. LOUIS.

This river flows through the County of Beauharnois into the St. Lawrence, at the town of Beauharnois.

To give an easier flow to the water during freshets, Symon's dam, situated 10 miles above the mouth of the river, was removed and some repairs made to the head gates at the entrance to the Feeder.

RIVER ST. MAURICE.

Between the 5th July and 26th August, 1886, a dredge operated in the western channel of the St. Maurice, cutting a passage 60 feet wide and 6 feet deep at extreme low water, as far as the St. Maurice Bridge.

At Cap aux Corneilles Station, $1\frac{1}{2}$ miles above the mouth of the river, repairs to existing and construction of additional piers were commenced last winter, and at the close of the fiscal year the work was well under way.

RIVIÈRE VERTE

Empties into the St. Lawrence on its southern side, [in the County of Témiscouata.

During the fiscal year the bed of the river was cleared of boulders.

RIVER YAMASKA.

The Yamaska flows from the south into Lake St. Peter.

During the fiscal year dredging to a depth of $5\frac{1}{2}$ feet was done through shoals obstructing free navigation of the river.

The western abutment of the dam was raised one course of timber and the upper eastern protecting wing extended 60 feet.

ST. ALPHONSE DE BAGOTVILLE,

At the head of Ha! Ha! Bay, River Saguenay, about 66 miles above its mouth.

The flooring of the pier was repaired in places, a freight shed 50 by 30 feet, and a waiting room 24 by 18 feet, were built.

STE. ANNE DE BELLEVUE

In the county of Jacques Cartier, on the River Ottawa, and 21 miles above Montreal.

Some necessary alterations were made to the wharf lately constructed by the Department at this place.

Boulders and other obstructions about the wharf were removed by the dredge "Nipissing," leaving 9 feet of water.

STE. ANNE DE LA POCATIÈRE

In the County of Kamouraska, on the south shore of the St. Lawrence, 70 miles below Quebec.

Work on this wharf was continued during the fiscal year, and but little now remains to complete it.

STE. ANNE DE SOREL

In the County of Richelieu, on the south-east shore of the St. Lawrence, about 3 miles below Sorel.

An additional ice pier, No. 6, has been constructed between piers 4 and 5.

STE. FAMILLE

On the Island of Orleans, 17 miles below Quebec.

This pier was thoroughly repaired during the fiscal year.

ST. FRANÇOIS D'ORLÉANS.

St. François is at the extreme eastern end of the Island of Orleans.

The necessary materials for the completion of the pier at this place have been procured.

STE. IRENÉE.

Ste. Irenée is in the County of Charlevoix, on the north shore of the St. Lawrence, 78 miles below Quebec.

A block 80 feet long, 30 feet wide and 18 feet high, has been sunk at this place.

ST. JEAN D'ORLÉANS,

On the Island of Orleans, 22 miles below Quebec.

The wharf was repaired where necessary and put in good order.

ST. PLACIDE,

In the County of Two Mountains, is situated on the northern bank of the Ottawa, about eighteen miles above its junction with the St. Lawrence.

A dredge was engaged, from 15th July to 1st September, 1883, in enlarging the basin in front of and at the sides of the wharf, and in making the channel from the eastward, about 800 feet of which is completed to a depth of 10 feet.

ST. ZOTIQUE.

St. Zotique is in the County of Soulanges on the north side of Lake St. Francis, 3 miles from Coteau Landing.

A crib 18 by 20 feet, carrying a shed of the same dimensions was built, and general repairs made to other portions of the wharf. Two of the ice piers were rebuilt from the water line.

SAULT AU RECOLLET RAPIDS.

These rapids are about 2 miles above the village of Sault au Recollet on the Rivières des Prairies.

To facilitate the descent of timber some boulders were removed from the channel.

TÉMISCOUATA ROAD.

This road extends from River du Loup (*en bas*), a distance of 67 miles, to the boundary between the Provinces of Quebec and New Brunswick.

From the 9th to the 60th mile, 39 culverts were repaired and the bridge at the 50th mile, over the Petite Rivière, received attention.

TROIS PISTOLES.

The village of Trois Pistoles is on the south shore of the St. Lawrence, 148 miles below Quebec.

The construction of a breakwater, to protect the pier built at this place by the Department, was commenced but not completed during the fiscal year.

VAUDREUIL

In the County of Vaudreuil, on the River Ottawa, about 25 miles above Montreal.

The "Nipissing" arrived at Vaudreuil on 9th August, and was engaged on the channel previously commenced, leading from deep water to the proposed wharf.

 PROVINCE OF ONTARIO.

BELLE RIVER.

Belle River empties into Lake St. Clair, in the County of Essex, some distance above the town of Windsor.

The pile work at the mouth of this river received some necessary repairs.

BELLEVILLE.

At the mouth of the River Moira which flows into the Bay of Quinté, 43 miles west of Kingston.

For the purpose of creating an outlet for the waters of the Moira during freshets, a contract has been entered into for the dredging of a channel. Work commenced on 30th September and closed on 30th November, 1886, and had not been resumed by the contractor at the close of the final year.

COBOURG

On Lake Ontario, 96 miles west of Kingston.

The superstructure of the outer crib of the east pier was built to the proper height, and that of the next 300 feet of the same pier was rebuilt where required. Repairs were also made to the west pier.

The dredge, "Ontario" was engaged from 1st July to 7th August in continuing the work of deepening along the wharves and the breakwater, and the basin.

KINGSTON.

Work was resumed on Point Frederick shoal on 1st July and continued until 29th October, during which time 2,421 cubic yards of rock were removed.

KINCARDINE

At the mouth of the River Penetangore, 31 miles north of Goderich, on Lake Huron.

Repairs were made to the south pier, and a channel was dredged to a depth of 16 feet from the salt works out to deep water, to enable vessels to load at the works.

KINGSVILLE

On Lake Erie, about 25 miles east from the mouth of the River Detroit. Extensive repairs were made to the harbour works at this place.

LITTLE CURRENT

The passage between the Cloche and Great Manitoulin Islands, and on the direct route to Sault Ste. Marie for vessels taking the north channel of Lake Huron.

The work of increasing the width of the channel at its upper end was carried on during the fiscal year, but is not yet completed.

LION'S HEAD.

Lion's Head, North Bruce, is 22 miles north of Warton, on the west side of Georgian Bay.

A channel, 175 feet long, 130 feet wide and 14 deep, was cut through a gravel shoal, which had formed behind the breakwater and interfered with navigation.

LITTLE BEAR CREEK.

Little Bear Creek empties into the Chenal Ecarté on the eastern side of St. Anne's Island, Lake St. Clair, about 16 miles from Chatham.

Owing to deposit brought down by the creek, one of the winding basins and some points in the dredged channel had become shoaled. This deposit was removed.

MCGREGOR'S CREEK

Empties into the River Thames, at Chatham, Kent County.

To prevent a sliding of the bank of the creek, on the town side, and consequent damage to property, a contract has been entered into for the construction of 300 feet of pile protection work on the south side, and at the close of the fiscal year the work was nearly completed.

MIDLAND.

Midland, Simcoe County, is the terminus of the Midland Division of the Grand Trunk Railway on Georgian Bay.

A contract has been entered into for the construction of wharfing in this harbour, the Grand Trunk Railway and the municipal authorities of Midland contributing thereto.

At the close of the fiscal year a commencement had been made of the work by the contractor.

OAKVILLE.

Oakville, in the County of Halton, is on Lake Ontario, 22 miles west of Toronto, and 18 miles east of Hamilton.

A contract has been entered into for the rebuilding of the outer 360 feet of the east pier which had been carried away by a severe storm. At the close of the fiscal year but little progress had been made with the work.

OWEN SOUND.

Owen Sound, Grey County, is at the mouth of the River Sydenham, and is the Georgian Bay terminus of the Canadian Pacific Railway.

Dredging was done during the year in the harbour as far up as the steamboat wharf.

PORT ARTHUR.

Port Arthur is on Thunder Bay, Lake Superior.

A contract has been entered into for an extension, eastwardly, of the breakwater, a distance of 1,600 feet.

At the close of the fiscal year the work was well in hand.

PORT ELGIN

Is in the County of Bruce, and 24 miles north of Kincardine.

A contract has been entered into for the construction of a groyne extending from the present landing pier a distance of 300 feet, to arrest the travel of sand which tends to shoal the water in the harbour, and at the close of the fiscal year the work was well under way.

From the 1st July to 11th August the dredge "Challenge" was employed in deepening the harbour between the dock and the breakwater. It resumed work on the 16th May, and removed an accumulation of sand that had washed into the harbour in the vicinity of the wharf, closing work on 1st June, 1887.

[1887]

PORT HOPE

On the north shore of Lake Ontario, 8 miles west of Cobourg.

A portion of the superstructure of the west pier was rebuilt, and stone and planking placed in and on the breakwater for a distance of 100 feet.

The dredge "Ontario" was employed during part of the fiscal year in giving increased depth in the harbour and along the breakwater.

RIVER AUX PÊCHES.

This river flows through the County of Essex and empties into Lake St. Clair. Pile protection work has been constructed on each side of the river at its mouth.

RIVER KAMINISTIQUIA.

This river empties into Thunder Bay to the westward of Port Arthur.

The deepening of the river up to the large elevator and docks was carried on during the working season, and when this channel is completed large vessels will have no difficulty in getting up to Fort William.

RIVER OTTAWA—NARROWS ABOVE PEMBROKE.

Dredging was carried on from 20th September until 16th November in the River Ottawa below the mouth of the Petewawa River.

During that time 540 cubic yards of boulders and 75 of rock were removed. Fifteen buoys were also placed in position.

RIDEAU RIVER.

A revetment wall 540 feet in length was built on the western side of the river to protect property which was annually damaged by the spring freshets.

SAUGEEN RIVER PIER.

This pier is situated at the mouth of the Saugeen River, which empties into Lake Huron at the village of Southampton.

A contract was entered into for the reconstruction of a length of 544 feet of the superstructure of the old pier, and the construction of an additional crib 100 feet in length.

At the close of the fiscal year the work was nearly finished.

SOUTHAMPTON,

Bruce County, is on the east coast of Lake Huron, 143 miles above Sarnia.

The dredging commenced last year at the landing pier was completed by the dredge "Challenge."

SUMMERSTOWN.

Summerstown, County of Glengarry, is on the north side of Lake St. Francis, 10 miles below Cornwall.

The work of deepening the main channel from the St. Lawrence to the wharves at the village has been completed.

THORNBURY.

Thornbury, Grey County, is distant from Collingwood 13 miles, and is on the Georgian Bay.

A row of piling was driven from the inner end of the pier in a south-westerly direction to prevent the beach being cut through by the sea.

The dredge "Challenge" operated in the harbour cutting through the shoal between the dock and the breakwater.

TORONTO.

The harbour of Toronto, formed by Toronto Island, is on the north shore of Lake Ontario, 161 miles from Kingston.

During the year a further quantity of heavy stone was placed at exposed points of the island protection works.

MANITOBA.

THE RED RIVER.

This river empties into the southern end of Lake Winnipeg.

The departmental dredge operated during the year on the shoal in Lake Winnipeg, and at the Forks of the River.

NORTH-WEST TERRITORIES.

RIVER SASKATCHEWAN.

The expenditure incurred on this river was in the removal of boulders and sand bars obstructing the channel of the North Branch, between Edmonton and The Forks. Much, however, remains to be done.

BRITISH COLUMBIA.

The report of the Hon. J. W. Trutch, Dominion Agent in British Columbia, and printed elsewhere in this volume, contains a description of harbour and other works carried on under his direction.

ESQUIMALT GRAVING DOCK.

The dock has been completed and is ready for the reception of vessels.

SURVEYS AND EXAMINATIONS.

During the year surveys and examinations were made at the undermentioned localities; and—with some exceptions—plans, reports and estimates have been submitted:—

Point Fortune,	King's Co.	P. E. I.
Georgetown,	do	do
Murray Harbour	do	do
Brae,	Prince Co.	do
New London	do	do
Pownal Bay,	Queen's Co.	do
Nine Mile Creek	do	do
North Rustico	do	do

Bayfield,	Antigonish Co.,	N. S.
Tracadie	do	do
Cribbens Cove	do	do
McNair's Cove	do	do
Beaver Cove,	Cape Breton Co.	do
Marstown,	Colchester Co.	do
Weymouth,	Digby Co.	do
Digby	do	do
Sheet Harbour,	Halifax Co.	do
Bedford Basin	do	do
West Bay,	Inverness Co.	do
Indian Point	do	do
Judique	do	do
Mabou Mines	do	do
Little Judique	do	do
Hall's Harbour,	King's Co.	do
Horton	do	do
Mordant	do	do
Gold River,	Lunenburg Co.	do
Tancook Island	do	do
LaHave Islands	do	do
Brooklyn,	Queen's Co.	do
Summerville	do	do
Lower D'Escousse,	Richmond Co.	do
Port Richmond	do	do
Points Port	do	do
St. Peter's Island	do	do
Little Narrows,	Victoria Co.	do
White Point	do	do
Eel Lake,	Yarmouth	do
Argyle Sound	do	do
Pinkney's Point	do	do
Chebogue Head	do	do
Moser River	do	do
Barachois	do	do
Rock Point	do	do
Elm Tree River,	Kent Co.,	N. B.
Dalhousie,	Restigouche	do
Grand Falls	do	do
Dipper Harbour,	St. John Co.	do
Black River	do	do
Quaco	do	do
River St. Louis,	Beauharnois Co.,	Quebec.
Berthier (<i>en haut</i>),	Berthier Co.	do
L'Anse aux Gascons,	Bonaventure Co.	do
Ste. Anne de la Perade,	Champlain Co.	do
Les Eboulements,	Charlevoix Co.	do
Cap Chatte,	Gaspé Co.	do
House Harbour	do	do
Ste. Adelaide de Pabos	do	do
Ste. Anne des Monts	do	do
St. Godfroi	do	do
Pointe Claire,	Jacques Cartier Co.	do
Ste. Anne de Bellevue	do	do
Kamouraska,	Kamouraska Co.	do
Laprairie,	Laprairie Co.	do

River des Prairies,	Laval Co.,	Quebec.
Sault au Recollet	do	do
River du Loup (<i>en haut</i>),	Maskinongé Co.	do
St. Joachims,	Montmorency Co.	do
River du Lièvre,	Ottawa Co.	do
Cheneaux Rapids (River Ottawa).		do
Ste. Anne de Sorel,	Richelieu Co.	do
Three Rivers,	St. Maurice Co.	do
Cacouna,	Temiscouata Co.	do
Father Point	do	do
Ile Verte	do	do
River Madawaska	do	do
Trois Pistoles	do	do
Cascades,	Vaudreuil Co.	do
Ile Perrot	do	do
Vaudreuil	do	do
River St. Maurice		do
Port Arthur,	Algoma Co.	Ontario.
Kincardine,	Bruce Co.	do
Oliphant,	do	do
Read's Point,	do	do
Southampton,	do	do
Wiarion,	do	do
Rideau River,	Carleton Co.	do
Port Granby,	Durham Co.	do
Port Hope	do	do
Jeannette's Creek,	Essex Co.	do
Kingsville	do	do
Portsmouth,	Frontenac Co.	do
Owen Sound,	Grey Co.	do
Goderich,	Huron Co.	do
Port Albert,	do	do
Mitchell's Bay,	Kent Co.	do
River Thames,	do	do
Rondeau	do	do
Little Lake,	Prince Edward Co.	do
Nation River		do
Assiniboine River,		Man.
Red River—St. Andrew's Rapids		do
West Selkirk		do
West Slough—near West Selkirk		do
Bow River—at Calgary,		N. W. T.
Elbow River do		do
River Saskatchewan		do

DREDGING.

THE "ST. LAWRENCE."

On the 1st July, 1886, this dredge was working at the head of the North-West Arm, Halifax Harbour, in deepening the channel to 16 feet at low tide. Work ceased on the 15th July, when a further quantity of 3,850 cubic yards of mud and boulders had been removed.

The dredge next operated at Cunard's Wharf, Halifax Harbor, up to 21st July, removing 1,400 cubic yards of mud and old logs. For this work the Messrs. Cunard paid \$300, which sum has been placed to the credit of the Receiver General.

On 2nd August the "St. Lawrence" arrived at Cocagne, Kent County, N.B., and opened a channel to a depth of 14 feet; 12,600 cubic yards of sand, clay and shells being removed by the 25th August.

On the 31st August the dredge commenced work at Little Glace Bay, Cape Breton County, N.S., improving the entrance to the harbour, but much time was lost owing to bad weather. By 5th October 4,025 cubic yards of clay, stone, mud, &c., were removed.

On the 8th the dredge arrived at Picton and went into winter quarters on the Marine Slip.

The total quantity dredged during the year was 21,875 cubic yards, costing 37 $\frac{86}{100}$ cents per yard.

The vessel was cleaned and painted, and repairs were made to the buckets, engine and boiler.

THE "CANADA."

At the beginning of the fiscal year this dredge was operating at Yarmouth, N.S., improving the channel near the Lobster Rocks and in front of the wharves, and on the 8th August it commenced the removal of the point at "the crotch"—so called—and continued work till 30th September, when 10,485 cubic yards of sand, mud and old piles had been removed, making a cut 60 feet wide, 14 feet deep at low tide, about half way through the point. The dredge then proceeded to St. John, N.B., and went into winter quarters.

On 25th June the "Canada" was ordered back to Yarmouth, and at the close of the fiscal year had removed a further quantity of 480 cubic yards of material.

The total quantity of dredging done during the fiscal year amounted to 10,965 cubic yards, at a cost of 73 $\frac{97}{100}$ cents per cubic yard.

A new deck, bulwarks, &c., were put on the dredge, and the cabins and rooms were resheathed and painted. The engines, boiler and condenser were put in thorough order. New tumblers and tumbler shafts were put in to receive the new buckets.

The sum of \$7.70 was received from the sale of old boats, and placed to the credit of the Hon. the Receiver General.

THE "NEW DOMINION."

At the commencement of the fiscal year this dredge was engaged in opening a channel in Bellisle Bay, King's County, N.B., to the public wharf, and continued working till 28th September, by which date 28,035 cubic yards of sand and clay had been removed.

On 3rd October work was commenced at Grand Lake, Queen's County, in reopening the channel. By the 29th October the dredge had removed 9,555 cubic yards of clay and sawdust, and the plant was taken to Indian town.

Work was done at the mills of Messrs. Millar & Woodman, at Millford, St. John County, N.B., from the 1st to 23rd November, resulting in the removal of 9,275 cubic yards of mud, ashes and bark.

On 29th November, work was begun at Hayford & Stetson's mills, at Indian town, and by the 21st December, 8,015 cubic yards of clay, bark, chips and logs were removed.

From that date to 8th January, the dredge removed 450 cubic yards from alongside the International Steamers wharf at St. John, at which latter date she was laid up for the winter at Carleton.

On 28th June, work was resumed at Bellisle Bay, and at the close of the year an additional amount of 1,510 cubic yards had been removed.

The plant received the necessary repairs during the winter.

The total quantity of work done by this dredge during the year amounted to 56,840 cubic yards, at a cost of 11.75 cents per cubic yard.

The sum of \$348.36 was received for work done for Messrs. Millar & Woodman and Messrs. Hayford & Stetson, and placed to the credit of the Hon. the Receiver General.

THE "CAPE BRETON."

At the beginning of the fiscal year the dredge was engaged in improving the channel near the coal wharves at Granton, Pictou County, N. S., working until 14th July, and removing 2,125 cubic yards of mud.

The work of improving the channel at Tatamagouche, Colchester County, N.S., was then resumed, and by the 27th of September, 14,255 cubic yards of mud and sand were removed and a narrow channel made through the bar.

The dredge was placed in winter quarters at Pictou on 4th October, and the plant received necessary repairs.

The total quantity dredged during the year was 16,350 cubic yards, and cost 43.36 cents per cubic yard.

The sum of \$69.20 was received from the sale of coal, zinc, old iron, &c., and placed to the credit of the Receiver General.

THE "PRINCE EDWARD."

At the close of the last fiscal year this dredge was operating in the harbour of Tignish, Prince County, and continued doing so until 25th September, 1886, up to which date 6,137 cubic yards of clay, sand and rock, had been removed, at a cost of \$1.01 per cubic yard.

The plant wintered at Cascumpec, and was repaired where required.

The sum of \$4 was received from the sale of an old cook stove and placed to the credit of the Receiver General.

THE "GEO. M'KENZIE."

At the beginning of the fiscal year this dredge was engaged in improving the entrance to Chéticamp Harbour, and by the 25th August had made a channel 45 feet wide and 13 feet deep, at low water, by the removal of 12,990 cubic yards of sand, gravel and hard pan.

On the 10th September, after a rough passage, in which two scows were lost, the dredge commenced work at Aspy Bay, Victoria County, but owing to the shoal nature of the water at the entrance to the harbour, a tug could not be employed and the scows had to be run by hand, and thus much time was lost.

By 4th October, 3,820 cubic yards of sand had been removed, and the plant was placed in winter quarters, and, as far as possible, repairs were made.

The total quantity of work done by the dredge during the year amounted to 16,810 cubic yards, at a cost of 41.09 cents per cubic yard.

THE "CHALLENGE."

On 1st July, 1886, the dredge was at Port Elgin, Lake Huron, opening a channel through a shoal between the dock and breakwater to a depth of 12 feet, 13,285 cubic yards of clay and sand being removed.

The dredge then worked one day at Southampton, removing 420 cubic yards of clay and stone, and on the 18th arrived at Lion's Head, Georgian Bay, where it worked until 15th September, cutting a channel 175 feet long, 130 feet wide, and 14 feet deep, through a shoal behind the breakwater, 7,020 cubic yards of gravel being removed.

The plant was then taken to Thornbury, Grey County, and opened a channel in the shoal between the dock and breakwater, removing 8,820 cubic yards of boulders, gravel and sand.

On 27th October the plant was taken to Collingwood and wintered there.

Necessary repairs having been effected, the dredge tug and scows left for Port Elgin on 16th May and worked in the harbour until 1st June, removing 5,820 cubic yards of sand that had accumulated in the vicinity of the dock.

The dredge was then taken to Kincardine, and commenced work on 2nd June in opening a channel from the salt works to deep water in the lake, 4,380 cubic yards of sand having been removed.

The total number of cubic yards dredged during the year amounted to 43,675, at a cost of 12 $\frac{9}{10}$ cents per cubic yard.

THE "NIPISSING."

On 1st July, 1886, the dredge was working at Summerstown, Glengarry County, Ontario, and remained there till the close of navigation, working in the main channel from the St. Lawrence to the wharves at the village, and removing 29,115 cubic yards of hard pan, boulders, clay, stone and sand.

On 21st May, 1887, the plant left Ottawa where it had wintered and been repaired, and arrived at St. Antoine, on the Richelieu River, and commenced straightening and deepening to 9 feet the crooked channel between the island and the western shore. At the close of the fiscal year the dredge was still at this work, and had removed 6,450 cubic yards of hard pan, boulders, clay and stone.

The total quantity dredged during the year amounted to 35,565 cubic yards, at a cost of 20 $\frac{3}{4}$ cents per yard.

THE "ONTARIO."

At the close of last fiscal year this dredge was operating at Cobourg, Lake Ontario, deepening the harbour inside of the piers, and the basin to a general depth of 15 feet, and to 17 feet along the western pier; the total quantity of material removed amounting to 13,740 cubic yards of clay, sand and stone.

On the 7th August the plant was taken to Port Hope and commenced work in the harbour, dredging to 11 feet at the inner and 16 feet at the outer end of the breakwater. Other parts of the harbour were also deepened. The amount of material dredged was 31,800 cubic yards of sand and 1,200 of clay.

On the 23rd October the plant was removed to Cobourg and placed in winter quarters, where it received the usual necessary repairs.

On the 2nd May work was commenced in the basin, Cobourg Harbour, a further quantity of 15,540 cubic yards of sand being removed.

On the 22nd June the dredge resumed work at Port Hope, removing a bar which had formed off the entrance to the harbour, and at the close of the fiscal year was still engaged on this work, giving a depth of 21 feet, and had removed 1,740 cubic yards of fine shifting sand.

The total amount of work done by this dredge during the year amounted to 64,020 cubic yards, at a cost 7 $\frac{3}{4}$ cents per cubic yard.

THE "QUEEN."

On 1st July this dredge was engaged in completing the channel at the Rivière à la Graise, Vaudreuil County, and in making a turning basin for vessels at the wharves at Rigaud, and work was closed on 9th August, by which time 6,834 cubic yards of clay and sand were removed.

Work was then resumed at Vaudreuil in the channel previously commenced, and by the 16th September, 5,019 cubic yards of clay were removed. The depth obtained was 9 feet.

From 16th September until 23rd October the "Queen" was engaged in dredging a channel through the bar at the mouth of the River du Loup (*en haut*) to 6 feet depth, and 6,424 cubic yards of clay, sand and mud were removed.

On 29th October the dredge arrived at Ste. Anne de Bellevue, County of Jacques Cartier, and removed 861 cubic yards of boulders, gravel, clay and stone from around the public wharf.

On the 10th November, the plant was towed to Ottawa, where it wintered and received the usual repairs.

On the 23rd May the dredge left for Laprairie, arriving there on the 26th, and from that date to the end of the fiscal year was working on a shoal between the new and old channels, giving a depth of 7 feet of water and removing 3,316 cubic yards of clay and stone.

The total amount of material dredged during the year was 22,454 cubic yards, at a cost of 34 $\frac{1}{2}$ cents per yard,

THE "ST. LOUIS"

On 4th July this dredge was taken to Summerstown, Glengarry County, Ontario, where it operated until 30th October in deepening the main channel from the St. Lawrence to the wharves at the village, during which period it removed 12,425 cubic yards of clay.

The dredge was then taken to Ottawa and placed in winter quarters. During the spring the cabin was rebuilt, stronger boom sticks put in, and the deck and machinery completely overhauled.

The total quantity of work done by this dredge during the year amounted to 12,425 cubic yards, at a cost of 28 $\frac{7}{8}$ cents per yard.

THE "WINNIPEG."

At the commencement of the fiscal year this dredge was engaged in widening the cut through the shoal at the mouth of the Red River in Lake Winnipeg, on the completion of which the plant was taken to "The Forks," and a second cut made through the bar which blocked the entrance to the west branch.

On the 31st October work closed and the plant was put in winter quarters in the west slough near West Selkirk, where the necessary repairs were made.

The total quantity of work done by this dredge during the year amounted to 68,400 cubic yards.

THE "DREDGER," E. C.

The details of work done by this dredge will be found in the report submitted by the Hon. J. W. Trutch.

THE "SNAG BOAT."

Details of the operations of this vessel will be found in the report of the Hon. J. W. Trutch.

DREDGING PLANT.

The dredging plant belonging to the Department is as follows:—

In the Maritime Provinces.

The steam hopper dredge—	"St. Lawrence."
do	do "Canada."
The dipper	do "New Dominion," and six scows.
do	do "Cape Breton," and five scows.
do	do "Prince Edward," and six scows.
do	do "Geo. McKenzie," and three scows.

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In Quebec.

The dipper dredge—"Queen of Canada," and two scows.
do do "Nipissing," two scows and tug "Denis."
do do "St. Louis," and two scows.
The stone lifter "Baillairgé."

In Ontario.

The dipper dredge—"Challenge," two scows and tug "Trudeau."
do do "Ontario," two scows and tug "Sir John."

In Manitoba.

The dipper dredge—"Winnipeg," two scows and tug "Sir Hector."
The bucket do "Priestman."

In British Columbia.

An elevator dredge and six scows. The steam tug "Georgie."
The "Snag Boat."

CLASSIFICATION of Disbursements of the following Dredges, during the Year ended 30th June, 1887.

"ST. LAWRENCE."

Items.	July.	August	September	October.	November	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	508 33	508 33	508 33	381 77	207 33	207 33	207 33	207 33	207 33	394 96	396 08	101 50	3,835 95
Coal.....	95 00	120 00	367 83	39 00	.....	.....	.....	.....	.....	.....	.....	.....	622 83
Provisions.....	452 18	33 84	211 20	113 85	.....	.....	.....	.....	.....	.....	.....	.....	811 07
Stores.....	.....	.....	12 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	19 53
Equipment.....	.....	45 50	16 58	.....	.....	.....	.....	.....	.....	.....	82 26	.....	144 33
Water.....	7 23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7 25
Repairs.....	45 58	.....	.....	.....	.....	143 76	.....	566 49	.....	319 03	.....	233 56	1,308 40
Pilotage.....	145 70	55 00	.....	115 00	.....	.....	.....	.....	.....	530 22	.....	.....	370 70
Wharfrage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	530 22
Contingencies.....	10 52	2 98	21 50	6 44	.....	.....	.....	.....	.....	.....	4 59	5 86	52 88
Totals.....	1,265 56	765 65	1,193 69	656 06	207 33	351 08	207 33	773 82	207 33	1,244 21	482 02	348 18	7,703 16
Working expenses...	1,219 98	765 65	1,193 69	656 06	207 33	207 33	207 33	.....	.....	.....	238 67	.....	4,696 04
Repairs, ordinary...	15 86	.....	.....	.....	.....	143 75	.....	773 82	207 33	1,244 21	.....	348 18	15 86
do extraordinary	29 72	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,991 26
Totals.....	1,265 56	765 65	1,193 69	656 06	207 33	351 03	207 33	773 82	207 33	1,244 21	482 92	348 18	7,703 16

CLASSIFICATION OF Disbursements of the following Dredges, &c.—Continued.

“CANADA.”

Items.	July.	August	September	October.	November	December	Jan.	Feb.	Mar.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	355 3	355 33	355 32	263 23	191 31	192 33	192 33	192 33	220 33	1,371 19	784 70	.....	4,174 76
Coal.....	186 51	185 14	158 78	.....	.....	.....	.....	.....	.....	.....	.....	.....	630 43
Provisions.....	339 61	49 45	196 13	.....	.....	.....	3 71	.....	.....	.....	41 69	.....	588 90
Stores.....	8 70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 39
Equipment.....	50 00	174 56	10 72	.....	.....	.....	.....	.....	.....	.....	.....	75 90	311 18
Water.....	54 20	.....	.....	4 84	.....	.....	.....	.....	.....	.....	.....	.....	4 84
Repairs.....	58 00	32 00	52 00	74 46	495 72	64 03	64 03	63 16	.....	87 20	.....	419 13	1,412 21
Pilotage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	142 00
Wharfrage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50 00
Contingencies.....	37 47	.....	.....	16 42	.....	.....	.....	.....	.....	.....	.....	.....	69 79
Totals.....	1,089 82	796 48	929 27	356 95	688 05	192 33	260 01	255 49	220 33	1,458 38	892 29	495 03	7,634 50
Working expenses.....	1,035 62	796 48	772 96	284 49	192 33	192 33	196 04	.....	.....	.....	281 33	.....	3,751 58
Repairs, ordinary.....	54 20	.....	.....	72 46	.....	.....	.....	.....	.....	.....	.....	.....	126 68
do extraordinary.....	.....	.....	156 31	.....	495 72	.....	64 03	255 49	220 33	1,458 39	610 96	495 03	3,756 25
Totals.....	1,089 82	796 48	929 27	356 95	688 05	192 33	260 07	255 49	220 33	1,458 39	892 29	495 03	7,634 50

“NEW DOMINION.”

Wages.....	487 75	494 50	491 50	491 50	.....	.....	327 25	147 50	157 50	326 25	636 88	.....	3,576 63
Coal.....	35 00	175 00	72 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	282 00
Stores.....	.....	2 45	20 87	3 90	.....	.....	.....	.....	.....	.....	.....	52 31	79 56
Equipment.....	4 34	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 60	30 00	84 94
Repairs.....	.....	.....	94 40	.....	105 00	.....	.....	99 75	.....	.....	.....	551 24	850 39

Towage.....	304 00	312 00	216 00	451 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,283 00
Wharfage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 00
Totals.....	841 09	993 95	897 80	949 40	105 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,196 52
Working expenses...	841 09	983 95	803 40	949 40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,955 69
Repairs, extraordi-	.....	.....	91 40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,210 83
nary.....	841 09	993 95	897 80	949 40	105 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,196 52
Totals.....

“CAPE BRETON.”

Wages.....	472 22	494 50	494 50	286 29	155 00	157 50	155 00	153 00	159 69	226 87	313 91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coal.....	76 66	.....	38 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stores.....	.....	.....	48 01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Equipment.....	6 40	120 20	10 30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Water.....	28 38	39 70	33 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Repairs.....	59 92	.....	6 85	4 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Towage.....	355 00	637 50	860 00	870 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wharfage.....	.....	.....	8 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	997 58	1,291 90	1,499 61	1,130 79	155 00	157 50	155 00	207 90	159 69	226 87	355 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Working expenses...	937 66	1,291 90	1,499 61	1,126 29	155 00	157 50	155 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Repairs, ordinary...	59 92	.....	.....	4 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do extraordinary	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	997 58	1,291 90	1,499 61	1,130 79	155 00	157 50	155 00	207 95	159 69	226 87	355 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

CLASSIFICATION OF Disbursements of the following Dredges, &c.—Continued.

“PRINCE EDWARD.”

Items.	July.	August.	September.	October.	November.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	511 50	518 50	500 50	300 97	155 00	157 50	155 00	150 00	157 50	155 00	155 00	.....	2,916 47
Coal.....	9 00	118 80	.....	16 25	.....	.....	.....	.....	.....	.....	.....	.....	144 05
Stores.....	90 53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90 53
Equipment.....	210 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	210 00
Water.....	80 12	74 08	74 08	.....	34 31	.....	.....	.....	.....	.....	.....	.....	138 51
Repairs.....	.....	74 46	500 00	.....	33 33	.....	.....	49 20	.....	.....	106 86	.....	763 85
Provision.....	.....	.....	.....	.....	50 00	.....	.....	.....	.....	.....	.....	.....	50 00
Towage.....	525 00	.....	280 00	.....	479 00	.....	.....	.....	.....	.....	.....	.....	1,254 00
Contingencies.....	.....	.....	.....	6 00	3 00	.....	42 03	.....	.....	.....	.....	.....	51 53
Totals.....	1,436 15	711 70	1,324 58	323 22	755 14	157 50	197 03	199 20	157 50	155 00	261 86	.....	5,668 94
Working expenses.....	1,426 15	637 30	824 58	323 22	721 81	157 50	197 03	.....	.....	.....	155 00	.....	4,442 59
Repairs, extraordinary.....	.....	74 46	500 00	.....	33 00	.....	.....	199 20	157 50	165 00	106 86	.....	1,226 35
Totals.....	1,426 15	711 76	1,324 58	323 22	755 14	157 50	197 03	199 20	157 50	155 00	261 86	.....	5,668 94

“GEO. MCKENZIE.”

Wages.....	497 76	463 71	614 04	277 02	155 00	157 50	155 00	150 00	157 50	191 25	161 25	.....	2,980 01
Coal.....	.....	.....	42 00	10 00	.....	.....	.....	.....	.....	.....	.....	.....	52 00
Stores.....	.....	59 03	.....	.....	.....	.....	.....	.....	.....	.....	157 39	.....	216 42
Water.....	89 50	12 00	15 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	116 50
Repairs.....	67 33	455 11	27 33	24 49	.....	25 28	.....	.....	.....	.....	.....	.....	636 80

Towage	460 70	1,408 40	350 10	10 00	19 20	160 00	157 50	228 45	318 61	2,219 20
Wharfrage	20 00	.....	.....	20 98	.....	.....	.....	.....	.....	49 20
Contingencies .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20 98
Totals	1,135 28	2,393 31	1,048 47	342 49	174 20	182 78	155 00	228 45	318 61	6,291 12
Working expenses	1,067 95	1,943 14	1,025 07	318 00	174 20	157 50	155 00	.....	161 25	4,993 18
Repairs, ordinary .....	.....	.....	3 93	24 49	.....	.....	.....	.....	.....	28 42
do extraordinary	67 33	455 17	23 40	.....	.....	25 28	160 00	228 45	157 39	1,261 52
Totals	1,135 28	2,398 31	1,048 47	342 49	174 20	182 78	155 00	228 45	318 64	6,291 12

“CHALLENGE.”

Wages	393 39	437 69	479 12	375 00	30 00	30 00	30 00	30 00	30 00	148 32	351 70	438 10	2,763 32
Coal .....	.....	87 30	.....	110 83	.....	.....	.....	.....	.....	.....	191 79	472 15	895 07
Wood	2 00	31 75	53 50	71 50	.....	.....	.....	.....	.....	.....	.....	4 25	163 00
Provisions	100 00	101 01	100 00	101 00	.....	.....	.....	.....	.....	.....	79 97	100 00	581 97
Stores	66 73	18 53	3 70	4 05	.....	.....	.....	.....	.....	.....	31 56	28 75	153 37
Equipment	15 30	1 93	.....	1 50	.....	.....	3 90	.....	.....	.....	106 80	6 76	118 95
Repairs .....	.....	25 01	.....	.....	.....	.....	.....	.....	.....	.....	486 05	20 60	633 31
Pilotage .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40 00	.....	65 00
Towage	8 60	61 58	38 20	2 75	.....	.....	.....	.....	.....	.....	155 00	.....	155 00
Contingencies .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 75	.....	132 32
Totals	586 07	764 78	679 52	666 63	30 00	136 43	33 90	161 07	1,419 62	1,060 60	5,633 21	.....	.....
Working expenses	570 77	762 85	679 52	666 63	30 00	30 00	33 90	151 07	963 57	1,040 00	5,002 91	.....	.....
Repairs, ordinary	15 30	1 93	.....	.....	.....	.....	.....	.....	128 94	20 60	166 77	.....	.....
do extraordinary .....	.....	.....	.....	.....	.....	.....	.....	.....	357 11	.....	463 54	.....	.....
Totals	586 07	764 78	679 52	666 63	30 00	136 43	33 90	151 07	1,449 62	1,030 60	5,633 21	.....	.....

CLASSIFICATION OF Disbursements of the following Dredges, &c.—Continued.

“NIPISSING.”

Items.	July.	August.	September.	October.	November.	Dec.	Jan.	Feb.	March.	April.	May.	June.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Wages.....	390 00	435 82	390 00	413 23	299 00	.....	.....	.....	.....	262 62	323 26	392 50	2,906 23
Coal.....	267 75	33 36	267 75	.....	141 38	.....	.....	.....	.....	.....	109 14	34 05	712 05
Wood.....	3 00	.....	.....	51 00	76 67	.....	.....	.....	.....	.....	.....	3 00	201 38
Provisions.....	104 07	209 00	100 00	101 10	4 85	.....	.....	.....	.....	.....	47 61	100 00	629 45
Stores.....	62 21	29 71	.....	.....	19 50	.....	.....	.....	.....	.....	22 41	34 60	153 78
Equipment.....	2 94	3 00	21 55	18 00	.....	.....	.....	.....	.....	.....	115 95	12 50	193 44
Repairs.....	180 81	88 61	134 53	133 06	33 53	33 06	8 19	.....	220 43	.....	778 01	8 88	1,974 14
Pilotage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20 00	20 00
Towage.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	79 75	.....	130 75
Contingencies.....	11 95	131 15	36 86	111 80	51 30	.....	.....	.....	10 87	.....	.....	100 00	453 93
Totals.....	1,022 76	821 45	1,001 69	8 6 04	976 38	33 06	8 19	.....	231 30	262 62	1,476 14	7 5 53	7,375 15
Working expenses.....	841 92	732 84	867 16	702 98	587 85	.....	.....	.....	10 87	262 62	698 12	686 65	5,401 01
Repairs, ordinary.....	180 84	89 61	38 97	38 97	4 25	.....	8 19	.....	.....	.....	.....	8 88	428 10
do extraordinary.....	.....	.....	36 10	64 16	384 28	33 06	.....	.....	220 43	.....	778 01	.....	1,646 01
Totals.....	1,022 76	821 45	1,001 69	836 04	976 38	33 06	8 19	.....	231 30	262 62	1,476 13	705 53	7,375 15

“ONTARIO.”

Wages.....	395 00	395 00	391 67	395 00	30 25	30 00	30 00	30 00	30 00	186 32	416 13	395 00	2,724 37
Coal.....	666 75	100 00	100 00	100 00	.....	.....	.....	.....	.....	.....	400 00	100 00	1,166 78
Provisions.....	74 06	12 21	17 36	6 58	.....	.....	.....	.....	.....	23 08	96 45	15 74	496 45
Stores.....	19 00	19 00	42 90	.....	.....	.....	.....	.....	.....	.....	62 81	.....	211 84
Equipment.....	48 15	40 32	6 50	63 00	.....	.....	.....	.....	.....	8 08	.....	.....	61 90
Repairs.....	103 09	1 45	1 25	.....	.....	.....	.....	.....	10 75	34 30	1 38	.....	166 05
Contingencies.....	720 30	1,234 76	559 63	564 58	30 25	30 00	30 00	30 00	40 75	251 78	976 77	510 74	4,979 61
Totals.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Working expenses...	672 15/	1,194 44/	553 18/	501 58/	30 25/	30 00/	30 00/	40 75/	243 70/	976 77/	510 74/	4,813 56/
Repairs, ordinary	48 15/	40 32/	6 50/	63 00/					8 08/			166 05/
Totals	720 30/	1,231 76/	569 69/	561 58/	30 25/	30 00/	30 00/	40 75/	351 78/	976 77/	510 74/	4,979 61/

"QUEEN."

Wages	391 61/	361 29/	369 17/	447 09/	188 67/					281 07/	314 42/	2,353 32/
Coal	225 54/	205 30/	97 83/	29 10/	192 41/					146 26/		896 44/
Wood	2 00/	13 00/	16 92/	69 0/								100 92/
Provisions	107 81/	96 00/	104 16/	101 69/	51 61/					68 31/	91 72/	611 30/
Stores	52 98/	46 96/	17 91/	5 28/	24 60/					33 56/	1 99/	183 27/
Equipment	104 37/	6 22/	9 60/							87 85/	69 67/	173 34/
Repairs	8 00/	8 00/	22 81/	35 20/	2 10/				294 25/	973 38/	139 06/	1,678 78/
Pilotage				10 00/								38 81/
Towage				319 10/	181 25/					176 83/	310 25/	10 00/
Contingencies				1,016 46/	610 64/							1,737 43/
Totals	1,162 31/	938 52/	946 45/	1,016 46/	610 64/	100 62/			294 25/	1,757 25/	927 11/	7,783 61/
Working expenses	1,057 94/	936 77/	918 40/	981 26/	638 54/					783 87/	788 05/	6,104 83/
Repairs, ordinary	104 37/	1 75/	28 05/	30 20/	2 10/				294 25/	51 92/	49 09/	267 39/
do extraordinary				5 00/		100 62/				921 46/	90 06/	1,411 39/
Totals	1,162 31/	938 52/	946 45/	1,016 46/	640 64/	100 62/			294 25/	1,757 25/	927 11/	7,783 61/

"ST. LOUIS."

Wages	454 85/	386 18/	466 37/	414 80/	119 16/						271 53/	2,112 39/
Coal	179 36/		119 00/		3 50/							299 30/
Wood					20 00/							3 50/
Provisions	30 00/	30 00/	30 00/	30 00/	7 20/					36 93/		176 99/
Stores	62 99/	18 89/	7 43/							19 42/		116 92/
Equipment	33 10/		19 00/	7 60/						31 20/		93 80/
Repairs	41 53/		33 99/	17 85/	20 00/						431 42/	554 91/
Pilotage					14 00/							20 00/
Towage												14 00/
Contingencies	36 70/		100 00/	6 00/						3 50/		146 20/
Total	818 47/	434 07/	768 33/	483 57/	184 36/	30 15/				94 10/	702 95/	3,536 00/
Working expenses	796 94/	434 07/	734 37/	465 72/	184 36/					94 10/	271 53/	2,951 09/
Repairs, ordinary			33 96/	17 85/		30 15/					19 92/	71 73/
do extraordinary	41 53/										411 50/	483 18/
Totals	838 47/	434 07/	768 33/	483 57/	184 36/	30 15/				94 10/	702 95/	3,536 00/

"CAPE BRETON."

Hard-pan	916	1,691	916						916
Sand, ordinary	4,361	1,691	4,361						6,147
Mud	828	3,334	828						9,257
Totals.....	6,135	5,525	6,135						16,350

"PRINCE EDWARD."

Hard-pan and rock.....	1,287	2,600	2,600						3,787
Clay.....	276	63	63						1,963
Sand, ordinary.....	325	62	62						587
Totals.....	1,887	2,625	2,625						6,137

"GEO. MCKENZIE."

Hard-pan	437	1,487	1,487						1,924
Gravel.....	5,589	1,763	1,763	140					7,492
Sand, ordinary.....	5,689	410	410						7,394
Totals.....	11,575	3,660	3,660	140					16,810

"NIPISSING."

Hard-pan	993	1,230	1,230	140					2,320
Boulders	992	960	960	11					690
Clay	4,066	1,36	1,36	7,581	5,610				18,615
Clay and stone.....	1,725	1,710	1,710	30					5,280
Sand, ordinary.....									1,725
Totals.....	7,77	3,970	3,900	7,860	5,610				35,565

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY THE FOLLOWING DREDGES—Continued.

“ CHALLENGE.”

Description of Material Dredged	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	Grand Totals.
Boulders			450	2,960									3,410
Gravel		3,600	5,470	2,960									12,030
Clay	1,440	730											2,170
Clay and stone		420											420
Sand, ordinary	9,345	1,770	400								5,820	4,380	21,755
Sand, very fine												3,930	3,930
Totals	10,785	6,620	6,320	5,920							5,820	8,310	43,675

Cubic yards

“ ONTARIO.”

Clay				1,200									1,200
Clay and stone	5,460												5,460
Sand, ordinary	5,700	14,520	11,880	7,980							7,860	7,680	55,620
Sand, very fine												1,740	1,740
Totals	11,160	14,520	11,880	9,180							7,860	9,420	64,020

“ QUEEN.”

Boulders					244								370
Gravel				56	83								139
Clay	5,546	3,283	1,956									2,196	12,971

Clay and stone.....	1,288	1,036	422	1,120	1,542
Sand, ordinary.....	.....	1,064	.....	.....	2,324
Sand, very fine.....	.....	826	.....	.....	4,352
Mud.....	.....	.....	.....	.....	826
Totals	5,516	4,872	749	3,316	22,454

“ ST. LOUIS. ”

Clay.....	2,175	3,975	3,525	.....	12,425
Totals	2,175	3,975	3,525	.....	12,425

“ J. G. SIPPPELL. ”

Clay.....	2,438	2,714	.....	.....	5,152
Clay and stone.....	1,932	6,026	368	.....	8,326
Totals	4,370	8,740	368	.....	13,478

[1887]

DREDGE STATEMENT showing Material removed at different Localities; Total Annual Expenditure on each Dredge and Average Cost per cubic yard.

Localities.	Hard Pan.	Boulders.	Gravel.	Clay.	Clay and Stone.	Sand, Ordinary.	Sand, Fine.	Mud.	Totals.
" CHALLENGE."									
Port Elgin.....	.....	.....	.....	2,170	.....	16,935	.....	.....	19,105
Southampton.....	.....	.....	.....	.....	420	.....	.....	.....	420
Lion's Head.....	.....	.....	7,020	.....	.....	.....	.....	.....	7,020
Thornbury.....	.....	3,410	5,010	.....	.....	40	.....	.....	8,820
Kincardine.....	.....	.....	.....	.....	.....	4,380	.....	.....	4,380
Goderich.....	.....	.....	.....	.....	.....	.....	3,930	.....	3,930
Totals.....	.....	3,410	12,030	2,170	420	21,715	3,930	.....	43,675
Total Annual Expenditure, \$5,635.21. Cost per cubic yard, 12 2/3c.									
" NIPISSING."									
Sumnerstown.....	3,688	3,367	.....	18,615	1,740	1,725	.....	.....	29,115
St. Antoine.....	2,220	690	.....	.....	3,540	.....	.....	.....	6,450
Totals.....	5,908	4,057	.....	18,615	5,280	1,725	.....	.....	35,665
Total Annual Expenditure, \$7,375.15. Cost per cubic yard, 20 2/3c.									
" ONTARIO."									
Cobourg.....	.....	.....	.....	.....	5,460	23,920	.....	.....	29,280
Port Hope.....	.....	.....	.....	1,200	.....	31,800	1,740	.....	34,740
Totals.....	.....	.....	.....	1,200	5,460	55,620	1,740	.....	64,020
Total Annual Expenditure, \$4,976.61. Cost per cubic yard, 7 2/3c.									

DETAILS of Dredging in the Maritime Provinces

Dredge.	Locality.	County.	NEW BRUNSWICK.		
			Quantity.	Cost.	Total Cost.
			C. yds.	\$ cts.	\$ cts.
" New Dominion "	Bellisle	King's, N.B.	29,545	3,473 48	.....
	Grand Lake.....	Queen's do	9,555	1,123 34	.....
	Millar & Woodman's	St. John do	9,275	1,090 42	.....
	Hayford & Stetson	do do	8,015	942 29	.....
	International Wharf.....	do do	450	52 90	6,682 43
" Canada "	Yarmouth.....	Yarmouth do .....	.....	.....	.....
" Cape Breton " ..	Granton	Pictou, N.S.....	.....	.....	.....
	Tatamagouche	Colchester do .....	.....	.....	.....
" Prince Edward "	Tignish.....	Prince, P.E.I. ....	.....	.....	.....
" St. Lawrence " ..	North-West Arm	Halifax, N.S.....	.....	.....	.....
	Cunard's Wharf	do .....	.....	.....	.....
	Cocagne	Kent, N.B	12,600	4,770 43	4,770 43
	Little Glace Bay	Cape Breton, N.S.	.....	.....	.....
" Geo. McKenzie "	Cheticamp	Inverness, N.S.....	.....	.....	.....
	Aspy Bay.....	Victoria, N.S.....	.....	.....	.....
			69,440	.....	11,452 86

Dredge.	NEW BRUNSWICK.		NOVA SCOTIA.		
	Quantity.	Cost.	Quantity.	Cost.	
	C. yds.	\$ cts.	C. yds.	\$ cts.	
" New Dominion "	56,840	6,682 43	.....	.....
" Canada " .....	.....	.....	10,965	8,110 91
" Cape Breton " .....	.....	.....	16,350	7,090 12
" Prince Edward " ..	.....	.....	.....	.....
" St. Lawrence "	12,600	4,770 43	9,275	3,511 54	
" Geo. McKenzie " .....	.....	.....	16,810	6,908 62
		69,440	11,452 86	53,400	25,621 19

for the Year ending 30th June, 1887.

NOVA SCOTIA.			PRINCE EDWARD ISLAND.			Quantity by each Dredge.	Total Expenditure.
Quantity.	Cost.	Total Cost.	Quantity.	Cost.	Total Cost.		
C. yds.	\$ cts.	\$ cts.	C. yds.	\$ cts.	\$ cts.	C. yds.	\$ cts.
.....
.....
.....	.....	.....	.....	.....	.....	56,840	6,682 43
10,965	8,110 91	8,110 91	.....	.....	.....	10,965	8,110 91
2,125	921 50	.....	.....	.....	.....	.....	.....
14,225	6,168 62	7,090 12	.....	.....	.....	16,350	7,090 12
.....	.....	.....	6,137	6,214 74	6,214 74	6,137	6,214 74
3,850	1,457 62	.....	.....	.....	.....	.....	.....
1,400	530 04	.....	.....	.....	.....	.....	.....
4,025	1,523 88	3,511 54	.....	.....	.....	21,875	8,251 97
12,990	5,338 67	5,338 67	.....	.....	.....	.....	.....
3,820	1,569 95	1,569 95	.....	.....	.....	16,810	6,908 62
53,400	.....	25,621 19	6,137	.....	6,214 74	128,977	43,288 79

PRINCE EDWARD ISLAND.		Total Quantity.	Expenditure Dredging.	Superintendence.	Total Expenditure.	Cost per Cubic Yard.
Quantity.	Cost.					
C. yds.	\$ cts.	C. yds.	\$ cts.	\$ cts.	\$ cts.	Cts.
.....	.....	56,840	6,196 52	485 91	6,682 43	0.11756
.....	.....	10,965	7,634 50	476 41	8,110 91	0.73970
.....	.....	16,350	6,403 01	687 11	7,090 12	0.4336
6,137	6,214 74	6,137	5,688 94	545 80	6,214 74	1.01266
.....	.....	21,875	7,703 16	578 81	8,281 97	0.37860
.....	.....	16,810	6,291 12	617 50	6,903 62	0.41098
6,137	6,214 74	128,977	39,897 25	3,591 54	43,288 79	0.3356

EXPENDITURE for Dredging in Nova Scotia for the Fifteen Years ended 30th June, 1887.

County.	Locality.	Total for Fourteen Years ended 30th June, 1886.			For the Year 1886-87.			Total Quantity.	Total Cost.	Cost for each County.
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.			
Antigonish.....	Antigonish.....	22,025	3,649 15	.....	.....	.....	22,025	3,649 15	.....
.....	Harbour au Bouche.....	1,568	2,498 48	.....	.....	.....	10,568	2,498 48	.....
.....	Tracadie.....	2,650	6,752 26	6,932 89	.....	.....	2,680	6,752 26	6,822 89
.....	Annapolis.....	2,825	1,635 68	1,635 68	.....	.....	2,825	1,635 68	1,635 68
.....	Cape Breton.....	22,267	9,275 56	.....	.....	.....	22,267	9,275 56	.....
.....	Sydney.....	54,600	17,781 51	.....	.....	.....	54,600	17,781 54	.....
.....	Little Glace Bay.....	27,212	9,464 94	.....	4,075	1,523 88	31,237	10,988 82	.....
.....	Port Caledonia.....	17,413	8,242 21	.....	.....	.....	17,413	8,212 71	.....
.....	Benacadie Pond.....	20,860	5,993 90	.....	.....	.....	20,860	5,993 90	.....
.....	Christmas Island.....	19,045	3,364 98	54,123 13	.....	1,523 88	19,045	3,364 98	55,647 01
.....	Tatamagouche.....	43,500	10,864 31	10,864 31	14,225	6,168 62	57,725	17,032 93	17,032 93	
.....	Parsboro'.....	42,595	12,804 63	.....	.....	.....	42,595	12,804 68	.....
.....	Wallace.....	50,885	9,908 28	22,712 96	.....	.....	50,885	9,908 28	22,712 96
.....	Digby.....	12,565	5,056 29	5,056 29	.....	.....	12,565	5,056 29	5,056 29
.....	Guysboro'.....	5,400	1,413 53	.....	.....	.....	5,400	1,413 53	.....
.....	Larry's River.....	26,230	6,546 70	.....	.....	.....	26,230	6,546 70	.....
.....	Port Mulgrave.....	3,532	1,749 78	.....	.....	.....	3,532	1,749 78	.....
.....	Sherbrooke.....	1,260	496 49	10,206 50	.....	.....	1,260	493 49	10,206 50
.....	Chesetcook.....	3,920	2,593 71	.....	.....	.....	3,920	2,593 71	.....
.....	Halifax Ferry.....	6,177	2,063 38	.....	.....	.....	6,177	2,063 38	.....
.....	Herring Cove.....	12,111	8,015 05	.....	.....	.....	12,111	8,015 05	.....
.....	Ketch Harbour.....	2,989	985 59	.....	.....	.....	2,989	985 59	.....
.....	Richmond Wharf.....	192	182 53	.....	.....	.....	192	182 53	.....
.....	Roches Wharf.....	1,750	620 28	.....	.....	.....	1,750	620 28	.....
.....	Halifax Railway Terminus.....	19,290	6,187 38	.....	.....	.....	19,290	6,187 38	.....
.....	Jeddore.....	21,515	4,958 56	.....	.....	.....	21,515	4,958 56	.....
.....	North-West Arm.....	3,500	1,512 77	27,119 25	3,850	1,457 62	7,350	2,970 39	.....
.....	Cunard's Wharf.....	.....	.....	1,400	1,400	530 94	1,400	530 04	28,168 91

Inverness	Whycomagh.....	3,491 31	19,760	3,491 31	19,760	3,491 31	19,760
	Campbell's Pond.....	872 83	4,940	872 83	4,940	872 83	4,940
	Port Hastings.....	190 37	270	190 37	270	190 37	270
	Cheticamp.....	21,630 25	84,055	12,990	5,338 67	26,968 92	84,055
	Wabou.....	29,576 31	69,007	55,761 07	6,338 87	29,576 31	61,099 74
Lunenburg	Lunenburg.....	22,194 57	70,510	22,194 57	70,510	22,194 57	70,510
	Mahone Bay.....	5,968 65	21,844	5,968 65	21,844	5,968 65	21,844
	Vogler's Cove.....	5,075 53	11,610	5,075 53	11,610	5,075 53	33,228 75
Pictou	Acadia Coal Co's.....	3,560 26	10,240	3,560 26	10,240	3,560 26	3,560 26
	Albion Mines.....	2,181 25	9,475	2,181 25	9,475	2,181 25	2,181 25
	East River.....	25,067 22	104,795	25,067 22	104,795	25,067 22	25,067 22
	Halifax Coal Co's Wharf.....	359 90	1,650	359 90	1,650	359 90	359 90
	Pictou Public Wharf.....	7,433 56	31,920	7,433 56	31,920	7,433 56	7,433 56
	do Railway Wharf.....	9,264 29	29,889	9,264 29	29,889	9,264 29	9,264 29
	do Landing.....	2,880 01	7,345	2,880 01	7,345	2,880 01	2,880 01
	Vale Colliery Wharf.....	682 15	1,395	682 15	1,395	682 15	682 15
	River John.....	22,243 98	85,173	22,243 98	85,173	22,243 98	22,243 98
	Granton.....	8,349 42	19,310	2,125	921 50	9,270 92	19,310
	New Glasgow.....	5,105 09	26,310	87,727 13	921 50	5,705 09	58,648 63
Queen's	Liverpool.....	4,762 38	12,940	4,762 38	12,940	4,762 38	4,762 38
Richmond	D'Escouse.....	5,962 13	11,860	5,962 13	11,860	5,962 13	5,962 13
	Cape LeRonde.....	24,277 56	78,891	24,277 56	78,891	24,277 56	24,277 56
	St. Peter's Canal.....	2,407 41	7,150	2,407 41	7,150	2,407 41	2,407 41
	St. Peter's.....	5,570 49	23,584	5,570 49	23,584	5,570 49	5,570 49
	Grand Goulet.....	4,468 87	18,920	4,468 87	18,920	4,468 87	4,468 87
	River Bourgeois.....	56 53	320	42,742 99	320	56 53	42,742 99
Marine Slip	Marine Slip.....	6,334 85	20,825	6,334 85	20,825	6,334 85	6,334 85
Shelburne	Lockeport.....	13,996 29	43,417	13,996 29	43,417	13,996 29	13,996 29
Yarmouth	Yarmouth.....	1,627 60	5,450	1,627 60	5,450	1,627 60	1,627 60
Hants	Windsor.....	1,569 95	3,820	1,569 95	3,820	1,569 95	1,569 95
Victoria	Aspee Bay.....	384,722 07	1,290,381	384,722 07	1,290,381	384,722 07	410,343 26
		384,722 07	384,722 07	53,400	25,621 19	25,621 19	410,343 26
		53,400	1,343,681	53,400	1,343,681	53,400	410,343 26

EXPENDITURE for Dredging in New Brunswick, for the Fifteen Years ended 30th June, 1887.

County.	Locality.	Total for Fourteen Years ended 30th June, 1886.		For the Year 1886-87.		Total Quantities	Total Cost.	Cost for each County.
		Quantity.	Cost.	Quantity.	Cost.			
		C. yds.	\$ cts.	C. yds.	\$ cts.			
Gloucester.....	Bathurst.....	72,807	20,629 52			72,807	20,629 52	10,629 52
	Richibucto.....	47,735	14,299 54			47,735	14,299 54	
	Cocagne.....	14,680	4,831 02	12,600	4,770 43	27,180	9,601 45	
	Rictouche.....	13,005	4,934 24			13,005	4,934 24	
	do Priest's Point.....	3,510	1,110 70			3,510	1,110 70	
Kent.....	do Chapel Point.....	4,140	1,310 07			4,140	1,310 07	
	do Robertson's Wharf.....	45	14 23		4,770 43	45	14 23	31,270 23
Northumberland.....	Horse Shoe.....	160,417	44,594 13			160,417	44,594 13	
	Outer Bar.....	13,125	4,032 67			13,125	4,032 67	
	Grand Dune.....	37,975	10,121 67			37,975	10,121 67	58,748 47
Queen's.....	Grand Lake.....	34,160	6,375 44			43,715	7,498 78	
	do McMann's Cove.....	20,440	4,522 83	9,555	1,123 34	20,440	4,522 82	
	Jemseg.....	61,305	12,117 74			61,305	12,117 74	
	Waashedemoak.....	48,975	6,340 83			48,975	6,340 83	30,480 17
St. John.....	I. C. Railway Terminus.....	139,810	37,130 01			139,810	37,130 01	
	Navy Island.....	25,294	9,296 79			25,294	9,296 79	
	Marble Cove.....	29,925	4,374 40			29,925	4,374 40	
	Murray's Mills.....	23,880	3,441 65			23,880	3,441 65	
	Indiantown Wharf.....	1,815	192 83			1,815	192 83	
	Long Wharf.....	7,137	2,680 24			7,137	2,680 24	
	Adam's Wharf.....	7,513	3,247 29			7,513	3,247 29	
	Miller and Woodman's.....			9,275	1,090 42	8,275	1,090 42	
	Harford and Stetson's.....			8,015	942 29	8,015	942 29	
	International Wharf.....			480	52 90	450	52 90	62,448 82
Sunbury.....		144,153	27,106 86			144,153	27,106 86	27,106 86
	Oromoeto.....							

Westmoreland.....	Pointe du Chêne.....	8,432 00	8,432 00	.....	33,750	8,432 00	9,432 00
York.....	Fredericton.....	7,699 15	7,699 15	.....	39,395	7,699 15	7,699 15
	St. Mary's Ferry.....	6,837 36	6,827 56	.....	16,570	6,827 56	18,906 03
	Gibson.....	4,379 52	4,379 52	.....	30,395	4,379 52	18,906 03
King's.....	Belle Isle Point.....	2,300 48	2,300 48	.....	44,965	5,773 96	5,773 93
		253,343 20	253,343 20	.....	1,115,316	264,796 06	264,796 06
		1,045,876	1,045,876	.....		

EXPENDITURE for Dredging in Prince Edward Island, for the Fifteen Years ended 30th June, 1887.

County.	Locality.	Total for Fourteen Years ended 30th June, 1887.		For the Year 1886-87.		Total Quantity.	Total Cost.	Cost for each County.
		Quantity.	Cost.	Quantity.	Cost.			
		C. yds.	\$ cts.	C. yds.	\$ ct.			
King's	Grand River.....	46,110	8,963 97	46,110	8,963 97	46,110	8,963 97	\$ cts.
	Montague River.....	106,140	17,119 43	106,140	17,119 43	106,140	17,119 43	\$ cts.
	Murray Harbour.....	44,430	7,378 33	44,430	7,378 33	44,430	7,378 33	\$ cts.
Queen's	Charlottetown Wharf.....	41,303	10,264 56	41,303	10,264 56	41,303	10,264 56	\$ cts.
	do Ferry.....	4,045	670 61	4,045	670 61	4,045	670 61	\$ cts.
	Orspaud.....	89,782	27,493 03	89,782	27,493 03	89,782	27,493 03	\$ cts.
	Pownal.....	44,400	9,604 55	44,400	9,604 55	44,400	9,604 55	\$ cts.
	Rock Point.....	91,440	14,661 16	91,440	14,661 16	91,440	14,661 16	\$ cts.
	Vernon River.....	17,860	6,326 72	17,860	6,326 72	17,860	6,326 72	\$ cts.
	Wood Islands.....	2,780	548 00	2,780	548 00	2,780	548 00	\$ cts.
	Nine-Mile Creek.....	31,650	6,286 46	31,650	6,286 46	31,650	6,286 46	\$ cts.
	Hickey's Wharf.....	760	150 51	760	150 51	760	150 51	\$ cts.
	Gar's Point.....	12,165	2,441 28	12,165	2,441 28	12,165	2,441 28	\$ cts.
	Pinette.....	3,825	756 24	3,825	756 24	3,825	756 24	\$ cts.
	Fort Augustus.....	3,195	631 68	3,195	631 68	3,195	631 68	\$ cts.
	South Port Ferry.....	33,015	5,528 75	33,015	5,528 75	33,015	5,528 75	\$ cts.
Prince	Summerside.....	15,855	2,495 34	15,855	2,495 34	15,855	2,495 34	\$ cts.
	Hurd's Point Pier.....	41,070	7,259 95	41,070	7,259 95	41,070	7,259 95	\$ cts.
	Tignish.....	1,415	890 81	6,137	6,214 74	7,612	7,105 55	\$ cts.
		631,290	129,501 38	6,137	6,214 74	637,427	135,716 12	\$ cts.
			129,561 38		6,214 74		136,776 12	\$ cts.

EXPENDITURE for Dredging in Quebec, for the Fifteen Years ended 30th June, 1837, from Appropriation, Maritime Provinces.

Magdalen Islands,	House Harbour.....	6,800	2,392 92	6,800	2,392 92	6,800	2,392 92	\$ cts.
Uo. Gaspé.....	Amherst Harbour.....	495	242 05	495	242 05	495	242 05	\$ cts.
Temiscouata.....	River du Loup.....	2,587	825 47	2,587	825 47	2,587	825 47	\$ cts.
Rimouski.....	* Rimouski.....	8,123	3,997 59	8,123	3,997 59	8,123	3,997 59	\$ cts.
		18,005	7,458 03	18,005	7,458 03	18,005	7,458 03	\$ cts.

* From amount voted for Quebec dredging.

STATEMENT of Dredging, showing Quantities removed in each Province, and cost of each Dredging for the Fifteen Years ended 30th June, 18-7.

Fiscal Year.	NEW BRUNSWICK.			NOVA SCOTIA.			QUEBEC.			PRINCE EDWARD ISLAND.			Total Quantity. C Yds.	Total Expenditure \$ cts.	Cost per Cubic Yard. \$ cts.
	Quantity.		Cost.	Quantity.		Cost.	Quantity.		Cost.	Quantity.		Cost.			
	C. Yds.	\$ cts.	\$ cts.	C. Yds.	\$ cts.	\$ cts.	C. Yds.	\$ cts.	\$ cts.	C. Yds.	\$ cts.				
1872-73.....	38,060	13,240 50	8,422 70	23,260	8,422 70	2,392 92	6,800	18,665	9,892 89	121,294	40,456 77	0 28 071	21,683 20	0 35 328	
1873-74.....	57,725	17,395 57	6,545 61	18,600	6,545 61	.....	.....	83,125	23,334 10	131,294	40,456 77	0 33 354	23,334 10	0 28 071
1874-75.....	78,223	17,325 05	13,238 83	24,416	13,238 83	.....	.....	58,781	10,891 80	230,192	49,818 22	0 21 612	40,456 77	0 33 354
1875-76.....	79,938	17,040 52	21,885 90	91,974	21,885 90	.....	.....	74,460	12,758 27	298,935	70,768 91	0 23 582	70,768 91	0 23 582
1876-77.....	97,680	23,161 90	31,846 74	127,785	31,846 74	.....	.....	82,860	12,011 18	270,787	64,943 04	0 21 981	70,768 91	0 23 582
1877-78.....	81,070	23,323 92	106,867	116,307	28,267 59	.....	.....	46,490	9,164 07	295,352	61,811 88	0 23 983	64,943 04	0 21 981
1878-79.....	132,555	27,400 22	28,267 59	116,307	28,267 59	.....	.....	36,390	12,674 98	228,379	64,396 69	0 28 187	270,787	0 23 983
1879-80.....	63,540	16,581 79	34,765 84	137,684	34,765 84	.....	.....	46,335	9,298 53	180,085	45,449 46	0 25 232	61,811 88	0 23 983
1880-81.....	44,315	12,385 85	87,118	87,118	33,363 41	.....	.....	47,325	9,358 57	216,531	61,347 15	0 28 381	61,811 88	0 23 983
1881-82.....	79,640	18,626 87	89,566	143,618	33,363 41	.....	.....	68,935	11,040 37	260,716	67,500 01	0 25 880	61,347 15	0 28 381
1882-83.....	48,565	13,122 70	42,998 93	157,560	42,998 93	.....	.....	79,760	13,355 05	284,368	79,509 01	0 27 959	67,500 01	0 25 880
1883-84.....	47,58	17,103 38	49,050 88	76,161	49,050 88	.....	.....	55,075	8,668 01	268,359	62,376 68	0 23 242	79,509 01	0 27 959
1884-85.....	128,997	23,460 35	25,260 73	76,161	25,260 73	.....	.....	17,137	10,349 66	142,432	46,708 34	0 32 792	62,376 68	0 23 242
1885-86.....	68,505	14,874 63	21,482 03	56,790	21,482 03	.....	.....	6,132	6,214 74	128,977	43,288 79	0 33 55	142,432	0 32 792
1886-87.....	69,440	11,452 86	25,621 19	53,400	25,621 19	.....	.....	.....	.....	.....	.....	.....	43,288 79	0 33 55
	1,115,318	264,796 11	398,407 98	1,301,097	398,407 98	.....	.....	637,432	135,716 12	3,071,852	806,378 24	0 26 25	806,378 24	0 26 25

STATEMENT of Dredging, showing Quantities removed by Hand in each Province, and cost of each Dredging for the Fifteen Years ended 30th June, 1887.

Fiscal Year.	NEW BRUNSWICK.			NOVA SCOTIA.			QUEBEC.			PRINCE EDWARD ISLAND.			Total Quantity. C Yds.	Total Expenditure \$ cts.	Cost per Cubic Yard. \$ cts.
	Quantity.		Cost.	Quantity.		Cost.	Quantity.		Cost.	Quantity.		Cost.			
	C. Yds.	\$ cts.	\$ cts.	C. Yds.	\$ cts.	\$ cts.	C. Yds.	\$ cts.	\$ cts.	C. Yds.	\$ cts.				
1878-79.....	555 13	245	555 13	.....	.....	245	.....	12,370	3,666 90	2 26 58	555 13	0 26 58	
1879-80.....	3,666 90	12,370	3,666 90	.....	.....	12,370	.....	11,140	2,560 25	0 22 88	3,666 90	0 22 88	
1880-81.....	2,560 25	10,640	2,560 25	.....	.....	10,640	.....	2,650 00	2,650 00	0 24 90	2,560 25	0 22 88	
1881-82.....	2,650 00	8,190	2,650 00	.....	.....	8,190	.....	2,500 00	2,500 00	0 30 63	2,650 00	0 24 90	
1882-83.....	2,500 00	5,460	2,500 00	.....	.....	5,460	.....	2,500 00	2,500 00	0 45 78	2,500 00	0 30 63	
1883-84.....	2,500 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,500 00	0 45 78	
1884-85.....	
1885-86.....	
1886-87.....	
	14,432 28	48,045	14,432 28	.....	.....	48,045	.....	14,432 28	14,432 28	0 30 03	14,432 28	0 30 03	

STATEMENT of Dredging in the Maritime Provinces, showing Quantities removed by, and Expenditure of, each Dredge, for the Fifteen Years ended 30th June, 1887.

Dredge.	Total Quantities and Cost for the Fourteen Years from 1872-73 to 1885-86.			1886-87.			Total for Fifteen Years ended 30th June 1887.		
	Quantity.	Cost.	Per Cubic Yard.	Quantity.	Cost.	Per Cubic Yard.	Quantity.	Cost.	Per Cubic Yard.
	O. Yards.	\$ cts.	Cts.	O. Yards.	\$ cts.	Cts.	O. Yards.	\$ cts.	Cts.
"New Dominion "	560,853	111,389 20	19.86	56,840	6,682 43	11.756	617,493	118,071 63	19.12
"Canada "	399,689	134,668 09	33.68	10,865	8,110 91	73.970	410,654	142,679 00	34.74
"Cape Breton "	508,638	136,566 02	24.98	16,350	7,090 12	43.36	524,988	133,646 14	25.45
"Prince Edward "	612,126	13,252 31	20.44	6,137	6,214 74	1,01.26	618,263	137,467 05	21.20
"St. Lawrence "	520,036	160,818 03	30.91	21,375	8,281 97	37.86	541,911	169,100 00	31.20
"Geo. McKenzie "	298,151	92,008 21	30.86	16,810	6,908 62	41.09	314,961	98,916 83	31.40
	2,929,292	766,591 86	25.82	129,377	43,288 79	35.56	3,058,369	799,680 65	26.15

STATEMENT of Dredging performed by Hand in the Maritime Provinces, showing Quantities removed and Expenditure at each locality, for Fifteen Years ended 30th June, 1887.

Locality.	1872-73 to 1885-86 = Fourteen Years.			1886-87.			Total for Fifteen Years ended 30th June, 1887.		
	Quantity.	Cost.	Per Cubic Yard.	Quantity.	Cost.	Per Cubic Yard.	Quantity.	Cost.	Per Cubic Yard.
	O. Yards.	\$ cts.	Cts.	O. Yards.	\$ cts.	Cts.	O. Yards.	\$ cts.	Cts.
Paraboro, N.S.	42,595	12,804 68	30.06	.....	.....	.....	42,595	12,804 68	30.06
Windsor, N.S.	6,460	1,627 60	29.86	.....	.....	.....	6,460	1,627 60	29.86
	48,045	14,432 28	30.03	.....	.....	.....	48,045	14,432 28	30.03

APPENDIX No. 6.

STÀTEMENT

OF THE

DREDGING PLANT

OF THE

DOMINION.

APPENDIX No. 6,

STATEMENT showing the Number of Dredges, Dredge Tugs and Scows, belonging to the Department, with Number of Crew, average Wages per month for the Year 1886, cost of Construction, &c.

Province where used.	Name of Vessel.	Description of Vessel.	Number of Crews.	Average Wages per Month.	Cost of Construction.	Remarks.
				\$ cts.	\$ cts.	
Nova Scotia and New Brunswick.	St. Lawrence.	Steam hopper dredge.	15	494 87	116,389 48	This is an iron hull elevator dredge, built in Glasgow in 1874-76.
do	Canada.	do	11	375 85	42,778 44	This is an iron hull elevator dredge, built in Glasgow in 1871-73.
do	New Dominion.	Dipper dredge and 8 scows.	11	238 76	30,326 51	A wooden hull spoon dredge, built in 1871-72.
do	Cape Breton.	do	13	287 68	19,744 38	do
do	George McKenzie.	do	11	271 47	16,009 00	do
do	Prince Edward.	do	11	322 21	23,592 07	do
Prince Edward Island.						Transferred from Local Government, F.E.I., at Confederation, on payment of \$22,000.
Quebec	Queen of Canada.	do	10	225 00	15,000 00	A wooden hull spoon dredge.
do		2 scows	.....	193 02		Full rebuilt in 1883-84.
do	Nipissing.	Dipper dredge and 2 scows.	7	265 00	15,501 57	2 side dumping scows, 32 cubic yards capacity. Purchased July, 1880. Wooden built dipper dredge.
do	Dennis.	Steam tug.	3	125 00	2,000 00	Purchased at same time as "Nipissing."
do	St. Louis.	Dipper dredge.	8	135 00	6,535 83	Wooden hull spoon dredge, built at Lockport, N.Y., 1883.
Ontario	Challenge.	do and 2 scows.	7	265 00	31,211 32	Rebuilt 1884-85.
do	Trudeau.	Steam tug.	3	130 00	6,847 05	Purchased in 1876.
do	Ontario.	Dipper dredge and 2 dump scows.	7	270 00	20,950 00	Wooden hull spoon dredge, built at Lockport, N.Y., 1884.
do	Sir John.	Steam tug.	3	125 00	12,000 00	Built at Lockport, N.Y., 1884.
Manitoba	Winnipeg.	Dipper dredge and 2 dump scows.	6	320 00	26,011 49	Wooden hull spoon dredge, built at Lockport, N.Y., 1883-84.
do	Sir Hector.	Steam tug.	4	215 00	15,775 00	Built at Lockport, N.Y., 1883-84.
British Columbia.	Dredger.	Elevator dredge and 6 scows.	10	568 54	60,000 00	Built by Local Government 1865, and transferred to Dominion at Confederation.
do	Georgie.	Steam tug.	.....	.....	6,250 00	Purchased in 1875.

APPENDIX No. 7.

MONTREAL FLOOD COMMISSION.

REPORTS OF THE COMMISSION

Appointed by Order in Council of 28th May, 1886, to
“ Enquire into the causes of the floods at Montreal, and
to suggest the necessary remedies to prevent their
recurrence ” ; together with Order in Council appointing
the Commission, and Report of the Chief Engineer of
the Department of Public Works.

 APPENDIX No. 7.

 REPORT OF THE COMMISSION APPOINTED TO ENQUIRE INTO AND
 REPORT UPON THE CAUSES OF THE ANNUAL FLOODS AT
 MONTREAL.

Ref. No. 68,134.

CERTIFIED COPY of a Report of a Committee of the Honourable the Privy Council, approved by His Excellency the Governor General in Council on the 24th May, 1886.

On a Memorandum dated 22nd May, 1886, from the Minister of Public Works, representing that a number of communications have been received from the City Council, Board of Trade, Corn Exchange Association, &c., of the city of Montreal, asking that a Commission be appointed by the Government to enquire into and report upon the causes which lead to the floods which annually devastate the city of Montreal;

That the City Council has offered to pay one-half of the expense of such a Commission on condition that it be allowed to nominate one of the Commissioners, and that Mr. Walter Shanly, C.E., has been suggested as the representative of the City Council on such Commission;

The Minister recommends that a Commission be appointed to enquire into the causes of the floods at Montreal, and to suggest the necessary remedies to prevent their recurrence, and that such Commission be composed of Messrs. H. F. Perley, C.E., Chief Engineer of the Department of Public Works, as representing the Department, T. C. Keefer, C.E., as representing the Board of Trade and Corn Exchange Association of Montreal, John Kennedy, C.E., as representing the Harbour Commissioners of Montreal, and Walter Shanly, C.E., as representing the City Council of Montreal—it being expressly understood that the latter gentleman is to be remunerated for his services wholly by the City Council, and that he is not to be paid in any way by the Government.

The Committee concur in the foregoing recommendation and submit the same for Your Excellency's approval.

JOHN J. MCGEE,

Clerk Privy Council.

Ref. No. 68,134.

CERTIFIED COPY of a Report of a Committee of the Honourable the Privy Council, approved by His Excellency the Governor General in Council on the 28th May, 1886.

The Committee, on the recommendation of the Minister of Public Works, advise that the Order in Council of the 24th instant authorizing a Commission to investigate the causes of the annual floods at Montreal be rescinded, and that in lieu thereof Messrs. H. F. Perley, C. E., as representing the Department of Public Works, T. C. Keefer, C.E. as representing the Board of Trade and Corn Association of Montreal, John Kennedy, C.E., as representing the Board of Harbour Commissioners of Montreal, and

Percival W. St. George as representing the City Council of Montreal, be appointed a Commission to enquire into the causes of the floods at Montreal, and to suggest the necessary remedies to prevent their recurrence; it being understood that one-half of the expense of such Commission is to be paid by the city of Montreal.

JOHN J. MCGEE,

Clerk Privy Council.

Ref. No. 69,816.

MONTREAL FLOOD COMMISSION,
MONTREAL, 31st July, 1886.

SIR,—The Commissioners appointed to “enquire into the causes and suggest remedies” for the ice floods at Montreal, immediately upon their organization last month, made arrangements for the land and river surveys and the investigations necessary in dealing with so great a question, and these are now being actively prosecuted.

The Commissioners, conscious of the great desire on the part of the citizens of Montreal that every possible effort should be made to prevent the recurrence of the disastrous floods of April last, took immediate steps to deal with the protection of the district south of the Lachine Canal, relative to which a charter was obtained at the last session of Parliament for the construction of a dyke or levee. They have prepared, and herewith submit, a plan showing the position of the site proposed for this dyke, together with an estimate of the probable cost.

The area which would be protected by this dyke is bounded by the Lachine Canal, the River St. Pierre, the tail-race of the Montreal waterworks and the River St. Lawrence, from the city limits, as far down as the waste weir at Tate's dry dock, and includes nearly the whole of the municipality of St. Gabriel, excepting the islands in the St. Lawrence.

The area protected within the limits of the city of Montreal is about 360 acres, and in St. Gabriel about 300 acres. The assessed value of this area is nearly \$5,000,000, of which about \$1,800,000 is in St. Gabriel.

The route of the dyke is along the present road and top of river bank, from Tate's dry dock to a point about 3,000 feet above the Victoria Bridge. Here it turns inland, crossing the city limits at the rear of the property belonging to the Estate Knox and strikes the tail race embankment near Wellington street—otherwise known as the Lower Lachine road—passing in rear of the farm house on the property of the Congregational Nuns.

The tail race bank is now being raised by the city to the level proposed for the top of this dyke, which is 29 feet above city datum or summer level of Montreal harbour. The level of top of dyke would be 1 foot 6 inches above highest level of floods of April last, and is nearly the same as the coping of Tate's dry dock, as also of the rails of the Grand Trunk Railway where crossed by the dyke.

The connection of the head of the tail race with the Lachine Canal bank completes the route of the dyke.

The estimated cost of the dyke and the necessary pumping plant and drainage works required in connection with it will be about \$85,000. The land is valued at about \$35,000, making a total of \$120,000. The land valued is much more than will be required for the site of the dyke, as it includes the whole of such building lots as are affected by the close proximity of the embankment, also a considerable acreage of low ground, which is not suitable for building purposes, from which it is proposed to take the material required for the embankment.

The estimate for the drainage and pumping works also includes sewers, which, though now only wanted in connection with a dyke, will ultimately be of value to the city as sewers.

The estimate, and the right of way provided for, are for a dyke alone, but the culverts are lengthened to admit of widening the dyke for a future roadway.

The final location, breadth, &c., may be modified by arrangements with the proprietors. These are few in number and the most important of them are quasi public bodies.

The Commissioners think it probable that it may be decided to construct at once the levee, on account of its simplicity, certainty of effect, the small amount of damage or inconvenience to be caused by it, and its moderate cost in proportion to the large amount of property it would benefit, as well as because any alternative scheme involves delay and the risk of further possible damage.

The protection of the remainder of the exposed district of the city, north of the Lachine Canal by raising the river front, is a work of much greater magnitude, involving as it does the almost entire reconstruction of the revetment wall. In connection with the plans and estimates required to show the cost of this work, the Commissioners are now conducting surveys and investigations for the purpose of ascertaining the practicability and probable cost of diminishing the floods, and of reducing them within harmless limits, by means of river works.

We have the honour to be, Sir,

Your obedient servants,

THOS. C. KEEFER,
HENRY F. PERLEY,
JOHN KENNEDY,
PERCIVAL W. ST. GEORGE,

Commissioners.

A. GOBBIL, Esq.,
Secretary, Department of Public Works,
Ottawa.

ESTIMATED COST OF PROPOSED POINT ST. CHARLES AND ST. GABRIEL DYKE.

Embankment, culverts, fencing, &c.....	\$ 37,400
Pumping and drainage works.....	41,600
	<u>\$ 79,000</u>
Engineering and contingencies.....	6,000
	<u>\$ 85,000</u>
Land valuation	35,000
Total	<u><u>\$120,000</u></u>

Ref. No. 77,053.

MONTREAL FLOOD COMMISSION,
MONTREAL, 5th May, 1887.

SIR,—The Commissioners have the honor to report that they have completed the surveys and observations of the River St. Lawrence in connection with their investigation into the causes and suggestion of remedies for the floods at Montreal. These observations have extended from the ice packs below Morrisburg to Quebec, a distance of 250 miles; but the ice surveys have been confined to the portion of the river between the head of Lake St. Louis and the Platon, about 36 miles above Quebec—the lowest point at which an ice bridge was formed during the past winter.

The object of these surveys, the first of their kind which have been taken in connection with the ice question, was to ascertain the practicability of holding back

above Montreal as well as of passing out to sea below Three Rivers a sufficient quantity of that ice which by its packing immediately below Montreal, is the sole cause of the floods.

The field work in connection with these surveys, observations and ice charts was only completed last week, and on account of the many questions involved and the various projects supported by worthy persons, some time will be required to prepare our final report and to put on record the large amount of new and valuable information which has been obtained.

In view of the urgency of the question the Commissioners now beg leave to report the result of their investigations and the conclusions at which they have arrived, in order that prompt action may be taken to protect the city of Montreal before another winter.

In the first report, dated 31st July, 1886, the Commissioners presented plans and estimates for a dyke, or embankment, extending from Tate's dry dock at the head of Mill street, along the river, front to the St. Pierre River at the lower Lachine Road, there to connect with the embankment of the water works tail race, and stated that they thought it probable "that it may be decided to construct at once this levee, on account of its simplicity, certainty of effect, the small amount of damage or inconvenience to be caused by it, and its moderate cost in proportion to the large amount of property to be benefited by it, as well as because any alternative scheme involves delay and the risk of further possible damage."

With respect to the protection of the exposed district north of the Lachine Canal by raising the river front, the Commissioners stated in that report that it was "a work of much greater magnitude, involving as it does almost the entire reconstruction of the revetment wall," and that in connection with this work they proposed to ascertain "the practicability and probable cost of diminishing the floods and of reducing them within harmless limits by means of river works."

The Commissioners have now to report, as the result of these investigations, their opinion, that, while an important diminution of the quantity of ice which is now arrested below Montreal may be effected by river works, or by annual work in the river, which may be the means of averting a flood in certain years—and more especially a winter flood,—in other years they might prove ineffectual for the protection of Montreal, especially against spring floods, and they are forced to the conclusion that there is no absolute certainty of protection for Montreal but in excluding the river by a dyke, or in raising the low districts above flood level.

EXCLUSION OF THE RIVER.

The questions connected with a dyke upon a permanent plan along the front, between the canal and the Canadian Pacific revetment wall, are of such magnitude that, so long as there was hope of protection in any other direction, the permanent dyking of a portion of the city front must be regarded as a work of last resort.

The raising of Commissioners street above flood level would be the most simple, permanent and effectual manner of dealing with the question, regardless of all other considerations. But this work calls for the simultaneous reconstruction of the revetment wall of a greater thickness and to a greater height, and upon its present site. Commissioners street is too narrow for the present, and still more so for the early future requirements of the commerce of Montreal; nor can it at present be widened, because the wharfage width between it and the ships is equally insufficient, and the commerce of the port is of more importance to the city and the Dominion than the width of the street. Commissioners street, therefore, cannot be widened, nor can its revetment wall be reconstructed where it ought to be for the purpose of a dyke until there is an advance of the whole wharfage front,—which carries with it an advance of the outer or eastern line of the dredged channel for its entire length. Again, the raising of Commissioners street, to a height of at least six feet, means an unknown amount for property damages along the whole route, and extending inwards toward the city at every connecting street, so far as property would be affected by the rearrangement of street grades. But probably the most serious matter would be the

interposition of a rampart, six feet in height, between the city and the port, over which all the tonnage must be carted. About ten years ago a commission of engineers recommended the widening of the wharves and of this street, and we understand that financial reasons alone have hitherto prevented any work being done in this direction; but, as Montreal will soon require all the harbour facilities which her position is capable of, there is very little doubt that this enlargement of the harbour front, and of Commissioners street, will soon be undertaken, and until this is done it will be necessary to postpone the permanent dyke required as protection from floods.

Since the report of the engineers above referred to the question of the proper height of wharves, for the accommodation of the larger class of steamers, which the deepening of the river has brought to the port, has been raised. The present level of wharves was adopted when the shipping of the port was confined to vessels of a few hundred tons. Ocean steamers of many thousand tons now frequent the port in such numbers as to need all the central portion of the harbour, and for these steamers the Commissioners understand a higher level of wharf would be more convenient. The higher the wharf level, the easier the cartage, and the less the space occupied by ramps.

Montreal is the only city whose wharves are submerged continuously for five months in the year; and Captain Barclay, for many years in control of the loading and discharging of Allan's steamers, is of opinion that the level of Commissioners street itself would be the most convenient one for the ships of that line. This, if applied throughout, would practically abolish the revetment wall, substituting the wharf front in its place.

The Commissioners refer to this question of wharfage height in consequence of its connection with that of a permanent dyke. The thickness and cost of a revetment wall depends upon its height, and as the permanent dyke must be either in connection with a new revetment wall or, in the absence of one, upon a foundation for the level of Commissioners street, the condition precedent to its location and mode of construction is the settlement of these questions of the new line for the wharves and the height of the same.

The retention of the present level of the wharves with a new revetment wall so placed as to give a hundred feet width to Commissioners street would, with the present system of wood construction, give the least amount of perishable work, and would cost about \$1,200,000.

To raise them to the level of Commissioners street and provide a dyke against floods above that level would cost about \$1,700,000.

Should it be found advisable to raise the wharf level with its railway tracks and sheds above the winter level of the river—abolishing thereby the revetment wall and its ramps—all that will then be necessary for the protection from floods attaining a higher level will be a permanent dyke or rampart of substantial masonry placed at a safe distance from the wharf front. The safe distance has been established by more than forty years experience, as that between the revetment wall and the buildings fronting upon it. Openings through this parapet wall for cartage purposes would be closed by stop gates during the flood periods.

If the high or Commissioners street level be adapted for the wharves along this portion of the city front, permanent sheds, bearing the same distance relation to the wharfage front, as the buildings on Commissioners street now do to the revetment wall, would be resorted to, and the Commissioners think that the parapet wall could be utilized in the construction of such sheds.

It would also make possible an elevated railway, reaching the manufacturing districts at either end of the city without interrupting the traffic of the port.

The annual cost connected with the temporary sheds has been estimated as high as \$10,000. There is a further charge for removal of ice as well as the additional time and cost of cartage in favour of the high level wharf.

Whether these advantages will be considered sufficient to compensate for the half million dollars greater cost of the high level is in the future.

ELEVATION OF FLOODED DISTRICT.

The raising of the low districts above flood level involves an outlay upon twenty-six miles of streets in this district of upwards of one million of dollars, exclusive of the cost of raising the buildings and lots, and is, in any case, the work of years. For the purposes of flood prevention the raising of Commissioners street alone would be sufficient, and nothing would be gained, except in a sanitary point of view, by raising any other street or buildings, because pumping must still be resorted to during floods, after the streets, lots and buildings have been raised, if the cellars are to be kept dry. It cannot be supposed that this whole district would be raised another six feet for the benefit of the cellars.

We have already referred to the questions connected with the raising of Commissioners street, and would only add, upon the question of cost, that nothing is to be gained in that respect by the raising of the street itself. Its necessary revetment wall would afford the required protection from floods, whether the street were raised or not, and this revetment wall is a necessary adjunct to the raising or maintenance of the street.

As there is, therefore, no means of protecting the river front north of the Lachine Canal upon any permanent plan, in time to provide against the contingency of another flood, the Commissioners have decided to advise the erection of a temporary dyke upon the top of the revetment wall, to be constructed of timber and earth-work, with openings through the same for access to the wharves, which are to be closed when navigation ceases. This can be effected in a short time and at a cost under \$50,000, which includes supporting the revetment wall where required, seeking for and cutting off old drains or leaks connecting with the river, so that the minimum of pumping would be secured.

ESTIMATES.

The present pumping plant was hastily improvised, and cannot be relied upon. It is moreover insufficient in capacity for the work it may be called upon to do during a flood, as there has as yet been no experience in pumping with the river at a higher level than the revetment wall.

For permanent plant about \$46,000 will be required, and this estimate is based upon the carrying out of the intercepting sewer, which we understand has already been determined upon by the city.

Since our estimate (of July, 1886) for the point St. Charles dyke some expenditure of a permanent character has been made there for the drainage works, reducing by so much our provision under that head.

The cost of protection work will now be as under:—

Embankment, culverts, fencing, &c, Point St. Charles	\$37,400 00
Drainage works do	14,000 00
Land valuation.....	35,000 00
Temporary dyke revetment wall, say.....	40,000 00
Superintendence, contingencies, &c.....	6,000 00
	<hr/>
	\$132,400 00
To which should be added for permanent pumping plant	46,000 00
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	<u>\$178,400 00</u>

We have the honour to be, Sir,
Your obedient servants,

THOS. C. KEEFER.
HENRY F. PERLEY.
JOHN KENNEDY.
PERCIVAL W. ST. GEORGE.

A. GOBEL, Esq.,
Secretary Department of Public Works.

Ref. No. 79,824.

MONTREAL FLOOD COMMISSION,

MONTREAL, 12th August, 1887.

SIR,—In obedience to your verbal request, made to one of their members, the Chief Engineer of Public Works, the Commissioners have the honour to report that they have prepared plans and estimates for a line of piers and booms at the lower end of Lake St. Louis.

In their report of the 5th May last, the Commissioners stated their belief that an important diminution of the quantity of ice which is now arrested below Montreal may be effected by river works, or by annual work in the river, that is—by holding back the ice above Lachine—or by passing it out to sea below Three Rivers. Of those two methods one would be represented by works of construction in the river, requiring only the annual labour of opening and closing the booms, while the other, to be effective, would require a capital outlay for properly constructed ice-breaking steamers, and considerable annual expenditure in fuel, wages and repairs. The action of the piers and booms would be independent of the character of the winters, while the cost, and even the practicability of the alternate method would materially depend upon the weather, and it was in view of this that the Commissioners recommended an experiment to be made last autumn with the tug boats of the Montreal Harbour Commission.

The practicability of arresting floating ice when young, and of causing ice to form at points where the current is sufficient to prevent freezing, by means of booms, has been established upon the Ottawa River and its tributaries, notably at Deux Rivières, which point we have surveyed in order to compare the currents and conditions there with those in Lake St. Louis, below Ile Dorval; and we have come to the conclusion that the ice can be arrested, at the points proposed, by means of piers and booms, without the risk of any alteration in the winter levels of Lake St. Louis.

In the case of Montreal, the Commissioners, while holding the opinion that the stoppage of the ice in early winter below Dorval would reduce the floods, and even render them harmless in certain winters, felt that when the interests at stake were so great, and a certain remedy was within the reach of those interested, it would have been unwise to assume any risks; but as regards the south shore of the St. Lawrence, below the Lachine Rapids, the conditions are reversed, and the only relief which can be expected for that quarter is in the holding back of the ice above Lachine.

The plan of holding back the ice has been publicly advocated from an early date. By whom it was first suggested is unknown to us, but we find it urged in the columns of the Montreal "Herald" in 1841; and in the report upon the Victoria Bridge, by the Chairman of this Commission, in 1853, the opinion was expressed that "a line of piers across this lake, near Ile Dorval, would very much diminish the annual inundation at Montreal."

Since 1852—the year when the record of winter gauging at Montreal commenced—the river has closed ten times in the month of December, and always without a winter flood. In the other twenty-six years it has closed in January. The effect of severe continued frost, at the beginning of winter, is to close Lake St. Louis, and cut off further supply of ice from above the points where it freezes over, and thus prevent a winter flood, which is the most distressing one.

Again, if the ice were held in Lake St. Louis until the river is open below Montreal, the severity of the spring floods should be diminished. Until last April it was the descent of the lake ice, before the river was open below Montreal, that caused the spring floods; but the shove and flood took place last spring before the lake ice passed below the Victoria Bridge. The river below Montreal was so filled with ice, which came down from the city, before the Laprairie Basin and Lake St. Louis were closed for the winter, as well as by the ice formed in the open water below this lake throughout an exceedingly severe winter, that it did not need the addition of the lake ice, in the spring, to cause a flood.

The effect of a line of piers and booms below Ile Dorval will be to prevent the descent of any ice from above them, until the booms are opened in the spring; and also to cover with ice a large portion of Lake St. Louis, extending to a considerable distance above Dorval, which is now an open water factory of frazil and bordage ice, which by the action of frost and wind is sent over the Lachine Rapids throughout the winter. The greater part of this ice is carried under the surface through the Laprairie Basin and is packed somewhere between Montreal and Varennes.

The number of piers, each of which will be thirty feet square on foundation, will be nineteen; and the length of two ply boom will be about fifteen thousand feet, or nearly three miles. The cost of the whole we estimate at \$70,000. The Commissioners recommend the carrying out of this work as one which, in proportion to its cost, will in their judgment produce greater beneficial results to the exposed districts outside of Montreal than any other river work they are able to suggest.

We have the honour to be, Sir,
Your obedient servants,

THOS. C. KEEFER,
HENRY F. PERLEY,
JOHN KENNEDY,
PERCIVAL W. ST. GEORGE,

The Honourable

Sir H. L. LANGEVIN, K.C.M.G., &c.
Minister of Public Works.

Ref. No. 80,648.

CHIEF ENGINEER'S OFFICE,

OTTAWA, 8th September, 1887.

SIR,—As per the endorsement by the Hon. the Minister, on Fyle No. 79,824, I am to state the particulars of the works proposed by the "Flood Commission" to be built in Lake St. Louis, for preventing wholly or in part, the passage of ice formed in the early part of each winter in the lake, or brought down into it from Lake St. Francis—down the Lachine Rapids, through the Laprairie Basin, and past Montreal, to jam and accumulate, and thus add to the probability of recurring floods and inundations, not only in that city, but over the southern shore of the St. Lawrence below the Lachine Rapids.

The Commission has stated fully why they have recommended the construction of piers and booms in Lake St. Louis, and it only remains for me to say that the piers will be 19 in number, each 30 feet square, built with sloping faces on the up stream ends, and properly protected to withstand the run of ice in the spring. These piers are to be placed at the lower end of the lake, and in such positions as will not interfere with navigation, and where a line of shoal water extends from shore to shore, they are to be placed about 500 feet apart, and between them booms will be stretched after the close of navigation, which, from the experience gained on the Upper Ottawa, will have the effect of causing the ice to form completely across the lake early in the winter, and once taken the pressure on the booms will be reduced, and all ice formed in the lake or brought into it, must remain until the breaking up in the spring. At present the ice forms out from the shores (bordage), and is broken up by winds and storms and carried by the current to the foot of the lake, thence through the Lachine Rapids, &c., to and past Montreal, and this process or action continues until the bordage on either side has become connected and a solid unbroken sheet has been formed.

Just before the breaking up of the river in the spring, one end of each boom will be cast loose, and with the flow of the ice they will swing freely and without damage, and can so remain until required to be placed in position for the following winter.

I have examined the details of the estimate of cost prepared by the Commission, and believe that it will be barely sufficient to cover the cost of the works proposed, as I differ in some points respecting the mode of constructing the piers, for with my experience in connection with the piers built by the Department at Laprairie, Chenal du Moine and Berthier, I am of the opinion that a heavier plan of construction must be adopted. The plan of boom prepared and the fastenings and mode of attachment to the piers are satisfactory.

If these piers and booms are to be of any service next spring, their immediate construction is very desirable, and if they are to be proceeded with and to hasten their speedy completion, the work of construction might be let in several, say five or more, contracts.

If the foundations can be put in before the ice makes and the booms stretched, and I see not reason to prevent this being done, the superstructures can be completed after the ice has formed, when there will be ample opportunity for the conveyance of materials—notably ballast to each pier.

I am, Sir,

Your obedient servant,

HENRY F. PERLEY,

Chief Engineer.

A. GOBEL, Esq.,
Secretary Public Works Department.

APPENDIX No. 8.

LAKE ST. JOHN, P. Q.

REPORTS BY HENRY F. PERLEY, CHIEF ENGINEER, AND THOMAS
GUERIN, C.E.,
ON EXAMINATIONS MADE DURING THE SEASONS OF 1885 AND 1886.

APPENDIX No. 8.

REPORT ON AN EXAMINATION OF LAKE ST. JOHN, QUE., MADE DURING THE SEASONS OF 1885 AND 1886.

Ref. No. 76,431.

CHIEF ENGINEER'S OFFICE,
OTTAWA, 23rd April, 1887.

SIR,—Herewith I transmit for the information of the Honourable the Minister a report by Mr. Thos. Guerin, C.E., on an examination of Lake St. John, Que., during the season of 1886, being in continuation of a report of work done during 1885.

Mr. Guerin describes the outlets of this lake and the obstructions which exist, those which are natural and those which have been constructed in the shape of dams for the purposes of the traffic in lumber, and he states that the presence of the dams on the Petite Décharge cause the lake to stand at a level of five feet above what it would were the dams not in existence.

The farmers bordering the lake complain that their lands are always flooded during high water, and they are thus prevented from sowing their crops at a seasonable time. They also assert that the lake did not in former years rise to such a height as it now does, and they charge the excess in rise to the dams at the Petite Décharge.

Some of the flooded land was examined and in some instances its level was in the vicinity of $3\frac{1}{2}$ feet below that of high water level of the spring of 1885, which is stated to be the ordinary high water in the lake.

As previously stated, the presence of the dams cause a permanent rise in the lake of 5 feet, consequently the lands examined must be flooded to a depth of $1\frac{1}{2}$ feet yearly. Were the dams removed only extraordinary high floods would cover them.

For some years the Department has been engaged in widening the Grande Décharge for the purpose of increasing its off-take capacity, but judging from the immense volume of water, as stated by Mr. Guerin, which has to be contended with each spring, it is plain to see that unless the work on the Grande Décharge be done on a gigantic scale but very little benefit will be derived.

The dams were built for assisting the lumber trade at a time when settlers around the lake were but few in number and farming was of little importance; but of late years there has been a very large influx of settlers into that region, and the question now arises, which is of the most importance to the country, the lumber traffic which exists and does not add anything to the development of the country, or the welfare and prosperity of people who have made their homes around the lake, and by whose exertions and labour the country must become of importance.

It appears to me that there is not any necessity for the maintenance of these dams on the Décharge to the height at which they have been built, and that they might be lowered, if not done away with entirely, so as to bring the lake to its original level, and thus prevent the inundations which have been complained of.

I am, Sir,

Your obedient servant,

HENRY F. PERLEY,

*Chief Engineer.*A. GOBELIL, Esq.,
Secretary Department of Public Works.

OTTAWA, 12th April, 1887.

SIR,—I have the honour to submit the following report on the examination of Lake St. John during the past season.

OUTLETS OF THE LAKE.

In the report on the examination of Lake St. John, for the season of 1885, it was stated that the lake has two outlets, the Petite Décharge and the Grande Décharge. The Petite Décharge was described as consisting of five branches, having dams across four of them and a portion of the fifth, with a view to facilitate lumbering operations. During the past season a survey was made of this outlet, and a plan of the same, marked No. 2, is herewith submitted, showing the several branches and the position of the dams. Sections of the dams have been made which you will find on the general plan of the lake, marked No. 1, herewith submitted.

The Grande Décharge commences at the head of those islands which you will find depicted on the general plan, and passing among the island it has a current of five feet per second. At a distance of about one mile below the head of this current it enters into a bed of about 850 feet in width at low water and here commence the rapids. At a distance of a few hundred feet from the head of these islands the channel widens and contains a number of islands. Thence rapids and islands are the principal features of this channel for a distance of about three miles. Here it takes a turn to the left and forms a bend, which, for future reference, I shall designate as the Bend of the Grande Décharge. It is not necessary, for my present purpose, to describe this channel any further.

CONTRIBUTIONS TO THE LAKE.

Having completed the examination of the discharges from the lake, attention was then turned towards ascertaining the capacities of the streams which constitute its supply. These consist of eleven rivers, among which are three of immense size, viz.: the Ashuapmouchouan, the Mistassini and the Peribonka. Having made inquiries as to the characters of these rivers, from parties who had frequently ascended them for many miles, it was ascertained that their beds are so irregular and studded with islands, that any of these rivers would require to be ascended for a distance of 150 miles or more, before a suitable place for measuring its capacity could be obtained. Add to this the fact that all the branches for that distance would have to be measured, and the conclusion is forced on us that this task alone could not be accomplished in less time than three or four seasons. The idea of measuring the supply of the lake was therefore abandoned.

Having been foiled in the desire to obtain the capacities of those rivers which constitute the supply to the lake, a matter which would greatly aid in the solution of the question of overflow, the area of the lake had to be utilized for that purpose. This, on the authority of the Crown Lands Department, Quebec, is $5,365\frac{4}{10}$ square miles.

PERIODS OF HIGH AND LOW WATER.

Gauges were established last year at certain places, so as to ascertain the levels of the lake at low water, and thence every day to the time of high water. The information thus obtained has been collated, from which we can infer that the lake has two periods of high and low water. Extreme low water occurs about 1st of April, and remains at that level only a couple of days, after which it rises and reaches its extreme high water level about the 12th of May, and remains at that level for about one month. It then falls and reaches a low water level about the 1st of September, and remains at that stage for about three weeks; then it rises to high water level which it reaches about the middle of November, when after a couple of days it commences to fall until it reaches its extreme low water state on or about the first of April.

FLOODED LAND AND HIGH WATER LEVEL.

The farmers bordering on the lake complain that a portion of their land is flooded always during high water in the spring of the year, and that they are consequently prevented from sowing their crops at a seasonable time. They assert that formerly the lake did not rise so high as it does of late years, and they impute the cause of the excessive rise to the action of the dams across those several channels of the Little Discharge referred to above.

I have examined some of the land in question, and I have found that its level in some instances is in the vicinity of $3\frac{1}{2}$ feet below that of the high water level of the spring of the year 1885, and it was stated to me by the farmers that the high water level of that year was the ordinary high water level of the lake. If, therefore, the high water level of the lake were reduced $3\frac{1}{2}$ feet lower than its ordinary elevation, the farmers would, in most cases, be freed from their present grievance; so that the problem is reduced to this: It is required to devise such means as will prevent the lake from rising within $3\frac{1}{2}$ feet of the high water level it acquired during the spring of the year 1885, which, according to our datum, the gauge register shows to be $197\cdot37 - 3\cdot50 = 193\cdot87$.

Whatever the cause may be, there is no doubt the water of the lake did not acquire as high a level formerly in the spring of the year as it does at the present time. The following facts will lead to such a conclusion:

There are wide sandy beaches at low water in several places on the border of the lake. On the beach, east of the mouth of the River Grammond, there are standing in the sand the trunks of several large trees, whose roots at low water in the autumn are exposed and are keeping the trunks in position, although the soil has been excavated and washed away by the receding water for several feet below the bottom of the trunk of each; so that in time of low water the trunk is elevated in some cases upwards of 3 feet above the ground, in an upright position, and propped by a network of roots.

In one instance where there is a withered pine tree of 2 feet diameter, in the position just described, it was found that the level of the fork, where the roots branch off, was 3 feet below the level of ordinary high water. It follows then, that during the lifetime of this tree, and before it was killed by washing away the soil from its roots, the water of the lake did not reach within a distance of 3 feet of the ordinary high water level, to which it rises at the present time.

Having thus established the fact that the water of the lake rises to a higher level of late years than it did formerly, we must conclude that such a phenomenon must arise either from the supply to the lake of late years being in excess of that which it formerly had; or from impediments to the outflow of the lake at the present time, which did not exist formerly.

There are no data from which to ascertain what the supply to the lake formerly was, and consequently an examination of the first mentioned cause is out of the question. With respect to the other cause suggested, it may be stated that the entrances to the two discharges are composed of rock, so that no impediment can have lately arisen from silting or otherwise at the heads of those discharges. The only cause which invites examination is the impediment in the Little Discharge caused by the dams, and this subject shall be discussed at length towards the end of this report.

SUPPOSED FORMER OUTLET.

An examination has been made of the lower end or foot of the lake, with the view of finding some favourable place for opening an additional outlet which would govern the overflow. While engaged with this object in view, a locality was found which presented the appearance of having been at some former time, the bed of another outlet of the lake. Allusion was made to this locality in a former communication to you; but since that time a survey has been made of it, and a plan and section of the same, marked plan No. 3, is herewith submitted.

I will not undertake to state that this locality contained the bed of a former outlet of the lake. A judgment in this respect may be found from the following description.

During the whole of the distance of one mile from the lake, along this locality, its level is above that of ordinary high water; although it is nowhere more than 7 feet above that level, and here it is a swamp, exceeding 14 feet in depth. A small stream runs from this swamp into the lake during the spring of the year, and at a distance of about three-quarters of a mile from the lake another stream runs from the same swamp in an opposite direction, called "Ruisseau Rouge." This is a permanent stream and runs into the bend of the *Grande Décharge* after traversing a distance of about three miles. The beds of these streams, as well as that of the swamp from which they originate, are confined within rocky boundaries, and this confined space so much resembles the bed of a former outlet that a desire to examine it so as to ascertain the feasibility of opening a channel through it, with the view of governing the overflow of the lake became imperative.

SIZE OF CUT THROUGH THIS OUTLET TO REDUCE THE H. W. LEVEL OF LAKE $3\frac{1}{2}$ FEET.

In utilizing this locality for the purpose of reducing the high water level of the lake; let us suppose a cut through it to incline at the rate of one foot per mile, its width to be 200 feet and its bottom to be 9 feet below high water level at the point of departure from the lake. Then applying Kutter's formula for canals in good order where the coefficient of roughness n is .025 we shall have after a slight transformation

$$v = 87.81 \sqrt{r s} \quad \text{and} \quad Q = 1.22 L r^{\frac{3}{2}}$$

Where r = the mean depth = 9 feet; s = sine of inclination = $\frac{1}{5280}$; L = width = 200 feet; v = velocity per second, Q = the discharge in cubic feet per second.

Let x denote any height of water in the canal and for the height x we get $Q = 1.22 L x^{\frac{3}{2}}$ ÷ hence we have $1.22 L x^{\frac{3}{2}} dx =$ the sum of all the discharges per second during the space dx ; or it is the differential of all the discharges per second during the space x ÷ so that $\int 1.22 L x^{\frac{3}{2}} dx =$ the sum itself, and as x is the number of such discharges we have $Q = 1.22 L \int_0^x x^{\frac{3}{2}} dx =$ the mean discharge per second

during the space x . Integrating this expression and taking x between the limits 0 and r we get $Q = 0.488 L r^{\frac{3}{2}}$. Substituting the values of r and L , r being = 9 feet and $L = 200$ feet, we get $Q = 0.488 \times 200 \times 9^{\frac{3}{2}} = 2,635$ cubic feet. This is the mean discharge through the cut per second, from the time the water of the lake commences to enter the cut until it rises to high water level.

On the 27th of April, 1886, according to the gauge register, the elevation of the lake was 184.85, and on the 28th it was 186.65, and the elevation of high water was, on the 12th of May, 194.83; so that on the 27th of April, the level of the lake was 9.98 feet below the level of high water and if the cut existed then, the water would on some time during that day commence to enter it. High water being on the 12th of May, it therefore occupied from the 27th of April to the 12th of May, to rise 9.98 feet. This amounts to 15 days or 1,296,000 seconds, which multiplied by the mean discharge will give the entire quantity which would pass through the cut in that time $1,296,000 \times 2,635 = 3,414,960,000$ cub. feet. The area of the lake is $365\frac{4}{10}$ square miles or 10,186,767,360 square feet; so that we have $\frac{3,414,960,000}{10,186,767,360} = 0.337$ feet; or = 4 inches.

Hence, if a cut were made from the lake, of 200 feet in width, whose bottom at the point of departure would be 9 feet below ordinary high water, with an incline of 1 foot per mile along this old channel; it would be only capable of reducing the level of the lake a distance of four inches below its ordinary high water level.

As the discharge through such a cut would vary as the width and the square root of the inclination, it is manifest that if we attempt to reduce the level of the lake the required distance of $3\frac{1}{2}$ feet below its high water level by utilizing this old channel, we shall have to open a cut through it whose base will be $9 + 3\frac{1}{2}$ feet below high water level, having a width of 700 feet and an inclination of 9 feet per mile. This would necessitate an excavation amounting to several million cubic yards.

Having fully examined the border of the lower end of the lake: I conclude there is no locality outside the beds of the present discharges through which a channel for lowering the level of ordinary high water to the desired limit, can be obtained within any reasonable expenditure of money.

EFFECT OF THE DAMS ON THE LITTLE DISCHARGE.

The bottoms of those channels across which those dams have been built on the Little Discharge, are of the most rugged description, and are suited to the application of Kutter's formula, 3rd class, where the bottom of the channel is supposed to consist of large rocks and the coefficient of roughness is $n = .035$. According to a simple transformation of this formula we shall have

$Q = L r \times 61.05 \sqrt{rs} = 61.05 L r^{\frac{3}{2}} \sqrt{s}$, where Q = the discharge in cubic feet per second; L = width of channel; r = the mean depth, and s = the size of the inclination.

The fall of the Little Discharge is 18 feet in round numbers. It is somewhat less than this amount at high water and greater at low water. The lengths of those channels are about one mile each, so that $\sqrt{s} = 0.053$ and $Q = 3.541 L r^{\frac{3}{2}}$.

Let x = any height of water in the channel and we get for height x . $Q = 3.541 L x^{\frac{3}{2}}$. And $3.541 L x^{\frac{3}{2}} dx$ = sum of discharge per second while the water is ascending the space dx ; or it is the differential of the sum of all the discharges per second during the rise through the space x . Hence, $\int 3.541 L x^{\frac{3}{2}} dx$ = the sum itself, and as x is the number of such discharges, we get $Q = 3.541 L \frac{\int x^{\frac{3}{2}} dx}{x}$ = the mean discharge per second during the time the lake rises through the space x .

Integrating this expression between the limits 0 and r we get $Q = 1.416 L r^{\frac{3}{2}}$

This is the mean discharge per second, which multiplied by the time of rising will give the entire quantity passed through each channel during the time the water would take to rise through the height r if the dam did not exist; and in our present case, if L denote the width of any of the channels or the length of any of the dams and r its height, then Q multiplied by the time of rising through r will denote the quantity of water backed into the lake by the existence of the dam.

On examining the sections of the dams, it may be seen that the area of dam No. 1 is 1,552 square feet; the elevation of its top is 197.37. The elevation of the top of the dam is greater than this amount, but as it is not effective above high water so we call the elevation of the dam the same as that of high water. The elevation of the bottom of the dam is 183.37; its height r is 14.00 feet; its width L is 121.00 feet. The mean discharge through the channel, according to the above formula, will be $Q = 8,975.10$ cubic feet per second.

On inspection of the gauge register we find that on the 26th of April, the elevation of the lake was 183.37 and on the 12th of May it was at its highest elevation; so that it occupied seventeen days to rise from the bottom to the top of the dam, which

in seconds amount to 1,468,800 seconds; hence we have $8,975 \cdot 10 \times 1,468,800 = 13,182,626,880$ cubic feet, which denotes the entire quantity backed into the lake by the existence of this dam. The following table can now be easily perused :

No. of Dam.	Area.	Elev. top.	Elev. bot.	Height r	Width L .	Discharge Q .
1.....	1,552	197·37	183·37	14·00	121·00	8,975·10
2.....	660	197·10	189·37	7·73	94·50	2,875·80
3.....	820·90	197·10	181·41	15·69	69·00	5,280·20
4.....	1,618·70	194·44	180·47	13·97	125·00	9,242·00
5.....	1,441·16	194·59	186·00	8·59	184·00	6,559·50

TIME of rising from bottom to top of each dam, taken from the gauge register :—

No. of Dam.	Enters bottom.	Reaches top.	Days rising.	Seconds.
1.....	April 26th.....	May 12th.....	17 days.....	1,468,800
2.....	do 29th.....	do 12th.....	14 do.....	1,209,600
3.....	do 24th.....	do 12th.....	19 do.....	1,641,600
4.....	do 23rd.....	do 12th.....	20 do.....	1,728,000
5.....	do 28th.....	do 12th.....	15 do.....	1,296,000

AMOUNT of water prevented from escaping by each dam :—

No.	Discharge.	Time of rising.	Quantity of water stopped.
No. 1.....	8,975·10	\times 1,468,800	= 13,182,626,880 cubic feet.
" 2.....	2,875·80	\times 1,209,600	= 3,478,567,680 do
" 3.....	5,280·20	\times 1,641,600	= 8,667,976,320 do
" 4.....	9,252·00	\times 1,728,000	= 15,970,176,000 do
" 5.....	6,559·50	\times 1,296,000	= 8,501,112,000 do
Total.....			<u>49,800,458,880 do</u>

Area of lake is $365 \frac{4}{10}$ square mile = 10,186,767,630 square feet. Dividing this area into the above total, which expresses the quantity accumulated in the lake : we get

$$\frac{49,800,458,800}{10,186,767,630} = 4.90 \text{ feet.}$$

Wherefore, the lake is raised $4 \frac{9}{10}$ feet above the the level of ordinary high water by the existence of those dams.

DAM NO. 6—AT THE SLIDE ST. JOSEPH D'ALMA.

Besides the five dams already discussed there is another at the head of the slide which is situated on the *Little Discharge* at *St. Joseph d'Alma*. This dam is several miles removed from the lake and is some 20 feet below its level. It does not affect the level of the lake; but a farmer named Alexis Tremblay on Ile d'Alma complains that it backs the water of *The Little Discharge* and causes it to flood his land. When I went to examine this locality, the dam had a head of about 30 inches of water on its crest.

There is no doubt this dam backs the water of *The Little Discharge* and raises its level, but to what extent Mr. Tremblay can claim damages it is difficult to determine without a knowledge of the high water level of the locality before the dam was built or before Mr. Tremblay became possessed of his farm. There are no reliable

means of acquiring this knowledge in the present state of affairs, but it is manifest the amount of damages must be small, for his land slopes to the water at the rate of about one in sixteen, so that a rise of 10 feet in the channel of *The Little Discharge* would cover only a strip of 160 feet in width along the border of the end of his farm.

This strip of 160 feet refers to that portion which is good land, there is another small portion at the end which is lower and overgrown with willows.

SOUNDING THE LAKE.

You will see by the present report I have finished the examination of all the subjects referred to in your instructions to me, excepting that of sounding the lake. This work could not be safely done in the boat I had at my command. Indeed it could not be safely done with any small boat, for the surface of the water is sometimes so boisterous as to be capable of swamping any small craft; moreover, squalls arise on this lake within half an hour's notice which seem to raise waves upwards of seven feet high. On one occasion myself and party had a narrow escape from being caught by one of them, we were about 800 feet off shore at the time, and we barely had time to reach a place of safety.

The proper time for sounding the lake is in winter. It can then be done with more efficiency and more safety to the parties employed.

There are many settlers located now on the borders of this lake, several of whom have all the appearance of being successful farmers. They anticipate a great impetus to their prosperity on the completion of the railway which they expect to be realized during the present year.

Respectfully submitted,

THOS. GUERIN,

Engineer Department of Public Works.

HENRY F. PERLEY, Esq.,

Chief Engineer Public Works.

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, 29th April, 1886.

SIR,—In accordance with your instructions I proceeded to Lake St. John to ascertain some means of diminishing the extent of its overflow during the time of high water, and also to ascertain the best means of utilizing its navigation by obtaining its depth in certain localities so as to determine the best positions for harbours and wharves.

I arrived at the lake on the 26th August and proceeded at once to obtain the necessary data for the adoption of a suitable plan to govern its overflow. I attached a gauge to the bridge at Belle Rivière and I planted another near the mouth of the River Grammond. I then undertook to examine the discharges from the lake as well as those of the rivers which constitute its supply.

DISCHARGES FROM THE LAKE.

There are at present two channels for the discharge of the waters of Lake St. John, viz., the Petite Décharge and the Grande Décharge. Both these channels unite at a distance of about ten miles from the lake and form the Saguenay River.

PETITE DÉCHARGE.

The Petite Décharge consisted formerly of five branches, but dams have been built across four of them and a dam has been built across a portion of the fifth. The name "Little Discharge" has been given to this latter, or fifth branch.

[1887]

From its point of departure from the lake it constitutes a continuous rapid for a distance of about 500 yards. At the end of this rapid it forms a small bay of almost still water, and for a distance of about $1\frac{3}{4}$ miles there is very little current until another rapid is reached. The fall during the first rapid was 18.60 feet. Those other branches which are referred to as having dams across them, terminate in this reach of still water. Sections of the dams have been taken and will be submitted with the general report on the completion of the survey.

At low water in the autumn the discharge amounted to 2,000 cubic feet per second, and at high water its discharge is 5,700 cubic feet per second.

THE GRANDE DÉCHARGE.

The Grande Décharge is the chief outlet of Lake St. John. At low water in the autumn it carries off 52,300 cubic feet per second, and at high water it carries off 149,600 cubic feet per second.

CONTRIBUTIONS TO THE LAKE.

It appears there are eleven rivers flowing into Lake St. John. Three of which, the Ashuapmouchouan the Mistassini and the Peribonka, are of gigantic proportions. When we consider that notwithstanding the lake having an area of 365 square miles and a discharge at high water of 155,300 cubic feet per second, yet its surface rises over 14 feet in a few weeks, we can then imagine the immense volume that must be poured into it.

The lateness of the season and a deficient staff prevented me from attempting any measurements of those rivers.

HIGH AND LOW WATER.

The first bench mark was out on the Belle River Bridge, its elevation being adopted at 200 feet above datum. According to this datum the elevation of high water, as pointed out by the farmers living in the vicinity, and as shown by the debris on the shore, was 197.37 feet. According to the register of the gauges, the level of the lake ceased to fall on the 1st September and remained almost stationary until the 20th of the same month. The elevation was then 182.53; so that the fall of the lake from high water in the spring to low water in the autumn was 14.84 feet.

AN OLD CHANNEL.

Proceeding from the Grande Décharge along the east shore of the lake to the point where the current begins, the bank consists of rock for a distance of one mile, then commences a sandbank for upwards of another mile. At the termination of the sand bank there is the bed of a small brook. This brook was traced upwards and found to have originated in a swamp, whose level was 1 foot below that of high water.

This swamp extended in the direction of the Grand Décharge with which it communicated by a stream from 60 to 70 feet wide. A pole 7 feet long did not reach the bottom of the swamp at the head of the stream.

This locality would be a favorable place to make a cut for relieving the lake. I would have run a line through it, were it not for the lateness of the season, but to facilitate future examination, a bench mark was made on the stump of a birch tree of about 6 inches in diameter and 4 feet high, near the mouth of the first named brook. Elevation of bench, 204.42.

To facilitate any future examination of the lake, I have caused bench marks to be made at the mouths of all rivers entering it, and also at the heads of the Grande and Petite Décharges. The following list gives their description and elevations:—

BENCH MARKS.

Belle River B. M. No. 1.—On end of beam over centre pier of bridge. Elevation, 200.00 feet.

- Belle River B. M. A.*—On sill of window of house at north end of bridge, occupied by Harvey. Elevation, 211.10.
- Grammond River B. M. No. 2.*—On large cedar on point of right bank at mouth of river. Elevation, 192.95.
- Koushpaganish River B. M. No. 3.*—On sill of window of Fortin's house, right bank of river; elevation 224.41.
- Metabechouan River B. M. No. 4.*—On beam near door of Price's store, left bank of river; elevation 201.70.
- Cuiatchouan River B. M. No. 5.*—On small poplar stump, about 200 feet up river, on right bank; elevation 210.02.
- Ouiatchouanish River B. M. No. 6.*—On foundation beam of Tremblay's mill, near corner, south end; elevation 205.57.
- Iroquois River B. M. No. 7.*—On small poplar stump 270 feet from river, right bank, one-half mile from lake; elevation 199.06.
- Ashuapmouchouan River B. M. No. 8.*—On beam in front of Normandie's house, right bank of river; elevation 206.59.
- Mistassini River B. M. No. 9.*—On small poplar stump on bank of small gully; elevation 202.88.
- Peribonka River B. M. No. 10.*—On spruce tree on right bank of small creek, about one mile below foot of island at entrance of river; elevation 193.86.
- Aux Cochon's River B. M. E. No. 11.*—On spruce tree on left bank of river, 30 feet from water; elevation 197.71.
- Old Channel or Proposed Cut B. M. No. 12.*—On stump of birch 4 feet high, 60 feet south of creek which discharges from swamp; elevation 204.42.
- Grande Décharge B. M. No. 13.*—On birch tree 59 feet from barn, near works office; elevation 211.35.
- Little Décharge B. M. No. 14.*—On birch tree 100 feet above dam, left bank; elevation 191.42.
- Little Décharge B. M. No. 15.*—On stump of small pine 25 feet below dam, left bank; elevation 200.51.

The deficient staff at my command and the lateness of the season on my arrival at the lake, combined with the strong and constant winds and rain during my sojourn there, prevented the execution of certain requisite work which, under more favourable circumstances, would have been carried out.

The surface of the lake was so boisterous that no soundings could be obtained from any boat of less dimensions than a steamer. Indeed no small boat could live on the lake during most of the time while I was employed there. September and October are unfavourable months for boating or sailing anywhere. These months constitute the period of the equinoctial gales, and those gales in the present instance did not fail to visit Lake St. John.

EXAMINATIONS YET TO BE MADE.

In addition to what was done during the past year, it is necessary to take soundings at the mouths of those rivers discharging into the lake. Also to make a survey of those branches which constitute the Little Discharge, and to run a line through the swamp referred to above. With this amount of data the question of overflow can be solved, even though the amount supplied by the contributing rivers were not obtainable.

Respectfully submitted,

THOS. GUERIN,

Engineer, Department Public Works.

HENRY F. PERLEY, Esq.,

Chief Engineer, Public Works Department.

APPENDIX No. 9.

REPORT ON DEEPENING THE CHANNEL

BETWEEN

MONTREAL AND QUEBEC,

BY

THE MONTREAL HARBOUR COMMISSIONERS.

APPENDIX No. 9.

REPORT OF THE MONTREAL HARBOUR COMMISSIONERS ON THE DEEPENING OF THE CHANNEL BETWEEN MONTREAL AND QUEBEC.

HARBOUR COMMISSIONERS OF MONTREAL,
SECRETARY'S OFFICE,

MONTREAL, 24th September, 1887.

SIR,—In compliance with the request contained in your letter of the 30th June last, I beg to send you herewith our Chief Engineer's report on the deepening of the ship channel of the St. Lawrence between Montreal and Quebec, during the fiscal year ended 30th June, 1887. I would merely add that Mr. Kennedy's original written report has been carefully compared with the type-written copy, and that the latter is an exact and true copy.

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

ALEXANDER ROBERTSON,

Secretary.

ANTOINE GOBEL, Esq.,

Secretary Department Public Works.

HARBOUR COMMISSIONERS OF MONTREAL,
CHIEF ENGINEER'S OFFICE,

MONTREAL, 20th September, 1887.

DEAR SIR,—In compliance with the request of the Secretary of Public Works, I beg to submit the following report upon the work of deepening the ship channel of the St. Lawrence, between Montreal and Quebec, during the Government fiscal year ended 30th June, 1887.

The work in hand is the deepening of the ship channel to 27½ feet at low water, instead of 25 feet, the present depth. The breadth of the deepened channel is being made the same as at present, that is, 300 feet in the straight parts, with enlargements to about 450 feet at bends, and other places where more room is needed.

At the opening of the fiscal year work was being carried on at various parts between Cap Charles and Montreal, with the Harbour Commissioners' fleet of dredges and tenders, and operations were continued throughout the year, with exception of the necessary suspension during the winter.

The chief details of the work accomplished during the fiscal year, and the cost of that part done up to the close of navigation, 1886, are as follows:—

[1887]

CAP CHARLES.

The excavation of the channel through the main shoal, which is of shale rock, was continued with one dredge and a stone-lifter from the beginning of the fiscal year until 18th November, 1886. Work was resumed in the middle of May, 1887, and continued with one to two dredges and a stone-lifter until 19th June, when the cutting through of the main shoal was practically finished to 26 feet deep at lowest water, or 27½ feet at half-neap tides.

Quantity removed by dredges during the fiscal year 61,065 cubic yards, scow measurement, costing 33½ cents per yard, and by stone-lifters 4,720 cubic yards, costing 65 cents per yard.

POUILLIER RAYER.

Work was carried on with one dredge the greater part of last fall, and again in the early part of this summer with a dredge and a stone-lifter, and by the close of the fiscal year all the main shoal had been cut through to 26 feet depth at lowest water. The margins of the shoals connecting it with the Cap Charles and Cap-à-la-Roche shoals yet remain to be cut through.

Quantity removed during the fiscal year by dredging, 14,392 cubic yards hard pan, with many boulders, costing \$1.10 per yard; by stone-lifters, 1,014 cubic yards, large boulders, costing 72 cents per yard.

CAP-À-LA ROCHE.

The cutting of the channel through the shoal, which is all of shale rock, was continued during the seasons of navigation by one dredge, assisted this spring by a second dredge, and occasionally by a stone-lifter.

Quantity removed, 89,313 cubic yards, costing 29½ cents per yard.

CAP LEVRAUT AND BATISCAN TRAVERSE.

Work was in progress at the beginning of the fiscal year and was continued until the middle of September, with one dredge and a stone-lifter.

Quantity dredged, 37,530 cubic yards; boulders removed by stone-lifter 543 cubic yards; average cost, 22½ cents per yard.

POINTE CITRONILLE.

A narrow sandy shoal extending across the channel was cut through to 27½ feet deep at lowest water, in the latter part of last summer.

Quantity removed 23,861 cubic yards, costing 19½ cents per yard.

CHAMPLAIN.

Work was commenced with one dredge early in June, 1887, and was in progress at the close of the fiscal year. Quantity dredged 4,010 cubic yards.

BÉCANCOUR.

One of the spoon-dredges from the Montreal harbour was set to cut away a small hard shoal at the bend of the channel, and worked some three months in the latter part of last summer. Quantity removed 10,676 cubic yards.

PORT ST. FRANCIS (INCLUDING FORCE SHOAL.)

Some small shoals, consisting of boulders and very tough clay, were removed by dredges and stone-lifters last fall. Quantity removed 9,70½ cubic yards, costing 37½ cents per yard.

LAKE ST. PETER (INCLUDING NICOLET TRAVERSE.)

Work was continued throughout the navigable seasons of the year by two dredges. Quantity dredged 721,200 yards, costing the remarkably low price of 2 $\frac{3}{4}$ cents per yard.

STONE ISLAND AND ISLE DE GRACE.

A distance of about 7,000 feet was deepened to 27 $\frac{1}{2}$ feet at low water, in the fall of 1886. Quantity dredged 98,430 cubic yards, costing 8 cents per yard.

CONTRECCEUR CHANNEL.

One to three dredges were employed last summer and fall, and one in the early part of this summer, in continuing the deepening to 27 $\frac{1}{2}$ feet, and have nearly completed the work. Quantity dredged 115,245 cubic yards, costing 13 cents per yard.

VARENNES.

From the middle of October till the close of navigation last fall, one dredge was employed in deepening to 27 $\frac{1}{2}$ feet. Quantity removed 92,310 cubic yards, costing 5 $\frac{1}{2}$ cents per yard.

POINTE AUX TREMBLES (EN HAUT.)

Two dredges were employed part of last fall, and removed 46,020 cubic yards, partly rock, costing 12 $\frac{1}{4}$ cents per yard.

MONTREAL.

Some small hard shoals and boulder banks were removed from the main ship channel, through the harbour, by the harbour dredges. Quantity dredged 4,298 cubic yards.

The aggregate quantity of dredging done at all parts in the ship channel during the Government fiscal year ended 30th June, 1887, was 1,341,486 cubic yards, as against 1,790,431 cubic yards in the preceding year.

The floating plant employed in the work, during the year last past, consisted of seven elevator dredges, two spoon dredges part of the time, two stone lifters, eight to nine screw tugs, five barges used as coal-tenders and smith's shops, sixteen hopper-bottomed scows and four flat scows. Of the seven elevator dredges, three are for working in earth and have buckets of 4, 16 and 28 cubic feet capacity, one is for rock or earth and has buckets of 16 feet capacity, one is for rock and has buckets of 4 cubic feet capacity, and the remaining two are for rock, with buckets of 6 $\frac{1}{2}$ cubic feet capacity.

Yours respectfully,

JOHN KENNEDY,
Chief Engineer.

ALEXANDER ROBERTSON, Esq.,
Secretary, &c.

APPENDIX No. 10.

QUEBEC HARBOUR IMPROVEMENTS.

REPORTS ON THE PRINCESS LOUISE EMBANKMENT AND DOCK
WORKS, RIVER ST. CHARLES; AND ON THE
GRAVING DOCK, LÉVIS,

BY

THE QUEBEC HARBOUR COMMISSIONERS.

 APPENDIX No. 10.

 QUEBEC HARBOUR IMPROVEMENTS—RIVER ST. CHARLES AND
 GRAVING DOCK AT LÉVIS.

Ref. No. 82,703.

HARBOUR COMMISSIONERS' OFFICE,

QUEBEC, 24th November, 1887.

SIR,—In compliance with the request conveyed in your letter of the 30th June last, I have the honour to transmit you, herewith, the Chief Engineer's report on the harbour works for the last fiscal year.

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

A. H. VERRET,

Secretary-Treasurer.

A. GOBEIL, Esq.,
 Secretary Department of Public Works,
 Ottawa.

OTTAWA, 21st November, 1887.

SIR,—Herewith I submit for the information of your board, the following with reference to the works of the Commission under my charge at Quebec during the fiscal year ended 30th June, 1887.

LOUISE BASIN.

A full depth of 25 feet at low tide has been obtained over the tidal or outer portion of the harbour, and the work of deepening the wet or inner portion was well under way at the close of the year. The masonry on the cross wall between the embankment and the entrance to the wet basin has been completed, and a portion of the same wall, carrying the sluices, has been partly constructed. A contract for the valves—seven in number—has been entered into with Mr. F. X. Drolet, of Quebec, who is so far doing good work.

The timber for the entrance gates has been delivered, and is being prepared.

During the year a contract has been entered into for the construction of a water-tight wall and outfall sewer along St. Andrew's and Leadenhall streets, on the southern side of the wet basin, and at the close of the fiscal year only a commencement had been made.

GRAVING DOCK, LÉVIS.

I have to report the completion of this dock, and that it has been put to its legitimate use in the reception of ships for repairs.

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

HENRY F. PERLEY,

Chief Engineer.

A. H. VERRET, Esq.,
 Secretary-Treasurer Harbour Commission,
 Quebec.

APPENDIX No. 11.

REPORT

ON THE

Saguenay District Slide and Booms,

FOR THE FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

HENRY F. PERLEY, Chief Engineer,

AND

JOSEPH ROSA, Superintendent.

APPENDIX No. II.

SLIDES, BOOMS, &c.—SAGUENAY DISTRICT.

Ref. No. 82,928.

SIR,—I transmit herewith a report by Mr. Joseph Rosa, Assistant Engineer, on the Saguenay Slide, for the fiscal year ended 30th June, 1887.

I am, Sir,

Your obedient servant,

HENRY F. PERLEY,

Chief Engineer.

A. GOBBIL, Esq.,

Secretary Public Works Department.

QUEBEC, 1st December, 1887.

SIR,—During the past fiscal year a further length of 526 feet of the slide was rebuilt and 500 more nearly so.

Ordinary repairs were made to the booms, dams and anchor piers.

During the year 26,500 logs, from 13 to 25 feet in length, passed through the slide.

I have the honour to be, Sir,

Your obedient servant,

JOSEPH ROSA,

Superintendent.

HENRY F. PERLEY, Esq.,

Chief Engineer Public Works Department.

APPENDIX No. 12.

REPORT

ON THE

ST. MAURICE DISTRICT SLIDES AND BOOMS,

FOR THE FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

HENRY F. PERLEY, Chief Engineer,

AND

CHAS. LAJOIE, Superintendent.

APPENDIX No. 12.

SLIDES AND BOOMS—ST. MAURICE DISTRICT.

Ref. No. E0,335.

CHIEF ENGINEER'S OFFICE,
OTTAWA, 31st August, 1887.

SIR,—Herewith I transmit a report by Mr. C. Lajoie, Superintendent of the St. Maurice District Slides and Booms, on the works under his charge for the fiscal year ended 30th June, 1887.

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

HENRY F. PERLEY,
Chief Engineer.

A. GOBEL, Esq.,
Secretary Public Works Department.

ST. MAURICE RIVER WORK'S OFFICE,
THREE RIVERS, 6th July, 1887.

SIR,—I have the honor to transmit herewith for the information of the Honourable the Minister of Public Works my report on the works under my superintendence during the fiscal year ended 30th June last.

The excessive height of water in the river this spring has been the cause of pretty considerable damage to the booms, the estimates of which have already been transmitted to you. The loss of logs was not considerable, but a great deal of labour and an over-expenditure only prevented a greater one.

The drive is accomplished with difficulty; one part of the cut has come to destination, the other part is yet to arrive, and a pretty large quantity of logs seem to be yet in the tributaries, where they will lay till next spring.

Amount expended for maintenance.....	\$16,929 31	
do do repairs.....	4,741 49	
		\$21,670 80
Amount voted for maintenance	\$15,000 00	
do do repairs	6,500 00	
		\$21,500 00
Over expenditure.....	\$ 170 80	

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

CHARLES LAJOIE,
Superintendent.

H. F. PERLEY, Esq.,
Chief Engineer, Public Works Department.

The following is a detailed statement of the expenditure of the several stations :

MOUTH OF THE ST. MAURICE.

Pier No. 1, 25 by 17 feet.—Renewing 500 feet of timber; one post. Sheathing three sides to a height of 6 feet with 3-inch pine planks.

Pier No. 1½, 15 by 18 feet.—Renewing 300 feet of timber; sheathing three sides to a height of 6 feet with 3-inch pine planks.

Piers Nos. 8, 9, 10.—Renewing timber on a height of 15 feet by 15 square feet; sheathing with 3-inch pine planks.

Pier No. 11.—One post.

Pier No. 17.—Sheathing the four corners with timber six inches thick; 10 fenders of 15 feet; 24 yards of stone on the front.

Pier No. 18.—Renewing 18 square feet on a height of 8 feet; sheathing the four corners with 6-inch thick timber; 14 fenders of 15 feet, and 24 yards of stone on the front.

Pier No. 19, 18 square feet.—Sheathing the four corners; six fenders and 24 yards of stone.

Pier No. 20.—Sheathing 15 square feet on one side; two fenders of 15 feet.

Pier No. 31.—Twenty-five yards of stone to fill up the scouring.

Pier No. 32.—50 yards of stone and brush to fill up the scouring.

Pier No. 36.—Renewing 24 square feet of timber; sheathing with planks; 16 fenders and two posts.

Pier No. 37.—Renewing 24 square feet of timber; sheathing with planks; 16 fenders.

Pier No. 38.—Renewing 31 by 25 feet of timber; sheathing with planks and 16 fenders.

Pier No. 39.—Renewing 31 by 29 feet of timber; sheathing with planks and 16 fenders.

Pier No. 40.—Renewing 24 by 20 feet of timber; sheathing with 3-inch planks on three sides and with 6-inch timber on the other side; 18 fenders and two posts.

Pier No. 41½.—Renewing and sloping 30 by 22 feet of timber; sheathing on three sides; 27 feet of flooring.

Pier No. 42.—Renewing and sloping 30 by 15 feet of timber; sheathing on three sides; 28 feet of flooring.

Pier No. 43.—Renewing 40 by 10 feet; sheathing; 25 yards of stone. Four piers for snubbing posts; 20 yards of stone for protecting each pier. 1,500 feet of booms 4½ feet wide sheathed with 3-inch planks.

EXTRAS.

To stretch the booms on this section: 2 anchors weighing 2,500 pounds; 1 floating pier, 48 by 16 feet; 14,433 pounds of chains.

SHAWENEGAN.

Pier No. 1.—Reconstructing the pier protecting the end of the slide; fixing a rail all around the pier.

Pier No. 2.—Fixing two pieces of timber, 30 feet long, for capping the large dam at the head of the fall.

Pier No. 3.—Reconstructing a snubbing pier, 11 by 11 square feet, on a height of 6 feet; fixing one post.

Pier No. 4.—Sheathing the corners of piers Nos. 1, 6, 8, 9, 10, 11, 12, 13 and 14; thirty fenders; one ton of stone; two snubbing posts.

Pier No. 5.—Replacing a few pieces of timber on the pier situated at the foot of the falls.

Pier No. 6.—Repairing the booms on the shoal so as to be made in single stick booms.

Pier No. 7.—Reconstructing the two wings of the wharf where are situated the buildings of the station; the south wing has a length of 106 feet and the other wing a length of 57 feet, and both a height of 15 feet, and ballasting with stone, sheathing with plank, making a 4-foot wide sidewalk and a railing.

Pier No. 8.—Constructing a scow 42 feet long by 8 feet wide

Pier No. 9.—Repairs on the frontage road, all the length of the lot, making a bridge of 24 feet, with railing.

Pier No. 10.—Repairs done at different places damaged by the high water of the spring.

GRANDE MÈRE.

Pier No. 1.—Repairing two piers, 10 by 20 feet by 8 feet in height, and filling the same with stone.

Pier No. 2.—One thousand eight hundred feet of boom, round stick, 12 inches in diameter.

Pier No. 3.—Shingling shed of 36 by 15 feet.

GRANDES PILES.

Piers Nos. 4, 5, 6.—Flooring with 10 by 10 inch thick timber, 12 feet wide and 20 feet long; ten fenders of 20 feet long and 10 by 10 inches thick; throwing four toises of stone in the piers.

Pier No. 2.—Constructing ice house, 12 by 12 feet, 9 feet high, sheeted with 3-inch planks.

Pier No. 3.—A shed of 36 by 12 feet, sheeted with boards.

Pier No. 4.—Seventy feet of booms, 3 feet wide, sheeted with 3-inch planks.

Pier No. 5.—Fixing six posts in the piers.

CHARLES LAJOIE,
Superintendent.

APPENDIX No. 13.

REPORT

ON THE

Ottawa District Slides and Booms,

FOR THE FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

HENRY F. PERLEY, Chief Engineer,

AND

GEO. P. BROPHY, Superintending Engineer.

APPENDIX No. 13.

SLIDES AND BOOMS—OTTAWA DISTRICT.

Ref. No. 82,703.

CHIEF ENGINEER'S OFFICE,
OTTAWA, 31st August, 1887.

SIR,—I transmit herewith the annual report by Mr. G. P. Brophy, Superintendent Engineer, on the works under his charge on the Ottawa River and its tributaries for the fiscal year ended 30th June, 1887.

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

HENRY F. PERLEY,
Chief Engineer.

A. GOBEIL, Esq.,
Secretary Public Works Department.

OTTAWA, 30th July, 1887.

SIR,—I have the honour to submit the following report on the works under my charge, on the Ottawa River and its tributaries for the fiscal year ended the 30th June, 1887.

The timber drives during the season of 1886 were generally successful in reaching the main stream and only a few parcels of logs and square and flatted timber were laid up or stuck by the falling of the water in the tributaries.

In the autumn months, at the lowest pitch of water, the slide and dam foundations were more accessible than they had been earlier in the season and therefore a close inspection was made in order that defects might be made good.

The works of repair and re-construction executed after the season of navigation for timber and during the winter and early spring months may be described as follows :—

ON THE MAIN RIVER.

Carillon Station.

The booms and piers at this place which are much damaged, wrecked and partially carried off by the ice shoves and freshets of 1885 were repaired as far as possible prior to 30th June, 1886, but there remained a considerable amount of repair work to the adjustable and floating aprons and the side pier of the slide which had to be attended to when the water fell sufficiently to enable the workmen to reach the foundations; this was carried out in due time, as well as the placing of the boom attachments and mooring appliances, and I am glad to say that the system of mooring the booms behind the guard or protection pier, to save them from being swept away by the ice moving in the spring has, so far, proved a success.

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Hull Station.

The slide here had its side piers and bottom planking strengthened; the main-booms stiffened and the regulating bulkheads adjusted. The bridge over the slide, which accommodates a very heavy traffic was extensively repaired in its timbers and roadway planking and the approaches generally made more serviceable.

The Roadway or Causeway

Between the Hull bridge and the railway crossing adjacent to the northerly approach of the Union Suspension Bridge, was raised and widened, thus making it more safe and convenient for the public using this busy thoroughfare.

Ottawa or South Chaudière Station.

The bulkheads, side piers, stop-logs and planking of the slides were repaired and defects made good; the booms strengthened in their fastenings and coverings; the storehouse extended and the regulating apron across timbers renewed and stiffened by the insertion of iron plates.

City of Ottawa.

Certain necessary repairs were executed at the approaches and flooring of the *Union Suspension Bridge* while the iron roadway bridge over the Chaudière slide had some of its braces stayed and the suspension rods and screw-nuts brought to a proper bearing. *The Dufferin Bridge* (over the canal) connecting Wellington and Rideau Streets, had its roadway timbers and planking removed and new materials substituted throughout; new sidewalks laid and the deck or roadway made up of tarred blocks packed with gravel, carefully fitted and bedded. *The Sappers' Bridge* (over the canal) joining Sparks and Rideau Streets had its roadway sheeting repaired and the additional width strengthened in its bracing and supports.

Cheneaux Station.

The booms and fastenings at this place as well as the floating platform at the trip-boom required for the passage of steamboats through the gap, were repaired and strengthened. For some reason or other a change in the direction and strength of the currents has taken place at the Cheneaux Rapids within the last two years, rendering the management of the booms and the handling of the logs and timber much more difficult than formerly. The cause of this is not very well understood, but certain blasting operations that have been undertaken by the Upper Ottawa Improvement Company, within the period mentioned, in some of the channels leading to the Chats Falls, about twenty miles further down stream, many have increased the draught of water as far up as the Cheneaux Station.

Mountain Slide.

A thorough reconstruction of a portion of the foundation timbers, headworks and piers was effected; the location of the entrance piers changed, and the guide-booms strengthened and repaired at this station. This work was successfully accomplished and there was a decided improvement in the running of timber from the time the slide was opened this season, and when the whole of the work is completed the facilities will be still greater.

Calumet Station.

The works here are on an extensive scale, and have been successfully operated for forty years; they overcome the Grand Calumet Falls, and there is always a great strain on them on account of the variable pitches of water prevailing during the sea-

son that timber passes. Recently the boom, pier and slide works have been patched for the business of the current year, and a portion of the materials has been procured preparatory to a thorough overhaul of the improvements at this place before the opening of navigation of 1888.

Rocher Capitaine Slide

Was repaired in its bottom and side timbers; the floor was levelled and the spike and bolt fastenings countersunk.

TRIBUTARIES OF THE OTTAWA.

Gatineau River.

The booms near the mouth of this stream were repaired and the piers strengthened; the division boom in the lake was overhauled; the gap timbers and platforms renewed; the outlet channels partly cleared of debris and accumulations of driftwood; the workmen's camp house repaired, and the fences around the Government property restored, where they had been damaged by wind storms and high water.

Madawaska River.

The tear and wear of timber and logs through the extensive series of improvements, extending from the mouth of the river to the upper reaches, a distance of upwards of thirty miles, necessitated repairs to the Arnprior slide, booms and piers in the lake, near the mouth; the dams at Flat Rapids; the dam at Little Rapids; the dam at Long Rapids; the High Falls, Ragged Chute and Chain Rapids slides, and a number of glance piers and wing dams on the upper reaches.

Coulange River.

In April, 1886, when the long slide at High Falls, then being reconstructed, was all but completed, a solid field of ice moved from above the headworks, carrying with it portions of the unprotected log and timber drives, together with part of the booms and piers and a portion of the governing dam at the head of the chute. The whole was swept over the falls and caused a serious break in the renewed slide. The work of making good the damage done on that occasion was steadily prosecuted during the autumn and winter months with such satisfactory results that, with the exception of some work in connection with the repairs of a submerged dam, delayed by the sudden rising of the water and certain minor details relating to the foot-board planking, &c., the whole was completed, and the slide was in operation for the passage of the logs and timber of this season's drive.

Black River.

The ice shoves and spring floods of 1886 having damaged the guide booms and piers above the head of High Falls slide on this stream, a considerable outlay had to be made by laying on new timbers; placing additional stone filling in the piers and providing additional chains for the booms. An extra support pier had to be built under the bridge; portions of the worn-out slide planking renewed and leakages stanchied where they occurred.

Petewawa River.

At the first, second, third and Bois Dur chutes, the slides and dams, now about thirty years in use, had become leaky; they were straightened up, and as far as possible made watertight by means of blocking and new plank sheeting, and a re-fill made of an extensive washout that had taken place in the governing dam at the second chute from the mouth. The boom and support piers in the lake, at the mouth of the stream, were also repaired as well as the slides, dams and booms on the upper reaches of the river.

Dumoine River.

The slide and dams at High Falls on this tributary were repaired, and the timbers and plank covering of the dams above the slide patched.

CONSTRUCTION.

The work coming under this head was performed on the reach of the Ottawa River above Lake Témiscamingue known as "*Quinze Rapids*"; it embraced the removal, by blasting, of dangerous reefs and rocky obstructions, the putting in of ring-bolts and the building of side dams and booms, as a step towards making this intricate channel of the Ottawa passable for timber, a large supply of which is to be found on the valuable limits situated above this point.

Last winter the waters of the Ottawa and tributary rivers were not unusually high, but there was, during that period, an immense snowfall without any appreciable thaw throughout the Ottawa valley, and this, together with the great thickness of ice that formed on the lakes and rivers, threatened a recurrence of the disastrous floods of 1876. The water, in the spring, did not reach the extreme pitch of that memorable year, nevertheless a very considerable amount of damage was done to the works by ice shoves and the action of the currents on the Madawaska, Black, Petewawa and Dumoine Rivers, and to a less extent on the Gatineau, and at the Mountain and other stations on the Ottawa. Until the season of lowest water it would be impossible to correctly estimate the extent of damage done, but it may be mentioned that the governing dam at the head of the Black River slide was completely carried away.

After the ice had left the streams the spring drives of timber and logs began to move freely, and as the water remained at a favourable height until the early summer—although it fell rapidly towards the end of June—it is believed that only a small percentage of the various classes of timber will be found stuck or detained by the end of the season.

The following statement, furnished by the collector of slide dues in this city shows the volume of business done on the works under my charge, and the revenue accrued thereon for the fiscal year covered by this report.

Timber, &c., that passed the Government slides and works :—

	Pieces.
White pine	41,139
Red pine	5,500
Boom and dimension	61,251
Cedars	10,944
Tamarac.....	2,249
Spruce.....	1,981
Basswood.....	4
Elm.....	10
Ash.....	71
Oak.....	10
Whitewood.....	30
Traverses.....	89
27,378 railway ties, equal to 3,422 pieces floating timber....	3,422
Total.....	126,700

3 cribs of sawn lumber, 1 hull of a steamboat, and of sawlogs 3,402,305 pieces. The accrued revenue was \$75,518.15.

In respectfully submitting the above,

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

GEO. P. BROPHY,

Superintending Engineer O. B. Works.

HENRY F. PERLEY, Esq.,
Chief Engineer of Public Works.

APPENDIX No. 14.

REPORT

ON THE

NEWCASTLE DISTRICT SLIDES AND BOOMS,

FOR THE FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

HENRY F. PERLEY, Chief Engineer.

AND

R. B. ROGERS, Superintending Engineer.

APPENDIX No. 14.

SLIDES AND BOOMS—NEWCASTLE DISTRICT.

Ref. No. 80,336.

CHIEF ENGINEER'S OFFICE,
OTTAWA, 31st August, 1887.

SIR,—I transmit herewith a report by Mr. R. B. Rogers, Superintendent Engineer, River Trent and Newcastle District works, on the works under his charge, for the fiscal year ended 30th June, 1887.

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

HENRY F. PERLEY,
Chief Engineer.

A. GOBEIL, Esq.,
Secretary Public Works Department.

TRENT CANAL WORKS, ENGINEER'S OFFICE,
PETERBOROUGH, 26th July, 1887.

SIR,—I have the honour to submit the following report on the works under my charge, connected with the Department of Public Works, for the fiscal year ended 30th June last.

The works on these waters, as has been stated in former reports, are divided into two classes, those constructed to facilitate the descent of timber, which are under the charge of the Department of Public Works, and those erected for the improvement of navigation, which are controlled by the Department of Railways and Canals.

The water during the spring was above the average, but did not come to within six inches of the height of last year. The average height of water was maintained on the several stretches, throughout the season. The weather kept cool till the spring was well advanced, this caused the ice, which was very thick, to descend in immense fields. The descent of ice caused more or less damage at every station on the route.

FENELON FALLS.

The walls of the slide are very much worn away, but I have deferred doing anything of a permanent character to it, owing to the probability of the position of the slide being changed in connection with the construction of the new works at this station by the Department of Railways and Canals. New guide booms will also have to be constructed.

SCUGOG RIVER.

The beacon at the mouth of this river was shoved out of position by the ice. This was repaired and replaced. A light has been kept on this beacon since the beginning of last season and has been a great benefit to navigation.

BOBOYGEON.

The dam was gravelled and some of the bents that were removed by the ice were replaced. A new dam is much needed at this place.

BUCKHORN.

New double stick glance booms were placed at the entrance of the slide and two extra piers to attach the booms to were constructed. A new pier 8 by 50 feet was built from the lower end of the slide to retain the water in the channel during the

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passage of logs and thus prevent the great jams that constantly occurred at this point. The ice broke the boom in one place, but this has since been repaired.

YOUNG'S POINT.

A point of rocks that obstructed the descent of timber below the dam was removed.

KATCHEWANNOE LAKE.

Three thousand feet of single stick boom was constructed and placed in position from Moodie's Island to the Three Islands. The boom in this lake has been a great boon to navigation, and has also greatly facilitated the descent of timber.

PETERBORO'.

It was not deemed advisable to proceed with the work of dredging the sawdust at and about the wharf owing to the fact that the lumbermen in the vicinity still deposit all their sawdust in the river. The appropriation for the same purpose at the mouth of the river at Rice Lake was not expended for the above reason. The navigation at these points will soon be closed owing to the immense deposits of sawdust.

HASTINGS.

The leakage through the slide was stopped. A favourable opportunity presented itself to execute this work when the water was shut off the dam for repairs by the Department of Railways and Canals.

HEELY'S FALLS.

A new bottom and apron was put in the slide and the cribwork below the slide was rebuilt and the whole put in good repair. The work was completed prior to my receiving a copy of the Order in Council transferring the care of the slides to the Messrs. Rathbun & Gilmour. The appropriations for Middle Falls and Percy Boom were not expended in compliance with the Order in Council mentioned above.

CHISHOLM.

Two new piers for attaching the glance booms to were constructed and placed in position prior to my receiving the above Order in Council referred to.

I have the honour to be, Sir,

Your obedient servant,

RICHARD B. ROGERS,
Superintending Engineer.

H. F. PERLEY, Esq.,
Chief Engineer, Department of Public Works,

TOTAL quantity of Saw-logs, Boom Timber, &c., which passed through the different Slides, for the fiscal year ended 30th June, 1887.

Station.	Saw Logs.	Boom Timber.	Cedar, 16 ft.	Cedar, 8 ft.	R. R. Ties.	Bolts.	Square Timber.
Fenelon Falls.....	231,000	4,322	.....	.....	.....	.....	.....
Hobcaygeon	180,000	2,395	.....	.....	.....	.....	.....
Buckhorn	180,000	2,395	.....	.....	.....	.....	.....
Burleigh	214,137	2,921	.....	.....	.....	.....	1,800
Young's Point	314,667	3,746	40,000	.....	.....	.....	1,800
Lakefield	291,667	3,514	40,000	.....	.....	.....	.....
Whitlaw's Rapids.....	251,667	3,114	40,000	.....	.....	.....	.....
Hastings	149,707	2,179	40,000	.....	.....	.....	.....
Heely's Falls.....	61,936	1,461	44,253	.....	.....	.....	.....
Middle Falls	378,032	4,824	116,918	50,716	4,911	3,824	490
Ohisholm's Rapids.....	378,032	4,824	116,918	50,716	4,911	3,824	490

APPENDIX No. 15.

STATEMENT OF STAFF EMPLOYED

ON THE

SLIDES AND BOOMS

THROUGHOUT THE DOMINION.

APPENDIX No. 15.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the different Slides and Booms.

Name.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Saguenay District.</i>					
Arthur Boulanger	Superintendent	Saguenay.	19th May, 1881	475 00 per annum	
Calixte Fortin	Asst Superintendent	do	13th do 1881	30 00 per month	
Frs. Trépanier	Carpenter	do .....	.....	1 50 per day	
<i>St. Maurice District.</i>					
Charles Lajoie	Superintendent	Three Rivers	7th Oct., 1878	1,200 00 per annum	
J. B. Normand	Boom Master	Mouth St Maurice	12th April, 1868	3 00 per day	
N. Dagneau	Paymaster	Three Rivers	1st Aug., 1866	50 00 per month	
Cyrac Lymburner	Foreman	Mouth St. Maurice	25th April, 1881	565 00 per annum.	
Jos. Page	Boom Keeper	Cap aux Corneilles	10th Dec., 1879	452 50 do	
Arthur Rouseau	Deputy Slide Master	Shawenegan	12th April, 1888	3 00 per day	
Charles Langlois	Foreman	do	13th Jan., 1880	441 00 per annum	
Théophile Larue	Boom Keeper	Grand Mère	15th March, 1872	2 00 per day	
Frs. Lacroix	do	Les Piles	1st April, 1866	468 00 per annum	
<i>Richelieu District.</i>					
Azaire Bienvenue	Boom Master	Belœil Station	1st June, 1882	100 00 per annum	
<i>Ottawa District.</i>					
G. P. Brophy	Superintendent	Ottawa	6th July, 1873	2,300 00 per annum	
D. Scott	Accountant	do	1st Oct., 1884	1,200 00 do	
J. H. Scott	Measurer & Draughts- man	do	1st Nov., 1882	2 50 per day	

Name	Rank	Location	Start Date	Pay	Remarks
W. Kane	Messenger	do	1st Aug., 1867	1 25 do	Employed about the works for 20 or 25 years.
Moses Aubrey	Foreman Carpenter	do	31st April, 1865	800 00 per annum	Actively employed about 7 months.
Pierre St. Pierre	Deputy Slide Master	Oarillon	21st March, 1875	1 25 per day	Actively employed about 7 months. Oversees repairs in winter.
D. Noonan	Boom Master	Gatineau	25th April, 1876	500 00 per annum	
W. J. McDonald	Deputy Slide Master	Chaudière	1st April, 1858	635 00 do	Paid during the season of navigation only, about 7 months. Attends to winter repairs.
J. Soulière	Asst	do	27th March, 1877	2 00 per day	Employed about 6 months.
J. McDonald	Deputy Slide Master	Hull	12th July, 1882	1 25 per day	Employed about 6 months during navigation.
D. McFarlane	do	Ubatz	16th May, 1880	480 00 per annum	Looks after repairs in winter.
John Harvey	Slide Master	Annprior	9th March, 1854	2 50 per day	Employed about 3 months during the season of navigation.
Jos. McCrea	Boom Master	Springtown	7th Sept, 1881	200 00 per annum	Employed 4 or 5 months during the season of navigation. Looks after repairs in winter.
James Barry	Deputy Slide Master	High Falls, Madawaska	15th Oct, 1880	480 00 do	Employed about 4 months.
Duncan McLaren	do	Portage du Fort	18th April, 1858	300 00 do	Employed about 4 months passing timber.
J. G. Poupore	do	Black River	10th Oct, 1879	480 00 do	Looks after repairs in winter.
James Rowan	do	Lower Petewawa	— Aug, 1848	480 00 do	Actively employed about 4 months passing timber. Looks after repairs in winter.
Wm. Thompson	do	Mountain	1st April, 1865	1 00 per day	Actively employed about 6 months during season of navigation. Looks after repairs in winter.
D. Carmichael	do	Oulmet	6th Nov, 1871	40 00 per month	Actively employed about 6 or 7 months during season of navigation. Looks after repairs in winter.
A. Proufoot	do	Coulonge	24th April, 1882	1 00 per day	Actively employed 4 months. Looks after repairs in winter.
Hugh Corley	do	Crooked Chute	12th do 1874	300 00 per annum	Employed 3 or 4 months each year.
A. McDougall	do	Joachim	1st May, 1874	1 50 per day	Employed about 4 months passing timber. Looks after repairs in winter.
Jos. Dufault	Boom Master	Dumoine	22nd April, 1879	300 00 per annum	Employed during timber season.
Hugh Grant	Deputy Slide Master	do	1865	Will inspect works if required.	Employed about 3 months.
A. YeEwen	do	Rocher Capitaine	1872	480 00 do	Employed during navigation about 3 months. Will inspect works if required.
F. Bélanger	Boom Master	Sault au Recollet	1872	1 00 per day	Employed about 7 months each year.
A. H. Johnson	do	Cheneaux	1872	2 50 do	Paid during season of navigation only, about 7 months. Attends to winter repairs.
G. J. Johnson	Asst Boom Master	do	1872	1 75 do	Paid during season of navigation only, about 7 months. Attends to winter repairs.
<i>Newcastle District.</i>					
R. B. Rogers	Superintendent	Peterboro'	1st July, 1884	600 00 per annum	Receives, also, \$500 per annum from Department of Railways and Canals.
G. H. Giroux	Clerk, Supt.'s Office	do	1st do 1882	500 00 do	

APPENDIX No. 15.—STATEMENT showing the Names, &c., of persons employed on the different Slides and Booms—*Concluded.*

Name.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
<i>Newcastle District—</i>					
<i>Concluded.</i>					
Robert Armstrong.....	Slide Master.....	Chisholm's Rapids.....	1st April, 1883.....	\$ 200 00 per annum.....	
John Ingram.....	do.....	Fenslon Falls.....	1st do 1883.....	200 00 do.....	
H. Deacon.....	do.....	Heely's Falls.....	1st do 1878.....	200 00 do.....	
W. H. Hall.....	do.....	Buckhorn.....	1st May, 1879.....	200 00 do.....	
Nelson Simmons.....	do.....	Middle Falls.....	1st do 1884.....	200 00 do.....	

Saguenay Works.—In addition to the Superintendent, there are employed on the Saguenay works 4 flagmen, at 70 cents per day each, during the passing of the logs through the slides, which lasts one or two months.
St. Maurice Works.—Every year during the timber running season, the officers in charge of the various stations employ 25 to 30 men during three or four months, at the rate of 80 cents to \$1.10 per working day, inclusive of 40 to 50 cents per day per man, paid for board to the Deputy Slide Masters and Boom Keepers; also, one clerk and foreman at \$1 per day, two watchmen and one gate-keeper.
Utawar River Works.—In addition to the above officers, &c., there are employed during the running season, one foreman on slide at \$1.50, and one assistant foreman at \$1.25 per day; also, 25 to 30 labourers at from \$1 to \$1.40 per working day.

R. STECKEL.

APPENDIX No. 16.

REPORT

ON

PUBLIC WORKS IN BRITISH COLUMBIA,

FOR THE FISCAL YEAR ENDED 30th JUNE, 1887,

BY

Hon. J. W. TRUTCH, C. M. G., Resident Agent.

APPENDIX No. 16.

REPORT ON PUBLIC WORKS IN BRITISH COLUMBIA.

Ref. No. 80,442.

VICTORIA, B.C., 29th August, 1887.

SIR,—I beg to submit for your information the following report upon the public works in this Province, carried on under my supervision during the fiscal year which ended on the 30th June last, together with a tabular statement thereof.

BUILDINGS.

1. *British Columbia Penitentiary.*

Various alterations and repairs have been made to this building pursuant to authority conveyed to me, from time to time, by the Chief Architect and as circumstances rendered necessary. The total expenditure on these works, together with the final payments on account of improved water service, fencing, stone steps, and the salary of the superintendent of works, amounted, on the 30th June last, to \$10,478 71.

Messrs. Sconllar & Co. completed in a satisfactory manner their contract for the erection on the penitentiary reserve of three pairs of semi-detached houses for guards' dwellings.

In accordance with instructions received from the Chief Architect, tenders were called for the erection of an additional two pairs of semi-detached houses, and for the erection of a laundry and bake house on the penitentiary reserve. The tenders of Mr. Joshua Holland being the lowest were accepted, and contracts made with him by the Department.

The contractor has completed both his contracts in a satisfactory manner.

2. *Immigration Shed.*

In accordance with instructions received from the Chief Architect, the building near the outer wharf, Victoria, purchased for an Immigration Shed, has been put in thorough repair, at a cost of \$846.33.

3. *Repairs, Furniture, Heating, Lighting, Water, Dominion Public Buildings.*

Necessary repairs, additions and alterations to the Post Office and Customs' House buildings at Victoria and New Westminster have been effected, fuel and water supplied to the different Departments, and gas supplied to the Post Office building, Victoria, pursuant to authority conveyed to me, from time to time, by the Chief Architect.

The total expenditure on this account has been \$2,475.62.

HARBOURS AND RIVERS.

4. *Removal of Dredger Rock, Victoria Harbour.*

Mr. Charles Hayward has completed his contract for the removal of this rock, and there is now 13 feet at low water, spring tides, over the site of the rock.

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5. *Cowichan River.*

The sum of \$1,560 was expended in improving this river last autumn, under Mr. Duncan, as foreman, pursuant to directions conveyed to me by the Chief Engineer.

6. *Fraser River, Improvement of mouth.*

In pursuance of directions conveyed to me by the Chief Engineer in a letter dated 13th July, 1886, the work of endeavouring to improve the North Channel through the sandheads at the mouth of the Fraser River was commenced and carried on until the appropriation of \$8,000 was expended.

The work consisted in building a submerged dam, 2,000 feet long by 25 feet wide by about 7 feet in depth of logs, snags, stone and mud across the north end of the south channel, for the purpose of directing the south channel current towards the north channel, in order that the scouring action of the current in the latter might be increased and a greater depth obtained thereby.

It is expected that the recent summer freshet, the greater force of which has this year passed through the north channel will have materially assisted the scour. To ascertain the actual results it will be necessary to take careful soundings through and across the north channel a distance of nearly five miles.

7. *Brigg's Portage, Nanaimo Harbour.*

Pursuant to authority conveyed to me by the Chief Engineer, the sum of \$741.52 was expended in excavating in rock a boat channel 10 feet wide through this portage, and which proved to be a great benefit to those living in the vicinity and in the adjacent islands having occasion to visit Nanaimo.

8. *Dredging and Dredge Vessels, Repairs and Snagboat.*

Dredging operations were resumed opposite Ladner's Landing, Fraser River, on the 3rd August, 1886, and continued at that point until the first week in October, when in accordance with instructions from the Chief Engineer, the dredge was moved to Woodward's, working at this latter point until the middle of December, when in compliance with the directions of the Chief Engineer, the dredge was ordered to proceed to Shoal Harbour, Saanich, and dredge a channel to the wharf at that place. The dredge left the mouth of the Fraser River on the 22nd December, having been detained some days by contrary winds, in tow of the steamer "Alexander," but through some misunderstanding of instructions given to the master of the tow boat by his owners, was towed to the entrance of Victoria Harbour. The boilers of the dredge being in urgent need of repairs, advantage was taken of the dredge being near the boiler shops to have the necessary repairs effected. These being effected on the 10th February the dredge was taken to Shoal Harbour and remained there until the 13th April, having, between the dates above mentioned, dredged a berth for steamers alongside the wharf, giving 8 feet at low water and a channel thereto 400 feet long by 80 feet wide, giving the same depth. No greater width or depth could be obtained owing to the bed rock being met with. From the 13th April to the 14th June last the dredge was employed in dredging in the vicinity of Dredger Rock, Victoria, when operations were suspended for the purpose of generally overhauling the dredge and attendant vessels.

The amount of material dredged during the fiscal year ending 30th June last, was 34,486 cubic yards, at a cost of \$10,039.34. The comparatively small result of this year's dredging as compared with previous years is in part accounted for by the late date (13th August) at which operations were resumed, and in part by the loss of time in moving from place to place, and whilst the machinery was undergoing repairs. Several necessary repairs to the dredge vessels have been effected during the past year, and new dredge material, such as buckets with steel lips and straps, and links with steel thimbles have been supplied, amounting to an aggregate expenditure of \$6,476.37.

The snag boat was employed from the 2nd August to the 30th September, in removing snags from the Fraser River, after which date she was used in assisting the work at the mouth of the Fraser River until the appropriation was expended. Several necessary repairs and alterations have been effected, and rope and other supplies furnished at an expenditure of \$1,544.96.

9. *Surveys and Inspections.*

Various small surveys and inspections of the different works were made during the year, the amount expended being \$1,286.57.

10. TELEGRAPH MAINTENANCE.

The Dominion Government telegraph lines and property in British Columbia, pursuant to the Minister's direction conveyed by telegrams dated 23th September, and 1st October, from Mr. Superintendent Gisborne, as reported by telegrams to Mr. Gisborne, dated 5th and 6th October, and by letter to the Secretary of the Department, dated 12th November, 1886.

11. ESQUIMALT GRAVING DOCK.

A separate report on this work from Mr. Bennett, Resident Engineer, will shortly be forwarded.

I have the honour to be, Sir,

Your obedient servant,

JOSEPH W. TRUTCH,

Dominion Government Agent.

The Honourable

Sir HECTOR L. LANGEVIN, C.B., K.C.M.G.,

Minister of Public Works.

Ottawa.

BRITISH COLUMBIA—PUBLIC WORKS OF CANADA.

STATEMENT of Public Works carried on in the Province of British Columbia, during the Fiscal Year 1886 and 1887.

Name of Work.	District or County.	Number and Date of Letters Authorizing Expenditure.	Expenditure Authorized.	Expenditure from 1st July, 1886, to 30th June, 1887.	Letters and Telegrams from Dominion Government Agent to Department of Public Works.
			\$ cts.	\$ cts.	
<i>Buildings.</i>					
1. British Columbia Penitentiary.	New West. District	Letter No. 64,087, 29th Dec., '86; 30th Sept., '86; Tel. 16th Dec., '86.	.....	10,478 71	2nd March, 1887. Letters 15th July, 4th Aug., 15th, 19th, 30th Oct., 1886; 17th Jan., 1887. 25th April, 4th May, 30th June, 1887. Telegram, 13th, 23rd Sept., 20th Oct., 1886; 19th Jan., 1887.
Officers' Quarters.....	.....	.....	.....	.....	.....
Laundry and Bakery.....	.....	.....	.....	.....	.....
2 Immigration Shed.....	Victoria District.....	5th June, 1887.....	.....	846 33	.....
3. Repairs, Dominion Buildings.....	.....	No. 37,595, 7th July, '86; 28th Dec., '86. Tel. 1st Nov. '86.....	.....	1,342 51	Letters 16th, 19th Aug., 13th Oct., 1886; 18th Feb., 1887. Tel. 26th Oct., 1886. 7th Jan., 1887. Tel. 26th Oct., 1886.
Lighting do.....	.....	.....	.....	528 62	.....
Heating do.....	.....	.....	.....	574 49	.....
Water do.....	.....	.....	.....	30 00	.....
<i>Harbours and Rivers.</i>					
4. Removal Dredger Rock.....	Victoria District.....	.....	.....	.....	Letters 12th Aug., 1886; 14th April, 1887. Tel. 22nd, 28th Oct., 1886.
5. Cowichan River.....	.....	No. 17,099, 13th July, '86 Tel., 28th Oct., '86.....	.....	1,560 00	Tel. 25th Oct., 1886.
6. Fraser River, improvement of mouth.....	New West. District	No. 17,098, 13th July, '86.	.....	8,014 41	Tel. 18th, 26th Sept., 1886.
7. Biggs Portage Nanaimo Harbour	Vancouver District	No. 17,348, 5th Aug., '86. Tel. 29th Sept., '86.....	.....	741 52	Tel. 28th Sept., 1886.
8. Dredging Fraser River, Shoal Harbour, Saanich and Victoria Harbour.....	.....	Letter No. 17,058, 12th July, '86.....	.....	10,039 34	Letter 19th Aug., 14th Oct., 4th Dec., 1886. Tel. 5th, 21st Oct., 28th Dec., '86.

Dredging Snag Boat.....	Letter No. 17,058, 12th July, '86.....	.....	4,984 78	2nd July.
Dredge Vessels, repairs.....	Letter No. 17,060, 12th July, '86.....	.....	4,475 96	
Dredge repairs, Snag Boat.....	Letter No. 17,058, 12th July, '86.....	.....	1,544 96	
New dredging plant.....	.....	.....	2,000 41	
9. Surveys and inspections.....	.....	.....	1,286 57	
10. Telegraph maintenance.....	.....	.....	10,043 56	
11. Esquimalt Graving Dock.....	.....	.....	5,922 60	Letters 6th, 8th, 12th, 20th July, 11th, 1st Aug., 14th Sept., 5th, 11th, 22nd, 27th Oct., 10th Nov., 15th Dec., 1886; Jan. 15th, 27th April, 14th May, 1887. Tel. 5th, 30th Nov., 15th Dec., 1886; 26th April, 11th May, 1887.

APPENDIX No. 17.

REPORT

ON

GOVERNMENT TELEGRAPH LINES,

FOR THE FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

F. N. GISBORNE, Superintendent.

APPENDIX No. 17.

REPORT ON GOVERNMENT TELEGRAPH LINES.

Ref. No. 80,284.

OTTAWA, 29th August, 1887.

SIR,—I have the honour to submit the following report upon the telegraph service for the twelve months ended 30th June, 1887, with the usual tabular statements of lines, operating staff, &c., established in the several districts.

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

F. N. GISBORNE,
Superintendent Telegraph Service

A. GOBELL, Esq.,
Secretary Public Works Department.

TELEGRAPH SERVICE, 1836-87.

NEWFOUNDLAND.

The line between Cape Ray and Port au Basque was maintained and operated as in previous years, under an agreement made with the Anglo-American Telegraph Company, at the usual cost of \$250.

MARITIME PROVINCES.

Cheticamp, Cape Breton, was telegraphically connected with the Western Union system at Mabou, by a land line fifty-three miles in length, constructed under contract by Messrs. McInnes & McLellan, of Mabou. The work of construction was begun on the 9th August, 1886, and completed on the 7th January, 1887. An intermediate office was established at Margaree Harbour. This line is being maintained in working order by the Department, under the immediate supervision of Mr. R. T. Clinch, Superintendent Western Union Telegraph Company, at St. John, N. B.

The revenue for the six months, January to June, inclusive, was \$68.27, and the expenditure for maintenance \$193.06.

An interruption in the cable between Grand Manan and Campobello, Bay of Fundy, occurred on the 15th January, and continued until the 14th May, when the damage, which was caused by abrasion on the rocks near the Campobello shore was repaired by Capt. Guildford, with the steamship "Newfield." With this exception the several lines in the Maritime Provinces were maintained in good working order, under the same arrangements as in previous years.

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The revenue and expenditure figures are as follows :—

	Revenue.		Expenditure.	
	1885-86.	1886-87.	1885-86.	1886-87.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Escuminac Line.....	182 78	132 78	479 20	424 16
Meat Cove Line.....	865 83	3,282 27	1,621 80	1,828 65
Low Point Line.....		50 00		50 00
Cape Nable Line.....	62 88	113 86	286 44	291 81
Bay of Fundy Lines.....	747 61	635 73	1,103 81	1,114 77

RIVER AND GULF OF ST. LAWRENCE.

The cable connecting the Island of Anticosti with Gaspé was damaged by ice at the landing at South West Point in April. It was, however, at once temporarily repaired by the District Superintendent, Mr. Edward Pope, and the damaged portion was replaced with new cable by the steamship "Newfield," in the following month.

The cable between Grosse Isle and Bird Rock, Magdalen Islands, was also damaged by rocks and ice, and communication was interrupted from the 27th April till the 1st June, when the damage was repaired by the steamship "Newfield." With this exception, the cables and the land lines in the Gulf were worked uninterruptedly during the year.

The land line along the north shore of the St. Lawrence has been further extended to Birch River, a point 45 miles below Moisie. The construction work was carried on during the months of September, October and November; and was then stopped, to be resumed during the present year. As the portion of country through which this line thus far extends below Moisie is wholly uninhabited, no new stations have been established in that section. The next settlement is Sheildrake, about 30 miles further down the coast.

In October the construction of a loop line from a point near Tadousac (on the North Shore line) to St. Etienne, a distance of 17 miles, was begun. The work was carried on by day's labour under the immediate supervision of Mr. H. J. McHugh, Inspector of the Signal Service, and was completed in November. Offices were opened in that month at Rivière aux Canards and St. Etienne. An office has since been opened (in June, 1887) at Baie des Rochers, between Rivière aux Canards and St. Simeon.

The cable connecting the quarantine station at Grosse Isle with Orleans Island, which had been relaid in May, 1886, and became interrupted on the 19th July following, was repaired on the 1st September and continued in operation until the station was closed for the winter. The cable was allowed to remain submerged, and in consequence of its having become interrupted and broken by ice and rocks, a new cable of lighter type (which had in the meantime been ordered as better calculated to meet the requirements of the locality) was laid in the following June. Both cables will be taken up again before next winter.

The land lines on Orleans Island and connection with Quebec have continued in good working order.

The revenue and expenditure figures for the several lines in the river and gulf section are as follows:—

	Revenue.		Expenditure.	
	1885-86.	1886-87.	1885-86.	1886-87.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Anticosti Lines.....	601 90	533 64	1,793 20	1,680 49
Magdalen Islands Lines (including Meat Cove Line).....	1,170 98	3,677 05	3,594 30	3,639 37
North Shore, St. Lawrence, and Chicoutimi Lines.....	1,933 78	2,230 92	7,418 66	6,800 00
Quarantine Line.....	204 57	177 96	724 26	519 06

ONTARIO.

The land line, and cable connecting Amherst Island, by telephone, with the telegraph office at Bath, continued without interruption during the year.

The revenue was \$76.92 and the expenditure \$71.00.

NORTH-WEST TERRITORY.

The construction of the new line between Battleford and Edmonton *via* Fort Pitt was begun in August and continued until winter set in.

A line with iron poles was erected from Battleford towards Fort Pitt, for a distance of 33 miles, and a line with tamarac poles from Edmonton to Victoria (on the route to Fort Pitt), a distance of 73 miles. Offices were opened at Fort Saskatchewan in December and at Victoria in January.

The poles provided for this line, with the exception of 2,800 iron poles for the Battleford—Fort Pitt section, were contracted for as follows, the contracts providing for proper distribution along the route:—

February, 1886, Edmonton—Fort Saskatchewan, Messrs. Ashen McKinnon & Co., 721 tamarac, at 98 cents each.

July, 1886, Fort Saskatchewan—Saddle Lake, Ashen & Shields, 2,519 tamarac, at \$1.55 each.

January, 1887, Saddle Lake—Fort Pitt, W. J. Barker, 3,000 tamarac, at \$1.16 each.

The work of construction, which was done by day labour under the supervision of the District Superintendent, Mr. H. Gisborne, was resumed early in the present summer. An office was opened at Fort Pitt in June. (See foot-note a.)

In consequence of the gradual deterioration of the line between Qu'Appelle and Battleford, appropriations for partly re-poling it were obtained for 1887-88, and contracts in connection therewith have been entered into as follows:—

April, 1887, Qu'Appelle - Humbolt, A. C. Vaughan, 2,000 cedar poles, Qu'Appelle, at \$1.45 each.

June, 1887, Qu'Appelle—Humbolt, W. H. Duncan, distribution of same, \$1,360.

April, 1887, Humbolt - Clark's Crossing, B. Boyer, 1,800 tamarac poles, distributed, at \$2 each.

April, 1887, Clark's Crossing to Battleford, G. F. Tupper, 2,800 tamarac poles, distributed, at \$1.95 each.

NOTE a.—This line was completed and put in operation on the 14th of the present month (August, 1887). Upon its completion the old line by the more southerly route was abandoned. Some of the old wire has since been collected for temporary use elsewhere.

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The work is now being proceeded with, and before winter these sections of the line will have been put in fair condition.

The revenue of the North-West Lines for the 12 months was \$8,841.69, and the expenditure for ordinary maintenance \$16,693.57.

BRITISH COLUMBIA.

In consequence of the completion of the Canadian Pacific Railway in British Columbia and the establishment of its accompanying telegraph system, which would necessarily be in competition with the lines operated over the same territory by the Government for the purpose of affording telegraphic facilities to the public, it was decided to accept an offer made by the railway company for the purchase by them of the lines which had been heretofore maintained by the Government, along or in proximity to the railway route. And, an arrangement was entered into with the Company for the operation and maintenance of the lines north of Ashcroft, and elsewhere apart from the railway.

This arrangement came into operation on the 1st October, 1886, and under it the lines are disposed as hereunder :—

	Miles.	
Victoria to Dungeness, branch, including cable.....	19½	} Land lines, cables, &c., sold to C.P.R.
Victoria to Cache Creek, main line.....	356	
New Westminster to Port Moody, branch.....	7½	
Cache Creek to Kamloops, branch.....	48	
	<u>431</u>	
	Miles.	
Ashcroft to Cache Creek, <i>new line</i>	4	} Lines operated by C. P. R. for the Govt. Ar- rangement terminable at any time.
Cache Creek to Barkerville, main line.....	272½	
New Westminster to Ladner's Landing, br.....	18	
	<u>294½</u>	

Total length lines as reported for 1885-86, 721½ miles.

The revenue and expenditure figures in connection with the British Columbia lines for the three months ended 30th September, 1886, compared with the same period of the previous year, are as follows :—

	1886.	1887.
Revenue, July—September.....	\$8,359 45	\$11,377 09
Expenditure do	8,075 84	11,078 44

RECAPITULATION.

(Exclusive of lines in the North-West Territories and British Columbia.)

	Expenditure.	Revenue.	Remarks.
	\$ cts.	\$ cts.	
Gulf of St. Lawrence and Maritime Provinces :—			Signal Service and Meteorological despatches being transmitted free of charge.
Anticosti Island.....	1,680 49	533 64	
Magdalen Islands (including Meat Cove lines).....	3,639 37	3,677 05	
Cheticamp—Mabou.....	193 06	68 27	
Cape Sable—Barrington.....	291 81	113 86	
Chatham—Escuminac.....	424 16	132 78	
Grosse Isle Quarantine.....	519 06	177 96	
Bay of Fundy.....	1,114 77	635 73	
North Shore, St. Lawrence.....	6,800 00	2,230 92	
Subsidies, stationery, line and office material and contingencies chargeable to the special appropriation for the Gulf lines.....	5,019 29		
	19,682 01	7,570 21	
Ontario—Bath-Amherst Island line.....	71 00	76 92	
Total.....	19,753 01	7,647 13	
Total figures for 1885-86 were.....	17,868 82	4,955 34	

F. N. GISBORNE,

Superintendent Government Telegraph Service.

OTTAWA, 29th August, 1887.

GOVERNMENT TELEGRAPH SERVICE.

NEWFOUNDLAND TELEGRAPH SYSTEM.

No.	STATIONS.	Intermediate Distances.	Operators.	Salaries per Annum.	Date of Appointment.	MEMO.
		Miles.		\$ cts.		
1	Port au Basque	0	.....	50 00 or com'n.,	.....	N. B. — The commission is 25 per cent. upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Cape Ray Lighthouse.....	14	.....	50 00 do	.....
	Totals	14		100 00		

Cost of land line, \$1,763.36; interest thereon at 5 per cent., say..... \$ 90 00
 Estimated annual maintenance and repairs..... 160 00

Total..... \$ 250 00 Required in Estimates, 1887-88.

N. B. — The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

ANTICOOSTI TELEGRAPH SYSTEM.
ANTICOOSTI INLAND SERVICE.

No.	STATIONS.	Inter- mediate Distances.	Operators.	Salaries per annum.	Day of Appointment.	Memo.
1	Fox Bay	Miles. 0	.....	\$ cts. 50 00 or com'n	.....	N.B.—The commission is 25 per cent. upon all business to and from the office; and commis- sion guaranteed not to be less than at the rate of \$50 per annum. Fox Bay office was closed in December, 1886 in consequence of resignation of agent.
2	Heath Point Lighthouse.	23	T. Gagné.....	50 00 do	July 20, 1881	
3	South Point Lighthouse.....	32½	W. Carter.....	50 00 do	do 27, 1881	
4	Shallop Creek	17½	B. Bradley.....	50 00 do	do 7, 1881	
5	Salt Lake.....	52½	F. Denault.....	350 00 do	do Oct. 19, 1881	General Repairer. Plus \$1 per day when absent on duty.
6	South-West P'nt Lighthouse.	15	Miss G. Pope.....	200 00 do	do Oct. 18, 1880	Chief Operator since 1st August, 1882.
			E. Pope.....	100 00 do	do Aug. 1, 1882	District Superintendent. Plus \$1 per day when absent on duty.
7	Jupiter River	7	.....	50 00 do	.....
8	Otter River.....	17½	.....	50 00 do	.....
9	Becacie River.....	22	M. Duguay	50 00 do	do Oct. 1, 1886	
10	Cape Eagle (Ellis Bay).....	10	.....	50 00 do	.....
11	West Point Lighthouse.....	14	A. Malouin.....	50 00 do	do Aug. 1, 1881	
12	English Bay.....	3	F. Cabot.....	50 00 do	do July 1, 1882	
	Total.....	214		1160 00		

GOVERNMENT TELEGRAPH SERVICE—Continued

ANTICOSTI TELEGRAPH SYSTEM.

GASPÉ

No.	STATIONS.	Inter- mediate Distances.	Operators.	Salary per annum.	Date of Appointment.	MEMO
1	L'Anse à Fougère.....	Miles. .....	.....	\$ cts. 50 00 or com'n.....	.....	N.B.—The commission is 25 per cent. on all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Gaspé Basin.....	28 28	J. J. Annett.....	150 00 200 00	Oct. 16, 1881....	

ESTIMATED COST OF ANNUAL MAINTENANCE OF ANTICOSTI SYSTEM.

Land lines—Salaries and repairs.....	\$3,000 00
Cables—Repairs, say.....	1,000 00
Total.....	\$4,000 00 Required in Estimates,
Less—Revenue, probably.....	500 00 1887-88.
Balance deficit.....	\$3,500 00

MAGDALEN ISLANDS TELEGRAPH SYSTEM.
MAGDALEN ISLANDS SECTION.

No.	STATIONS.	Inter- mediate Distances.	Operators.	Salaries per annum.	Date of Appointment.	Memo.
1	Amberst.....	Miles, 0	Miss J. Shea.....	\$ cts. 50 00 or com'n.	Oct. 1, 1882	N.B.—The commission is 25 per cent. on all busi- ness to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Amberst Lighthouse.....	9	Wm. Cormier.....	50 00 or com'n.	June 11, 1881	
3	Etang du Nord Village.....	15	P. Pelletier.....	400 00	Dec. 1, 1881	
4	do Lighthouse.....	1	T. O'Brien.....	50 00 or com'n.	do 1, 1881	2-wire loop.
5	Cap aux Meules.....	.....	W. Leslie.....	50 00 or com'n.	Aug. 9, 1883	
6	House Harbour.....	8	P. Jones.....	50 00	Dec. 1, 1881	1 mile loop.
7	Wolfe Island.....	28½	N. Clark.....	100 00	Sept. 25, 1881	Short cable of 750 feet in length.
8	Grosse Isle.....	11	A. LeSourdais, D. Supt.....	500 00	Aug. 17, 1880	
9	Bird Rock.....	Cable	T. Turbide.....	50 00 or com'n.	do 20, 1881	Plus \$1 per day when absent on duty.
10	Grand Entry.....	11	Miss McPhail.....	50 00	Feb. 18, 1882	
	Totals.....	83½		1,350 00		

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MAGDALEN ISLANDS TELEGRAPH SYSTEM.
CAPE BRETON SECTION.

No.	STATIONS.	Inter- mediate Distances.	Operators.	Salaries per annum.	Date of Appointment.	MEMO.
1	Meat Cove (Cable Station)...	Miles. 0	A. B. McDonald	\$ cts. 420 00	Nov. 7, 1880	N.B.—The commission is 25 p.c. upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Aspy Bay	10½	R.	50 00 or comb'n	Aug. 1, 1882	
3	Neil's Harbour { { 1-way house { Loop Line...	1½	M. McLeod.	50 00 do	April 1, 1887	
4	Ingonish, North Bay.	9	J. M. Burke.	360 00 do	do 1, 1882	General Repairer.
5	Ingonish Harbour.	10½	.....	50 00 do	.....
6	Indian Brook	23	D. McLennan.	50 00 do	April 1, 1883	
7	St. Anne's South Bay.	19	Miss C. Morrison.....	50 00 do	do 1, 1883	N.B.—This section is at present operated and maintained by the Western Union Telegraph Company, but at the cost of the Government. The agreement is for ten years (expiring 18th April, 1891), but can be cancelled on one year's notice.
8	Baddeck (Loop Line).	13	Miss Dunlop.....	50 00 do	Jan. 1, 1882	
9	Englishtown	6	Miss Bingham.....	50 00 do	July 19, 1882	
10	Kelly's Cove (N. Campbellton)	2	U. L. Campbell.....	50 00 do	April 1, 1885	
11	Big Bras d'Or.....	6	.....	50 00 do	.....
12	North Sydney.	12½	.....	.....	.....
	Totals.....	128½		1,230 00		

ESTIMATED COST OF ANNUAL MAINTENANCE OF MAGDALEN ISLAND SYSTEM.

Local lines. Salaries and repairs	\$4,100 00
Cable. Repairs, say	1,000 00
Total	\$5,100 00
Less probable revenue.....	1,400 00
Balance deficit.....	\$3,700 00

NOVA SCOTIA TELEGRAPH SYSTEM.
CAPE SABLE SECTION.

No.	STATIONS.	Inter- mediate Distances.	Operators.	Salaries. per Annum.	Date of Appointment.	Memo.
1	Barrington	Miles. 0	Miss A. A. Sponagle	\$ cts. 50 00 or com'n'...	Dec. 18, 1883	N.B.—The commission is 25 p. c. upon all business to and from the offices; said commission guaranteed to be not less than at the rate of \$50 per annum.
2	Newelltown (including 1½ miles cable)	11	Miss S. J. Newell	50 00 do ...	do 22, 1883	
3	Cape Sable Island Lighthouse (including ¼ mile cable)	¾	J. K. Doane	50 00 do ...	do 18, 1883	
	Totals	17½		150 00		

Estimated cost of annual maintenance:—

Required in Estimates for 1887-88..... \$300 00
 do

150 00

GOVERNMENT TELEGRAPH SERVICE—Continued.

LOW POINT, CAPE BRETON SECTION.

No.	STATIONS.	Inter- mediate Distances.	Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		\$ cts.		
1	Lingan	0	.....	50 00 or com'n.....	.....	N.B.—The commission is 25 p.c. upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2	Low Point Lighthouse	5	S. Peters	50 00 do ...	Aug. 1, 1881	
	Totals	5		100 00		

Estimated annual maintenance and repairs:—
Land lines—Salaries and repairs

\$150 00 Required in Estimates, 1887-88.

EAST COAST SECTION.

N.B.—In connection with the Signal Service a land line 298 miles in length has been erected between Canso and Halifax for a bonus of \$16,000, and is now maintained and operated by the Western Union Telegraph Company without further cost to the Government.

MABOU—CHETICAMP, C. B., TELEGRAPH SYSTEM.

1	Mabou	0	Miss M. Finn	50 00 or com'n.....	April, 1887	N.B.—The commission is 25 p.c. of the Government line tariff receipts, and is guaranteed to amount to not less than \$50 per annum.
2	Broad Cove	20	.....	.....	.....
3	Margaree Harbor	17	Mrs. M. A. McLellan	do ..	do	
4	Cheticamp	16	Mrs. M. Fiset	do ..	do	
	Total	53				

Estimated cost of annual maintenance

Estimated revenue

\$650 00 Required in Estimates, 1887-88.
150 00

CHATHAM-ESCUMINAC, N.B., TELEGRAPH SYSTEM.

No.	STATIONS.	Intermediate Distances.	Operators.	Salary per Annum.	Date of Appointment.	Memo.
1	Chatham	Miles. 0	Great North-Western Telegraph Co.	\$ cta. 185 00	1885.	This amount is paid for supervision of the line and office accommodation at Chatham.
2	Black Brook.....	5½	.....	50 00 or com'n.....	.....	The commission is 25 per cent. of the Government line tariff receipts, and is guaranteed to amount to not less than \$50 per annum. Black Brook office has been closed since Feb., 1887, in consequence of the agent having resigned.
3	Bay du Vin.....	15	Miss M. Williston.....	50 00 do ..	March 1.....	
4	Escuminac	9½	Mrs. A. Lewis.....	50 00 do ..	Sept. 1.....	
5	Point Escuminac Lighthouse	12	H. W. Phillips, jun.....	50 00 do ..	Feb. 1.....	
	Total.....	42		385 00		

Estimated cost of annual maintenance, salaries and repairs..... \$800 00, Required in Estimates, 1887-88.
 Estimated Revenue..... 150 00

GOVERNMENT TELEGRAPH SERVICE—Continued.

BAY OF FUNDY, N. B., TELEGRAPH SYSTEM.

GRAND MANAN SECTION.

Stations.	Inter- mediate Distances.	Operators.	Salaries per Annum.	Date of Appointment.	Memo.
<i>Long Eddy Cable Hut, to</i>	Miles.		\$ cts.		
1 Flag's Cove	3	{ H. O. Seely (D. Supt.)..... Miss C. Daggett	420 00 50 00	Nov. 18, 1880... June 1, 1882...	N. B.—The commission is 25 p.c. upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum.
2 Woodward's Cove	6	E. Cameron	50 00 or com'n...	April 1, 1885...	
3 Grand Harbour	2	D. H. Covert	50 00 do	Dec. 1, 1885...	
4 Seal Cove	4½	O. McLaughlin	50 00 do	Jan. 1, 1883...	
5 Southern Head Lighthouse ...	5½	Wood McLaughlin..... D. McKay, Repairer.	50 00 do 60 00	do 18, 1881... May 1, 1881...	
Totals.....	21	.....	730 00		

ON

[1887]

CAMPO BELLO SECTION.

	Liberty Cove Cable Hut, to	Miles.	G. M. Mabee J. Cushing	\$ cts.	Dec. 1, 1881... do 26, 1881...
1	Welchpool.....	7 $\frac{1}{2}$	.....	100 00 or com'n.....	
2	Eastport, Maine, U.S.A.	$\frac{1}{2}$	.....	100 00	
	Totals	8		200 00	

ESTIMATED COST OF ANNUAL MAINTENANCE AND REVENUE.

Land lines—Salaries and repairs	\$1,600 00
Cable—Repairs, probably	1,000 00
Total	\$2,600 00
Less probable revenue	700 00
Balance deficit.....	\$1,900 00

Required in Estimates,
1887-88.

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.
CHICOUTIMI SECTION.

STATIONS.	Inter-mediate Distances.	Operators.	Salaries per Annum.	Date of Appointment.	MEMO.
	Miles.				
1 Bay St. Paul.....	0	F. Boivin	\$ 50 or comm'n* {	Previous to April 1, '85. }	*The commission upon business is 25 per cent. of the tolls for the Government line; the amount guaranteed to be not less than \$50 per annum.
2 St. Urbain.....	9	A. Boivin	50 do ...	do	
3 La Orche.....	37	A. Gauthier (Repairer)...	50 do ...	do	
4 St. Alexis	31½	G. Levoite	420	May 15, 1887...	
5 St. Alphonse de Begotville...	3	A. Simard	50 or comm'n* ...	April, 1885...	
6 Chicoutimi	11½	F. A. Guey	50 do ...	April 28, 1886..	
Total	92		720		

MAINTENANCE.
Included with North Shore Section.
NORTH SHORE SECTION.

1 Murray Bay	0	Mrs. F. Vincent.	\$ 50 or comm'n* {	Previous to April 1, '85. }
2 St. Fidèle	10	E. W. Tremblay	50 do ...	do
3 St. Siméon	11	J. Tremblay	50 do ...	do
4 Bate des Rochers	11	G. Savard	50 do ...	June, 1887
5 Riv. aux Ombres } Loop Line		G. Boullianne	50 do ...	Nov., 1886
6 St. Etienne.....	17	J. Savard	50 do ...	Previous to April 1885. }
7 Tadoussac (¼ mile cable).....	13	D. Lapointe	50 do ...	do
8 Bergeronnes	15	M. Savard	50 do ...	do
9 Escoumins	12	J. H. Topping	50 do ...	do
10 Mille Vaches	16	J. A. Puise	50 do ...	do
11 Portneuf Mills	11½	R. Pincombe	50 do ...	May, 1887
12 Portneuf Light (Loop 3 miles)	9	L. Tremblay	50 do ...	Previous to April 1, '85. }
13 Sault au Cochon.....	7	{ M. McLaren (Repairer)...	420	do
		{ K. F. Vincent.	50 or comm'n* ...	May, 1886

14	Beisamits					
16	Pointe aux Ourdres (cable).....			May 1, 1887		
16	Pointe Parada, Manicouagan		500 per annum	Aug. 1, 1883		
17	River Godbout (cable)		50 or comm'n.....	Oct. 15, 1883		
18	Pointe des Monts		50 do	Dec. 28, 1883		
19	Trinity Bay		50 do	May 16, 1884		
20	Pentecost River					
21	Sept Isles		180	Jan. 2, 1884		
22	River Moisie		50 do	May 1, 1885		
23	Pointe de Mingan					
24	Pointe aux Equimaux					
25	Natashquan					
26	Wapitagan					
27	Shecatia					
28	Bonne Espérance					
29	Anse aux Blanc Sablon					
30	Fortean Bay					
31	Point Amour Lighthouse					
			2,080			

Total length of land line and cable Murray Bay to Moisie is 39½ miles.

ESTIMATED COST OF ANNUAL MAINTENANCE.

Chicoutimi and North Shore to Moisie	\$7,500 00
Cable repairs	500 00
Required in Estimates for 1887-88	\$8,000 00
Estimated Revenue	2,200 00

GOVERNMENT TELEGRAPH SERVICE—Continued.

GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.

No.	STATIONS.	Intermediate Distances.	Operators.	Salaries per Annum.	When Appointed.	MEMO.
1	Quebec.....	Miles. 0	Great North-Western Telegraph Co.	\$ cts. 185 00	This amount is paid for supervision of the line, and covers rent of the pole line Quebec to L'Ange Gardien, for which \$35 per annum is charged.
2	L'Ange Gardien..... St. Pierre (¾ mile cable).....	13 4	G. Turcott.....	50 00 or com'n....	Mar. 1, 1885	
3	St. Pétronille.....	4½	0 00 do	This commission is 25 per cent. of the Government line tariff, and is guaranteed to amount to not less than \$50 per annum The office at St. Pétronille has been closed since Sept., 1886, in consequence of agent having resigned.
4	St. Laurent.....	6½	Mlle. L. Chabot.....	50 00 do	Dec. 20, 1884	
5	St. Jean.....	7	H. Bernard.....	50 00 do	Jan. 1, 1886	
6	St. François (including 5½ miles cable).....	6½	M. Emard.....	50 00 do	Mar. 1, 1886	
7	Grosse Isle quarantine office.....	9	M. Langlois.....	50 00 do	Sept. 1, 1885	
8	do hospital.....	1½	(Telephone).....	.....	.....
	Total.....	52		485 00		

ESTIMATED COST OF ANNUAL MAINTENANCE.

Land line salaries and repairs.....	\$ 850 00
Cable repairs.....	300 00
Required in Estimates, 1887-88.....	\$1,150 00
Estimated Revenue.....	\$ 200 00

GOVERNMENT TELEGRAPH SERVICE.

ONTARIO: BATH-AMHERST ISLAND TELEGRAPH SYSTEM.

No.	STATIONS.	Inter- mediate Distances.	Agents.	Salaries per Annum.	Date of Appointment.	Memo.
1	Bath	0	F. W. Armstrong	\$50 00	Nov. 15, 1885	Accountant and General Agent.
2	Emerald	3½	M. Fowler & McGinness..	25 p. c. comm'n...	do	The commission is upon the receipts for Govern- ment line.
3	Stella	4½	J. S. Neilson	do	do	
	Total	8				

This line is operated with telephones.

Estimated cost of annual maintenance..... \$250 00

The Revenue will about cover the maintenance Expenditure.

GOVERNMENT TELEGRAPH SERVICE—Continued.

LINES IN THE NORTH-WEST TERRITORY.
QU'APPELLE-EDMONTON SECTION.

STATIONS.	Intermediate Distances	Operators.	Salaries per Annum.	Date of Appointment.	Memo.
1 Qu'Appelle	Miles 0	E. W. Warner	\$ 7.00	Jan., 1883...	
2 Fort Qu'Appelle	17	Miss A. Johnston	600 00	Mar. 1, 1885...	
3 Touchwood	46	A. Von Lindeburg	600 00	Nov. 1, 1883...	
4 Humbolt	78	J. M. Anderson	720 00	May 1, 1884...	
5 Clarke's Crossing	55	R. J. Molloy, Agent	720 00	do 1, 1884...	
6 Henrietta	38	W. Harrington, Repairer	600 00	do 1, 1886...	
7 Battleford	47	H. Salsbury, Repairer	720 00	Oct. 1, 1886...	
8 Fort Pitt	89	W. Richardson, Agent	720 00	Prev. to 1882...	
9 Moose Hill Creek	62	G. McClenehan, Operator	720 00	April 1, 1886...	
10 Victoria	76½	Geo. Carter, Repairer	720 00	July 1, 1886...	
11 Fort Saskatchewan	49	W. E. McKinlay, Repairer	720 00	June, 1887...	
12 Edmonton	24	W. C. Gillis, Repairer	720 00	Jan., 1887...	
<i>Branch Line—</i>		W. G. Ross, Agent	Com. 25 p c	Dec., 1886 ..	
Clarke's Crossing	0	A. Taylor, Agent	720 00	Prev. to 1882...	
St. Laurent	60	W. McKay, Repairer	720 00	May 1, 1886...	
Prince Albert	23				
<i>Branch Line—</i>					
Clarke's Crossing	0				
Saskatoon	14				
<i>Branch Line—</i>					
Edmonton	0	J. St. Denys	720 00	Nov., 1886...	
St. Albert	9	E. J. Rankin	720 00	Mar., 1887...	
Total	687½	See note a.	11,860 00		a. The Saskatoon and St. Albert branch lines are operated with telephones.

NOTE. The new line from Battleford to Edmonton via Fort Pitt and Victoria was completed on 14th August, 1887, and on that date the old line via Strang and Leduc was abandoned.

Estimated cost of annual maintenance—salaries, supplies and repairs including the Wood Mountain Section—required in Estimates, 1887-88, \$20,000.

GOVERNMENT TELEGRAPH SERVICE—Continued.
NORTH-WEST TELEGRAPH LINES.—WOOD MOUNTAIN AND FORT MACLEOD SECTIONS.

No.	STATIONS.	Intermediate Distances.	Operator.	Salaries, per Annum.	Date of Appointment.	MEMO.
		Miles.		\$ cts.		
	<i>Fort Macleod Line—</i>					
1	Galt Junction.....	0				
2	Lethbridge.....	107				
3	McLeod.....	28½				
4	Fort Macleod.....	½				
	<i>Wood Mountain Line—</i>					
1	Moose Jaw.....	0	H. Rutheford.....	240 00		
2	Wood Mountain.....	90½	J. S. Macdonald.....	720 00		
	Total.....	226½		\$960 00		

The Fort Macleod line has been leased to the North-West Coal and Navigation Co. at 5 per cent. per annum upon cost of construction.

The Wood Mountain line is operated directly, as part of the Government Telegraph Service.

GOVERNMENT TELEGRAPH SERVICE IN BRITISH COLUMBIA.

Office.	Intermediate Distances.	Names.	Positions.	Salaries per month.	Date of Appointment.	Memo.	
Ashcroft Station.....	Miles. 0	C. P. Ry	Operator and repairer.....	\$ 60 00	Feb. 16, 1885	These lines are now operated by the Canadian Pacific Railway Co. for the Government. The arrangement being terminable at any time.	
Cache Creek.....	4	H. L. Good.....	do	50 00	do 1, 1883		
Clinton.....	26	J. A. LeBourdais.....	do	50 00	May 1, 1880		
Bridge Creek.....	53	Wm. Walker.....	do	50 00	June -- 1886		
Soda Creek.....	78	Henry Yeates.....	do	60 00	April 29, 1882		
Quesnelle	54½	Miss I. Barlow.....	do	47 00	.....	
Stanley	48	W. W. Dodd	do	83 33	Feb. 17, 1873		
Barkerville.....	13	James Stone.....	do and repairer....	.....	.....
<i>Branch.</i>	276½						
New Westminster.....	} 18	J. H. Good.....	Operator.....	Commission.	Nov. 22, 1884		
Ladner's Landing (½ mile cable).....				\$350 33	\$4,200 per annum.		
Total	294½						

Estimated cost of maintenance, including general repair of line, \$6,500, required in Estimates, 1887-88.

APPENDIX No. 18.

STATEMENT

SHOWING THE

GOVERNMENT PIERS AND WHARVES

IN THE

PROVINCES OF ONTARIO AND QUEBEC.

APPENDIX No. 18.

GOVERNMENT PIERS AND WHARVES.
PROVINCE OF QUEBEC.

Ref. No. 63,235.

Names of Places.	Counties.	Total Length.	Width.	Height at end.	Block.		Depth of Water at end.		Date of Commencement of Work.	Remarks.
					Length.	Width.	E. L. W.	S. H. W.		
		Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.		
Etang du Nord, Magdalen Islands.....	Gaspé.....	450	28	22	.....	12	15	1881		
Ile aux Goélands, Magdalen Islands.	do	500	25	.....	313	28	12	.....	1881	Commenced in 1884. Municipality granted \$2,500 towards its construction.
New Oarliste.....	Bonaventure.....	.....	.....	.....	50	25	.....	.....	.....
Newport.....	do	225	20	17	90	20	42	12½	1881	Pier completed. Municipality supplemented the Parliamentary grant with \$2,500 towards the work.
Oarleton.....	do	.....	.....	.....	.....	.....	.....	.....	.....	In 1883, 100 feet of pile-work were built on the east side of the channel.
Matane.....	Rimouski.....	580	30	20	.....	.....	1½	15½	1878	This work was completed in 1883.
Rivière Blanche.....	do	655	20	20	150	30	2	15	1876	This pier is kept in good repair by the Inter-colonial Railway
Rimouski.....	do	2,500	20	26	150	30	8	28	1853	114 feet under construction.
Bic.....	do	1,040	20	.....	80	30	.....	.....	1884	The extension to the block will soon be completed.
Trois-Pistoles.....	Témiscouata.....	980	30	42	394	50	14	34	1881	Completed in 1884.
Rivière du Loup.....	do	1,641	30	.....	.....	.....	.....	.....	1853	Built in 1875-76-77 by Provincial Government and Municipality. Since 1879, the works have been continued and completed by the Dominion Government.
Anse du Portage.....	Chicoutimi.....	108	18	28	Slip 104	24	4	2.	1882	Built by Municipality in 1860; burnt in 1870; rebuilt by Government in 1875. This pier has lately been extended.
Anse St. Jean.....	do	366	26	29	50	40	7½	24½	1875	Built in 1873 by the St. Lawrence Steam Co. In 1874 the Government took possession of it, and has kept it in repairs since 1880.
St. Alphonse de Bagothville.....	do	445	24	49	77	55	29	47	1860	
Chicoutimi.....	do	282	70	28	127	30	7	19	1873	

	1,219	28	42	237½	51	14	32	1852	Lighthouse at end of pier.
Rivière Ouelle									
Ste. Anne de la Po- caillère	100	30	42½		18		37	1884	Built in 1884.
Sault au Cochon	188	35	42½					1880	Work finished in 1881.
Malbale, cap à l'Aigle	500	30	46	108	70	24	44	1850	Completed in 1850.
Malbale, Pointe au Pic	900	30½	36	80	45	15	34	1852	Pier completed in 1852.
Eboulements	730	30	36			12	29	1881	Lighthouse on block.
Baie St. Paul, Cap aux Corbeaux	200	30	42			12	31	1874	Built with the Parliamentary grant by the inhabitants.
Baie St. Paul Block	263	32	42			16½	33½	1881	A block 30 x 30 was built by the inhabitants ; the remainder was built by the Government.
Ile aux Goudres	463	20	24			6	24	1876	Completed in 1855. The superstructure was rebuilt in 1877-78.
St. Jean, Port Joli	1,104	31	34	48	51	7½	25½	1882	Work completed in October, 1884.
L'Islet	642	25	32	75	36	6	24	1882	Completed in 1886. An addition was built in 1882.
Ile aux Grues	345	25	36			10	31	.....	Completed in 1848.
Grosse Ile, East Wh'f	345	48						1879	Commenced in 1879 and completed in 1882.
do West do	100	25	19					1862	For the extension of 100 feet to the Block is com- pleted.
do St. Thomas	566	32	34	159	27	12	30	.....	Built by Municipality by means of Municipal Loan Fund.
do Berthier (en bas)	1,091	30	27	50	37	6	22	.....	Completed June, 1885.
do Bellechasse	400	30	18					1882	There are 6½ feet at half neap and 8½ feet at half spring tides. It was completed in 1882.
do St. Francois, I. d'Orl. Ste. Famille	460	30 & 25	24	90	30		20	1879	The pier was built by the Municipality, and is owned by a company. The Government hav- ing built a light-house on it, the Department has kept the pier in repairs ever since.
do St. Jean, I. d'Orleans	651	30		50	44	7	23	.....	There is a lighthouse at the end of this pier.
do St. Laurent do	583	20		104	32	7	23	.....
do Quebec, Queen's Wh'f	175	66						.....
do Quebec Marine Hos- pital	E. W. 515	24	9					.....
do Ecureuils	W. W. 555	30	22					.....
do Portneuf	70	20	16				12	1881	Dry at low water. There are, at high water (neaps), 7 feet; and high water (spring) 12 feet of water.
do Nicolet	3,080	10						.....
do Yamachiche	1,460	12	10	98	43	5	.....	.....	Commenced in 1882 and completed in 1883.
do Chenal du Moine	30	20	16					1880	There are four ice pier at south side of Chenal du Moine. They were built by contract in 1883.
do Berthier .....	.....	.....	.....	186	66	10	.....	.....	A wharf.
do Lavaltrie	183	20	17	64	33	10	.....	.....
do Launaraie .....	.....	.....	23½	70	30	9½	17	1883	

GOVERNMENT PIERS AND WHARVES.—Continued.
PROVINCE OF QUEBEC.—Concluded.

Names of Places.	Countries.	Total Length.	Width.	Height at end.	Block.		Depth of Water at end.		Date of Commencement of Work.	Remarks.
					Length	Width	E. L. W.	E. H. W.		
		Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.		
Agnes, Lake Megantic	Compton.....	435	30	13	80	20	6	11	1882	
Pionolis do	do	165	12	13	20	20	6	11	1882	
Loures do	do	190	18	14	30	20	6	11	1883	
L'Assomption	L'Assomption ..	101	69	.....	.....	.....	.....	.....	.....
St. Sulpice	do	195	20	18	51	33	10	.....	.....
St. Timothée	do .....	.....	.....	.....	100	24	7½	10½	1882	
St. Anne de Bellevue	Jacques Cartier..	120	24	18	.....	.....	9	13	1885	
Lacolle	Missisquoi	100	100	16	.....	.....	8	14	1884	Built in 1884 by contract
Cedars	Soulanges .....	.....	.....	.....	114	34	7½	11½	1881	This landing pier was built in 1881.
St. Dominique	do	64	24	.....	73	24	15	17	1880	do
Coteau Landing	do	896	12	12	200	24	8	12	.....	The superstructure was renewed in 1885.
St. Zotique	do	1,126	12	14	100	24	9	13	1882	This pier will be completed in 1885.
St. Anticet	Huntingdon	34 & 18	.....	.....	.....	.....	.....	.....	1882	On the south shore of Lake St. Francis.

GOVERNMENT PIERS AND WHARVES—Continued.

PROVINCE OF ONTARIO.

Names of Harbours.	Counties.	Lakes.	Length.		Revetment or Pilework.	Breakwater.	Total Wharfrage.	Width.	Depth of Water at Entrance.		Expenditure by Government, Local Companies, Municipal Authority or Harbour Commissioners.	Remarks.
			North or East Pier.	South or West Pier.					E. L. W.	H. W.		
L'Original	Prescott	River Ottawa.	.....	.....	.....	.....	.....	.....	7	21	Local Municipality and Government.	Built in 1858. Portion above water reconstructed in 1883-84. These works were commenced in 1829.
Cobourg	West Northumberland	Lake Ontario	1,590	1,650	1,050	.....	4,290	.....	18 E. P. 22 W. P.	22 26	.....	.....
Port Hope	East Durham.	do	1,471	1,641	6,863	30	9,774	20-30	12	16	Company, Commissioners and Government.	The works were commenced in 1832.
Newcastle	West Durham.	do	880	600	730	.....	2,210	15-30	12	16	.....	.....
Port Darlington	do	do	1,180	1,620	.....	.....	2,800	20-30	12	16	Company, Commissioners and Government.	.....
Oshawa	South Ontario.	do	.....	.....	.....	.....	815	20-30	11	15	Company and Government.	.....
Whitby	do	do	390	645	1,760	.....	2,795	20-30	11	15	Harbour Commissioners and Government.	The works were commenced in 1843.
Pickering	do	do	685	835	1,460	.....	1,460	15-30	12	16	Township, Harbour Commissioners and Government.	.....
Toronto (Queen's Wharf).	do	do	.....	.....	.....	.....	1,091	30	12	16	Government and Harbour Commissioners.	This wharf was commenced in 1833.
Toronto Harbour Improvements.	do	do	.....	.....	11,380	.....	.....	11	.....	.....	Government.....	.....
Oskville	Halton	do	640	500	422	.....	1,562	15-6.	7	11	William Chisholm and Government.	The works were commenced in 1829.
Burlington Piers	Wentworth	do	2,367	2,710	.....	.....	5,971	20-40	14	15	Government.....	do
Port Maitland	Monck	Lake Erie	1,600	1,500	.....	.....	3,000	.....	10	13	.....	These piers form the entrance of the Broad Creek of the Welland Canal.
Port Dover	South Norfolk.	do	1,020	1,020	.....	.....	2,040	.....	10	13	Government and Harbour Commissioners.	These works were commenced in 1833-34.

GOVERNMENT PIERS AND WHARVES—Continued

PROVINCE OF ONTARIO—Concluded.

Names of Harbours.	Counties.	Lakes.	Length		Revelment or Breakwater.	Total Wharfrage.	Width.	Depth of Water at Entrance.		Expenditure by Government, Local Companies, Municipal Authority or Harbour Commissioners.	Remarks.
			North or East Pier.	South or West Pier.				E. L. W.	M. H. E.		
Port Burwell	East Elgin	Lake Erie.	570	850	1,100	2,520	15-30	9	12	Harbour Company and Government	The works were commenced in 1837.
Port Bruce	do	do	700	750	.....	1,450	.....	.....	14½	do	These works were commenced in 1827.
Port Stanley	do	do	1,150	1,870	720	3,740	.....	11½	.....	Government, Commissioners, Government; also by the London and Port Stanley Railway Company.	
Morpeth.....	do	do	400	500	.....	900	.....	10	13	E. Hill, East Pier, and Government	
Rondeau	Kent	do	780	1,080	2,000	3,800	30-40	18	21	Government.....	These works were commenced in 1844.
Kingsville	South Essex ...	do	880	440	750	2,070	20-50	12	15	Municipal Authority and Government	
Bayfield	South Huron...	Lake Huron...	820	875	.....	1,695	20-30	11	14½	Government and Township of Hanley.	The piers were repaired in 1884-85.
Goderich.....	West Huron ...	do	1,310	1,520	720	3,560	30	14	17½	Government.....	A harbour of refuge.
Port Albert.....	do	do	260	120	.....	410	20	5	8½	Government and Municipality.	
Kincardine	West Bruce....	do	905	880	1,905	3,690	30	12	15½	Government.....	Built in 1856 and 1857.
Inverhuron	do	do	380	.....	.....	450	15-30	16	19½	Government.....	
Port Elgin.....	do	do	.....	.....	.....	1,330	20	12	15½	Government and Local Company.	
Southampton & Chantry Island	do	do	820	.....	.....	4,687	20-30	14	17½	The Municipality, aided by a Government grant, built the pier. The breakwater, &c., were built by the Government.	A harbour of refuge. The Government has the control of the harbour. Southampton piers were commenced in 1858, and those of Chantry Island in 1856.

Warton.....	North Grey...	Georgian Bay.	.....	.....	.....	1,235	20	14	17½	Government.....	Built in 1883.
Big Bay	do	do	.....	.....	452	14-25	11½	15	15	Local Authority and Government.	Built in 1877 and 1881.
Owend Sound ..	do	do	.....	2,470	2,470	20	14	17½	17½	Town Council and Government.	This work was built in 1881-82.
Meaford ..	East Grey	do	.....	775	895	20-30	14	17½	17½	Municipal Council and Government	The works were commenced in 1856.
Thornbury	do	do	.....	.....	.....	15-30	12	15½	15½	Municipality, and Government.	
Collingwood	North Simcoe.	do	.....	.....	3,190	20-24	11	14½	14½	Government and Northern Railway Company.	The breakwater, 790 feet in length, was built in 1874-75. An extension to the east pier, 600 feet in length, is under construction.
Port Arthur	Algoma	Lake Superior.	640	.....	2,640	20-30	.....	14	14	Government.....	Pier built in 1870. The breakwater, 2,000 feet in length, is under contract.

APPENDIX No. 19.

TABULAR STATEMENTS

SHOWING THE DATES OF THE

OPENING AND CLOSING OF NAVIGATION

AT THE

PRINCIPAL PORTS OF CANADA,

ON THE SEABOARD AND ON THE GULF, RIVER, AND LAKES OF THE
ST. LAWRENCE ;

ALSO, PORTS WHICH ARE ALWAYS OPEN.

APPENDIX No. 19.

No. 1.—STATEMENT of the Closing of Navigation in the Fall of 1886, and of the Opening in the Spring of 1887.

Name of Port.	Location.	Closed in 1886.	Opened in 1887.	Remarks.
Charlottetown, P.E.I.	Gulf St. Lawrence	Dec. 29...	April 26...	Spring tides, 9½ ft.; neap tides, 8 ft. Depth of water at low water, at Railway Wharf, 20 ft.; at Queen's Wharf, 14 ft.
Georgetown	do	Feb 8, '87...	do	Spring tides rise ½ ft.; neaps, 4 ft.
Pictou, N.S.	do	Dec. 30...	do	Ferry steamer "Mayflower," continued running until 14th Feb., 1887, and resumed her trips on 23rd March, 1887. Neap tides rise about 4½ ft.; spring, 6 to 7 ft.
Sydney	do	Jan. 7, '87...	do	Spring tides rise 4 ft.; neaps, 2½ ft.
Shediac, N.B.	do	Dec. 10...	May 7...	Spring tides rise 10 ft.; neaps, 6 ft.
Campbellton	Basin des Chaleurs	do 4...	do 6...	Spring tides rise about 5 ft.
Percé, P.Q.	Gulf St. Lawrence	do 5...	April 20...	Rise and fall of tide, about 6 ft.
Gaspé Basin	do	do 11...	May 9...	Spring tides rise 23 ft.
Tadoussac	River St. Lawrence	Nov. 22...	April 23...	Rise and fall of tide, from 13 to 18 ft.
Quebec	do	do 24...	do 30...	
Sorel	do	do 3...	May 2...	
St. John's	River Richelieu.....	Dec. 27...	April 27...	
Montreal	do	Nov. 27...	Nov. 1...	
Kingston, Ont.	River St. Lawrence.....	Dec. 4...	May 19...	
Belleville	do	do 30...	April 19...	
Port Hope	Lake Ontario,	Nov. 30...	do 25...	
Toronto	do	do 7...	do 7...	
Port Stanley	do	do 4...	do 12...	
Port Dover	Lake Erie	do 6...	do 4...	
Windsor	do	do 4...	do 8...	
	Detroit River	do 21...	Jan. 5...	The dates given are those of the last departure for and first arrival from ports at a distance. Virtually this harbour is never closed, as the ferry boats run constantly between this place and Detroit.
Sarnia	Lake Huron	do 15...	April 4...	
Goderich	do	Nov. 30...	May 20...	
Kincardine	do	do 28...	April 30...	
Owen Sound	Georgian Bay	Dec. 11...	do 30...	
Collingwood	do	do 3...	do 20...	
Warton	do	do 24...	do 23...	
Sault Ste. Marie	Lake Superior	do 4...	May 1...	
Port Arthur	do	do 20...	do 11...	
Winnipeg, Man.....	Red River	Nov. 4...	April 25...	

J. A. PHILLIPS,

OTTAWA, 2nd August, 1887.

No. 2.—STATEMENT showing some of the ports in the Dominion which are open to Navigation the whole year.

Name of Port.	County.	Province.	Depth of Water at Low Water.	Remarks.
Annapolis	Annapolis	Nova Scotia	15 to 20	In very severe winters thin ice forms, but screw steamers could always enter.
Barrington	Shelburne	do	12 to 20	At anchorage. Wharves dry at low water.
Digby	Digby	do	18	About ten feet at end of steamboat pier.
Halifax	Halifax	do	20 to 30	At wharves. 70 to 100 feet in harbour.
Liverpool	Queen's	do	7	On bar. At Brooklyn 24 feet.
Lockport	Shelburne	do	8	
Lunenburg	Lunenburg	do	12	
Parrsboro'	Cumberland	do .....	.....	Dry in harbour at low water.
Shelburne	Shelburne	do	40 to 60	
Yarmouth	Yarmouth	do	13	
St. Andrews	Charlotte	New Brunswick	14	In inner harbour.
St. John	St. John	do	20	At entrance of harbour. 60 feet in harbour.
St. Stephens	Charlotte	do	6	30 feet at the ledge, 4 miles below the town.
*Tadousac	Saguenay	Quebec	30 to 50	
Windsor	Essex	Ontario .....	.....	Ferry boats cross Detroit River all winter.

* See remarks respecting Tadousac Harbour in Appendix No. 8 of general report 1867-1882.

Victoria, Nanaimo, Burrard Inlet and all other ports in British Columbia, up to Skeena River, are always open. New Westminster is liable to be closed 7 to 15 days. See telegram No. 34,027, from Hon. J. W. Trutch, 3rd May, 1883.

Tides in British Columbia—At Victoria ordinary springs rise from 7 to 10 feet, neaps 5 to 8 feet; at Nanaimo ordinary springs rise 14 feet, neaps 11 feet; at Westminster ordinary springs rise 7 feet, neaps 4 feet; at Hastings, Burrard Inlet, ordinary springs rise 16 feet, neaps 12 feet; at Port Moody ordinary springs rise 10 to 12 feet, neaps 5 to 6 feet. See telegram from Hon. J. W. Trutch, 25th Oct., 1883, No. 39,810.

APPENDIX No. 20.

COMPARATIVE STATEMENT

OF THE

NUMBER OF VESSELS,

THEIR

AGGREGATE TONNAGE,

AND THE

NUMBER OF MEN EMPLOYED

WHICH HAVE ARRIVED FROM SEA,

AT THE PORTS OF HALIFAX, N.S., ST. JOHN, N.B., CHARLOTTETOWN
P.E.I., QUEBEC AND MONTREAL, PROVINCE OF QUEBEC,
AND VICTORIA, B.C., FROM 1868 TO 1885.

APPENDIX No. 20.

STATEMENT of the Number of Vessels and their Aggregate Tonnage, and Number of Men employed, which have arrived *from Sea*, to 30th June each year since Confederation, at the Ports of Halifax, N.S.; St. John, N.B.; Charlottetown, P.E.I. Quebec, Montreal, P.Q., and Victoria, B.C.

Port.	Year.	No. of Vessels	No. of Tons.	No. of Men.	Remarks.	
Halifax,	N.S.	1868	1,089	274,089	16,562	Nova Scotia entered Confederation on 1st July, 1867.
		1869	1,792	288,682	16,022	
		1870	1,261	311,357	16,319	
		1871	1,266	302,338	15,581	
		1872	1,587	363,847	20,211	
		1873	1,384	372,985	19,803	
		1874	1,074	316,955	15,800	
		1875	1,215	354,274	18,168	
		1876	1,067	374,705	16,621	
		1877	1,076	494,638	20,358	
		1878	917	473,423	18,862	
		1879	959	391,448	18,725	
		1880	1,070	529,663	21,143	
		1881	7,157	601,398	23,630	
		1882	1,168	575,529	23,806	
		1883	1,079	540,583	21,166	
		1884	1,093	565,562	22,402	
		1885	944	601,112	21,896	
		28,900	7,732,698	347,095		
St. John,	N.B.	1868	993	374,429	10,046	New Brunswick entered Confederation on 1st July, 1867.
		1869	1,413	502,083	13,320	
		1870	1,613	471,297	13,382	
		1871	1,575	442,837	12,371	
		1872	1,562	420,860	12,056	
		1873	1,470	406,442	11,537	
		1874	1,320	480,473	12,563	
		1875	1,131	377,614	10,593	
		1876	994	376,939	8,090	
		1877	1,115	421,060	10,051	
		1878	1,206	396,330	9,867	
		1879	1,055	376,919	9,711	
		1880	1,424	462,880	12,337	
		1881	1,444	444,546	12,548	
		1882	1,536	493,783	14,059	
1883	1,632	468,743	13,777			
1884	1,904	484,471	19,646			
1885	1,740	401,547	15,391			
		25,237	7,811,523	222,795		
Charlottetown, P.E.I.		1874	173	51,478	2,116	Prince Edward Island entered Confederation on the 1st July, 1873.
		1875	196	57,609	2,176	
		1876	184	68,521	2,305	
		1877	350	79,893	3,391	
		1878	288	65,716	2,932	
		1879	429	79,330	3,832	
		1880	255	64,281	2,598	
		1881	288	64,322	2,635	
		1882	196	50,038	2,018	
		1883	125	14,282	1,660	
		1884	184	50,544	2,145	
1885	210	53,024	2,742			
		2,877	7,6,648	30,550		

STATEMENT of the Number of Vessels and their Aggregate Tonnage, and Number of Men employed, which have arrived from Sea, to 30th June, &c.

Port.	Year.	No. of Vessels.	No. of Tons	No. of Men.	Remarks.	
Quebec,	Que.	1868	910	628,866	18,520	Quebec entered Confederation on 1st July, 1867.
		1869	952	640,087	19,205	
		1870	1,091	756,078	21,931	
		1871	844	623,474	18,741	
		1872	1,002	783,316	21,730	
		1873	917	734,937	20,827	
		1874	971	789,433	22,658	
		1875	854	639,235	19,818	
		1876	949	744,252	20,107	
		1877	983	855,101	21,489	
		1878	910	802,930	19,499	
		1879	642	604,490	15,610	
		1880	657	665,688	17,221	
		1881	783	802,186	19,888	
		1882	642	676,327	17,675	
		1883	682	737,059	18,687	
		1884	693	767,395	19,351	
	1885	541	620,352	15,963		
		14,033	12,884,756	353,870		
Montreal,	do	1868	253	160,553	7,339	
		1869	261	168,824	7,921	
		1870	340	228,121	9,366	
		1871	346	247,313	10,300	
		1872	435	311,567	11,724	
		1873	422	307,453	11,867	
		1874	384	306,782	11,623	
		1875	354	297,363	10,972	
		1876	337	285,609	9,881	
		1877	303	279,197	1,208	
		1878	325	309,261	9,679	
		1879	300	349,712	10,763	
		1880	374	427,057	13,269	
		1881	400	484,028	13,754	
		1882	347	373,412	11,934	
		1883	318	405,496	12,541	
		1884	360	493,799	14,434	
	1885	303	460,625	12,957		
		5,844	5,896,172	191,532		
Victoria,	B.C.	1872	292	131,696	4,487	British Colombia entered Confederation on the 20th July, 1871.
		1873	408	169,414	5,829	
		1874	401	156,197	5,744	
		1875	453	193,481	7,090	
		1876	524	302,199	11,706	
		1877	523	312,155	11,569	
		1878	488	358,924	11,443	
		1879	514	377,705	10,891	
		1880	471	356,649	10,132	
		1881	467	338,996	9,297	
		1882	488	398,034	11,792	
		1883	702	501,983	15,934	
		1884	823	511,203	24,113	
		1885	809	395,106	22,226	
		7,363	4,484,722	162,253		

APPENDIX No. 21.

STATEMENT

SHOWING THE

NUMBER AND TONNAGE OF VESSELS CONSTRUCTED

AT THE

PRINCIPAL SHIP BUILDING PORTS IN CANADA,

FROM 1868 TO 1885, (INCLUSIVE).

APPENDIX NO. 21.

STATEMENT showing the Number and Tonnage of Vessels constructed at the principal Ship Building Ports of Canada, from 1868 to 1886.

(Compiled from Trade and Navigation Returns.)

Year.	NOVA SCOTIA.						NEW BRUNSWICK.																
	Halifax.		Pictou.		Windsor.		Yarmouth.		St. John.		Chatham.		Dorchester.										
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.									
1868	1	723	6	1,734	3	2,510	4	1,638	3	222	42	12,407	15	4,690	2	1,122							
1869	4	805	3	86	16	5,047	2	712	2	879	65	22,880	6	4,536	2	1,371							
1870	1	11	6	2,234	17	6,566	1	35	2	2,348	64	26,640	1	25	3	1,701						
1871	1	11	3	4,207	16	6,631	4	167	80	27,311	2	72	3	1,881						
1872	5	13,157	3	1,706	16	5,899	.....	.....	5	431	69	29,483	.....	.....	7	4,036			
1873	4	15,196	11	4,832	15	7,407	.....	.....	6	687	53	32,491	.....	.....	22	1,865			
1874	9	18,366	10	4,780	23	11,417	.....	.....	27	2,066	64	36,863	.....	.....	3	301			
1875	28	9,163	11	6,362	21	15,777	.....	.....	24	18,654	100	38,220	.....	.....	7	5,180			
1876	21	6,607	1	35	2	12,146	.....	.....	27	18,654	100	38,220	.....	.....	2	35			
1877	8	3,449	3	6,791	2	12,146	.....	.....	27	18,654	100	38,220	.....	.....	11	3,158			
1878	10	5,936	6	2,209	18	13,654	.....	.....	35	10,760	41	23,731	.....	.....	11	3,265			
1879	16	3,144	5	1,561	12	9,431	.....	.....	16	8,487	26	20,463	.....	.....	14	3,280			
1880	23	2,161	2	910	13	12,837	.....	.....	34	19,001	34	20,706	.....	.....	3	23			
1881	63	1,432	8	3,327	12	9,906	.....	.....	12	10,866	30	12,470	.....	.....	9	88			
1882	3	3,867	4	2,936	16	9,527	.....	.....	11	10,866	45	14,861	.....	.....	2	104			
1883	44	4,175	1	1,237	9	5,595	.....	.....	3	40	37	11,835	.....	.....	1	29			
1884	25	1,867	4	3,118	12	7,037	.....	.....	21	21	52	15,608	.....	.....	2	864			
1885	2	2,275	4	3,413	7	6,691	.....	.....	3	134	25	11,120	.....	.....	7	483			
Total.	18	1366	466	104,750	6	56	120	55,977	5	322	261	158,316	43	3,978	886	398,919	18	566	141	33,200	64	40,365

STATEMENT showing the Number and Tonnage of Vessels constructed at the principal Ship Building Ports of Canada, from 1868 to 1885—*Concluded.*

Year.	QUEBEC.						ONTARIO.														
	PRINCE EDWARD ISLAND.			Charlottetown.			Quebec.		Montreal.		St. Catharines.		Toronto.		Kingston.						
	Number.	Tonnage.	Sailing.	Number.	Tonnage.	Steam.	Number.	Tonnage.	Steam.	Number.	Tonnage.	Sailing.	Number.	Tonnage.	Steam.	Number.	Tonnage.				
1868	56	23,649	2	327	8	701	.....	.....	.....	.....	.....	.....	.....	.....
1869	61	28,766	5	443	18	2,038	.....	.....	.....	.....	.....	.....	.....	.....
1870	39	17,932	3	77	11	1,210	1	11	6	1,093	2	33	1	50				
1871	81	17,965	7	374	13	1,643	4	612	3	1,032	2	109	2	1,016				
1872	50	11,109	1	43	9	1,559	5	1,787	4	1,426	1	418	7	1,052				
1873	873	11,109	3	332	5	1,197	9	1,873	8	3,006	.....	.....	.....	.....
1874	47	18,584	4	333	6	13,453	3	818	8	2,944	.....	.....	.....	.....
1875	66	14,949	5	210	4	844	4	356	6	1,069	.....	.....	.....	.....
1876	149	25,892	8	1,496	57	19,280	4	844	4	4,363	.....	.....	.....	.....
1877	88	20,982	7	734	45	21,104	8	1,392	44	3,271	.....	.....	.....	.....
1878	67	16,373	7	385	39	3,768	4	327	1	361	3	125	5	113				
1879	57	16,486	4	124	28	12,949	5	498	6	569	.....	.....	.....	.....
1880	2	7,395	8	568	21	7,560	4	313	3	332	.....	.....	.....	.....
1881	19	5,591	7	506	16	4,508	3	34	10	1,193	.....	.....	.....	.....
1882	16	2,863	6	271	22	5,489	3	124	12	2,023	.....	.....	.....	.....
1883	13	3,776	4	417	18	3,206	3	326	10	2,450	.....	.....	.....	.....
1884	1	189	3	221	16	3,855	3	54	2	1,001	.....	.....	.....	.....
1885	21	4,962	6	688	16	2,465	3	607	2	241	.....	.....	.....	.....
1886	21	4,962	5	679	10	2,910	.....	.....	.....	.....	.....	.....	.....	.....
	6	599	499	67	241,413	71	6,811	210	25,604	45	7,113	41	11,912	52	3,388	37	3,687	52	6,258	86	13,601

N.B.—For number and tonnage of sea-going vessels built in Quebec from 1787 to 1867, see Appendix No. 52 of Report of Commissioners of Public Works, published in 1867.—G. F. B.

APPENDIX No. 22.

NUMBER OF SEA-GOING AND COASTING VESSELS
WRECKED ON THE SEA COAST
AND IN THE
GULF, RIVERS AND LAKES OF THE ST. LAWRENCE
IN THE
DOMINION OF CANADA
FROM 1868 TO 1885 (INCLUSIVE).

COMPILED FROM REPORTS OF DEPARTMENT OF MARINE AND FISHERIES

APPENDIX No. 22.

PART 1st.—SEA-GOING AND COASTING VESSELS.

(a) STATEMENT of Wrecks and Casualties which have occurred in Canadian Waters to Foreign and Canadian Sea-going Vessels, from 1868 to 1886.

(Compiled from the Yearly Reports of the Minister of Marine and Fisheries.)

Year.	Place where Wreck or Casualty occurred, and No. of Vessels wrecked or damaged at each place.										Description of Vessels wrecked or damaged, or No. of each description.					Nature of Casualty and No. of Vessels.					
	Newfoundland	Anticosti Is-lands.	Magdalen Is-lands.	Prince Edward Island.	New Brunswick Coast.	Nova Scotia Coast.	Gulf St Lawrence.	Quebec to Gulf.	River St. Lawrence to Mon-treal.	Steamers.	Ships.	Barques.	Brigs.	Brigantines.	Schooners.	Stranded.	Sunk or Found-ered.	Burnt.	Collision.	Abandoned.	Other causes.
June 1, 1868, to Dec. 31, 1868...	4	4	2	1	9	(b) 25	7	36	1	3	9	33	13	7	21	83	6	15	1	9	
1870.....	4	5	1	1	6	51	4	30	8	8	15	23	8	13	47	46	6	18	1	1	
1871.....	6	1	1	1	11	56	11	37	2	5	20	25	7	23	46	95	6	13	1	1	
1872.....	2	8	4	1	19	40	16	31	1	6	13	43	4	10	46	90	11	8	2	2	
1873.....	2	3	37	8	28	116	11	26	3	18	15	89	12	21	132	192	10	3	11	1	
1874.....	5	7	6	3	23	71	6	63	2	30	21	40	4	18	72	114	5	4	28	1	
1875.....	5	6	8	7	33	87	14	30	3	19	15	35	4	27	96	146	5	5	28	1	
1876.....	8	6	9	7	33	109	16	38	10	24	14	49	6	33	125	152	9	8	47	3	
1877.....	11	4	9	9	29	104	4	68	12	28	13	42	2	25	122	145	8	5	21	1	
1878.....	8	7	4	7	33	76	14	31	10	20	10	28	3	18	98	123	5	5	30	1	
1879.....	11	2	5	17	25	118	10	32	13	23	13	43	3	33	143	169	4	34	1	1	
1880.....	7	11	3	11	16	88	24	29	17	27	13	49	8	16	93	113	7	5	39	5	
1881.....	9	1	5	8	22	58	13	13	5	23	3	30	3	11	61	76	4	6	54	1	
1882.....	4	2	2	8	33	92	13	19	10	29	5	28	3	21	103	125	3	4	28	1	
1883.....	6	8	6	9	21	127	11	23	10	33	13	37	3	25	112	138	10	8	18	3	
1884.....	3	5	4	9	23	89	15	9	2	20	2	11	3	16	94	112	8	10	14	4	
1885.....	3	2	2	1	21	48	3	3	3	16	1	5	2	3	51	55	5	4	4	.....
Grand Totals.	107	82	105	121	388	1,354	191	506	112	332	192	592	82	309	1,442	1,968	105	77	393	24	343

Notes: (a)—For statement of Wrecks prior to 1867, see Appendix No. 53 to Public Works Report for 1867, pp 426 to 428, prepared by G. F. Baillairgé, D. M. P. W. (b)—The Vessels shown as having been wrecked on the Nova Scotia coast are principally fishing and coasting schooners.

PART 1ST.—SEA-GOING AND COASTING VESSELS—Continued.
STATEMENT of Wrecks and Casualties which have occurred in Canadian Waters to Foreign and Canadian Sea going Vessels from 1868 to 1885.

Year.	Approximate Loss.				Total No. of Wrecks and Casualties.	Remarks.
	When Total.		When Partial.			
	No. of Vessels.	Amount.	No. of Vessels.	Amount.		
June 1, 1868, to Dec. 31, 1869.....		\$		\$	86	Nature of casualties not ascertained; amount of losses not recorded.
Jan 1 to Dec. 31, 1870.....	53	268,946	61	49,720	115	
1871.....	58	575,544	67	84,514	125	
1872.....	58	847,070	61	314,595	123	On 1st April, s.s. "Atlantic" was stranded at Marr's Head, N.S.; 515 lives lost; less \$550,000.
1873.....	95	2,002,210	143	278,692	237	On 6th July, s.s. "City of Washington" was stranded at Gull Rock Bar, N.S.; no lives lost; loss \$500,000.
1874.....	65	679,375	120	270,648	185	On 6th Sept., s.s. "Medway" was stranded on Newfoundland coast; 7 lives lost; loss \$100,000.
1875.....	75	1,040,794	121	307,154	196	On 24th Aug., s.s. "Saltwell" foundered off Scatterie, N.S.; 6 lives lost; loss \$150,000.
1876.....	87	497,490	164	197,554	251	On Nov., s.s. "Picton"; never heard of; all on board lost; loss \$46,000.
1877.....	61	537,980	178	232,073	239	A portion of the partial loss could not be ascertained.
1878.....	72	860,250	118	97,918	190	On 22nd July, s.s. "Lake Megantic" stranded on Anticosti Island; no lives lost; \$200,000.
1879.....	73	675,600	180	169,803	253	
1880.....	71	1,192,100	135	151,288	206	
1881.....	46	608,810	82	364,155	128	On 8th Oct., s.s. "Corean" stranded on Point St. Michel, River St. Lawrence; no lives lost; partial loss \$200,000.
1882.....	69	917,553	119	215,051	188	
1883.....	91	792,900	133	199,189	224	On 3rd Sept., barque "Brittania" wrecked on Sable Island, and 14 lives lost.
1884.....	87	1,310,950	77	222,791	164	On 3rd April, str. "Daniel Steinman" wrecked near Sambro Light, and 123 lives lost; loss \$289,000.
1885.....	35	404,355	48	105,675	83	
Grand Totals.	1,095	12,379,839	1,790	3,261,928	2,885	

[1881]

PART 2ND.—VESSELS NAVI

STATEMENT of Wrecks and Casualties to Vessels navigating

Year.	Place where Wreck or Casualty occurred, and No. of Vessels wrecked or damaged at each place.						Description of Vessels wrecked or damaged, and No. of each description.				Nature of Casualty and No. of Vessels.				
	Lakes.				Welland Canal.	Lake Ontario to Montreal.	Steamers.	Propellers.	Schooners, &c.	Barges.	Stranded.	Sunk or Foundered.	Burnt.	Collision.	Other causes.
	Ontario.	Erie.	Huron.	Superior.											
July 1, 1868, to Dec. 31, 1869...	2	6													
Jan. 1 to Dec. 31, 1870.....	26	21	11			5	5	7	46	3					
1871.....	16	6	16			3	6	5	30						
1872.....	24	12	8	2	3	6	10	7	32	6	39	6	2	4	4
1873.....	9	2	3	2		2	8		8	2	8	2	4		3
1874.....	10	9	4		1	3	7		19	1	15	5	4		3
1875.....	9	5	5	1		1	12		9	12	1	4	4		
1876.....	2	4	2			1	3	1	5	6	1	1	1		
1877.....	4	12	3	1		2	4	1	14	3	17	2	1	1	1
1878.....	8	7	10			1	16		10	11	5	7	1	2	
1879.....	6	4	8		1	4	10		10	3	11	3	3	5	1
1880.....	22	9	9	1		14	18		27	10	28	9	6	4	8
1881.....	12	2	4	1	2	11	14		14	4	10	8	5	4	5
1882.....	10	11	8			6	9		23	3	13	6	6	5	
1883.....	6		8	2	1	17	23		12	9	22	9	6	3	4
1884.....	7	4	1	6	2	7	13	1	8	5	10	7	4	3	3
1885.....	5	1	1	4		5	6	4	4	4	5	3	4		3
Grand Totals..	178	125	101	20	10	88	164	23	273	53	213	67	57	35	37

GATING ON INLAND WATERS.

on Inland Waters of Canada, from 1868 to 1885.

Approximate Loss.				Total Number of Wrecks or Casualties.	Remarks.
When Total.		When Partial.			
No. of Vessels.	Amount.	No. of Vessels.	Amount.		
	\$		\$		
				63	
				41	
11	150,700	44	70,433	55	{ On 28th Sept. steamer "Rapid" capsized near Pt. Pelée, Lake Erie; 7 lives lost; loss on vessel, \$9,000
					{ On 24th Nov. propeller "Mary Ward" foundered off Nottawasaga Lighthouse, Lake Huron; 8 lives lost; \$43,000.
6	108,000	12	23,450	18	On 5th Nov. steamer "Bavarian" was burnt off Whitby Lighthouse, Lake Ontario; 20 lives lost; \$50,000.
6	109,300	21	52,175	27	
10	96,000	11	27,550	21	
4	40,000	5	11,000	9	{ On 17th May schooner "T. C. Street" capsized on Lake Erie; 6 lives lost; \$4,000.
					{ On 26th Oct. schooner "Maggie Hunter" on Lake Ontario; 7 lives lost; \$10,000.
9	92,000	13	12,400	22	On 8th Oct. barge "American" drifted ashore at Point Pelée, Lake Erie; 6 lives lost; \$7,000.
13	97,600	13	25,425	26	On 16th June schooner "James Scott" capsized above Port Burwell Lighthouse, Lake Erie; 5 lives lost; \$10,000.
5	20,900	18	27,445	23	
18	133,800	37	29,500	55	{ On 16th April schooner "Northman" foundered off Port Credit, Lake Ontario; 8 lives lost; \$18,000.
					{ On 7th Nov. steamer "Zealand" foundered near Long Point, Lake Ontario; 17 lives lost; \$27,000.
					{ On 24th Nov. steamer "Simcoe" foundered off Manitoulin Islands, Lake Huron; 12 lives lost; \$24,000.
11	110,800	21	38,775	32	{ On 24th May steamer "Victoria" upset on Thames River, 1½ miles from London; 182 lives lost.
					{ On 19th July steamer "City of Winnipeg" burnt at Duluth; 4 lives lost; \$60,000.
					{ On 14th Nov. schooner "E. P. Dorr" foundered off Long Point; 7 lives lost; \$9,000.
22	226,450	13	32,968	35	
17	219,200	27	105,389	44	
13	82,672	14	36,645	27	
9	275,220	6	4,000	15	
154	1,762,342	255	497,156	513	

APPENDIX No. 23.

STATEMENTS.

1ST.—CONTRACTS LET BY THE DEPARTMENT.

2ND.—PROPERTY PURCHASED BY THE DEPARTMENT.

3RD.—PROPERTY LEASED BY OR TO THE DEPARTMENT.

DURING THE FISCAL YEAR ENDED 39TH JUNE, 1887.

APPENDIX No. 23.

Ref. No. 82,009.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 31st October, 1887.

SIR.—I have the honor to enclose the following statements which are required for insertion in the Annual Report for 1886-87, viz :—

No. 1.—Statement of Contracts let by this Department during the fiscal year ended 30th June last.

No. 2.—Statement of Property purchased by this Department during the same period.

No. 3.—Statement of Property and Rights leased to and by this Department during the same period.

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

F. X. R. SAUCIER.

A. GOBEL, Esq., Secretary,
Department of Public Works.

No. 1.—CONTRACTS let by the Department of Public Works of Canada, from the 30th June, 1886, to the 30th June, 1887.

Works.	Names of Contractors.	Date of Contract.	Amount.
			\$ cts.
PUBLIC BUILDINGS.			
<i>Government House, Parliament and Departmental Buildings.</i>			
New Departmental Building—Iron roofs, &c	A. Charlebois.....	Sept. 3, 1886	60,000 00
Parliament and Departmental Buildings—Supply of coal.....	G. W. McCullough.....	July 6, 1886	3,635 28
Parliament and Departmental Buildings—Covering steps for winter.....	W. T. Odell.....	Nov. 9, 1886	210 00
Parliament and Departmental Buildings—Removal of snow	John Bruce.....	Dec. 2, 1886	645 00
Parliament and Departmental Buildings—Repairs, &c, to roofs.....	E. G. Laverdure.....	Jan. 26, 1887	3,300 00
Rideau Hall—Removal of snow	A. C. Hunter.....	Dec. 6, 1886	495 00
do and Parliament and Departmental Buildings supply of ice	D. N. Charlebois	Feb. 19, 1887	246 82
			225

[1887]

No. I.—CONTRACTS let by the Department of Public Works, &c.—Continued.

Works.	Name of Contractors.	Date of Contract.	Amounts.
			\$ cts.
PUBLIC BUILDINGS—Continued.			
<i>Nova Scotia.</i>			
Amherst Public Building—Counter, screen, vault fittings.....	Rhodes, Curry & Co ...	July 20, 1886	355 00
Amherst Public Building—Supply of coal.....	Acadia Coal Company.	Aug. 8, 1886	224 40
Baddeck do Heating apparatus.....	C. B. Thompson	Oct. 13, 1886	490 00
Halifax Public Buildings—Supply of coal.....	Acadia Coal Company.	Aug. 8, 1886	460 65
New Glasgow Public Building—Supply of coal	do do	do 8, 1886	170 37
North Sydney—Heating apparatus, Post Office Building.....	The Truro Foundry and Machine Co.	Dec. 18, 1886	1,275 00
Truro Public Building—Supply of coal	Acadia Coal Company.	Aug. 8, 1886	87 50
Windsor do do	do do	do 8, 1886	45 86
Yarmouth do do	do do	do 8, 1886	229 60
do do Heating apparatus.....	Jos. Muirhead.....	Nov. 1, 1886	2,440 00
<i>Prince Edward Island.</i>			
Charlottetown Public Building—Heating apparatus.	McKinnon & McLean...	Sept. 22, 1886	4,923 12
do do Buildings—Supply of coal.....	Acadia Coal Company.	Aug. 8, 1886	570 71
<i>New Brunswick.</i>			
Bathurst Public Building—Heating apparatus.....	Wisdom & Fish.	Oct. 15, 1886	1,550 00
do do Post Office fittings.....	S. Gammon	Sept. 6, 1886	1,300 00
Carleton do Supply of coal	W. L. Busby.....	Aug. 8, 1886	101 22
Fredericton do do	Jos. G. Gill	do 8, 1886	300 90
do Post Office—Repairs	A. H. Saunderson.....	do 12, 1886	303 00
Moncton Public Building—Supply of coal.....	Acadia Coal Company.	do 8, 1886	250 36
St. John Custom House do	Magee Bros.	do 8, 1886	1,454 41
do Marine Hospital do (bit).....	W. L. Busby	do 8, 1886	8 00
do do do (anth.).....	S. P. & W. F. Starr	do 8, 1886	348 82
do Post Office do (bit).....	W. L. Busby	do 8, 1886	59 77
do do do (anth.)	R. P. & W. F. Starr.....	do 8, 1886	407 84
do P.O. Savings Bank do (bit.)	W. L. Busby.....	do 8, 1886	18 69
do do do (anth)	R. P. & W. F. Starr...	do 8, 1886	146 28
St. Stephens Public Building—Supply of coal	do do	do 8, 1886	161 06
do do Heating apparatus.....	J. E. Fitzgerald	Sept. 21, 1886	1,290 00
Sussex do Supply of coal.....	R. P. & W. F. Starr.....	Aug. 8, 1886	37 83
Woodstock Public Building do	W. L. Busby	do 8, 1886	286 12
do do Grading, fencing, &c.	Hugh Hay	Sept. 29, 1886	3,625 00
<i>Quebec.</i>			
Grosse Isle—Quarantine—Repairs and alterations	George Beaucage.....	Aug. 10, 1886	5,750 00
do do Additional works	do	Oct. 11, 1886	1,150 00
Hull—Post Office	Stuart & McCullough..	Aug. 3, 1886	15,445 00
do do Supply of coal	McRae & Co	July 22, 1887	149 75
do do Heating apparatus.....	Garth & Co	Feb. 4, 1887	1,047 00
do do Fittings	W. Stewart	May 3, 1887	2,200 60
Montreal Custom House—Supply of coal	F. Robertson.....	Aug. 8, 1886	972 60
do Examining Warehouse—Supply of coal	do	do 8, 1886	1,722 10
do Inland Revenue Building—Supply of coal.....	J. O'Brien	do 8, 1886	250 77
do Post Office—Supply of coal.....	do	do 8, 1886	866 88
Montreal Drill Hall—Heating apparatus	E. Chanteloup	Dec. 22, 1886	9,400 00
Quebec Custom House—Alterations, &c., to heating apparatus	A. Mulholland.....	July 21, 1886	641 00
Quebec Custom House—Supply of coal.....	R. Borland & Co.....	Aug. 8, 1886	516 35

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			\$ cts.
<i>Quebec—Concluded.</i>			
Quebec Examining Warehouse—Supply of coal.....	R. Borland & Co.....	Aug. 8, 1886	439 00
do Marine Hospital do	do	do 8, 1886	179 60
do Post Office do	do	do 8, 1886	175 60
do Marine Hospital—Supply of fuel wood.....	N. Burke	do 31, 1886	935 00
do Observatory—Heating apparatus	G. T. Phillips	Sept. 16, 1886	715 00
do Post Office—Alterations in the fittings of Money Order, Savings Bank, and Registered Letters Offices	J. Perry	Nov. 25, 1886	600 00
do Queen's Wharf—Repairs to stores .....	.....	Jan 12, 1887	1,499 31
do Princess Louise Embankment—Emigrant shed offices.....	A. Lortie.	do 14, 1887	21,200 00
do Princess Louise Embankment—Additional works .....	.....	Mar. 3, 1887	6,231 25
do Examining Warehouse—Coal compartment in engine house.....	Carrier, Lainé & Co...	do 3, 1887	180 90
Sorel Public Building—Walls, fences, sidewalks and roofs	Geo Beaucage.....	July 22, 1886	3,069 00
Sorel Public Building—Supply of coal	P. Laconture	Aug. 8, 1886	300 00
Sherbrooke Public Building—Tower clock	R. J. Spearing	July 26, 1886	1,130 00
St. Vincent de Paul Penitentiary—Supply of coal.....	Dufresne & Mongenais.	Oct. 6, 1886	1,213 06
do do Quarrying and supplying stone	Anclair & Pastien	Nov. 24, 1886	Sched rates
do do Steam boiler.....	J. Macdougall... ..	Aug. 11, 1886	935 00
do do Supply of fuel wood	Dufresne & Mongenais.	Dec. 27, 1886	529 54
Three Rivers Public Buildings—Supply of coal	Z. Marchand.....	Aug 8, 1886	455 79
<i>Ontario.</i>			
Belleville Public Building—Supply of coal.....	Downey & Preston.....	do 8, 1886	283 25
do do Alterations to heating apparatus	Garth & Co	July 19, 1886	1,310 00
Berlin do Supply of coal	Klopper & Richardson.	Aug. 8, 1886	184 83
Brantford do do	K. T. Elliott	do 8, 1886	352 79
Brockville do do	Central Canada Coal Co.	do 8, 1886	280 00
Chatham do do	J. L. Scott	do 8, 1886	351 37
Cornwall do do	Grant & Conroy	do 8, 1886	282 50
Galt do do	J. Malcolm	do 8, 1886	295 00
Gananoque do do	The Rathbun Co	do 8, 1886	130 00
Hamilton do Passenger and freight elevator.....	Miller Bros., & Mitchell	July 15, 1886	2,500 00
do do Supply of coal	Thos. Myles & Son	Aug. 8, 1886	1,353 35
do do Entrances, gates and guards to elevator	J. Fensom	Dec. 1, 1886	993 00
do Drill Shed—Construction.....	M. A. Pigott	Apr. 23, 1887	33,000 00
Kingston Public Buildings—Supply of coal	Breck & Booth	Aug. 8, 1886	561 49
do Penitentiary—2 steam boilers for heating.	The Canadian Locomotive & Engine Co	Sept. 22, 1886	1,300 00
London Public Buildings—Supply of coal	J. Mann & Sons.....	Aug. 8, 1886	1,129 24
Orangeville do do	Kenny & Decatur	do 8, 1886	227 18
Ottawa—Roofing pump house near foot of canal	E. G. Laverdure	do 30, 1886	262 50
do do Experimental Farm—Office and store	E. Palen	Nov. 15, 1886	295 00
do do Conservatory	do	Dec. 2, 1886	575 00
do do Repairs to storehouse....	do	do 16, 1886	460 14
do do Heating apparatus	Blyth & Kerr	Jan. 15, 1887	196 00
do do Fencing	Tubin & O'Keefe	Feb. 4, 1887	1.29 pr. panel

No. 1.—CONTRACTS let by the Department of Public Works, &c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—Continued.			
<i>Ontario—Concluded.</i>			
			\$ cts.
Ottawa Printing Bureau	J. E. Askwith	June 6, 1887	94,000 00
do do Iron joists and girders	Rousseau & Mather	do 15, 1887	32,775 00
Port Hope Public Building—Supply of coal	Wright Bros	Aug. 8, 1886	262 50
Peterborough Post Office—Tower	J. E. Askwith	Oct. 18, 1886	2,300 00
Stratford Public Building—Supply of coal.....	F. Goodwin	Aug. 8, 1886	261 12
St. Catharines do do	E. C. Rogers	do 8, 1886	195 86
St. Thomas do do	J. Griffin	do 8, 1886	390 02
Toronto Post Office—Customs Office.....	T. Pells	Mar. 4, 1887	2,275 00
do Examining Warehouse—Alterations and ad- ditions	J. Fletcher	June 30, 1887	7,200 00
do Examining Warehouse—Elevator	J. Fensom	do 30, 1887	3,450 00
do do Boilers	Inglis & Hunter	do 30, 1887	4,250 00
do Public Buildings—Supply of coal and wood.	P. Burns.....	Aug. 8, 1886	2,667 65
Windsor do do do	J. & T. Hurley	do 8, 1886	382 85
<i>Manitoba.</i>			
Stony Mountain Penitentiary—Boiler.....	The Vulcan Iron Co....	Jan. 24, 1887	550 00
do do Hospital and wash- house	Rourke & Cass.....	June 20, 1887	28,500 00
Winnipeg Post Office—Fittings, &c., for Savings Bank Office	J. E. Gelley & Co.	July 12, 1886	3,200 00
do do P. O. Inspector's rooms.....	do	do 12, 1886	2,200 00
do do Removal of vault lining and doors exchanged, and removal of three safes.....	Vulcan Iron Works.....	Aug. 23, 1886	690 00
do Infantry School—Officers' quarters.....	Murray & McDiarmid...	Nov. 25, 1886	10,775 00
do do Stabling	do	do 25, 1886	3,975 00
do Post Office—Fittings	Gelley & Co.....	May 4, 1886	9,500 00
do Custom House—Heating apparatus and screens.....	Garth & Co.....		2,720 25
do Post Office—Eciler.....	Vulcan Iron Co.	Jan. 24, 1887	550 00
<i>North-West Territories.</i>			
Battleford—N.-W. M. Police—Barrack building and hospital.....	W. J. Barker.....	Sept. 25, 1886	2,200 00
do N.-W. M. Police—Barrack building and mess room with kitchen	Smart & Macdonald ...	do 25, 1886	1,700 00
do N.-W. M. Police—2 stables	W. J. Barker	do 25, 1886	1,600 00
Calgary—Highway bridge across Bow River.....	Kennedy & Heney.....	May 2, 1887	18,500 00
Fort McLeod Barracks—Winter sashes.....	J. Craig	Nov. 26, 1886	780 00
Lethbridge—N.-W. M. Police—Barracks, officers' quarters, stables, &c.....	Scott & Merrill	do 29, 1886	4,386 00
Regina—N.-W. M. P.—Commissioner's house.....	R. H. Williams.....	Sept. 11, 1886	5,985 00
do do Two Barracks	do	do 11, 1886	30,935 00
do Public Offices—Supply of coal.....	The North-Western Coal & Navigation Co.....	Oct. 12, 1886	272 00
do do do	J. A. McCaul		706 69
do N.-W. M. Police—Hospital and surgeon's house.....	J. McCrea	Nov. 10, 1886	10,600 00
<i>British Columbia.</i>			
New Westminster Penitentiary—2 pairs semi-de- tached houses for officers' dwellings.....	J. Holland.....	Oct. 27, 1886	8,500 00
New Westminster Penitentiary—Laundry and bake- house.....	do	Feb. 9, 1887	4,500 00

No. 1.—CONTRACTS let by the Department of Public Works, &c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS—DREDGING AND DREDGE VESSELS.			
<i>Nova Scotia.</i>			
Arisaig—Breakwater and repairs to pier	A. McKinnon.....	Oct. 20, 1886	7,900 00
Bayfield—Extension of breakwater.....	J. McMillan.....	Nov. 12, 1886	3,946 00
Blue Rock—Breakwater	S. O'Donoghue.....	do 24, 1886	6,980 00
Broad Cove Marsh, C.B.—Wharf.....	Campbell & Boyle.....	do 12, 1886	7,300 00
Fox Island—Beach Protection Works.....	D. Sutherland.....	Sept. 6, 1886	3,200 00
McNair's Cove—Reconstruction of part of breakwater.....	A. McKinnon.....	Apr. 1, 1887	9,500 00
Port Greville—Part of proposed breakwater.....	M. Hatfield.....	July 12, 1886	5,775 00
<i>Prince Edward Island.</i>			
New London Harbour—Reconstruction of portions of breakwater.....	G. McKay	Sept. 28, 1886	1,400 00
<i>New Brunswick.</i>			
Dalhousie—Ballast wharf.....	G. Gordon.....	Dec. 13, 1886	7,800 00
Upper Salmon River—Extension to breakwater.....	Wallace, Appleby & Appleby	Oct. 25, 1886	4,570 00
<i>Quebec.</i>			
Berthier (<i>en haut</i>)—Pier (ice breaker).....	D. O'Brien.....	do 7, 1886	1,369 00
Cap aux Corneilles—Repairs to 3 piers and 6 new piers.....	T. E. Normand	do 12, 1886	Schd. rates
Ile Perrot—Block of crib-work.....	D. O'Brien.....	Apr. 20, 1887	4,065 00
Longueuil—Wharf.....	J. Burns	Nov. 6, 1886	7,393 00
Percé—Pier	A. Lortie	Feb. 14, 1887	12,500 00
Port Daniel—Pier.....	do	do 14, 1887	18,875 00
Rivière du Lièvre—Lock and dam	Thomson & Poupore....	Dec 29, 1886	Schd. rates
St. Irénée—Removing to St. Irénée a pier which was at Les Ebonlements.....	G. Lavoie	Sept. 2, 1886	2,911 00
<i>Ontario.</i>			
Belleville—Dredging in or near the harbour.....	G. A. Munson.....	Sept. 22, 1886	*
Chatham—Works at McGregor's Creek.....	Flook & Babcock.....	Jan. 19, 1887	2,950 00
Hilton—Crib-work.....	Tobin & O'Keefe.....	Dec. 7, 1886	9,700 00
Midland—Works in the harbour.....	P. Navin	Feb. 17, 1887	Schd. rates
Oakville—Pier work.....	E. Murphy.....	Nov. 20, 1886	12,150 00
Port Arthur—Further length of breakwater.....	A. Stewart.....	Oct. 30, 1886	98,000 00
Port Elgin—Groyne at western end of landing pier...	D. Porter.....	Nov. 22, 1886	9,995 00
Southampton—Rebuilding north pier and constructing crib-work at mouth of River Saugeen.....	do	Dec. 29, 1886	6,500 00
<i>Manitoba.</i>			
Lake of the Woods—Dam and fish pass.....	John Mather.....	Apr. 5, 1887	7,000 00
<i>Dredge Vessels.</i>			
Two side dumping dredge scows	Nish & Lefebvre.....	Mar. 3, 1887	2,800 00

* Paid to contractor by Department, to 28th October, 1887, \$3,400.

[1887]

No. 1.—CONTRACTS let by the Department of Public Works, &c.—Continued.

Works.	Names of Contractors.	Date of Contract.	Amount.
[TELEGRAPH LINES.]			
N.-W. Territories—Battleford and Fort Pitt—Distribution of poles, tar, insulators, &c.....	J. Rose	Mar. 23, 1887	90c. per 100 lbs.
N.-W. Territories—Battleford and Clark's Crossing—Supply and distribution of telegraph poles.....	G. F. Tupper.....	Apl. 16, 1887	1.95 per pole
N.-W. Territories—Clark's Crossing and Humboldt—Supply and distribution of telegraph poles.....	B. Boyer.....	do 19, 1887	2.00 do
Nova Scotia—Mabou and Cheticamp—Construction of a telegraph line.....	McInnes & McLellan...	Aug. 12, 1886	2,088 96
N.-W. Territories—Qu'Appelle and Humboldt—Delivery and distribution of telegraph poles.....	W. H. Duncan.....	June 7, 1887	1,360 00
N.-W. Territories—Saddle Lake Creek—Supply of telegraph poles to continue line from.....	W. J. Barker.....	Jan. 22, 1887	1.16 per pole
N.-W. Territories—Supply of telegraph poles for telegraph line in.....	A. C. Vaughan.....	Apl. 7, 1887	1.45 do

F. X. R. SAUCIER.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 28th October, 1887

No. 2.—STATEMENT of Property Purchased by the Department of Public Works during the Fiscal Year ended 30th June, 1887.

Date of Conveyance.	Vendors.	Purchaser.	Description of Property.	For what Purpose.	Area.	Price.
						\$ cts.
Mar. 16, 1886	A. G. Gamble	Her Majesty.	Lots 1, 2 and 3, Block 13, in the suburbs of New Westminster, B.C.	Penitentiary purposes.	2,130 super. feet	2,300 00
Nov. 16, 1886	H. S. Harwood	do	Parcel of land at Cascades, Que.	Approach to pier.	24½ acres	50 00
Aug. 31, 1886	C. E. Knapp <i>et ux.</i>	do	do	Dorchester Penitentiary.	24½ acres	548 80
Dec. 23, 1886	W. G. Wilson <i>et ux.</i>	do	Lot No. 6, east side of John St., Napanee, Ont.	Site for Public Building	2 50 chains.	3,000 00
do	Lucius Kilburn	do	Parcel of land, corner Main and Cutting Sts, Coaticook, Que.	do	7,560 super. feet.	2,000 00
Feb. 1, 1887.	D. R. Murphy <i>et ux.</i>	do	Parts of lots 4 and 5, south side of Dundas St., Trenton, Ont.	do	do	4,875 00
Jan. 21, 1887	Dame L. E. Taché <i>et al.</i>	do	Taché's wharf, Kamouraska, Que.	Improvement of navigation	do	1,000 00
Feb. 13, 1887.	La Fabrique, St. Jérôme.	do	Cadastral lot No 219, St. Jérôme, Que.	Site for Public Building.	arpent 85 perc 300 feet	4,000 00
Sept 23, 1884.	J. W. Huri & T. E. Baker	do	Town lot No 8, Block C, Princes Albert, NWT	do	do	1 00
Feb. 21, 1884	H. Gisborne	do	do	do	do	do
March 8, 1887.	High Court of Justice (Chancery Division), Ontario	do	do	do	do	do
Feb. 20, 1886	T. Allen <i>et ux.</i>	do	West half lot No. 6, south side Lombard St, Toronto, Ont.	Post Office premises.	do	6,896 97
July 9, 1887.	T. Deacon <i>et ux.</i>	do	Lot of land in the Parish of Botsford, N.B.	Site for boat-houses, Cape Tormentine	21,630 super. ft..	50 00
May 1, 1887.	Mrs. C. A. Creighton	do	West part of lot No. 1, Block A, Supple Section, Pembroke, Ont.	Site for Public Building.	132 X 76 X 57 ft.	2,500 00
		do	Lots Nos. 1, 2, 13 and 14, Rudolf Division, Letter B, Lunenburg, N.S.	do	do	3,900 00

F. X. R. SAUCIER.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 28th October, 1887.

No. 3.—STATEMENT of Property and Rights leased to and by the Department of Public Works during the Fiscal Year ended 30th June, 1887.

Date of Lease.	Lessor.	Lessee.	Property Leased.	For what purpose used.	Duration of Lease.	Rent payable.
1886.						\$ cts.
Aug. 6..	Her Majesty	The N.-W. Coal and Nav. Co	Government Telegraph Line from Fort Melcod to Dunmore, N.-W. Territories.	.....	21 years	1,375 00 p. an'm
Nov 19...	do	A. G. Grier & Co	Right to cover over part of the Chaudiere Slide	For better access to their piling grounds.	During pleasure.	1 00 do
Dec. 11...	do	T. Webb.....	Lots 1, 2 and 21 N. of Bay Street and water lots 1, 2, 3 and 4 Presqu' Ile Harbour.	.....	21 years	43 00 do
do 23...	do	R. Finlayson	Right to erect two bulkheads, Rock Bay, Victoria Harbour, B.O.	.....	During pleasure.	25 00 do
1887.						
Jan. 12...	do	Hall, Neilson & Co	Strip of land at Cap aux Cornelles, River St. Maurice, Que.	.....	21 years	10 00 do
do 20...	do	J. Spratt.....	Right to build a wharf in Victoria Harbour, B.O.	.....	During pleasure.	25 00 do
Feb 2...	do	Andrew Myles...	Building at corner of Main and Simonds Streets, Portland, N.B.	.....	5 years	500 00 do
do 5...	do	The Great Northern Tran Co	Right to occupy the "old breakwater" at Collingwood, Ont.	.....	During pleasure	1 00 do
do 26 ..	Egan Estate Company (limited).	Her Majesty	Portion of building adjoining Post Office, Ottawa, Ont.	Examining Warehouse ..	2 years and 4 mos	856 00 do
Mar. 10...	J. Darré & Son.....	do	2nd and 3rd flats over their store, Ottawa, Ont.	Dept. of Indian Affairs...	2 years	1,000 00 do
Jan. 2...	R. B. Angus, et al (Trus)	do	Lots 16, 17, 18, 19 and 20, block 345, with buildings thereon, Regina, N.-W. T.	Court House	2 years	1,200 00 do
June 1..	A. Charlebois, et al.	do	Assignment of lease of lots 11 and 12, west side of Elgin Street and lots 1 and 2 north side of Catherine Street in Stewarston, near Ottawa, Ont.	New Departmental Building, building material.	17 months	104 00 do
do 9...	do	do	Assignment of lease of portions of lot F, concession C., Rideau Front, Township of Nepean, County of Carleton, Ont.	do	5 months..	30 00 do

F. X. R. SAUCIER.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 28th October, 1887.

APPENDIX No. 24.

LIST OF SOME OF THE ACTS OF PARLIAMENT

PASSED AT THE SESSION OF 1887

AND HAVING REFERENCE TO

THE DEPARTMENT OF PUBLIC WORKS

OR WORKS UNDER ITS CHARGE.

APPENDIX No. 24.

Ref. No. 82,075.

LIST of some of the Public Acts of the Parliament of Canada, passed at the First Session of the Sixth Parliament of Canada ended on the twenty-third day of June, 1887, and having reference to the Public Works Department, or works under its charge.

Subject.	Full Title of the Statute.	Chapter.	Page in Statute Book.
Sums granted to Her Majesty for the financial year ending 30th June, 1887, and the purposes for which they are granted.	An Act for granting to Her Majesty certain sums of money required for defraying certain expenses of the public service, for the financial years ending respectively the 30th June, 1887, and the 30th June, 1888, and for other purposes relating to the public service.	1	3
Revised Statutes of Canada—Distribution of.	An Act to amend Chapter two of the Revised Statutes of Canada, intituled "An Act respecting the publication of the Statutes."	2	45
Public Officers—Security to be given by some.	An Act to amend the Act respecting Public Officers.....	9	53]
Trial of Claims against the Crown.	An Act to amend "The Supreme and Exchequer Courts Act" and to make better provision for the trial of claims against the Crown.	16	62
Expropriation of Lands.....	An Act to amend the Revised Statutes, Chapter thirty-nine, respecting the Expropriation of Lands.	17	76
Advancing further sums for completing Graving Dock, &c., in the Harbour of Quebec.	An Act to authorize the advance of further sums for completing the Graving Dock and the Improvements in the Harbour of Quebec.	41	147
Improvement of the River St. Lawrence	An Act relating to the improvement of the River St. Lawrence.	43	149

F. X. R. SAUCIER.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 2nd November 1887.

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APPENDIX No. 25.

—

NATIONAL ART GALLERY.

—

CURATOR'S REPORT.

APPENDIX No. 25.

NATIONAL ART GALLERY.—CURATOR'S REPORT.

Ref. No. 83,351.

NATIONAL ART GALLERY,

OTTAWA, 16th December, 1887.

SIR,—I have the honour to report the following additions to the Gallery received during the fiscal year ended 30th June, 1887:—

Oil painting—by G. F. Watts, R. A., London, England. "Time, Death and Judgment"—Presented by the Artist.

Oil painting—by F. M. Bell Smith, R.C.A. Diploma picture received from the Royal Canadian Academy.

Oil painting—A. D. Patterson, R.C.A. Diploma picture received from the Royal Canadian Academy.

Oil painting—"Madonna and Child."—Presented by Senator R. P. Haythorne.

There are at present over a hundred works of art in the Gallery which, with the exception of three pictures purchased by the Government have been donated by artists and others in sympathy with the establishment of a National Collection of pictures, &c.

The present value of objects in the Gallery may be estimated at between \$20,000 and \$30,000.

During the fiscal year the interest in the Gallery judging by the attendance has been greater than any previous year, 11,943 visitors having registered their names, an increase of 3,151 over the attendance of the preceding year.

I have the honour to be, Sir,

Your obedient servant,

JOHN W. H. WATTS,

Curator.

A. GOBEL, Esq.,
Secretary Department of Public Works,
Ottawa.

[1887]

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APPENDIX No. 26.

STATEMENT

OF CASES REFERRED TO THE

OFFICIAL ARBITRATORS

FOR FISCAL YEAR ENDED 30TH JUNE, 1887,

BY

CHARLES THIBAUT, SECRETARY

APPENDIX No. 26.

REPORT OF THE SECRETARY TO THE OFFICIAL ARBITRATORS.

Ref. No. 79,184.

OFFICIAL ARBITRATORS, CANADA,
OTTAWA, 18th July, 1887.

SIR,—I beg to enclose you the report of the cases referred by your Department, and arbitrated and awarded upon by the Official Arbitrators, during the Fiscal Year ended 30th June last (1887).

I am, Sir,

Your obedient servant,

CHAS. THIBAULT,

Secretary to the Official Arbitrators.

A. GOBEL, Esq.,
Secretary Public Works Department,
Ottawa.

STATEMENT of Claims referred to and arbitrated upon by the Official Arbitrators, in connection with the Department of Public Works, during the Fiscal Year ended 30th June, 1887.

Claimant	Nature of Claims.	When Referred.	To whom Referred.	Referred for Report or Award.	Amount Claimed.	Amount Awarded.	Date of Award.	Remarks.
Denis O'Brien	Exam. warehouse at Quebec— Extra works in connection.	1886. Sept. 21....	Full Board...	For Award..	\$ cts. 4,600 00	\$ cts.	1886.	Not yet investigated, but will soon be.
Alex. Martin	Public building on Wellington street, Ottawa—Land taken for	Nov. 15....	do ...	do ..	3,125 00	750 00	Nov. 25...	
N. B., 1885.		1885.	do ...	do ...	.....	43,279 00	Dec. 6...	But the amount paid to M. Starrs & Co. should be deducted—say, about \$10,000.
M. Starr & Co....	DesJochim's Bridge — Extra work	Dec. 29....	do ...	do ...	.....	.....	.....

[1887]

CHAS. THIBAULT,
Secretary to the Official Arbitrators.

OTTAWA, 18th July, 1887.

APPENDIX No. 27.

OFFICERS OF THE DEPARTMENT.

Ref. No. 63,650.

APPENDIX

Members, Commissioners and Assistant Commissioners of the Board of Works,
Architects of the Department of

Chairman, Commissioners and Ministers.			Assistant Commissioners and Deputy Ministers.	
Names.	From	To	Names.	Date of Appointment.
<i>Under Statute 4-5 Vic., Cap. 38, Corporation of Board of Works.</i>				
Hon. H. H. Killaly, Chairman.....				
D. Daly } S. B. Harrison } J. Davidson }	Members..	Dec. 29, 1841	Oct. 3, 1844	
<i>New Board of Works.</i>				
Hon. H. H. Killaly, Chairman.....				
D. Daly } W. H. Draper.... } W. Morris..... } D. B. Papineau. }	Members..	Oct. 5, 1844	June 8, 1846	
<i>Under Statute 9 Vic., Cap. 37, etc.</i>				
Hon. W. B. Robinson, Chief Commissioner...	July 4, 1846	Mar. 10, 1848	Hon. Chas. Eus Casgrain, Assist. Commissioner.	Aug. 1, 1846
E. P. Taché do ...	Mar. 11, 1848	Nov. 26, 1849	Hon. M. Cameron, Asst. Commissioner	Mar. 11, 1848
J. Chabot do ...	Dec. 15, 1849	Mar. 31, 1850	Jno. Westenhall, Asst. Commissioner.	Feb. 2, 1850
W. H. Merritt do ...	April 20, 1850	Feb. 11, 1851	Hon. Jos. Bourret, Asst. Commissioner	April 20, 1850
J. Bourret do ...	Feb. 15, 1851	Oct. 27, 1851	Hon. H. H. Killaly, Asst. Commissioner	Feb. 15, 1851
John Young do ...	Oct. 28, 1851	Sept. 22, 1852		
J. Chabot do ...	Sept. 23, 1852	Jan. 26, 1855		
F. Lemieux do ...	Jan. 27, 1855	Nov. 25, 1857		
C. Alleyu do ...	Nov. 28, 1857	Aug. 1, 1858		
L. H. Holton do ...	Aug. 2, 1858	do 6, 1858		
L. V. Sicotte do ...	do 6, 1858	Jan. 10, 1859	Samuel Keefer, Asst. Commissioner.	May 6, 1859
John Rose do ...	Jan. 15, 1859	June 12, 1861		
Jos. Cauchon, Commissioner.	June 15, 1861	May 23, 1862		
U. J. Tessier do ...	May 24, 1862	do 27, 1863		
L. T. Drummond do ...	do 28, 1863	July 23, 1863		
M. Laframboise do ...	July 23, 1863	Mar. 29, 1864	Toussaint Trudeau, Asst. Commissioner	Mar. 15, 1864
J. C. Chapais do ...	Mar. 30, 1864	June 30, 1867		
<i>Under Statute 31 Vic., Cap. 12.</i>				
Hon. Wm. McDougall, Minister.....	July 1, 1867	Oct. —, 1869	Toussaint Trudeau, Deputy Minister.	May —, 1868
Hon. H. L. Langevin, C.B., Minister	Dec 8, 1869	Nov. 5, 1873		
Hon. Alexander Mackenzie do ...	Nov. 7, 1873	Oct. 16, 1878		
Sir Chas. Tupper, C.B., K.C.M.G., Minister	Oct. 17, 1878	May 20, 1879		
Sir Hector L. Langevin, C.B., K.C.M.G., Minister.....	May 20, 1879		G. F. Baillairgé, Deputy Minister.	Oct. 4, 1879

No. 27.

and of the Ministers, Deputy Ministers, Secretaries, Chief Engineers and Chief Public Works, from 1841 to 1887.

Secretaries.		Chief Engineers.		Chief Architects.	
Names.	Date of Appointment.	Names.	Date of Appointment.	Names.	Date of Appointment.
Thomas A. Begly...	Aug. 17, 1841.	Samuel Keefer.....	Aug. 17, 1841.	F. P. Rubidge, Architect and Asst. Engineer	Dec. 15, 1841.
Thomas A. Begly, under Act estab- lishing Dept. of Public Works.	Sept. 25, 1847.				
.....	.....	John Page	Oct. 31, 1853.		
Toussaint Trudeau.	Dec. 13, 1859.				
Frederick Braun....	March 8, 1864.				
.....	.....	G. F. Baillairgé, Asst. Chief En- gineer.	July 5, 1871.	Thos. S. Scott...	Feb. 7, 1872.
{ S. Chapleau.....	Oct. 4, 1879.	H. F. Perley.....	Nov. 25, 1880.	Thos. Fuller.....	Oct. 31, 1881.
{ F. H. Ennis.....	Nov. 4, 1880.				
{ A. Gobeil	Jan. 23, 1885.				

APPENDIX No. 28.

OFFICIAL CORRESPONDENCE

From 1st July, 1867, to 30th June, 1887.

APPENDIX No. 28.

OFFICIAL CORRESPONDENCE.

Letters Received and Sent from 1st July, 1867, to 30th June, 1887.

Years.	Received.	Sent.
1867—From 1st July to 31st December	2,075	1,511
1868 do 1st January to 31st December	3,498	2,317
1869 do do do	3,448	2,171
1870 do do do	4,961	3,185
1871 do do do	6,268	3,983
1872 do do do	8,333	4,428
1873 do do do	10,072	5,707
1874 do do do	9,800	5,043
1875 do do do	9,006	5,006
1876 do do do	7,971	4,773
1877 do do do	7,517	4,425
1878 do do do	6,886	4,021
1879 do do to 6th October	7,186	4,547
1879* do 7th October to 31st December	2,033	810
1880 do 1st January do	8,451	4,410
1881 do do do	9,599	5,529
1882 do do do	10,505	5,699
1883 do do do	11,633	6,227
1884 do do do	13,114	6,903
1885 do do do	18,977	5,321
1886 do do do	9,644	5,352
1887 do do to 30th June	4,866	2,735

* By an Order in Council, approved on 19th May, 1879, published at page 1496 of the *Canada Gazette*, the 20th May of that year was fixed as the day for separating the Department of Railways and Canals from the Department of Public Works, in accordance with Act 42 Vic., cap. 7. The staff of officers and clerks of the Department of Public Works continued to manage in common the business of the two Departments until the 1st October, when an Order in Council was approved dividing the staff between the two Departments. The first letter of the new Department of Public Works was written on 7th October.

The above list does not include the correspondence of the chief officers of the Department with their assistants and the public, which averages over 8,000 letters per year, nor the Departmental and other cheques sent out, of which above 5,000 are mailed during each fiscal year.

† The decrease in the number of letters received and sent is not caused by any actual diminution of letters, but by a change in the manner of filing since 1st April, 1885. Up to that date all accounts were registered singly, and a letter accompanied each payment. Now, accounts are filed by subjects, as many as thirty or forty accounts being sometimes covered by one number and printed slip; s have been substituted for the letters which formerly accompanied payments. A very considerable saving of time has been effected by these changes, and the business of the Department greatly facilitated.

SUPPLEMENT

TO

MINISTER OF PUBLIC WORKS' REPORT

FOR THE

FISCAL YEAR 1886-87.

Printed by Order of Parliament.



OTTAWA:

PRINTED BY MACLEAN, ROGER & CO., WELLINGTON STREET.
1888.

APPENDIX No. 29.

INLAND NAVIGATION OF CANADA.

ELEVATIONS OF THE ST. LAWRENCE, LAKE CHAMPLAIN AND
RIVER HUDSON, ABOVE MEAN SEA LEVEL.

OCEAN ROUTES—CANADA AND UNITED STATES
TO FOREIGN COUNTRIES.

CANADIAN LAND ROUTES TO THE SEABOARD, Etc.

GOVERNMENT RAILWAYS AND TELEGRAPH LINES, Etc.

CANADIAN AND UNITED STATES ROUTES, Etc.,
FROM LIVERPOOL TO JAPAN.

CANADIAN PACIFIC RAILWAY,
SUEZ CANAL AND PANAMA CANAL ROUTES.

COST OF PUBLIC WORKS, CANADA.

BY

G. F. BAILLAIRGÉ,
Deputy Minister Public Works.

APPENDIX No. 29.

PART I.

ST. LAWRENCE NAVIGATION,
RIVERS OTTAWA, SAGUENAY AND LAKE ST. JOHN,
ALSO NAVIGABLE WATERS, MANITOBA AND NORTH-WEST
TERRITORIES, PORT NELSON AND HUDSON'S BAY,
ALSO,
ELEVATIONS OF THE ST. LAWRENCE ABOVE MEAN SEA LEVEL
AND
WATER LEVELS, Etc.,
In connection with Floods between Laprairie, Montreal and Three Rivers,
Opening and Closing of Navigation at Quebec, Montreal,
Kingston, Toronto,
Etc., Etc.

PART I.

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- No. 1. St. Lawrence Navigation : Table of distances from the Strait of Belle-Ile to Duluth, at the head of Lake Superior.
- No. 2. Draught of water, St. Lawrence Navigation.
- No. 3. Distances between the principal places from Montreal to Quebec, along the centre line of the ship channel.
- No. 4. St. Lawrence Navigation: Levels of rivers and lakes above tide-water at Albany and Three Rivers, according to different authorities.
- No. 5. Levels established between low tide-water at Three Rivers and lowest observed water of Montreal Harbour at lower entrance of Old Lock No. 1, at foot of Lachine Canal.
- No. 6. Highest and lowest water levels, and depths at low water on the lower mitre sill of Old Lock No. 1, at foot of Lachine Canal, in the Harbour of Montreal, hitherto and now adopted by Engineers of Harbour, Water Works, &c.
- No. 7. St. Lawrence Navigation: Remarks respecting dredging of channel between Quebec and Montreal, and the draught of water through the canals on the main line of the St. Lawrence Navigation.
- No. 8. Lake Navigation from head of Lake Superior to Three Rivers: Length, breadth, depth, area and elevation above the sea at Three Rivers.
- No. 9. St. Clair Flats Ship Canal.
- No. 10. St. Mary's Falls Ship Canal.
- No. 11. Table showing the smallest locks on the several lines of Navigation; also the dimensions of the largest vessels that may pass through them.
- No. 12. Lake St. John: Length, breadth, area, elevation above sea, depth, winds, ice, &c.
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- No. 14. Statement showing number of trips, tonnage and crew of steamers which have called at Chicoutimi and at other places on the Saguenay, from 1840 to 1887 inclusively.
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- No. 17. Approximate distances from mouth of Red River down to Grand Rapids at mouth of North or Main Saskatchewan, and thence up to Fort Edmonton.
- No. 18. Remarks respecting steamers and draught of water on route between mouth of Red River and Fort Edmonton on the Saskatchewan.
- No. 19. Navigable waters: Manitoba and North-West Territories.
- No. 19½. Great Mackenzie River Region: Navigation, climate and resources.

-
- No. 20. Volume of water discharged from the River Saskatchewan, and from its north and south branches.
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- No. 23B. Discharge of the River St. Lawrence, from Sant Ste. Marie to Quebec.
- No. 24. Comparison of Ottawa and St. Lawrence routes.
- No. 25. River Mississippi.
- No. 26. Elevations of the St. Lawrence and Hudson—Bench marks, &c.
- No. 27. Montreal and Laprairie Floods, &c.
- No. 28. Elevations of St. Lawrence, Lake Champlain and River Hudson, above sea level, etc.
- No. 29. Discharge of the St. Lawrence, as measured in 1882 at Montreal.
- No. 30. Progress of Flood, Laprarie to Three Rivers, April, 1886.
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- No. 33. Notes on Opening and Closing of Navigation above Montreal, 1842 to 1853.
- No. 34. Opening of Navigation at Cascades Wharf and foot of Beauharnois Canal, 1846 to 1853.
- No. 35. Opening and closing of Navigation at Quebec, Montreal, Kingston and Toronto, 1814 to 1888.
- No. 36. Opening and closing of Navigation on the Hudson River, Champlain and Erie Canals, and the opening on Lake Erie, 1824 to 1888.
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(Ref. to 40,995.)

No. 1.—ST. LAWRENCE NAVIGATION.

DISTANCES.

FROM STRAIT OF BELLE-ILE TO DULUTH, AT HEAD OF LAKE SUPERIOR.

From	To	Sections of Navigation.	Statute Miles.	
			Inter-mediate.	Total to Strait of Belle-Ile.
Strait of Belle-Ile.....	Cape Whittle	Gulf of St. Lawrence.....	240	240
Cape Whittle.....	West Light, Anticosti.....	do	201	441
West Light, Anticosti.....	Father Point	River St. Lawrence.....	203	643
Father Point.....	Rimouski	do	6	649
Rimouski	Sic.....	do	12	661
Sic	Ile-Verte.....	do	39	700
Ile-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	8 $\frac{1}{2}$	994 $\frac{1}{2}$
Lachine	Beauharnois	Lake St. Louis	15 $\frac{1}{2}$	1,009 $\frac{1}{2}$
Beauharnois	Ste-Cécile.....	Beauharnois Canal	17 $\frac{1}{2}$	1,021
Ste-Cécile	Cornwall	Lake St. Francis.....	32 $\frac{1}{2}$	1,053 $\frac{1}{2}$
Cornwall	Dickinson's Landing	Cornwall Canal.....	11 $\frac{1}{2}$	1,065 $\frac{1}{2}$
Dickinson's Landing	Farran's Point.....	River St. Lawrence	5	1,070 $\frac{1}{2}$
Farran's Point.....	Upper end Croyle's Island.....	Farran's Point Canal	3	1,071
Upper end Croyle's Island.....	Williamsburg or Morrisburg	River St. Lawrence.....	10 $\frac{1}{2}$	1,081 $\frac{1}{2}$
Williamsburg.....	Rapide-Plat	Rapide-Plat Canal	4	1,085 $\frac{1}{2}$
Rapide-Plat	Point Iroquois Village.....	River St. Lawrence.....	4 $\frac{1}{2}$	1,090
Point Iroquois Village.....	Upper end Presqu'île	Point Iroquois Canal.....	3	1,093
Presqu'île	Point Cardinal, Edwards- burg	Junction Canal.....	2 $\frac{5}{8}$	1,095 $\frac{5}{8}$
Point Cardinal.....	Head of Galops Rapids	Galops Canal	2	1,097 $\frac{5}{8}$
Galops Rapids.....	Prescott	River St. Lawrence.....	7 $\frac{3}{8}$	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.....	Amherstburg	Lake Erie	232	1,593
Amherstburg	Windsor	River Detroit	18	1,611
Windsor	Foot of St. Mary's Island.....	Lake Ste-Claire.....	25	1,636
Foot of St. Mary's Island.....	Sarnia	River Ste-Claire.....	33	1,669
Sarnia	Foot of St. Joseph's Island.....	Lake Huron	270	1,939
Foot of St. Joseph's Island.....	Foot of Saut-Ste-Marie.....	River St. Mary.....	47	1,986
Saut-Ste-Marie.....	Head of Saut-Ste-Marie.....	Saut-Ste-Marie Canal.....	1	1,987
Head of Saut-Ste-Marie.....	Pointe-aux-Pins.....	River St. Mary.....	7	1,994
Pointe-aux-Pins.....	Duluth	Lake Superior.....	390	2,384

Of the 2,384 miles from the Straits of Belle-Ile to the Head of Lake Superior, 71 $\frac{1}{2}$ miles are artificial navigation, and 2,312 $\frac{1}{2}$ open navigation.

Strait of Belle-Ile to Liverpool, 1,942 geographical, or 2,234 statute miles.

The total ascent from tide-water to Lake Superior is now assumed to be not less than 602 $\frac{1}{2}$ feet, above tide-water at Three Rivers, and 601.78 above tide-water at New York, according to the most recent information obtained up to the 7th April, 1883.

For details respecting the various sections of rivers and canal navigation, viz.:—the intermediate and total distances; the intermediate and total rise above tide-water; the dimensions and depth of each canal, and of each lock, &c., on the St. Lawrence route of navigation and its tributaries, &c., see tabulated profiles Nos. 4, 5, 13, 14, 15, 29 of Appendix No. 36 of General Report on Public Works, 1867 to 1882.

For dates of opening and closing of navigation, see Appendix No. 19.

No. 2.—Draught of Water—St. Lawrence Navigation.

Sections of Navigation.	Minimum depth available in 1887.	Depth when work now in progress is completed. — See Remarks at No. 7.
	Feet	Feet.
Dredged Channel—Quebec to Montreal—In progress	25 to 27·5	27·5
Lachine Canal—Enlargement completed	12	14
Beaubarnois Canal—To be enlarged or another canal to be constructed on north shore opposite	9	14
Cornwall Canal—Enlargement commenced in 1876—In progress	9	14
Williamsburg Canals—Enlargement commenced in 1884—In progress ...	9	14
Murray Canal—Completed—Not on main line of navigation	10	10
Burlington Bay Canal—Not on main line of navigation	10	10
Welland Canal—Enlargement completed—Deepening to 14 ft. completed	14	14
Saut-Ste-Marie Canal—State of Michigan—Enlargement completed.....	16·8	16·8
do Canada—Survey commenced, 1887		

No. 3.—DISTANCES OF PLACES BETWEEN MONTREAL AND QUEBEC.

Measured in English Statute Miles along the centre line of the Ship Channel.

From	To	Statute Miles.	
		Inter-mediate.	Total.
Montreal Island Wharf, opp. Custom House	Longue-Pointe	6·1	6·1
Longue-Pointe	Pointe-aux-Trembles, <i>en haut</i>	4·0	10·1
Pointe-aux-Trembles, <i>en haut</i>	Varenes	3·4	13·5
Varenes	Cap St-Michel	2·8	16·3
Cap St-Michel	Verchères	5·3	21·6
Verchères	Plum Island Light	1·1	22·7
Plum Island Light	Contrecoeur Channel, upper entrance ...	6·1	28·8
Contrecoeur Channel, upper entrance	Lavaltrie	1·6	30·4
Lavaltrie	Contrecoeur Channel, lower entrance	4·8	35·0
Contrecoeur Channel, lower entrance	Lanoraie	1·3	36·3
Lanoraie	Sorel, opposite Lighthouse	8·7	45·0
Sorel, opposite Lighthouse	Ile de Grâce Light	3·8	48·8
Ile de Grâce Light	Stone Island Light	3·5	52·3
Stone Island Light	Lightship No. 1	5·2	57·5
Lightship No. 1	do No. 2	2·9	60·4
do No. 2	White Buoy	4·4	64·8
White Buoy	Lightship No. 3	6·5	71·3
Lightship No. 3	Port St. Francis	4·2	75·5
Port St. Francis	Three Rivers	6·5	82·0
Three Rivers	Bécancour, Iron Buoy at Bend	5·6	87·6
Bécancour, Iron Buoy at Bend	Champlain	6·0	93·6
Champlain	Batiscan Wharf	7·9	101·5
Batiscan Wharf	Cap Levrant	4·0	105·5
Cap Levrant	Cap à la Roche, centre of new channel ...	3·3	108·8
Cap à la Roche, centre of new channel ...	Cap Charles	2·2	111·0
Cap Charles	Richelieu Rapids	9·0	120·0
Richelieu Rapids	Platon Wharf	4·9	124·9
Platon Wharf	Ste-Croix	5·6	130·5
Ste-Croix	Ecureuils	1·5	132·0
Ecureuils	Pointe-aux-Trembles, <i>en bas</i>	7·0	139·0
Point-aux-Trembles, <i>en bas</i>	Cap-Rouge	12·0	151·0
Cap-Rouge	Quebec, Custom House Wharf	9·3	160·3

No. 4.—ST. LAWRENCE NAVIGATION.

LEVELS of River and Lakes above Tide-Water at Albany and Three Rivers, according to the following authorities:—

Sections of Navigation.	Above Tide-Water at Albany.	Above Tide-Water at Three Rivers.						
	U.S. Engineers, 1816, 1876, 1882, 1883.	Admiralty Charts, 1817, 1818, 1822, 1823.	Rubidge, 1846.	Ottawa Ship Canal Survey — Shanley, 1858.	Ottawa Ship Canal Survey — Clarke, 1859.	Department of Public Works Report, 1867.	Canal Commission Report, 1871.	Department of Public Works Report, 1882.
Albany, River Hudson.....	a. b. 0' 00	.....	.....	.....	.....	.....	.....	.....
Three Rivers, River St. Lawrence	(d)	0' 00	0' 00	0' 00	0' 00	0' 00	0' 00	0' 00
Montreal, River St. Lawrence	(e)	.....	12' 75	13' 00	12' 75	13' 25	11' 00	11' 75
Kingston, Lake Ontario.....	.....	1817. 232' 20	234' 00	.....	.....	234' 00	234' 00	240' 00
Oswego do	245' 15	.....	.....	.....	.....	.....	.....	.....
Lake Erie, Survey of 1816	564' 85	.....	.....	.....	.....	.....	.....	.....
do do 1876	571' 68	.....	.....	.....	.....	.....	.....	.....
do Report of 1882	568' 57	.....	.....	.....	.....	.....	.....	.....
do Canadian authorities	.....	1818. 564' 00	564' 00	.....	.....	564' 00	564' 00	566' 75
Lake Ste-Claire.....	.....	.....	.....	.....	.....	572' 00	568' 00	570' 75
Lake Huron.....	.....	1882. 590' 00	594' 00	.....	.....	578' 00	574' 00	576' 75
Georgian Bay, Lake Huron	.....	594' 00	594' 00	572' 00	574' 00	578' 00	578' 00	575' 75
Lake Michigan	.....	.....	.....	.....	.....	580' 00	578' 00	578' 75
Lake Superior, Saut-Ste-Marie	.....	Mean Elevation above tide-water at New York. 1823. 627' 00	.....	.....	.....	600' 00	600' 00	602' 75

REMARKS.

(a.) The tide-water at Albany signifies the mean low water, which is about one foot above extreme low water.—See telegram from Major D. L. Malloy, Deputy State Engineer and Surveyor, State of New York, No. 32,606, of 12th March, 1883.

MEAN RISE AND FALL OF TIDE AT ALBANY AND NEW YORK.

(b.) According to a telegram received 23rd April, 1883, from John G. Parke, Acting Chief of Engineers at Washington, U. S., the mean rise and fall of the tide at Governor's Island, Harbour of New York, is 4' 40 feet, and at Albany it is 2' 32 feet.—See No. 33,865.

DECLIVITY OF THE RIVER HUDSON FROM ALBANY TO NEW YORK.

(c.) According to a letter dated Washington, U. S., 1st May, 1883, from Richard D. Cutts, Assistant in charge of United States Coast and Geodetic Survey Office, the difference of level during low water, between Governor's Island, Harbour of New York, and Albany, or the total declivity between the two places, is 4' 27 feet. See No. 34,047. See Remarks d, e, f, next page.

No. 5.—THREE RIVERS TO MONTREAL.

ELEVATION above the lowest tide-water observed at Three Rivers, as established by levels taken during the construction of the North Shore Railway, 1876 to 1879, and in February, 1883.

Designation.	Datum— North Shore Railway, Montreal and Quebec.	Rise.	
		Inter- mediate.	Above low water, Three Rivers.
Lowest water observed at Three Rivers by R. Steckel, up to 18th September, 1881.....	d 39 55	d 0-00	d 0-00
Top of S. E. corner Richelieu Co.'s wharf at Three Rivers.....	56 55	17-00	17-00
Bench mark, top of railway bridge, River St. Maurice, 2 miles up stream.....	90-00	33-45	50-45
Bench mark, top of railway bridge, Terrebonne.....	81-17	8-83	41-62
Top of coping, old entrance Lock No. 1, of Lachine Canal, Montreal, distance from railway bridge, Terrebonne, about 19 miles.....	67-19	13-98	27-64
Lowest water recorded at Montreal since September, 1852; on 8th-9th November, 1879, and 6th October, 1881, at foot of Lachine Canal, old Lock No. 1.....	e 51-28	e 15-91	e 11-73
Top of lower mitre-sill of old Lock No. 1, at foot of Lachine Canal, Montreal.....	35-86	Depth water on lower sill, Lock No. 1. e 15-42	—3-69
Low water level adopted by Harbour Commissioners at present: Depth on mitre-sill, 16½; previous low-water level Harbour Commissioners: on mitre-sill, 17; summer water datum of the Montreal Water Works: on mitre-sill, 19.....		Height above lower sill of Lock No. 1.	
Top of coping, old Lock No. 1, above lower mitre-sill.....	67 19	31-33	27-64
Flood level of highest water above Victoria Bridge, April, 1858	79 61	43-75	40-06
Summer water of Flats of Lake St. Peter, 18-50 feet: corresponds to a depth of 17 feet on the lower mitre-sill of Lock No. 1, Montreal.			

REMARKS—Continued.

See preceding table No. 4. St. Lawrence Navigation.

(d) The tide-water at Three Rivers is the lowest water recorded up to 19th September, 1871. It is 17 feet below the bench mark on the south-east corner of the wharf of the Richelieu and Ontario Company at Three Rivers. See memoranda, dated 21st February, 1883, No. 33,687.

(e) The elevation of low water surface, say 11-73 feet, at Montreal, above tide-water at Three Rivers, represents a depth of 15-42 feet of water on top of the mitre sill of Old Lock No. 1, at foot of Lachine Canal.

(f) The mean elevation of Lake Superior, above the sea, refers to the level of the mean tide at New York. See telegram from Major Farquhar, Engineer, dated Detroit, 7th April, 1883, No. 33,363.

See tables Nos. 26, 27, 28, according to more recent data obtained up to 1888.

No. 6.—HARBOURS OF THREE RIVERS AND MONTREAL

High and low water levels referred to tide-water at Three Rivers and to top of lower mitre-sill old Lock No. 1, at foot of Lachine Canal, Montreal.

Designation.	Datum— Montreal Harbour Engineers.	Datum— North Shore Railway Engineers.	Above top of lower-mitre sill of old Lock No. 1, Lachine Canal, Montreal.	Elevation above tide-water, Three Rivers
Lowest water observed at Three Rivers, 19th September, 1881	84.69	39 55	3.69	0.00
Top of lower mitre sill, old Lock No. 1, at lower entrance of Lachine Canal	81 00	35.86	0.00	-3.09
Lowest water observed at Montreal, from September, 1854, to 8th-9th November, 1879, and to 8th October, 1881.....	96.42	51.28	15.42	+11.73
Low water Montreal Harbour, as lately adopted by Harbour Commissioners.....	97.50	52.36	16.50	+12.81
Low water, Montreal Harbour, as previously adopted	98.00	52.86	17 00	+13.31
Summer water datum of Montreal Water Works— T. O. Keefer	100.00	54.86	19.00	+15.31
Level of coping of old Lock No. 1.....	112.33	67.19	31.33	+27.64
Flood level of highest water above Victoria Bridge, April, 1858	124.75	79.61	43.75	+40.06
Ordnance bench mark on ramp of revetment wall in front of the Bonsecours Market— Per Engineers or Shearer scheme	119.63	74.49	38.63	+34.94
Per John Sutcliffe, C.E.....	119.61	74.47	38.61	+34.92
Per Montreal Harbour Engineers.....	119.57	74.43	38.57	+34.88

No. 7.—ST. LAWRENCE NAVIGATION.

REMARKS respecting dredged channel between Quebec and Montreal, and the draught of water through the Canals on the main line of the St. Lawrence Navigation.

DREDGED CHANNEL BETWEEN QUEBEC AND MONTREAL.

The deepening of the ship channel between Montreal and Quebec to 25 feet at low water, was completed in 1882. By the Act 46 Vic., chap. 38, assented to on 25th May, 1883, authority was given to raise the sum of \$900,000 to continue the dredging to a depth of 27½ feet. Dredging was commenced by the Montreal Harbour Commissioners on the 18th June, 1883, and has been vigorously carried on up to the present time, except for the necessary interruption during winter. A description of the work will be found in Appendix No. 9. The width of the dredged portions of the channel varies from 350 to 450 feet. By the Act 51 Vic., chap. 5, 22nd May, 1888, the channel debt and works were assumed by the Federal Government.

CANALS—RIVER ST. LAWRENCE ROUTE.

When the enlargement of the canals was decided upon in 1871, the scale of navigation of the St. Lawrence route was throughout fixed at an available depth of 12 feet of water. This was authorized to be carried out in 1873.

In 1875, strong representations were made of the desirability of deepening the various channels for the passage of vessels drawing 14 feet of water.

This was assented to by the Government, and orders were accordingly given to place the foundations of all permanent structures, on those parts of the works not then under contract, at a depth corresponding to 14 feet of water on the mitre sills of the locks.

The orders thus given, applied to all the principal works on the main line of navigation between Lake Erie and the City of Montreal.

The locks on the enlarged canals throughout, are to be 275 feet long between the gates, 45 feet in width, and, when completed, are to have a depth of 14 feet of water on the sills.

This will enable vessels of almost any ordinary build to pass, carrying fully one thousand tons burden; but as the tendency seems to be towards increasing the breadth of beam and sectional area of freight vessels, it is probable that the canals will ere long be navigated by a class of vessels capable of carrying fully 1,500 tons.

For preceding and further details, see pages 4 and 5, Report of John Page, Chief Engineer of Canals, dated 16th February, 1880, published the same year.

When navigation was opened in 1887, the deepening of the Welland Canal was to be completed, to a depth of 14 feet, from Allanburg downward, the whole width of about 120 feet, and on the summit level, westward to only half width, say 60 feet; the deepening throughout, to the full width, was to be completed 1st November, 1887. The first vessel of 14 feet draught passed through the canal, 26th May, and the enlargement was completed towards December, 1887.

SAUT STE. MARIE CANAL.

According to a telegram, No. 33,238, dated 5th April, 1883, from Major Farquhar, Engineer in charge of this work, the maximum lift of the new lock of the enlarged canal is 18.6 feet, and the minimum lift 16.8 feet.

No. 8.—LAKE NAVIGATION.
LAKE SUPERIOR TO TIDE WATER.

Names of Lakes, and of Rivers connecting the same.	STATUTE MILES.			DEPTH IN FEET.		Area in Square Miles.	Elevation above Sea, at Three Rivers.
	Greatest Length.	Greatest Breadth.	Average Breadth.	Greatest.	Mean.		
Superior	390	160	80	.....	900	32,000	602½
St Mary's River	35	4	1	.....	60	30	584½
Michigan	345	84	58	.....	1,000	22,400	578½
Green Bay	100	25	18	.....	500	2,000	578½
Mackinaw Straits	{ Not added below }		20	10	200	40	578½
Georgian Bay	130	55	40	.....	500	.....	576½
Huron	270	105	70	.....	900	23,000	576½
Ste-Claire River	33	.....	.....	50	35	.....	.....
Ste-Claire Lake	25	25	20	27	15	360	570½
River Detroit,	25	3	1	37	20	.....	.....
Lake Erie	250	60	38	204	90	10,000	566½
Niagara River	35	3	1	.....	30	.....	.....
Lake Ontario	190	52	40	600	412	6,700	240
Lake St. Francis	38	5	4	80	36	132	142
Lake St. Louis	15	7	5	68	30	75	58
Lake St. Peter	30	9	7	40	8	200	0
River St. Lawrence, connecting Lakes between Kingston and Three Rivers	186	.....	.....	.....	20	.....	.....
Total length of Lake Navigation do do ...	2,112	Inclusive of River portions			96,877		.....
	1,778	Exclusive of River portions .....			.....		.....

N.B.—For elevation above the sea, refer to corrected table No. 28.

No. 9.—ST. CLAIR FLATS SHIP CANAL, MICHIGAN, U. S.

This canal was projected in 1866, with a view to obtaining a straight channel across St. Clair Flats, 13 feet deep, 300 feet wide, and provided on each side with a dike 7,300 feet long. The dikes to consist of timber cribs resting upon piles driven into the original bottom of the shoal, and filled with materials dredged from the channel between them, each dike being protected on both sides by sheet-piling.

The project was modified in 1874, so as to deepen the channel to a depth of 16 feet, and width of 200 feet. The work was completed in 1881, at a cost of \$591,544.09.

No. 10.—ST. MARY'S FALLS SHIP CANAL, U. S.

This canal, which overcomes the rapids in the St. Mary's River, connecting the waters of Lakes Huron and Superior, is situated in the State of Michigan, and was first projected in 1837. The canal was not, however, commenced until 4th June, 1853, and the first boat passed through the old canal on 18th June, 1855. Cost of old canal to 14th May, 1885, \$999,802.46. In 1870, the enlargement of the canal was commenced, and it was opened to navigation on 1st September, 1881, but not completed till 1882, up to which time the cost of the enlargement had been \$2,405,000. The upper reach of the enlarged canal is 5,500 feet long; least width 108 feet; width at upper entrance, 500 feet. The new lock of the enlarged canal is 515 feet long between gates, 80 feet wide in chamber, 60 feet wide at the gates, with 16 feet depth of water on sills during mean low water; total lift varies from 16½ to 18 feet. The two old locks at the foot of the canal were each 350 feet long, 70 feet wide at top, 61 feet wide at bottom of chamber, 70 feet wide between gates, with 12 feet depth of water on sills. They are now being removed to make room for the proposed new lock described further on, with a depth of 21 feet on the sills and 20 feet in canal.

Years.	Gross Receipts.	Tonnage.	No. of Sail Vessels.	No. of Steamers.	No. of Passages.	Opened.	Closed.
	\$ cts.						
1855.....	4,374 66	106,296	.....	.....	.....	June 18...	Nov. 23
1856.....	7,575 78	101,458	.....	.....	.....	May 4...	do 28
1857.....	9,406 74	180,820	.....	.....	.....	do 9...	do 30
1858.....	10,848 80	219,819	.....	.....	.....	April 18...	do 20
1859.....	16,941 84	352,642	.....	.....	.....	May 3...	do 28
1860.....	24,777 82	403,687	.....	.....	.....	do 11...	do 26
1861.....	16,672 16	276,639	.....	.....	.....	do 3...	do 14
1862.....	21,607 17	359,812	.....	.....	.....	April 27...	do 27
1863.....	30,574 44	507,434	.....	.....	.....	do 28...	do 24
1864.....	34,287 31	571,438	1,045	366	1,411	May 2...	Dec. 4
1865.....	22,339 64	409,062	602	395	997	do 1...	do 3
1866.....	23,069 54	458,530	555	453	1,008	do 5...	do 3
1867.....	33,615 54	556,898	839	466	1,305	do 4...	do 3
1868.....	25,977 14	432,563	817	338	1,151	do 2...	do 3
1869.....	31,579 96	524,884	939	399	1,388	do 4...	Nov. 29
1870.....	41,896 43	690,825	1,397	431	1,828	April 29...	Dec. 1
1871.....	33,865 45	752,100	1,064	573	1,637	May 8...	Nov. 29
1872.....	41,432 44	914,735	1,212	792	2,004	do 11...	do 26
1873.....	44,943 18	1,204,445	1,549	968	2,517	do 5...	do 18
1874.....	36,922 97	1,070,857	883	901	1,734	do 12...	Dec. 2
1875.....	41,189 04	1,259,533	569	1,464	2,083	do 12...	do 2
1876.....	46,867 20	1,541,676	684	1,733	2,417	do 8...	Nov. 26
1877.....	44,351 43	1,439,215	1,401	1,050	2,451	do 2...	do 30
1878.....	49,437 00	1,667,136	1,091	1,476	2,587	April 8...	Dec. 3
1879.....	41,385 63	1,677,071	1,403	1,618	3,121	May 2...	do 3
1880.....	44,552 78	1,734,890	1,718	1,735	3,503	April 28...	Nov. 15
1881.....	Collection of	2,092,757	1,706	2,117	4,004	May 7...	Dec. 5
1882.....	tolls discon-	2,468,088	1,663	2,739	4,774	April 21...	do 3
1883.....	tinued, June	2,042,259	1,458	2,620	4,315	May 2...	do 11
1884.....	9, 1881.	2,997,837	1,710	3,608	5,689	April 23...	do 10
1885.....	.....	3,035,927	1,689	3,354	5,380	May 6...	do 3
1886.....	.....	4,219,397	2,534	4,584	7,424	April 25...	do 4
1887.....	.....	4,897,598	2,562	5,968	9,355	May 1...	do 3

Until the 9th June, 1881, the canal was owned and operated by the State of Michigan, the tolls collected being applied to defray the operating expenses. At 9 a.m. on that day the ownership and control were transferred to the United States, and thereafter the canal was free.

The tonnages given in the table are to be understood as "registered tonnage." The "freight" tonnages differ considerably from this column, but it is only since the canal passed under control of the United States that a distinction between the two has been made in the canal records.

In addition to those enumerated under the heads "Sail Vessels" and "Steamers," the column "No of Passengers" includes all passages of the canal by rafts and other unregistered craft.

In 1879 the number was.....	100
1880 do	50
1881 do	181
1882 do	372
1883 do	237
1884 do	371
1885 do	337
1886 do	306
1887 do	825

A change in the laws, prescribing the manner of computing the tonnage for register, went into effect in 1883, the result being to reduce the amount of registered tonnage below that of 1882, while, as a matter of fact, the actual tonnage ("freight tonnage") passing the canal in 1883 exceeded that of 1882 by 237,585 tons, and in 1884 there was a further excess of 605,898 tons, thus:—

1882 Registered tonnage, 2,468,088.	Freight tonnage, 2,029,520
1883 do 2,042,259.	do 2,267,105
1884 do 2,997,837.	do 2,873,003
1885 do 3,035,937.	do 3,256,628
1886 do 4,219,397.	do 4,527,759
1887 do 4,897,598.	do 5,494,649

By the United States River and Harbour Act of 5th August, 1886, the sum of \$250,000 was appropriated for "Improving Saint Mary's River, Michigan; continuing improvement by a new lock and approaches." Under this Act, the project approved by the War Department has in view the construction of a single lock of 18 feet lift, 800 feet long between hollow quoins, 100 feet wide (with gates of the same width), and having 21 feet of water on the mitre-sills, to occupy the site of the two locks built in the original construction of the canal (1855). The prism of the canal is to be deepened sufficiently to give at least 20 feet of water through it.

See letters from Brig. Genl. Poe, U.S.A., Nos., 63,286, 72,698 and 83,150, the latter dated 8th Dec., 1887.

Another canal is to be constructed on the Canadian shore, opposite, by the Federal Government. The survey for its location is in progress, 1887.

No. 11.—TABLE showing the smallest locks on the several lines of navigation; also the dimensions of the largest vessels which may pass through them.

Name of Canal.	Dimensions of Lock in Feet.			Dimensions of Vessels in Feet.			Tonnage of Vessels.
	Length.	Breadth.	Depth of Water on Sills.	Length.	Breadth.	Draught of Water when Loaded.	
Lachine	270	45	12	250	44	12	1,000
Beaubarnois	200	45	9	180	44	9	700
Cornwall	200	55	9	180	54	9	750
Williamsburg	200	45	9	180	44	9	700
Welland	270	45	12	250	44	†14	1,000
St. Ours Lock	200	45	7	180	44	7	600
Chambly	118	23½	7	110	23	6½	230
Rideau	134	33	5	120	21½	4½	250
Ste-Anne	200	45	9	180	44	9	700
Carillon	200	45	9	180	44	9	700
Grenville	200	45	9	180	44	9	700
Culbute	200	45	6	180	44	6	550
St. Peter's	200	49½	18	199	49	17½	1,000
River Trent	131	32½	4½				
<i>United States Canals.</i>							
Erie	110	18	7	102	17½	6½	220
Champlain	100	18	5	92	17½	4½	80
Saut-Ste-Marie (new)	515	80	16	490	55	16	To pass several vessels.
do (old)	350	70	12	320	67	12	2,000
do (proposed new)	800	100	21	.....	100	19	

† Welland Canal deepened throughout to 14 feet; work completed towards end of 1887.

For details respecting the various canals, see tabulated profiles Nos. 4, 5, 12, 13, 14, 15 and 29, of Appendix No. 30, in General Report of Public Works, 1867 to 1882.

No. 12.—LAKE ST. JOHN.

The lake is about 100 statute miles on an air line from Quebec; 41½ statute miles, by the shortest road, from Chicoutimi, and 110.97 statute miles from Tadoussac, *vid* the Petite Décharge and the River Saguenay.

- Greatest length from Belle-Rivière, near foot of lake and at its south-east end, up to outlet of River Mistassini, at the north-west end, or towards head of lake..... 27½ statute miles.
- Greatest width across the lake from outlet of the River Péribonca to the outlet of the River Ouïatchouan, or from north to south along the meridian..... 20 statute miles.
- Width on meridian across centre of lake..... 17½ statute miles.
- Contour of lake, per map of 1880, by Commissioner of Crown Lands, Quebec..... 85 statute miles.
- Area of lake, per E. E. Taché, Deputy Commissioner of Crown Lands, Quebec..... 365.40 miles.

Elevation of lake above the sea, according to report of A. L. Light, Chief Engineer Government Railways, Quebec, dated 8th March, 1881.....	278 feet.
Elevation of lake above the sea, per map of 1880.....	300 feet.
Elevation of lake above the sea, per Richardson, at mouth of Ashuapmouchouan, in June, 1870.....	293 feet.
Depth of lake is said to vary generally from 3 feet at one mile from shore, to 12 and 54 feet at $1\frac{1}{2}$ to 3 miles from shore, and to 60 feet towards the middle of the lake.....	3 to 60 feet.

See Note S, Part III, Appendix No. 8, of General Report on Public Works, 1867 to 1882.

Bouchette, in his Topographical Dictionary, represents the depth of the lake as being 240 feet at centre.

In 1884, Mr. Joseph Ross, the Engineer in charge of the Saguenay District Works, having been instructed to ascertain the depth of the lake towards its centre, states, in a letter addressed to the Deputy Minister of Public Works, under date 18th June, 1884, that the greatest depth he found is 225 feet; and that the mean depth is from 72 to 90 feet in the deepest part of the lake. See his official report, 14th January, 1885, in No. 56,373, containing a map with his soundings taken in June, 1884.

In spring, the waters of the lake rise from 15 to 34 feet above its winter level in the course of 15 days. In June, it generally rises from 12 to 18 and sometimes to 30 feet.

In autumn, they rise 3 to 4 feet, suddenly, during high winds, but only for periods of short duration.

The spring floods retard the cultivation of considerable tracts of land around the lake, and have been the subject of great complaint.

In a letter, No. 10,666, of 29th December, 1880, from his Lordship D. Racine, Bishop of Chicoutimi, to Sir Hector L. Langevin, Minister of Public Works, it is stated that the outflow from the lake is much diminished by the Government slide and dams, at the head of the Petite Décharge, wherefore he requests the Government to improve the other outlet, called the Grande Décharge.

This request was assented to, and the improvement was proceeded with, from year to year, until it was decided to discontinue it, in 1888.

Hydrographic Survey.

A hydrographic survey of Lake St. John, was commenced, by order of the Minister of Public Works, towards the beginning of July, 1883, in connection with its proposed improvement for purposes of navigation. It was discontinued before winter, owing to the want of funds. It was afterwards continued in 1885-1886 by Thos. Guerin, C.E., who reported on the discharge from the lake, but did not sound it.

Winds.

The north-westerly and south-westerly winds are those to which the lake is most exposed.

Ice.

Ice begins to form in November, and the lake is afterwards frozen over so that it can be travelled upon with safety, with heavy loads, after the 10th of December. Ice begins to disappear along the borders of the lake towards the middle of April. The whole of the lake is free from ice towards the 12th of May.

Bed of Lake.

The bed of the lake, according to Sir William Logan and Mr. Richardson, one of his assistants, consists of limestone, which crops out on the western shore.

A full description of the geological features of the Lake St. John region will be found in the Report of the Geological Survey of Canada, from its commencement to 1863, the year of its publication. See extracts in Note H, Part III, Appendix No. 8, of General Report on Public Works, 1867 to 1882.

For further details respecting climate, soil, forests, settlement, &c., Lake St. John and Saguenay regions, see Appendix No. 8, General Report on Public Works, 1867 and 1882.

Overflow of Lake St. John.

Mr. Thos. Guerin, one of the Engineers of the Department of Public Works, who has devoted many years to the investigation of questions connected with hydraulics, was instructed, in 1885, to ascertain the quantity of water supplied to the lake by its tributaries, in order that a remedy may be suggested for diminishing the overflow, and the consequent inundation of the fertile lands around Lake St. John.

His survey was completed during the autumn of 1886, excepting the sounding of the lake.

See Report No. 76,431, dated 12th April, 1887.

No. 13.—RIVER ROUTE.

FROM Tadoussac, near the mouth of the River Saguenay, to the upper end of Lake St. John, as measured on the Admiralty Chart corrected up to 1871, and on the Map published by the Department of Crown Lands in Quebec, in 1880.

Names of Places.	DISTANCE IN MILES.		On which side of River Saguenay.	Depths at centre of River Saguenay during Low Tide.	Anchorage	Remarks.
	Perprinted Sailing directions.	Per Chart.				
	Nautical.	Statute.				
Tadoussac	0-00	0-00	On N. E. shore...	Fathoms.	Anchorage	Hills in rear 400 feet high.
Anse-à-l'Eau	0-50	0-58	do	104	do	Hills in rear 1,080 feet high.
Anse-à-la-Barque	1-00	1-27	do	88	do	do
St-Etienne Bay and River	10-50	9-00	On S. W. shore...	100	do	do
St-Marguerite River	13-00	10-35	On N. shore...	60	do	do
Iles-St-Louis (lower end)	17-00	14-95	km. from S. shore	72	do	do
Iles-St-Louis (upper end)	18-00	17-14	Near N. shore...	90	do	do
River Petit-Saguenay	18-50	18-98	On S. shore...	90	do	do
Anse-St-Jean and River	24-00	21-78	do	118	do	do
Cape Eternity Cove	30-00	28-50	On S. W. shore...	146	do	Hills in rear, of silentic granite, 1,500 feet high.
Trinity Point	36-00	32-78	On N. shore...	145	do	do
Tableau	43-00	40-25	On S. shore...	142	do	do
Descente-des-Femmes	47-50	46-23	On N. shore...	118	do	do
Cap-à-l'Est	47-00	51-75	do	118	Anchorage	Hills of silentic granite and gneiss.
Midway between	46-60	48-00	do	80	do	do
Cap-à-l'Ouest	55-00	53-59	In channel.....	80	do	Opposite Cap-à-l'Ouest.
Foot of Baie-des-Ha! Ha!	57-00	60-26	On W. shore	5 near shore	do	do
Petite-Ilets	57-00	56-50	On N. shore	60	do	do
Pointe-aux-Roches	61-93	63-25	do	3 1/2	do	do
Chicoutimi	62-80	71-22	On S. shore	2	do	do
River Chicoutimi	67-15	72-22	On N. shore	2 to 1	do	do
Riv.-des-Vases, Terres-Rompues	68-02	77-22	do	No soundings....	Tide ends.	From Chicoutimi up to Terres Rompues the breadth of the river varies from 4-tenths to 3, 2 and 5-tenths of a statute mile in width.
River Shipshaw	69-76	80-22	On S. shore.....	do	do	From Terres-Rompues up to Lake St. John the river is interrupted by numerous rapids.
Rivière-aux-Sables	73-02	83-97	On N. shore.....	do	do	do
Grand-Remous or Township line of Kinogami or Rivière des Aulnates						

River Duclou	76 50	87-87	.....	.....	.....	.....	No soundings	.....
River Gervais	82 58	94-97	.....	.....	.....	do	do	.....
Junction of Grande and Petite-Décharges	86 28	99-22	.....	.....	.....	do	do	.....
Mouth of Petite-Décharge, at foot of Lake St. John	96 50	110 97	0 50	0 58	N.E. end of Lake	do	do	In a westerly direction, at E. end of Lake St. John.
Mouth of Grande-Décharge, at foot of Lake St. John	97 58	112-22	1 00	1 16	do	do	do	In a N.W. direction, at E. end of Lake St. John.
River Mistassini, <i>via</i> Grande-Décharge	119 32	137-22	0 65	0 75	N.W. end of Lake	do	do	On a direct line across Lake to its western or upper end.
River Mistassini, <i>via</i> Petite-Décharge	118 02	135-72	.....	.....	do	do	do	.....
River Peribonca, <i>via</i> Petite-Décharge	113 45	130-47	0 87	1 00	Most northerly shore of Lake.	do	do	.....
River Ohomouchouan <i>via</i> Petite-Décharge	118 23	135 97	0 44	0 50	S.W. end of Lake	do	do	.....
River Ouitchouan, <i>via</i> Petite-Décharge	113 02	129 97	.....	.....	On S. shore	do	do	.....
River Metabetchouan, <i>via</i> Petite-Décharge	107 60	123-97	.....	.....	do	do	do	.....

NOTE.—The distances measured on the Admiralty Chart are correct. The distances given by the sailing directions in the St. Lawrence Pilot, published in 1880, from St-Etienne Bay to Chicoutimi, appear to include 1½ miles from Tadoussac down to the mouth of the Saguenay.

No. 14.—STATEMENT showing the number of Trips, Tonnage and Crew of Steamers which have called at Chicoutimi, and other places on the Saguenay, from 1840 to 1887, inclusively.

Year.	Number of Trips.	Tonnage.	Crew.	Steamers.
1840.....	2	524	40	Unicorn.
1841.....	1	262	20	do
1842.....	1	250	20	North America.
1843.....	5	1,830	120	do and Alliance.
1844.....	4	1,165	90	Alliance.
1845.....	5	861	95	Pocahontas.
1846.....	6	1,128	112	Lady Colborne.
1847*.....				
1848.....	3	1,820	60	Alliance.
1849.....	9	1,035	135	Rowland Hill.
1850.....	9	1,035	135	do
1851.....	9	1,035	135	do
1852.....	9	1,035	135	do
1853.....	15	2,145	225	Saguenay.
1854.....	15	2,145	225	do
1855.....	15	2,145	225	do
1856.....	15	2,145	225	do
1857.....	15	2,145	225	do
1858.....	15	2,145	225	do
1859.....	15	2,145	225	do
1860.....	15	2,145	225	do
1861.....	19	5,320	570	Magnet.
1862.....	19	5,320	570	do
1863.....	19	5,320	570	do
1864.....	21	5,880	630	do
1865.....	21	5,880	630	do
1866.....	31	8,505	930	do and Champion.
1867.....	54	27,706	2,085	do and Union.
1868.....	42	19,880	1,560	do do
1869.....	77	36,593	2,255	do do
1870.....	84	39,526	2,395	Advance, St. George, Magnet, Union and Clyde.
1871.....	89	41,568	2,585	do do
1872.....	80	30,155	1,630	Union and Clyde.
1873.....	14	6,100	280	} St. George, Clyde, Union, Saguenay.
1873.....	91	77,298	2,730	
1874.....	81	71,148	2,400	Saguenay, Union, St. Lawrence.
1875.....	88	76,666	2,640	do do
1876.....	90	81,115	2,700	do do
1877.....	96	82,356	2,880	do do
1878.....	106	92,861	3,180	do do
1879.....	78	72,929	2,340	do and St. Lawrence.
1880.....	77	73,985	3,250	do do
1881.....	100	69,598	3,500	do Union, St. Lawrence [and] Chicoutimi.
1882.....	67	66,959	2,880	do and St. Lawrence.
1883.....	78	70,256	3,120	do and Union.
1884.....	85	70,095	3,400	do do
1885.....	78	60,337	3,110	St. Lawrence, Union and Druid.
1886.....	106	68,193	4,457	do do Magnet.
1887.....	72	37,706	3,240	do do do

* In 1847 steamers were engaged conveying immigrants from Grosse-Ile to Montreal.

See No. 83,068, dated 5th December, 1887, from A. Gaboury, Secretary of the St. Lawrence Steam Navigation Company, Quebec.

N.B.—Between 1840 and 1860 the steamers Admiral, Lord Sydenham, Princess Royal, Dorchester, Lady Elgin and Mayflower also made a few trips to Ha! Ha! Bay with passengers and freight.

No. 15.—STATEMENT of Sea-going Vessels which have loaded at and left the Ports of the Counties of Chicoutimi and Saguenay, from 1840 to 1887, inclusively, showing Number of Vessels, their Tonnage and Crew, for each year and each Port.

Year.	Chicoutimi.			Tadoussac.			Les Escumains.			Saut-au-Cochon.		
	No. of Vessels.	Tons Register.	Crew.	No. of Vessels.	Tons Register.	Crew.	No. of Vessels.	Tons Register.	Crew.	No. of Vessels.	Tons Register.	Crew.
1840.....												
1841.....												
1842.....												
1843.....												
1844.....												
1845.....												
1846.....												
1847.....												
1848.....												
1849.....												
1850.....												
1851.....												
1852.....	45	19,908	617									
1853.....	23	10,478	329									
1854.....	23	13,738	358									
1855.....	9	5,771	160									
1856.....	26	12,235	285									
1857.....	21	13,480	324									
1858.....	13	8,749	232									
1859.....	28	14,534	406									
1860.....	31	15,583	475									
1861.....	31	21,999	541									
1862.....	13	10,758	263									
1863.....	21	12,244	310									
1864.....	19	12,395	310									
1865.....	18	14,767	885									
1866.....	28	19,812	533									
1867.....	13	7,592	174									
1868.....	17	12,201	304									
1869.....	25	17,215	383	18	11,275	254	8	8,215	248			
1870.....	15	11,355	243	6	4,926	101						
1871.....	15	11,614	242	4	2,067	50						
1872.....	34	22,077	494	1	531	12						
1873.....	31	19,826	458	3	1,718	38						
1874.....	44	25,270	620	7	3,170	79	6	3,127	76	1	498	14
1875.....	34	17,268	442	5	2,021	57	1	654	14	6	3,275	77
1876.....	28	15,682	379	3	776	29	5	1,214	61	3	1,454	36
1877.....	27	18,093	398	5	3,215	73	1	271	91	8	4,441	101
1878.....	34	23,375	505	7	2,735	77	5	1,752	59	8	3,745	102
1879.....	34	18,160	420	6	2,583	67				5	3,631	73
1880.....	42	23,907	543	4	1,855	48	7	2,578	80	10	4,494	117
1881.....	34	19,584	431	8	4,104	96	8	3,971	104	7	3,777	85
1882.....	29	17,614	372	2	1,149	26	7	3,424	92	5	2,994	62
1883.....	36	20,831	452	4	2,306	52	4	1,729	36	10	4,512	115
1884.....	33	17,058	384	3	2,007	43	11	5,256	135	7	3,298	81
1885.....	36	21,946	428	6	2,326	59	2	789	20	8	4,250	95
1886.....	26	13,576	289	14	7,353	147	2	1,140	21	10	4,415	94
1887.....	22	14,424	286	14	7,713	148	2	1,180	24	7	3,678	58

See No. 83,059, dated 5th December, 1887, from Hon. J. G. Blanchet, Collector of Customs, Quebec. For further details see Appendix No. 8, General Report on Public Works, 1867-1882.

No. 16.—RIVER ST. LAWRENCE AND DAWSON ROUTE.

No. 5.—From Strait of Belle-Ile to Port Arthur (Prince Arthur's Landing) on north shore of Lake Superior, and thence to Winnipeg.

From	To	Sections of Route.	Statute Miles.	
			Inter- mediate	Total to Strait of Belle-Ile.
Strait of Belle-Ile.....	Quebec.....	Gulf and River St. Lawrence	826	826
Quebec.....	Foot of Saut-Ste-Marie.....	Rivers and Lakes on the St Lawrence.....	1,160	1,986
Foot of Saut-Ste-Marie..	Head of Saut-Ste-Marie.....	Saut-Ste-Marie Canal.....	1	1,987
Head of Saut-Ste-Marie..	Pointe-aux-Pins.....	River St. Mary.....	7	1,994
Pointe-aux-Pins.....	Port Arthur.....	Lake Superior.....	270	2,364
Port Arthur.....	Lake Shebandowan.....	Dawson Route, by land.....	45	2,309
Lake Shebandowan.....	Foot of Rainy River.....	Dawson Route, by chain of lakes and portages.....	192	2,501
Foot of Rainy River.....	Head of Rainy River.....	Dawson Route, by Fort Frances Canal.....	$\frac{1}{2}$	2,501 $\frac{1}{2}$
Head of Rainy River.....	North-West Angle of Lake of the Woods.....	Dawson Route, by Rainy River and Lake of the Woods.....	119 $\frac{5}{8}$	2,621
North-West Angle of Lake of the Woods.....	Fort Garry, Winnipeg.....	Dawson Route, by land.....	96	2,716

The steamboat voyage from Collingwood to Port Arthur is..... 530 Statute miles.

Length of Dawson Route, chain of lakes and portages, from Port Arthur

to Fort Garry, Winnipeg..... 452 do

Canadian Pacific Railway, from Port Arthur to Winnipeg..... 430 do

For details respecting route between Lake Superior and the Red River at Fort Garry (Winnipeg), see Reports of S. J. Dawson, C.E., dated 20th April, 1868, and 1st May, 1869, printed by order of the House of Commons of Canada, in 1838 and 1869.

Three powerful Clyde built steamships, lighted by electricity, the "Algoma," "Alberta" and "Athabaska," were placed on the route from Owen Sound, Lake Huron, through the Saut-Ste-Marie Canal, to Port Arthur, Lake Superior, by the Canadian Pacific Railway Company in 1834.

One of these steamships, the "Algoma," a propeller of about 1,153 net tons, was destroyed on 7th November, 1885, during a snow storm and gale, on Lake Superior, when on her voyage from Owen Sound, Lake Huron, to Port Arthur, Lake Superior. She stranded on the south shore of Ile-Royal through an error in judgment, it appears. Thirty of the crew and eight passengers were lost; twelve of the crew and two passengers were saved. The trim of the vessel is given as 7 ft. 2 in. forward and 13 ft. 4 in. aft. when the accident occurred. The steamship was valued at \$235,000, exclusive of the cargo, \$17,000.

No. 17.—TABLE of approximate distances between various points, from Mouth of Red River, at Head of Lake Winnipeg, down to Grand Rapid, at Mouth of the North or Main Saskatchewan, towards foot of Lake, and thence along the Saskatchewan up to Fort Edmonton, as per maps published in 1878, 1880, &c.

Names of Localities.	Inter- mediate distances	Total distances from Mouth of Red River.
	Miles.	Miles.
<i>Lake Winnipeg.</i>		
1. Mouth of Red River to Mouth of Saskatchewan, or from Head of Lake Winnipeg down to Grand Rapid towards Foot of Lake.	260	260
<i>North or Main River Saskatchewan.</i>		
2. Mouth of Saskatchewan, on Lake Winnipeg, at Grand Rapid up to Foot of Cedar Lake.....	20	
3. Foot to Head of Cedar Lake.....	30	
4. Head of Cedar Lake to Cumberland House.....	115	
5. Cumberland House to Tobin's Rapids.....	52	
6. Tobin's Rapids to Fort à la Corne.....	92	
7. Fort à la Corne to Forks, North and South Saskatchewan.....	14	
8. Forks of Saskatchewan to Cole's Rapid.....	9	
9. Cole's Rapid to Carlton House.....	71	
10. Carlton House to Battleford, on original Pacific Railway Line.....	110	
11. Battleford to Fort Pitt.....	95	
12. Fort Pitt to Fort Saskatchewan.....	185	
13. Fort Saskatchewan to Fort Edmonton.....	20	
		813
Total from Mouth of Red River to Fort Edmonton, at about 30 miles above intersection of original Pacific Railway Line.....		1,073

See pages 392 to 395, Note A, Appendix No. 8 of General Report on Public Works, 1867 to 1882.

No. 18.—REMARKS.

The navigation between the mouth of Red River and Fort Edmonton is performed by three steamers of the Hudson Bay Company, one of which plies between Red River and Grand Falls, near Lake Winnipeg. These falls are impassable for vessels. Here the company has built a tramway, about four miles in length, to overcome the falls, which involves the transshipment of passengers and freight.

A second steamer runs from the head of the falls to Carlton House, say 400 miles.

A third steamer completes the journey, thence to Fort Edmonton, 410 miles.

The entire journey of 1,073 miles is said to occupy about a fortnight.

The depth available during low water is said to be from 3 to 4 feet or less.

For further details, see Appendix, page 65, Public Works Report, 1879-80, No. 11,090.

For distances from Prince Arthur's Landing to Winnipeg and westward by Canadian Pacific Railway, see tables of Appendix No. 30, Parts III and IV, of General Report on Public Works, 1867 to 1882; see also comparative tables of distances from Liverpool, England, on the Atlantic, to Yokohama, Japan, on the Pacific, by the shortest ocean and railway routes, Part IV of this Appendix.

No. 19.—NAVIGABLE WATERS—Manitoba and North-West Territories.

Names of Rivers and Lakes.	Length.	Mean Width.	Mean Depth.	Remarks.
	Miles.	Feet.	Feet.	
Lake Winnipeg.....	300	The "Anson Northup," the first steamer, commenced running in 1859.....
Lakes Manitoba and Winnipegosis	230	.....	.....
Red River (within Manitoba).....	90	.....	.....
Assiniboine River.....	350	150	4	
Souris River (probable).....	120	100 to 135	2 to 3½	See No. 18, 21.
Qu'Appelle River and Lakes.....	200	70 to 100	2 to 4½	
Long Lake.....	40	The "Lily," an iron steam-boat belonging to the Hudson Bay Company, has been running on the river since 1877.
Main Saskatchewan.....	400	.....	.....
North do.....	800	.....	.....
South do.....	1,000	750 to 2,000	5 to 8	
Athabasca River and Lake.....	500	800	The "Wrightley" steamer owned by the same Company.
Peace River.....	700	.....	.....
Mackenzie River and Slave Lake... (See description at No. 19½.)	1,500	1,200 to 3,000	20 to 300	
Little Slave Lake.....	75	

No. 19½.—GREAT MACKENZIE RIVER REGION.

During the Session of 1888, a Select Committee was appointed by the Senate to inquire as to the value of that part of the Dominion lying north of the Saskatchewan water-shed, east of the Rocky Mountains and west of Hudson's Bay, comprising the Great Mackenzie Basin, its extent of navigable Rivers Lakes and Sea Coast, of Agricultural and Pastoral Lands, its Fisheries, Forests and Mines.

According to the report of this Committee, presented by their Chairman the Honorable John Schultz, M.D., 2nd May, 1888, they arrived at the following conclusions:

REGARDING NAVIGATION.

- 1st. The extent of the scope of the enquiry, covers one million two hundred and sixty thousand square statutory miles, which area includes none of the islands of the Arctic Archipelago.
- 2nd. Its coast line on the Arctic Ocean and Hudson's Bay measures about 5,000 miles, exclusive of inlets and deeply indented bays.
- 3rd. Over one-half of this coast line is easily accessible to whaling and sealing crafts.
- 4th. The navigable coast lines of the larger lakes of the region in question amount to about 4,000 miles, while its total lacustrine area probably exceeds that of the eastern Canadian American chain of great lakes.
- 5th. That there is a river navigation of about 2,750 miles, of which 1,390 are suitable for stern-wheel steamers, which with their barges may carry 300 tons; the remaining 1,360 miles being deep enough for light draught sea-going steamers.
- 6th. That there is a total of about 6,500 miles, of continuous lake coast and river navigation, broken only in two places.
- 7th. That the two breaks in question are upon the Great Slave and Athabasca Rivers, the first being now overcome by a 20 miles waggon road from Fort Smith southward on the Great Slave River, and the latter being a stretch of 70 miles on the Athabasca, of questionable navigation above Fort McMurray, down which flat boats or scows descend, but cannot ascend, and which about 60 miles of waggon road would overcome, while some improvement of the rapids might render the whole river navigable.

8th. That with suitable steam-crafts this river and lake navigation may be connected with Victoria and Vancouver, by way of the mouth of the River Mackenzie, the Arctic Ocean and Behring Straits and Sea, and it is now connected, on the south, by 80 miles of waggon road between Athabasca Landing and Edmonton, with navigable water in the Saskatchewan River.

ARABLE AND PASTORAL LANDS.

	Probable area Square miles.
Suitable for the growth of potatoes.....	656,000
do do barley.....	407,000
do do wheat.....	316,000

The pastoral area is estimated at 860,000, of which 28,000 is open prairie, with occasional groves, the remainder being wooded more or less; 270,000 square miles, including the prairie, may be considered as arable land.

Spring flowers and the buds of deciduous trees appear as early, north of Great Slave Lake, as at Winnipeg. St. Paul, Minneapolis, Kingston or Ottawa, and earlier along the Peace, Liard and other western affluents of the Great Mackenzie River, where the climate resembles that of Western Ontario.

FISHERIES, FORESTS AND MINES.

According to the evidence received by the Committee, the quantity of sea and fresh water fishes is sufficient to supply a great portion of the North American Continent.

The forest area has upon it a growth of trees well suited for all purposes of house and ship building, for mining, railway and bridging purposes, far in excess of its own needs.

As regards the mines of this vast region, little is known of the portion east of the Mackenzie River and north of Great Slave Lake. On the western side of the Mackenzie and along the head waters of its affluents, the Peel, Liard and Peace Rivers, the auriferous area is estimated at from 150,000 to 200,000 square miles. Silver is found on the Upper Liard and Peace Rivers, copper on the Coppermine River which may be connected with an eastern arm of Great Bear Lake by a tramway of 40 miles. Iron, graphite, ochre, brick and pottery clay, mica, gypsum, lime and sandstone, sand for glass and moulding and asphaltum, are all known to exist. The petroleum area along the Athabasca River, Great Slave River, Little Slave and Great Slave Lakes and the Mackenzie River, is so extensive as to justify the belief that it is the greatest in America, if not in the world and that eventually it will supply the larger part of North America and be shipped from Churchill or some more northern Hudson's Bay port to England. The Committee recommend that a tract of about 40,000 square miles of the petroleum region be reserved from sale, between Athabasca Lake, Peace River and Little Slave Lake.

Salt and sulphur deposits are less extensive, but the former is found in crystals equal in purity to the best rock salt and in highly saline springs, while the latter is found in the form of pyrites. There are extensive coal and lignite deposits on the lower Mackenzie and elsewhere. Scientific exploration has not yet extended north of Great Slave Lake.

The chief present commercial product of the country is its furs; the region in question is the last great fur preserve of the world.

The Indian population is sparse, and having never lived in large communities, is peaceable.

According to the evidence received, the distances which separate the navigable waters of the Mackenzie Basin from the eastern and western sea coasts and from navigable rivers and railways to the south and south-east, are as follows:—

From the head of Great Slave Lake to head of Chesterfield Inlet, 320 miles; from the head of Athabasca Lake to the harbor of Churchill, 440 miles; from Fort McMurray at the junction of the Clearwater with the Athabasca, below the 70 miles of questionable navigation, to the following places on the Saskatchewan: Prince Albert, 300 miles; Fort Pitt, 220 miles; Victoria, 179 miles; Edmonton, 225 miles; from Calgary, on the Canadian Pacific Railway, to Athabasca Landing, on the Athabasca River, 250 miles; from head of Little Slave Lake to Peace River Landing on the Peace River, 65 miles; from Hazleton, on the Skeena River, to Peace River, in the Pass, 150 miles; from Port McMurray on the Stikkeen River to Fort Liard, on the Liard River, 370 miles.

The Committee state that the region in question occupies an area greater than the Australian continent or two-thirds of Europe, covering part of the British Islands, Norway, Sweden, Denmark, Germany, Austria and a part of France and Russia.

No. 20.—RIVER SASKATCHEWAN.

Approximate estimate of the number of cubic feet of water passing down the South Branch, the North Branch, and the Main Saskatchewan.

	Cubic Feet per Second.	Cubic Feet per Minute.	Cubic Feet per Hour.
South Branch.....	34,285 =	2,057,094 =	123,425,616
North Branch.....	25,281 =	1,516,856 =	91,011,360
Main Saskatchewan, at Fort à la Corne...	59,567 =	3,574,021 =	214,441,290
do near Deering River..	57,493 =	3,449,583 =	206,975,000

For particulars respecting the Saskatchewan, see pages 392 to 395, 828, 829, of General Report on Public Works, 1867 to 1882.

For further particulars about the Saskatchewan River, see the Report made by Prof. H. Y. Hind, and published by order of the Legislature of Canada, 1859.

No. 21.—NAMES of Vessels which were navigating the waters of Manitoba and North-West Territories in 1878 and 1879, as per Macoun's Work, published in 1882, and also since the preceding dates.

Name of Vessel.	Name of River or Lake Navigated.	Canadian or American Vessel.	Remarks.
Alpha.....	Assiniboine and Lower Red Riv.	Canadian.....	Owned by the Winnipeg and Western Transportation Company.
Oheyenne.....	do	do	
Swallow.....	Lower Red River	do	
Prince Rupert....	do	do	
Keewatin.....	do	do	
Ellen.....	do	do	Owned by the N. W. Transportation Company.
Colville.....	Lake Winnipeg.	do	
Northcote.....	Saskatchewan...	do	
Lilly.....	do	do	
Marquis.....	do	do	
North-West.....	do	do	do
Marquette.....	Assiniboine.....	do	Owned by the Kittson or Red River Transportation Company, who own also fourteen barges of 1,800 tons capacity.
Manitoba.....	Red River.....	American.....	
Dakota.....	do	do	
Selkirk.....	do	do	
Minnesota.....	do	do	
Grandin.....	do	Independent.....	
Wrightley.....	Mackenzie River.	Canadian.....	
do	Peel River.....	do	
do	Liard River.....	do	
do	Great Slave Lake and River.....	do	

See Appendix No. 8, page 392 of General Report on Public Works, 1867 to 1882.

No. 22.—HUDSON'S BAY REGION.

NAVIGATION, CLIMATE, RESOURCES, ETC.,
 ACCORDING TO THE MOST AUTHENTIC INFORMATION
 OBTAINED UP TO 1888.

Hudson's Bay was discovered by Henry Hudson in 1610. It extends from 51° to 63° of North Latitude, a distance of about 825 statute miles in length, and from 78° to 96° of West Longitude, a distance of about 630 statute miles in breadth.

Hudson's Strait is about 500 statute miles in length, and 100 in breadth.

	Geo. Miles.
York Factory to Liverpool <i>via</i> Hudson's Strait, about.....	2,966.
Churchill Harbour to Liverpool <i>via</i> Hudson's Strait, about...	2,900
Quebec to Liverpool <i>via</i> Strait of Belle-Ile, about.....	2,661
New York to Liverpool, about.....	3,094

HUDSON'S BAY REGION.

NAVIGATION, CLIMATE, RESOURCES, &c.

In 1884, 1885, 1886, an expedition, under the command of Lieut. Gordon, was sent on board of a steamship, each year, by the Federal Government, to Hudson's Straits and Bay, in order to test their navigability for commercial purposes, to take accurate observations and collect information respecting the condition and extent of the ice, the prevailing winds and currents, the earliest date of the opening and the latest of the closing of navigation in the straits and bay, and also respecting the climate, geology, fisheries and other resources of the region wherein they are situated.

During the first year, Lieut. Gordon selected the localities most suitable for taking observations along the straits and bay, erected temporary buildings thereon for the use of the observers who were left at each station with the necessary assistance and supplies, and who took meteorological observations each year, according to the mode prescribed.

During the last year Churchill Harbour and Port Nelson were surveyed, from the 29th July to the 14th August; the observers, buildings, and plant of the stations were removed from the 8th to the 30th September, before the closing of navigation, and were disembarked at Halifax on the 10th of October, 1886.

The expenditure by the Department of Marine during each calendar year was:

1st Expedition, 1884.....	\$37,267 57
2nd do 1885.....	53 938 40
3rd do 1886.....	29,710 05
Subsequently (incidental expenditure), 1887.....	1,084 07
Total.....	\$122,020 09

A report on each of the expeditions was made by Lieut. Gordon to the Department of Marine, by whom the whole has been published, together with the accompanying charts of each report.

The following narrative contains a brief synopsis of and extracts from these reports, which are as useful and important as they are interesting:—

1884.

FIRST EXPEDITION.

STEAMSHIP "NEPTUNE."

The "Neptune," a wooden vessel of 684 tons burden was chartered from Messrs. Job & Bros., of St. John's, Newfoundland, for the first expedition; she was navigated by Captain W. Sopp as sailing master and a competent staff of officers and men.

The vessel had been built for the seal fishery.

Staff of Expedition.

Geologist and medical officer.....	1
Observers.....	8
Photographer	1
Carpenters	2
Stationmen.....	12
Total	24

1885-1886.

SECOND AND THIRD EXPEDITIONS.

STEAMSHIP "ALERT."

Her Majesty's steamship "Alert," barque-rigged, of about 700 gross tons, with surface condensing engines of fifty nominal horse power and a speed of about $8\frac{1}{2}$ knots per hour during calm weather, or an average speed of 6 knots, with from 4 to 6 tons of coal, per day, was used during the expeditions of 1885-1886. When in the ice-packs, only one boiler was used, and the "Alert" consumed only 2 tons of coal per day, the speed being 4 knots.

This vessel was specially rebuilt for the Arctic expedition of 1876, under the command of Sir George Nares.

1885.

SECOND EXPEDITION.

H. M. S. "ALERT."

Officers of the Ship and Members of the Expedition.

Officers of the ship:

1 commander, 1 first officer, 1 second officer, 1 chief engineer,	
1 second engineer, 1 carpenter.....	6

Crew:

2 boatswains, 12 seamen, 1 lamp trimmer, 6 engineers' crew,	
1 chief steward, 1 chief cook, 2 assistant stewards, 1 assistant cook.....	26

Members of the expedition:

1 geologist and medical officer, 1 assistant geologist, 5 observers	7
Station hands.....	12
Editor of <i>Winnipeg Times</i> , representing company of projected railway from Winnipeg to Hudson's Bay.....	1

Total.....	<u>52</u>
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1886.

THIRD EXPEDITION.

DOMINION STEAMER "ALERT."

Officers of the Ship and Members of the Expedition.

Officers of the ship:

1 commander, 1 captain, 3 mates.....	5
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Crew:

1 boatswain, 20 seamen, 1 lamp trimmer, 2 engineers, 6 stokers,	
2 oilers, 5 stewards and cooks.....	37

Members of the expedition:

1 meteorological assistant.....	1
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Total.....	<u>43</u>
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 METEOROLOGICAL OBSERVATIONS, 1884.

Complete observations were taken on board during the voyage, and for the purpose of illustrating the weather which was met with in Hudson's Straits, I shall compare it with that experienced at Belle-Ile, a station of the Meteorological Service, and on the regular trade route between Quebec and Europe.

For the first period from 1st to 31st August.—The "Neptune" was, on 1st August, at Nachvak Bay, within 100 miles of the east end of the Straits, and on 30th August, had just left Nottingham Island, on the west end, so that the month of August was spent in the straits region.

The following table is compiled from the Meteorological Records:—

	Belle-Ile Straits.	Hudson's Straits.
Number of days on which fog is recorded.....	13	6
Approximate number of hours of fog.....	220	102
Days on which snow fell.....	0	4
Days on which rain fell.....	10	8
Days on which wind exceeded 25 miles per hour, but did not reach 40.....	6	5
Days on which wind exceeded 40 miles.....	2	1

The following comparison, for September, is between Station No. 1, at Cape Chudleigh, and Belle-Ile:—

	Belle-Ile Straits.	Hudson's Straits.
Number of days on which fog is recorded.....	7	4
Approximate number of hours of fog.....	82	34
Days on which snow fell.....	3	8
Days on which rain fell.....	15	6
Days on which velocity of wind was between 25 and 40 miles per hour.....	4	5
Days on which velocity of wind was 40 miles or over, per hour.....	11	3

Days on which any snow fell, are put down as snow days, though rain as well as snow may have fallen on those days.

The mean temperature of the month at Cape Chudleigh, for August, was 39°; for Belle-Ile, 49.67°; and for September, Cape Chudleigh, 32.76°; and Belle-Ile, 43.1°.

See App. 30, Rep. Marine and Fisheries, 1884, p. 198-199.

 MEAN MINIMUM TEMPERATURE—HUDSON'S STRAITS.

"The mean monthly temperature, proven now to exist, precludes all ideas of the possibility of navigating the Straits from November to April inclusive.

In May, June and July, large quantities of ice are present in the Straits, and as the average temperature of the eastern end of the Straits in May is 23° Fah., or 5½° below the freezing point of salt water, the ice does not begin to give way in this month.

By the months of June and July, the temperature here has risen to 35° and 40° respectively, and the ice honey-combs and melts rapidly; but judging from the reports of the stations and our own experience, it takes all June and generally part of July to reduce the quantity sufficiently to permit of the Straits being navigated for the purposes of commerce."

Mean Temperature for one Year.

During the first 6 months of 1885 :

32·14° to—18·14° at eastern end—Port Burwell.

43·07° to—33·08° at western end—Port De Boucherville.

During the subsequent 4 months, including October, 1885 :

28·00° to 36·82° at eastern end.

17·59° to 45·23° at western end.

During the last 2 months of 1885 :

18·91° to— 1·96° at eastern end.

8·06° to—14·73° at western end.

NOTE.—For Meteorological and Tidal Observations and Diary of each Expedition, see tables A, B, C, D, E, F.

ICE.

HUDSON'S STRAITS AND BAY.

There are icebergs at all times of the year in Hudson's Straits, especially on the north side where some have been seen aground in from 80 to 100 fathoms of water, but in August and September there is less ice in the Straits than during any other part of the year.

In the bay and straits there is a considerable amount of young floe or solid blue ice, up to the beginning of August; its thickness varies from $3\frac{1}{2}$ feet, at Port Burwell, near the outlet of the straits, to $7\frac{1}{2}$ feet at Marble Island, near the west coast and in the northern portion of the bay; this ice, in the month of July, is generally covered with a crust of snow from $1\frac{1}{2}$ to 2 feet in thickness and as hard as the ice itself, but it honey-combs very quickly and is full of water holes.

Large masses of heavy Arctic or old ice are met with in the straits early in July; this ice which is the product of several winters, is of every thickness, from 10 to 40 feet.

The quantity of ice which passes down across the mouth of the straits is enormous; in the spring of the year it sometimes forms an impenetrable barrier, the breadth of which varies greatly and extends from 50 to 100 miles, more or less, outside of the straits to the open water of the ocean.

PERIOD OF NAVIGATION.

HUDSON'S STRAITS AND BAY.

The period of navigation, during an ordinary year, is estimated as being from 15th July to 15th October, with a possibility of a fortnight longer in the spring and autumn for strongly built vessels with propellers, of small dimensions, well down in the water.

The average date of 116 consecutive arrivals of the Hudson's Bay Company's ships at York Factory, is about the 4th of September. Of the 116 arrivals, 48 were in August, the earliest being on the 6th; the latest was on the 7th of October, on which occasion the vessel wintered in the bay.

The Factor at Churchill states that the ice in the bay never extends far enough to intercept the view of open water. It is now admitted that Hudson's Bay is navigable early in June, its water being warmer than those of the straits.

In the straits, the surface temperature of the water varied from 32·6° to 33·3° during the voyage in August and September of 1884, whilst in the Bay it was 41° at Churchill, 39·7° at 100 miles north-east from York, 39·4° at Marble Island and 36° at the south end of Mansfield Island, towards the north-east entrance of Hudson's Bay.

The temperature of the water surface at Belle-Ile, on the 25th July, was 41.6° and off the entrance of Hudson's Straits it was 34.7° on the 4th August, the same year.

August and September are the two months of the safest navigation and most open water in Hudson's Straits.

TIDAL CURRENTS.

The tidal currents, in Hudson's Straits, add very considerably to the risks of navigation. These currents vary in velocity from 3 to 6 knots per hour; they flow with great rapidity, especially at the eastern end of the strait, round and about the Button's Islands, and at the western end near the Digges Islands at the mouth of Hudson's Bay; any vessel getting entangled in the running ice in these currents, is sure to meet with hard usage, if not actual disaster.

It is on account of these currents that Captain Coats advises the mariner navigating Hudson's Straits not to enter them till the first week of July, by which time, he says, the ice is usually sufficiently broken up to make it safe for a ship.

COMPASSES.

The last and indeed the most serious difficulty that I anticipate, says Lieut. Gordon, is in the faulty working of the compasses, especially about the critical ground of Digges Island. Mansfield Island can, under most circumstances, be kept clear by the lead, but in the neighbourhood of Digges Island nothing but the most sleepless vigilance and the greatest caution will save a ship from disaster.

At the western end of Hudson's Straits we are approaching the Magnetic Pole, the dip being 86° at Digges Island. This means great vertical force with the horizontal force approaching the vanishing point. In making a voyage from the United Kingdom to Hudson's Bay, the dip changes from 67° to 87° nearly.

The only safety in thick weather lies in the constant use of the lead and keeping a bright look-out, as the dead-reckoning is frequently in error to a considerable extent.

RESOURCES OF HUDSON'S BAY AND STRAITS.

THE FISHERIES.

The fish and mammals possessing commercial value in these waters, are:—

1. The right whale—“*balaena mysticetus*”—which, in consequence of the high price of whalebone, is by far the richest prize which the whaler can capture. Its numbers are diminishing rapidly.

This whale is being hunted out of Hudson's Bay, as it has been from its other southern haunts, not by our own people, but by the subjects of a neighbouring state.

A whale of 50 to 60 feet in length yields about a ton of bone and from 20 to 40 tons of oil, according to the thickness of the blubber, which varies from 6 to 18 inches. A fish of this description would be worth about \$18,000, at present prices of oil and bone.

2. The white whale—“*begula catodon*”—is, beyond all question, the whale of Hudson's Bay. On the Churchill, York and Nelson Rivers, they ascend with the tide each day in great numbers. They are also seen in the straits.

"Of all the fisheries engaged in by the Hudson's Bay Company, that of the white whale is the most extensive. The blubber of these mammals weighs from 200 to 400 pounds each, and is very rich in the finest of oil. Each porpoise is worth about \$100. In 1883 the company secured nearly 200 in one tide at Churchill, and a far greater number in Ungava Bay; they are grounded on the flats, in coves where the tide rises 15 to 20 feet or more, and where, by means of trap nets, they are held in check until the water recedes, leaving them high and dry on the rocks and sand."

3. The narwhal or unicorn—"monodon monoceros"—which is good for its blubber, according to its size; the horn of the male, which often measures 5 feet in length, is valuable as ivory. These cetacea are frequently seen in the straits.

4. The walrus—"trichechus rosmarinus"—the sea horse, which is found in great numbers, most frequently at a short distance from shore, in the straits, and especially in the bay north of Marble Island where the company sends two sloops each year from Churchill; these vessels never fail to secure, in the course of a few weeks, as much blubber, ivory and hides as they can carry.

In 1884 they captured from 20 to 30 of these pinnipedia, which were valued in the aggregate to more than \$7,000.

5. Seals of various kinds—"phocae." Nearly all the families of seals seem to be represented in Hudson's Bay and Straits, but they are seldom found in such large packs as are seen off the coast of Newfoundland, especially during spring; they are, however, killed in large numbers by the Esquimaux, who use their flesh for food and their skins for clothing, for their canoes—"kayaks"—and their tents.

6. The polar bear—"ursus maritimus." Although these animals are numerous in the region 200 miles westward of Stupart's Bay, they are seldom seen before the month of June, when they venture to descend the straits on the floating ice in search of the seals, which they capture while asleep. As yet, they have not been known to attack man in any instance, notwithstanding their reputed fierceness.

7. Salmon and trout only, are exported, although a very fine species of white-fish is found in the Nelson River. The salmon and trout fishery is prosecuted by the Hudson's Bay Company in various localities, and especially in Ungava Bay, where these fishes abound in nearly all the streams and resort in greatest numbers to where the salt water mingles with the fresh.

8. The codfish are very plentiful in all the coves and inlets of Ungava Bay. None, however, have been found, up to the present time, any further westward than the eastern side of this bay, either in the straits or in Hudson's Bay.

WHALE-FISHING IN HUDSON'S BAY.

The whale-fishing has been actively prosecuted for more than 40 years by United States whalers, chiefly in the basin of Rowe's Welcome, at the north-west or upper end of Hudson's Bay. They come chiefly from the ports of New Bedford, Massachusetts, and New London, Connecticut, whence they start in July and proceed to Marble Island, near the north-west coast of the bay, where they arrive in September, and remain all winter in a port, until the following month of June; the ships are sawn out of the ice early in that month, and cruise about Hudson's Bay till the latter end of July, when they go up to the fishing grounds in Rowe's Welcome, whence they return towards the beginning of September, on their homeward voyage, with cargoes of blubber and whale-bone. The value of these cargoes, if based on an average total catch of ten whales a year, and on a price of \$4,000 for each whale, would amount to more than \$1,000,000 for a period of twenty-five years.

The report of the United States Commissioner of Fish and Fisheries for 1875-76 states that during the eleven years preceding 1874 about fifty voyages were known to have been made by whaling vessels to Hudson's Bay, and their returns amounted to at least \$1,371,000, or an average of \$27,240 per voyage.

The total value of the oil alone which was secured in and exported from the Hudson's Bay region by the company and the United States whalers, in 1883, is estimated at \$150,000, or \$1,500,000 for the past ten years.

The number of ships sent by the New Englanders to Hudson's Bay and Cumberland Gulf, from 1846 to 1876, with their catch, each year, as stated in the report of 1886, was:—

113 ships, or 4 to 5 per year for 25 years.		
14·3 barrels, sperm—average per ship per year.		
496· barrels, whale-oil	do	do
7,965· pounds, whale-bone	do	do

This average cargo yields to-day:—

2 tons sperm.....	\$ 400
62 do whale-oil.....	6,800
3½ do whale-bone.....	40,000
	\$47,200

In the period 1846 to 1876, sixteen ships engaged in the trade were lost, but if we take the above catch and consider that the average size of the ships is only 240 tons, the margin for profit is still very large.

Apart from the pursuit of whales, these vessels trade, without any license, with the Esquimaux for the barter of their musk-ox and other skins, competing thus with the Hudson's Bay Company who pay the full duty called for by the Canadian protective tariff on all the articles they import for the trade of the Hudson's Bay region. The duties they paid in 1885 at York and Moose Factories amounted to \$22,000.

Another fact deserving the consideration of the Canadian Government is that the colony of Newfoundland collects the duties on articles consumed at Fort Chimo, on the coast of Ungava Bay, or sold to the natives in the interior of Labrador, within Canadian territory, although their jurisdiction should not extend westward beyond the line 57° 9' of west longitude running due north from Blanc-Sablon on the Strait of Belle-Ile (including Blanc-Sablon and the Woody Islands) on the parallel of 51° 25' of north latitude, to the parallel of 52° of north latitude, which constitutes their southern boundary until it intersects their extreme western boundary of 65° of west longitude, which runs due north from the said parallel of 52° of north latitude to Cape Chudleigh, which is situated at the parallel of 60° 37' north latitude, at the mouth of Hudson's Strait.

N.B.—For those who wish to have a general and accurate idea of the other fisheries of Canada, see the very interesting pamphlet by L. Z. Joncas, M.P. for Gaspé, published by the Department of Agriculture in 1886, and showing that Canada, possesses the most extensive and richest fisheries of the world.

GEOLOGY OF HUDSON'S BAY AND STRAITS.

The shores along the straits consist chiefly of gneiss. The specimens of rock collected on the west coast of the bay indicate that the Huronian series covers a large extent of the Hudson's Bay region; this series is the principal repository of the economic materials.

The mineral resources, as well as the natural history of the bay and straits, have been fully treated of by Dr. Bell, assistant director of the Geological Survey of Canada, who accompanied the expedition, each year, as medical officer and geologist. His reports are annexed to those of Lieut. Gordon.

ECONOMIC MINERALS OF THE HUDSON'S BAY TERRITORIES IN GENERAL.

Dr. Bell, in his report of 1885, enumerates the following useful minerals, describing the localities where they are to be found:—

Iron, clay-ironstone, copper, lead, zinc, molybdenum, silver, gold, gypsum, salt, soapstone, lignite, anthracite, petroleum and asphalt, mica, graphite, asbestos, chromic iron, apatite, iron pyrites, lime, hydraulic cement, building stones, glass-sand, fire clays and clays for brick-making, moulding sand, shell-marl for manure, ochre, peat, flagstones, roofing slates and other substances, as well as various ornamental stones and rare minerals of scientific interest.

Judging from the information hitherto obtained and his researches up to 1887, he regards the north-west of Hudson's Bay as one of the most promising in valuable economic materials of the yet unexplored territories.

FAUNA.

Hudson's Straits and Bay.

The terrestrial mammalia of the Straits and northern part of the Bay are chiefly:—

The polar bear, white, grey, red and black foxes, reindeers, wolves and hares.

Geese, swans, ducks and ptarmigans, besides other kinds of game birds, are plentiful.

FAUNA AND FLORA.

Prince of Wales Sound.

The fauna and flora observed by F. F. Payne, assistant in the meteorological service of Canada, and then in charge of the Stupart's Bay station, on the north-west coast of the Sound, are fully described in the report of 1886.

According to a list he has given in this report, respecting the flora, the plants are in bud at dates varying from the 20th of May to the 27th of June; they are in leaf generally in the course of June and in flower during July; the seeds ripen in August, and the plants wither between the 20th of August and the 15th of September.

LABRADOR, HUDSON'S STRAITS AND BAY REGION.

FOREST TREES.

Spruce, tamarac, balsam fir, canoe birch, aspen and balsam poplar are reported to exist in the interior of northern Labrador, at some distance from the coast of the Atlantic and the Straits, except along the rivers and brooks which are generally fringed with spruce and tamarac.

On the west side of Hudson's Bay, spruce was seen in considerable quantities all along the coast.

ESQUIMAUX.

On the Atlantic coast of Labrador, the natives gather generally around the Moravian missions, the principal of which is Nain, where they number about 200; this mission is about 410 miles from Belle-Ile and 350 from Cape Chudleigh, at eastern end of Hudson's Straits. In the remainder of Labrador, under the jurisdiction of Newfoundland, the natives number about 400, according to the census of 1884. The total population at that time was 4,212, of whom 607 were Esquimaux.

Along the Straits region, or for a distance of 500 miles from Cape Chudleigh to Nottingham Island at the entrance to Hudson's Bay, the number of Esquimaux is estimated as not exceeding 1,500.

The men generally measure from 5 feet 2 inches to 5 feet 8 inches, and the women from 4 feet 10 inches to 5 feet 1½ inches in height. Their families consist generally of two children. The most frequent disease among them is that which affects the lungs.

N. B.—According to the ecclesiastical census of 1881, the population of the various trading and fishing settlements scattered along the north shore of the Gulf of St. Lawrence, from Tadoussac down to Blanc-Sablon, a distance of about 636 miles, was 8,457 persons, of whom 3,500 were located from Tadoussac to Betshiamitz on the first 77 miles.

The population for the remainder of the distance, including Betshiamitz, comprised 4,957, of whom 1,228 were Indians.

CHURCHILL HARBOUR

ON WEST COAST OF HUDSON'S BAY.

Surveyed by Lieut. Gordon, 29th July to 5th August, 1886.

This harbour is formed by the mouth of the Churchill River which flows nearly true north. The basin for anchorage, with a depth of over 4 fathoms at low water, is about 1,500 yards north and south by about 1,000 yards, east and west.

The holding ground is excellent, the bottom being mud, and though the tide runs very rapidly, and is estimated to run about 6 knots at half-tide, this harbour is an eminently safe one. It is admirably suited for a railroad terminus.

The necessary docks could be easily and cheaply built, and the deep water basin enlarged at small cost. Stone is lying at the water's edge ready to be laid into docks and piers and nature seems to have left little to be done in order to make this a capacious port fit for doing a business of great magnitude.

Ice forms in the harbour, on the average, about the middle of November and breaks up about the middle of June.

It is the only known harbour on the western coast of Hudson's Bay.

Springs rise 15½ feet.

Neaps rise 8 feet.

For fuller details see pp. 8, 9, and chart of Lieut. Gordon's report, 1886.

PORT NELSON.

SOUTH OF CHURCHILL HARBOUR, ON THE WEST COAST OF HUDSON'S BAY.

"Reconnaissance Survey made by Lieut. Gordon, 6th to 13th August, 1886."

Port Nelson, according to Professor Macoun, is about 80 miles nearer to Liverpool, *vid* Hudson's Straits, than is New York.

Some idea of the difficulties encountered by Lieut. Gordon in surveying the estuaries of the Nelson and Hayes Rivers may be formed from the following:—The ship was lying 9 miles from the nearest land, 17 miles from head-quarters camp, and 28 miles from the proposed terminus of the railway from Winnipeg, and was yet but little more than a mile from the point of the shoal, with only 6 feet of water on it, and a tide of nearly 3 knots.

The "Alert" lay in 5 fathoms of water, with 35 fathoms of chain out, but steam was ready for instant use, the whole time, and the cable was buoyed and ready for shipping. One night during an easterly gale, which she rode out at her anchors, Capt. Barrie, the first officer, who was in command at the time, reported to Lieut. Gordon, that if the ship had not been fitted with tanks and tubes for running oil, he would have been compelled to slip and go to sea. The tide carried the oil to windward and kept the sea from breaking over the ship, although she was straining heavily at her chains and rolling the boats to the water all through the night.

A great deal of fog hangs over the bay in the months of July and August, and much delay, if not disaster, would be sure to occur if vessels were to attempt to make this port in anything but the finest weather. A lot of loose ice, which was very heavy, off the mouth of the river, was encountered on the 5th of August; the lightship could not be placed in position before all danger from this cause had disappeared. The rise and fall of the tides average 12 feet.

Lieut. Gordon says: I consider that the estuary of the Nelson River is one of the most dangerous places in the world to go to. * * * It is no port, nor would the expenditure of any amount of money make it a desirable place for shipping.

See pp. 9, 10, 11 and chart, Report of 1886.

YORK FACTORY.

ON NORTH-WEST SIDE OF THE HAYES RIVER, NEAR THE CONFLUENCE OF THE NELSON RIVER.

York Factory is built on the tongue of land between the mouths of the Nelson and Hayes Rivers.

For more than 200 years, from two to five sailing vessels, on an average, frequently with war ships conveying them, have sailed annually from Europe and America to Port Nelson (York Factory) or other ports in Hudson's Bay and returned with cargoes the same season, *via* the only available route, Hudson's Straits.

It is near the mouth of the Nelson River which carries a body of water double that of the north and south branches of the Saskatchewan combined, and reaches the sea through a narrow depression in the Laurentides, having a descent of 20 inches in a mile, or in round numbers, 700 feet in a little more than 400 statute miles from the spot where it debouches from Lake Winnipeg.

It is about the same distance from the edge of a vast fertile region in the North-West, exceeding 200 millions of acres in area, as Quebec is from Toronto.

DEPTH OF FROST AND THAW PENETRATION.

At York Factory, the water of the Nelson and Hayes Rivers freezes to a depth of $5\frac{1}{2}$ to $6\frac{1}{2}$ feet respectively, in December, January, February and March.

In April and May the soil is frozen to a depth of from 30 to 48 inches; in June, July and August, the thaw penetrates the ground from 10 to 40 inches, and sometimes more, according to its situation and quality.

Snow seldom falls during the latter three months.

OPENING AND CLOSING OF NAVIGATION.

The opening and closing of navigation on the Hayes River, from 1820 to 1880, are shown in the general report of Public Works, 1867 to 1882, according to a record furnished by W. Woods, of York Factory.

The dates of opening vary from the 9th of May to the 1st of June, and those of closing from the 3rd of November to the 9th of December. (See p. 397, Report 1867-82.)

N.B.—In the same Report, pp. 344 to 446, will be found a memorandum on the Lake St. John, Saguenay, Hudson's Bay and the Arctic regions.

"A."
METEOROLOGICAL OBSERVATIONS.
TEMPERATURE.

YEAR AND MONTH.	STRAIT OF BELLE-ILE		HUDSON'S STRAIT.				HUDSON'S BAY, N.E. ENTRANCE.		HUDSON'S BAY, WEST COAST.	
	Light-house.	Port Burwell, Cape Ohudleigh.	Fort Chimo, Uugava Bay.	Stupart's Bay.	Ashe Inlet.	Port De Boucherville, Nottingham Island.	Port Laperrière, Digges Island.	Port Churchill.	York Factory	
	Lat. 51° 53' N. Lon. 55° 22' W.	Lat. 60° 31½' N. Lon. 64° 46' W.	Lat. 49° 8' N. Lon. 68° 16' W.	Lat. 61° 35' N. Lon. 71° 32' W.	Lat. 62° 33' N. Lon. 70° 35' W.	Lat. 63° 12' N. Lon. 77° 28' W.	Lat. 62° 34½' N. Lon. 78° 1' W.	Lat. 59° 43' N. Lon. 94° 10' W.	Lat. 57° 0' N. Lon. 92° 28' W.	
	Minimum.	Mean Minimum	Minimum.	Mean Minimum	Mean Minimum	Mean Minimum	Mean Minimum	Mean Oldest.	Mean { 7 A.M. 2 P.M. 8 P.M.	
1885.										
September	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	25.0	28.00	8.0	36.04	30.19	26.93	30.14	30.50	37.70	
November	-3.0	18.91	-16.0	29.46	20.70	17.59	21.88	-2.67	12.89	
December	-12.0	-1.96	-23.0	19.94	7.47	8.06	11.37	-10.67	-11.13	
				4.54	-5.29	-14.73	-11.18	-32.00		
1886.										
January	-15.0	-18.14	-39.0	-15.12	-25.29	-30.90	-31.08	-41.67	-27.26	
February	-11.0	-15.97	-43.0	-14.91	-25.44	-33.08	-31.09	-55.00	-13.20	
March	-14.0	-5.53	-37.0	0.28	-16.37	-18.76	-17.46	-32.67	-9.47	
April	2.0	9.79	.....	16.77	1.71	-2.21	0.62	-12.00	18.85
May	19.0	23.63	.....	30.07	19.17	16.91	17.62	3.00	35.09
June	33.0	43.84	.....	31.09	32.14	32.14	31.15	33.33	51.78
July	34.0	36.82	.....	48.65	25.72	34.39	34.14	43.33	68.24
August	39.0	36.69	.....	49.16	34.61	34.54	34.82	43.33	64.51
Year	.....	.....	.....	30.72	9.06	.....	.....	.....	.....
September	30.0	33.41	.....	41.00	31.75	.....	.....	.....	44.81
Year	-15.0	14.82	.....	.....	.....	5.91	7.57	.....	.....

N.B.—Observations taken at 3h., 7h. and 11h. A.M. and P.M. of the standard time of the 75th Meridian, except at Fort Chimo and York Factory.

"C."
METEOROLOGICAL OBSERVATIONS.
VELOCITY OF THE WIND.

NUMBER of Days, each month, at each Station, where the Velocity of the Wind equalled a Gale of 30 miles an hour and upwards. (Except at Fort Churchill and York Factory where the velocity is indicated otherwise).

YEARS AND MONTHS.	STRAIT OF BELLE-ILE		HUDSON'S STRAIT.			HUDSON'S BAY, N.E. ENTRANCE.		HUDSON'S BAY, WEST COAST.	
	Belle-Ile, Light-house.	Port Burwell.	Ashe Inlet.	Stupart's Bay.	Port DeBoucher-ville, Nottingham Island.	Port Laperrière, Digges Island.	Fort Churchill.	York Factory.	
1885.	16	8	5	8	5	9	Miles. 24.67	Miles. 13.38	
September.....	16	8	5	8	5	9	30.71	13.38	
October.....	18	7	9	3	5	6	19.99	13.08	
November.....	22	12	12	8	4	13	39.75	11.54	
December.....									
1886.	17	23	10	8	3	5	24.29	13.04	
January.....	17	17	9	8	3	5	35.08	13.04	
February.....	21	16	4	5	4	7	27.48	13.92	
March.....	17	19	7	5	4	6	23.25	11.67	
April.....	5	14	10	0	4	2	32.04	12.62	
May.....	7	12	9	3	0	2	12.96	11.98	
June.....	6	13	8	4	0	4	15.63	11.92	
July.....	17	10	5	4	0	5	13.83	13.87	
August.....	4	17	8	4	0	5	11.96	11.96	
September.....									
Year.....	169	168	96	61	32	70	24.81	12.33	

N.B.—The observations at York Factory are derived from a group of years, 1876 to 1883.

"D."

WEEKLY ABSTRACT of Observations taken on board Dominion Steamer "Alert,"
under the Command of Lieut. A. R. Gordon, R.N., June to October, 1886.

Weeks ending	Barometer.				Temperature.				Hours.			Observations. Wind, 30 miles and over.
	Mean.	Highest.	Lowest.	Range.	Mean.	Max.	Min.	Range.	Rain.	Snow.	Fog.	
1886.												
July 1.....	29·793	30·160	29·492	·668	48·84	57·2	38·5	18·7	22	—	56	4
do 8.....	·756	·070	·509	·561	36·63	48·0	33·0	15·0	26	16	38	5
do 15.....	·787	29·984	·420	·564	38·42	48·8	32·5	16·3	18	—	28	—
do 22.....	·664	·912	·390	·522	38·63	42·5	32·0	10·5	12	—	22	1
do 29.....	·727	·953	·502	·451	40·71	53·0	36·0	17·0	36	—	38	—
August 5.....	·924	30·192	·702	·490	49·42	84·0	39·0	45·0	14	—	40	6
do 12.....	·824	29·978	·606	·372	53·68	71·0	44·0	27·0	20	—	2	—
do 19.....	·807	30·101	·355	·746	55·90	76·0	43·0	33·0	8	—	12	—
do 26.....	·727	·101	·141	·960	46·94	64·0	39·0	25·0	14	—	32	6
September 2.....	·742	29·998	28·873	1·125	39·52	52·0	35·5	16·5	64	—	38	9
do 9.....	·851	30·134	29·234	·900	36·92	44·0	32·0	12·0	30	10	10	13
do 16.....	·578	·055	·120	·935	35·36	42·3	32·0	10·3	14	6	10	20
do 23.....	·642	·074	28·857	1·217	46·23	43·2	27·6	15·6	12	2	18	23
do 30.....	·935	·233	29·403	·830	34·49	45·0	28·5	16·5	8	2	—	7
October 7.....	·676	·275	·017	1·258	39·95	50·0	32·0	18·0	22	2	4	2
Voyage.....	29·762	30·275	28·857	1·418	42·776	84·0	27·6	56·4	320	38	348	96

"E."

TIDAL OBSERVATIONS AT THE STATIONS.

For the ordinary purposes of Navigation.

Nature of Observations.	Labrador—N. E. Coast.		Hudson's Strait.			Hudson's Bay—N. E. Entrance		Hudson's Bay—N. W. Coast.	
	Nachvak Bay. Skynner's Cove.		Port Burwell.	Stupart's Bay.	Ashe Inlet.	Port De Boucherville.	Port Laperrière.	Marble Island.	Port Churchill.
	H. M.		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
Time of H. W. F. and C.	7 08		9 25	8 11	8 32	9 30	9 26	4 10	7 06
Mean luni-tidal interval	7 01		9 04	7 50	8 04	8 57	8 53	3 54	6 44
	Feet.		Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
Mean rise and fall.	3.69		14.24	18.04	22.00	9.47	6.18	9.00	11.70
do do springs	4.88		18.90	24.14	29.95	13.01	8.66	12.00	15.50
do do neaps	2.68		9.59	11.94	14.03	5.93	3.70	6.00	8.00

N. B.—No correction for barometric changes was applied to these observations.
 At the two stations in the centre of the straits, Ashe Inlet and Stupart's Bay, the periods selected were the months of April and May respectively, during which time the straits were completely covered with ice. At all other stations the periods selected were in the open season.

Under the Command of Lieut. A. R. GORDON, R.N.

NAMES OF STATIONS, &c., ON THE ROUTE.	FIRST EXPEDITION—BY THE "NEPTUNE," 1884.								SECOND EXPEDITION—BY THE "ALERT," 1885.								THIRD EXPEDITION—BY THE "ALERT," 1886.							
	Outward.				Homeward.				Outward.				Homeward.				Outward.				Homeward.			
	Navigation.	Detentions at Stations, &c.	Fog, Snow, &c.	Ice, &c.	Navigation.	Detentions at Stations, &c.	Fog, Snow, &c.	Ice, &c.	Navigation.	Detentions at Stations, &c.	Fog, Snow, &c.	Ice, &c.	Navigation.	Detentions at Stations, &c.	Fog, Snow, &c.	Ice, &c.	Navigation.	Detentions at Stations, &c.	Fog, Snow, &c.	Ice, &c.	Navigation.	Detentions at Stations, &c.	Fog, Snow, &c.	Ice, &c.
	Dates.	Days.	Days.		Dates.	Days.	Days.		Dates.	Days.	Days.		Dates.	Days.	Days.		Dates.	Days.	Days.		Dates.	Days.	Days.	
Halifax, S.E. coast of Nova Scotia.....	July 23...								May 27				Oct. 18				June 24				Oct. 10			
Out of Omsko, S. end of Cape Breton.....	July 23...								May 29								June 26				do 9			
Scutari Island, opposite E. coast of Cape Breton.....	do 24...								do 29								do 27				do 7			
Cape Bay, W. end of Newfoundland.....	do 26...	1 day.							June 1								do 29				do 6			
Blanc Sablon, S.W. end of Strait of Belle-Ile.....																								
St. John's, Newfoundland, E. end.....																								
Bull Dog Island, E. coast of Labrador.....	July 28...				October 8				June 6				Oct. 13				July 1				do 3			
Ford Harbour, E. end of Paul Island, E. coast of Labrador.....	do 29...	1 day.															do 2				do 2			
Main Harbour, E. coast of Labrador, Chef-lieu of Six Moravian Missions.....	do 30...	For furs, &c., 1 day.			October 7				July 31				Oct. 9				do 3				do 3			
Cape Mugford, E. coast of Labrador.....	do 31...				do 6				do 31				do 9				do 4				do 4			
Nachvak Bay, E. do do.....	Aug. 1...	1 day.			September 30				August 1				do 8				do 5				do 5			
Cape Chudleigh, E. entrance, S. side of Hudson's Strait.....	do 5...								July 4 to Aug. 2.				Sept. 28				do 5				do 5			
Resolution Island, E. entrance, N. side do.....	do 8...	Searching for a harbor, 1 day.			September 26				June 15 to July 6.								July 5, 6, 7, 8 and 9.				do 7			
Port Burwell, near entrance of Hudson's Strait, on S. side.....	do 5...	Erect'n of buildings, 3 days. Aug. 5 to 8.			do 27				August 4				Sept. 29				do 26				do 26			
Ashe Inlet, on N. side of Hudson's Strait, midway of the Strait.....	do 11...	5			do 23				Aug. 12, 17, 21				do 18				July 11				do 12			
Stupart's Bay, on S. do do do.....	do 17...	5			do 24				Aug. 22				do 20				do 12				do 16			
Port DeBoucherville, Nottingham Island, 45 miles north of Digges Island, N.E. entrance of Hudson's Bay.....	do 24...	5			do 20				do 24				do 17				July 15, 16, 17 and 18.				do 8			
Port Lapierre, outer Digges Island, S.W. end of the larger island, N.E. entrance of Hudson's Bay.....	do 16...				do 16				do 25				do 12				July 20				do 30			
Mansfield Island, N.E. entrance of Hudson's Bay.....	do 30...				do 15				do 29				do 12								do 28			
Southampton Island do do.....	do 31...																July 27				do 28			
Marble Head, N.W. coast, S.W. end of Island, Whalers' Harbour, Hudson's Bay.....	Sept. 2...	Observations taken, 1 day.																			do 22, 23			
Fort Churchill, W. coast, Hudson's Bay.....	do 6...	Taking ballast, &c., 3 days.							Aug. 31				Aug. 7				do 29				do 16			
Nelson River do do.....	do 11...																Aug. 6							
York Factory do do.....	do 12...	For furs.....			September 12								Aug. 13				Aug. 13				do 14			
Totals during each voyage.....	52 days.	26 1/2 days.	8 days—Rain. 4 do Snow. 9 do Fog.	29 days.	16 days.	6 days—Rain. 8 do Snow. 4 do Fog.	103 days.	49 days.	... hours—Rain. 78 do Snow. 220 do Fog.	42 days.	14 1/2 days.	... hours—Rain. 148 do Snow. 28 do Fog.	50 days.	17 days.	128 hours—Rain. 18 do Snow. 222 do Fog.	57 days.	31 days.	192 hours—Rain. 22 do Snow. 126 do Fog.						
			August 1 to 31, Hudson's Strait, 1884.			September between Cape Chudleigh and Belle Ile, 1884.			June 3 to September 1, 1885.			September 1 to October 17, 1885.			July 1 to August 6, 1886.			August 6 to October 7, 1886.						

Fine run down the Labrador, N.E. coast, and through the Gut of Canso.

Very brilliant Aurora Borealis when compasses would not work on night of 21st August.

Weather fine and clear until the 21st August.

NC. 23 A.—TABLE OF PRINCIPAL RIVERS throughout the World compared with the Rivers St. Lawrence and Ottawa, etc.

Names.	Area of Drainage in Square Miles.	Length in Miles.	Discharge in Cubic Feet per Second.			Authority.
			Low Water.	Mean.	High Water.	
Amazon	2,400,000	4,000	.....	.....	1,700,000	Encyclopedia Britannica
Mississippi	1,226,000	4,400	447,200	.....	1,270,000	C. Ellet, jun. <i>See</i> No. 25.
St. Lawrence	565,000	2,600	.....	900,000	.....	A. J. Russell, Esq. <i>See</i> No. 23 B
Niagara	237,300	.....	370,589	389,000	406,000	New York State Reports.
Ganges	432,000	1,680	86,300	207,000	494,207	Sir C. Lyell.
Nile	520,200	2,240	23,100	220,000	.....	Encyclopedia Britannica
Ohio, at Wheeling ..	25,000	.....	1,400	.....	260,277	C. Ellet, jun.
Thames	5,000	215	1,320	.....	7,900	Encyclopedia Britannica
Rhone	38,000	560	7,000	21,000	204,000	D' Aubuisson.
Rhine	88,000	700	13,490	33,700	164,000	do
Ottawa, at foot of Seven League Lake 26 miles below Lake Témiscamingue .....	.....	.....	14,800	.....	25,100	Thos. Guerin, C.E., Report on Lake Témiscamingue, etc., 12th Feb., 1885, P. W. R., 1884-85.
Ottawa (Grenville)...	80,000	700	35,000	85,000	150,000	Ottawa Survey.
French River.....	4,700	.....	9,500	.....	.....	do
Ragnenay, Outlet Lake St. John.....	.....	.....	54,300	.....	155,300	Thos. Guerin, C.E., Report, 29th April, 1886, on lowering high water level of Lake St. John.
Outlet Petit Décharge .....	.....	.....	2,000	.....	5,700	do do do
Outlet Grande Décharge .....	.....	.....	52,300	.....	149,600	do do do
Saskatchewan, at Fort La Corne .....	.....	813	.....	.....	59,567	Prof. H. Y. Hind, 1858.

See Report of T. C. Clarke, C.E., 2nd January, 1860, on Ottawa Ship Canal Survey.

No. 23 B.—DISCHARGE OF THE RIVER ST. LAWRENCE.
FROM SAUT-STE-MARIE TO QUEBEC.

Locality	Mean Velocity Feet per Second.	Discharge Cubic Feet per Second.	Authority.
River St. Mary.....	0.967	90,783	Scientific American, for week ending Dec. 12, 1868
River St. Clair.....	3.514	233,736	do do
Detroit.....	3.000	236,000	do do
River Niagara.....	2.258	242,494	do do
Ogdensburgh.....	0.954	319,943	do do
Montreal—St. Mary's Current.....	4.820	277,243	Lowest in summer of 1882.—Thos. Guerin, C.E.
	5.310	354,488		Mean do do
Quebec.....		431,733	Highest do do
		441,000	Memo. from Thos. Guerin, C.E., March 11, 1887.

N.B.—According to a plan prepared, during the winter of 1880, by the late T. W. Harrington, C.E., at the Lachine Office, Montreal, the following velocities were measured at Moffatt's Island, in the Harbour of Montreal:—

Velocity in summer, 7 miles per hour = 10 feet per second.
do in winter, 3½ do = 5 do

For details respecting discharge at Montreal, see Appendix No. 10 of Public Works Report for 1882-83, containing reports of Chief Engineer and of T. Guerin, C.E., on the St. Lawrence Bridge and Manufacturing Company's scheme, by T. F. Bateman, engineer of the company, pages 119 to 150.—G.F.B.

No. 24.—COMPARISON of Ottawa and St. Lawrence Routes.

No.	Name of Route.	Distances—Chicago to Montreal.				Lockage.		
		Lakes.	River.	Canal.	Total.	Up.	Down.	Total.
		Miles.	Miles.	Miles.	Miles.	Feet.	Feet.	Feet.
1	Welland Canal.....	1,145	132	71	1,348	.....	535	535
2	Toronto and Georgian Bay.....	775	155	120	1,050	130	675	305
3	French River and Ottawa, according to Walter Shanly's project*	575	347	58	980	83	615	698

* N.B.—Estimated cost, per project of Walter Shanly, \$24,000,000, comprising enlargement of Lachine and other canals on the route
Estimated cost, per project of T. C. Clarke, \$12,000,000, exclusive of enlargement of Lachine Canal.
See Appendix No. 30, General Report on Public Works, 1867-82.

DETAILS—RIVER MISSISSIPPI.

No. 25.—DISTANCES along the river from its Outlet on the Gulf of Mexico, up to its Source.

(See pages 92-93 of United States Report on the Mississippi.)

Localities.	Distances. — Miles.
Gulf of Mexico	0
Head of Passes.....	17
New Orleans.....	105
Carrolton	121
Natchez	378
Cairo (Mouth of Ohio).....	1,097
St. Louis.....	1,270
Mouth of Missouri.....	1,285
St. Paul (Minnesota).....	1,944
Falls of St. Anthony.....	1,957
Source of Mississippi.....	2,616
<hr/>	
New Orleans to St. Paul—Along river.....	1,839
do do Air line.....	1,043

TABLES Nos. 26 TO 31, INCLUSIVE.—PART I,

INDICATING

ELEVATIONS OF THE ST. LAWRENCE

ABOVE MEAN SEA LEVEL,

AND ALSO

WATER LEVELS, Etc.,

In connection with Floods between Laprairie, Montreal
and Three Rivers.

REMARK.

A continuous double line of Geodetic levels is being run by R. Steckel, C.E., for the Public Work Department, along the St. Lawrence, in order to verify, supplement and modify, as may be found requisite, the data given in the following tables which are based on the best information available up to the present time, for the purpose of preparing correct Profiles of the River and its Estuary, corresponding to various phases of the fluvial tide-wave in connection with the variations of the river levels proper, above tide water, etc., etc.

G. F. B.

OTTAWA, 10th Dec., 1887.

No. 26.—QUEBEC TO MONTREAL, ALBANY AND NEW YORK.

ELEVATIONS OF THE ST. LAWRENCE AND RIVER HUDSON.

	DESIGNATION.	RELATIVE ELEVATIONS IN FEET.				
		Above Montreal Harbour Datum established by Imperial Government.	Above North Shore Railway Datum of Provincial Government.	Above Top of Lower Mitre Sill, Old Lock No. 1, at foot of Lachine Canal.	Above Mean Sea Level, Governor's Island, New York.	Above Lowest Observed Water at Three Rivers.
1	Bench Mark on top of Railway Bridge, 2 miles up the River St. Maurice.....	135·14	90·00	54·14	65·45	50·45
2	Bench Mark, top of Railway Bridge, Terrebonne	126·31	81·17	45·31	56·62	41·62
3	Flood level of the St. Lawrence at Laprairie, April, 1858.....	124·75	79·61	43·75	56·06	40·06
4,5,6	Ordnance Bench Mark on ramp of the revetment wall in front of the Bonsecours market, along North side of Montreal Harbour:—					
4	Per Engineers of Shearer Scheme	119·63	74·49	38·63	49·94	34·94
5	Per Government Engineer	119·61	74·47	38·61	49·94	34·92
6	Per Montreal Harbour Engineers.	119·57	74·43	38·57	49·88	34·88
7	Top of coping, Old Lock No. 1, foot of Lachine Canal. On line of Lower Mitre Sill in 1879	112·33	67·19	31·33	42·64	27·64
8	Top of S.E. corner Richelieu Company's Wharf at Three Rivers, 1881	101·69	56·55	20·69	32·00	17·00
9	Summer datum of Montreal Water Works, per T. C. Keefer, C.E.	100·00	54·86	19·00	30·31	15·31
10	Low Water, Montreal Harbour, as formerly adopted	98·00	52·86	17·00	28·31	13·31
11	Low Water, Montreal Harbour, afterwards adopted	97·50	52·36	16·50	27·81	12·81
12	Lowest Water recorded at Montreal, from September, 1852, to 6th October, 1881....	96·42	51·28	15·42	26·73	11·73
13	Lowest Water observed at Three Rivers, by R. Steckel, C.E., 19th Sept., 1881.....	84·69	39·55	3·69	15·00	0·00
14	Top of Lower Mitre Sill of Old Lock No. 1, at foot of Lachine Canal. Head of Montreal Harbour	81·00	35·86	0·00	11·31	Below - 3·69
15	River Hudson. Low water at Albany	73·96	28·82	Below - 7·04	* 4·27	-10·73
16	Governor's Island. Mean Sea Level, New York; assumed	69·69	24·55	-11·31	0·00	-15·00
17	River St. Lawrence. Mean Sea Level, St. Lawrence Estuary, Province of Quebec; assumed	69·69	24·55	-11·31	0·00	-15·00
18	Datum of North Shore or Canadian Pacific Railway to Quebec.	45·14	0·00	-35·86	Below - 24·55	-39·55
19	Main datum established by Government....	0·00	Below - 45·14	-81·00	-69·69	-84·69

* See Note C, table No. 4.

No. 27 — MONTREAL AND LAPRAIRIE FLOODS, ETC.

ELEVATIONS OF THE ST. LAWRENCE DURING THE SHOVING OF THE ICE AND AT OTHER SEASONS.

DESIGNATION.		RELATIVE ELEVATIONS IN FEET.			
		Above Datum, Imperial Government.	Above Top of Lower Mitre Sill, Old Lock No. 1, at Foot of Lachine Canal.	Above Mean Sea Level at Governor's Island, New York.	Above Lowest Observed Water at Three Rivers.
1	Flood of April, 1869, at Laprairie. See Report of Thos. Guerin, C.E., 12th March, 1883, in Public Works Report, 1882-83, at page 132 of Appendix.	125·72	44·72	56·03	41·03
1½	Highest flood, 18th April 1886, at half-past twelve, noon, at Laprairie, per T. Guerin.....	127·67	46·67	57·98	42·98
1¾	Highest flood, 18th April 1886, at half-past four, p.m., at Montreal, per T. Guerin.....	125·30	44·30	55·61	40·61
2	Flood of April, 1858, at Laprairie. See page 808, Public Works Report, 1867-82.....	124·75	43·75	55·06	40·06
3	Flood of April, 1858, at Montreal. See page 374, Public Works Report, 1867.....	117·50	36·50	47·81	32·81
4	Top of railway track approaching Victoria Bridge, at Point St. Charles, recorded at City Surveyor's Office, Montreal. See page 133, Public Works Report, 1882-83.....	122·55	41·55	52·86	37·86
5	General elevation of Point St. Charles, which is drained into the sewers of the City of Montreal.	121 to 122	41·00	52·31	37·31
6	Elevation of John Street, in front of Poissant's Hotel, at Laprairie. See page 144, Public Works Report, 1882-83.....	121 88	40·88	52·19	37·19
7	Flood, 15th April, 1869, Harbour of Montreal.....	109·79	28·79	40·10	25·10
8	Flood, 22nd April, 1869, Griffintown flooded.....	121·41	40·41	51·72	36·72
9	Flood, 23rd April, 1869, Harbour of Montreal.....	115·25	34·25	45·56	30·56
7, 8, 9	See page 132, Public Works Report, 1882-83, Appendix 10.....				
10	Elevation, Chaboillez Square, City of Montreal.....	120 00	39·00	50·31	35·31
11	Flood, January, 1866, Montreal.....	120·50	39·50	50·81	35·81
11½	Flood, 2d January, 1883, Montreal, 110·22 per Guerin's calculation, 21st December 1882.....	110·92	29·92	41·23	26·23
12	Maxima winter and spring elevations, Harbour of Montreal, varied from 111 to 117 during several years, which gives a general maximum during the shoving of the ice, of.....	114·00	33·00	44·31	39·31
13	Harbour of Montreal, foot of Lachine Canal, 6th June, 1882.....	104·50	23·50	34·81	19·81
14	Harbour of Montreal, St. Mary's Current, 2 miles downward, 6th June, 1882.....	102·91	21·91	33 22	18·22
15	Harbour of Montreal, foot of Lachine Canal, 14th September, 1882.....	99·00	18·00	29·31	14·31
16	Harbour of Montreal, St. Mary's Current, 14th Sept., 1882.....	97·83	16·83	28·14	13·14
17	Harbour of Montreal, foot of Lachine Canal, 24th November, 1882.....	98·50	17·50	28·81	13·81
	do do 30th November, 1882.....	98·00	17·00	28 31	13·31
18	Harbour of Montreal, St. Mary's Current, 24th November, 1882.....	97·15	16·15	27·46	12·46
	do do 30th November, 1882.....	96·85	15·85	27·16	12·16
19	Lowest water observed at Three Rivers, by R. Steckel, 19th September, 1881.....	84·69	3·69	15·00	0·00

No. 27.—MONTREAL AND LAPRAIRIE FLOODS, ETC.—*Concluded.*ELEVATIONS OF THE ST. LAWRENCE DURING THE SHOVING OF THE ICE AND AT OTHER SEASONS.—*Concluded.*

	DESIGNATION.	RELATIVE ELEVATIONS IN FEET.			
		Above Datum, Imperial Government.	Above Top of Lower Mitre Sill, Old-Lock No. 1, at Foot of Lachine Canal.	Above Mean Sea Level at Governor's Island, New York.	Above Lowest Observed Water at Three Rivers.
20	Top of L.M.S. Old Lock No. 1, foot of Lachine Canal, head of Montreal Harbour.....	81·00	0·00	11·31	Below. —3·69
21	Governor's Island, mean sea level, New York, Assumed.....	69·69	Below. —11·31	0·00	—15·00
22	Datum established by Imperial Government.....	0·00	—81·00	Below. —69·69	—84·69

No. 28.—QUEBEC TO LAKE SUPERIOR AND NEW YORK.

APPROXIMATE ELEVATIONS OF THE ST. LAWRENCE, LAKE CHAMPLAIN AND RIVER HUDSON.

N. B.—No continuous line of levels along the St. Lawrence, between Montreal and Lake Superior, has been taken by the Government, up to 1888; the elevations therefore are only approximate.

DESIGNATION.		RELATIVE ELEVATIONS IN FEET.			
		Above Datum, Imperial Government.	Above Mean Sea Level at Governor's Island, New York.	Above Mean Tide Water at Albany.	Above Lowest Observed Water at Three Rivers.
1	Lake Superior, head of Saut Ste. Marie Canal	671.47	601.78	597.51	586.78
2	Lake Huron, foot of Saut Ste. Marie Canal; fall, 16.75 to 18.00—mean, 17.38	654.09	584.40	580.13	569.40
3	Lake Erie, Port Colborne, head of Welland Canal.	645.86	576.17	571.90	561.17
4	Lake Ontario, Port Dalhousie, foot of Welland Canal; fall, 326.75 feet	319.11	249.42	245.15	234.42
4 to 5	From Lake Ontario down to the Cornwall Canal there are 3 canals, with a total descent of about 31 feet:—the Galops, 15 to 15½; the Rapide Plat, 11½, and the Farran's Point, 3½ to 4 feet..				
5	River St. Lawrence, head of Cornwall Canal	274.69	205.00	200.73	190.00
6	Lake St. Francis, foot of Cornwall Canal	226.69	157.00	152.73	142.00
7	Lake St. Francis, head of Beauharnois Canal	225.19	155.50	151.23	140.50
8	Lake Champlain { High water, Report of J. B. Mills, 19th Feb., 1848	170.19	100.50	96.23	85.50
	{ Low water	166.96	97.27	93.00	82.27
9	Lake St. Louis, foot of Beauharnois Canal	142.69	73.00	63.73	53.00
10	Lake St. Louis, head of Lachine Canal	141.19	71.50	67.23	56.50
11	River St. Lawrence, foot of Lachine Canal; head of Harbour of Montreal; lowest water observed, Sept., 1852, to Oct., 1881	96.42	26.73	22.46	11.73
12	River St. Lawrence, foot of St. Mary's Current, 2 miles below head of Harbour of Montreal	94.69	25.00	20.73	10.00
13	River St. Lawrence, highest water, spring tides, Quebec	90.69	21.00	16.73	6.00
14	River St. Lawrence, highest water, spring tides, Three Rivers	88.69	19.00	14.73	4.00
15	River St. Lawrence, lowest water observed at Three Rivers by R. Steckel, 19th Sept., 1881.	84.69	15.00	10.73	0.00
16	River St. Lawrence, top of lower mitre sill, Old Lock, No. 1, at foot of Lachine Canal, Montreal	81.00	11.31	7.04	—3.69
17	River Hudson, low water at Albany	73.96	4.27	0.00	—10.73
				Below.	
18	Governor's Island, mean sea level at New York	69.69	0.00	—4.27	—15.00
19	River St. Lawrence, mean sea level, St. Lawrence Estuary, Province of Quebec	69.69	0.00	—4.27	—15.00
20	Datum to which all elevations are referred	0.00	—69.69	—73.96	—84.69

No. 29.—DISCHARGE OF THE RIVER ST. LAWRENCE.

MEASURED BY THOMAS GUERIN, C.E., BY ORDER OF DEPARTMENT OF PUBLIC WORKS, 1882.

Date of Measurement.	Season and Locality.	Above Datum of Imperial Government.	Discharge Cubic Feet. Per Second.	Velocity in Feet Per Second.
1882	MONTREAL HARBOUR. <i>During the Maximum Summer Elevation.</i>			
June 6.....	Water Surface, foot of Lachine Canal.....	104.50		
	North Channel, St. Mary's Current, at Section.....	102.91	360,805	5.31
	South Channel, St. Helen's Island Current, at Section...	103.23	70,928	
	Total discharge during highest water in summer.....		431,733	
	<i>During the Minimum Summer Elevation.</i>			
November 30	Water Surface, foot of Lachine Canal.....	98.00		
	North Channel, St. Mary's Current, at Section.....	96.85	260,114	4.82
	South Channel, St. Helen's Island Current, at Section...		17,129	
	Total discharge during lowest water in summer.....		277,243	
June 6 to Nov. 30....	Average discharge, summer, 1882.....		354,488	

REMARK.—St. Helen's Island, 8 miles below Laprairie, divides the river into two channels, the one on the harbour side being called "St. Mary's Current," and the other on the opposite side being called the "South Channel," both being nearly three-quarters of a mile in width.

At Laprairie Village, width of river not less than 4 miles.

At Longueuil Village, width of river little less than 1 mile.

See reports of H. F. Perley, Chief Engineer of Public Works, 19th March, 1883, and of Thos. Guerin, C.E., 12th March, 1883, in Appendix 10, Report of Public Works, 1882-83.—G. F. B.

No. 30.—PROGRESS OF FLOOD, APRIL, 1886.

EXTREME ELEVATIONS TO WHICH THE FLOOD ROSE.—LAPRAIRIE TO THREE RIVERS.

Localities.	Dates.	Hours and Minutes.	Above Ordinary Low Water.	Above Government Datum at Montreal.
1886				
Laprairie, highest flood, per Thos. Guerin, C.E...	April 18 ...	H. M. 12—30 P.M.	29·67	127·67
Montreal, foot of Lachine Canal	do 18	4—30 do	27·30	125·30
Longueuil, upper end of village	do 17.....	6—00 do	25·10	123·10
do lower do	do 17.....	.....	23·10	121·10
do water nearly stationary	do 18.....	.....	.....	.....
do water began to subside	do 19.....	.....	.....	.....
do water entirely subsided	do 20.....	.....	.....	.....
Boucherville, per J. Kennedy, Chief Eng H.C.....	do 20	Noon. 2 to 3h P.M.	19·75	117·75
Varenes do do	do 20	1 do	20·50	118·50
Verchères do do	do 20.....	.....	20·25	118·25
H. M				
Contrecoeur do do	do 20	3—00 P.M.	20·83	118·83
Sorel, water stationary 5 to 6 hours	do 20	7—00 do	16·10	114·10
Three Rivers, per Thomas Berlinguet, C.E.....	do 20	3—40 do	11·45	109·45
do do	do 21.....	3—40 do	13·20	111·20
do do	do 22.....	3—40 do	13·90	111·90
do do	do 23.....	2—30 do	14·10	112·10
do do	do 24.....	3—40 do	13·65	111·65

N.B.—The elevations of the flood between Laprairie and Three Rivers were furnished by John Kennedy, Chief Engineer of Harbour Commissioners, Montreal.

The hours at which the flood occurred were furnished chi fly by the Mayors of the localities. The low water from which the above elevations are reckoned is taken at 17 feet on the lower sill of Lock No. 1, at the foot of the old entrance of the Lachine Canal, which corresponds to 98 feet above the Government datum, and to 11 feet on the Flats of Lake St. Peter.

According to the late Thomas Guerin, C.E., who died 7th May, 1887, the flood took 4 hours to reach from Laprairie to Montreal, on the 18th of April, 1886.—G F.B.

No. 31.—HARBOUR OF MONTREAL.

DATES OF OPENING AND CLOSING OF NAVIGATION.

Opening of Navigation.			Closing of Navigation.		
1877.....	April	17	1877.....	January	2
1878.....	March	30	1878.....	December	23
1879.....	April	24	1879.....	do	19
1880.....	do	17	1880.....	do	3
1881.....	do	19	1881.....	January	2
1882.....	do	11	1882.....	December	9
1883.....	do	27	1883.....	do	16
1884.....	do	22	1884.....	do	18
1885.....	May	5	1885.....	do	7
1886.....	April	24	1886.....	do	4
1887.....	May	1	1887.....	do	23

No. 31 $\frac{1}{2}$.—HARBOUR OF MONTREAL.

MEMORANDUM TAKEN FROM THE HARBOUR MASTER'S REPORTS RESPECTING THE ICE AND THE OPENING AND CLOSING OF NAVIGATION FROM 1864 TO 1888.

- 1864—The ice in the harbour began to break and move on the 7th of April; on the 13th river was clear; close of navigation December 10th.
- 1865—On the first of January the water gradually rose; on the 14th the ice shoved; on the 15th the ice remained stationary.
- 1866—Opening of navigation April 19th; on the 5th January, 1866, the river was full of ice; on the 6th the ice became stationary.
- 1867—On the 1st of January the water was level with the wharves; ice forming fast; on the 9th ice became stationary. The first shove of the ice took place on the 14th April, on the 22nd the harbour was clear of ice.
- 1868—The winter was unusually cold, the river was frozen at an early date, teams crossed on the 16th of December, 1867; on the 19th March, 1868, ice shoved; on the 4th of April the ice shoved heavily opposite the city; on the 14th and 15th the ice kept moving; on the 17th the harbour was clear.
- 1869—December 28th, the river was frozen over early; on this date the first team crossed to St Lambert, in the beginning of 1869; the ice was considered firm for the winter; on the 13th April the ice shoved; on the 18th shoved again, on the 19th it shoved, flooding Griffintown, which continued until the 23rd, at 10 a.m. ice below gave way; on the 25th the harbour clear of ice.
- 1870—On the 1st January, channel opposite city free of ice; on the 8th crossed on foot; on 9th ice shoved, no crossing until 13th, teams crossed on the 15th; on 17th thaw set in which lasted some time; on 31st March the ice opposite the city was bad; the first shove on the 9th April, shoved on the 10th and 11th; on the 17th harbour clear of ice.
- 1871—On the 4th January river frozen over; on the 6th became mild ice shoved; on 11th teams crossing; on the 15th March a slight shove; 17th shoved again; on 31st, last crossing; 3rd April the ice kept moving; on 10th harbour clear.
- 1872—When the year commenced, the river was frozen and teams crossing; on April 18th, first shove; on 28th harbour clear; on 1st May vessels arrived in port.
- 1873—On the 1st January the river was frozen over and ice stationary, teams crossing; on 11th April the ice shoved and continued to do so daily until 21st when it gave way; on 25th Steamer *William* arrived from Sorel.
- 1874—On 17th January the river was frozen over; on 21st teams crossed from Longueuil; April 18th first shove; on 23rd harbour free from ice; 25th a number of small craft arrived in port. The ice-bridge at Cape Rouge held firm until the 9th of May.
- 1875—On the 1st January, the river opposite the city was full of ice, teams crossed below Hochelaga on the last day of the year 1874; on 4th January, 1875, ice became stationary. The winter was the coldest that had been experienced for many years. The first ice shoved on the 24th April; on 29th harbour clear; on the 1st May, a may-pole was placed on the ice opposite Longueuil; on 3rd, river vessels arrived from Boucherville; on the 7th ice-bridge at Cape Rouge gave way. On the 5th December, ice became stationary; on 21st teams crossed to the city, the earliest on record.
- 1876—When January commenced, the river was frozen and ice good; on April 12th ice got bad; on 16th first shove and shoved daily until 26th; on 27th several vessels arrived from Boucherville. On 19th December, the ice was good, persons crossing on foot; 23rd teams crossing.
- 1877—When the year commenced, the river was frozen over; the weather in April was fine and mild; on the 5th the ice began to get bad; on the 8th, the first shove and moved downwards, on the 14th, the channel was clear as far as Hochelaga; on the 17th the tug *Francis* arrived from Boucherville. The weather was mild this fall, the navigation was still open on the 31st of December.

- 1878—On the 1st of January, the Longueuil Ferry still running, in the afternoon left the harbour with a party on a pleasure excursion to Boucherville, on the 17th people crossed the ice on foot, on 24th good crossing. The 7th of January was the coldest day of the winter, at 8 a.m. 15° below zero; on the 1st of February roads were made, on the 18th a road was made to Laprairie, and on the last day of the month these roads were considered unsafe. March 1st cold snap, on the 2nd teams again crossed to St. Lambert and Laprairie, on the 12th again abandoned, on the 16th first open water; on 18th first shove of ice, on 22nd channel clear as far as Pointe-aux-Trembles; on the 29th the steamer *Montarville* came into the harbour but had to return to Boucherville, on the 30th tug *St. Francis* arrived in port; on last day of the year the river was full of drift ice.
- 1879—On the 1st of January the weather was fine, in the afternoon a boat's crew descended the Lachine Rapids in safety, on the 25th the river was full of ice, on 26th teams crossed at Longueuil; on the 1st February a road was made from St. Lambert, on 13th February a road was made from Laprairie; on the 12th April the ice shoved, after the 15th the ice kept daily moving downwards, on the 18th the ice became so closely packed and stationary that people crossed on foot; on 23rd steamer *St. Lambert* arrived in port from Boucherville. On the 22nd December it was very cold, 22° below zero, on the 25th river full of ice, on 27th crossing on foot, teams crossing at Longueuil.
- 1880—On the 1st of January weather fine, at 8 a.m. 4° below zero; river opposite city full of ice, teams crossing below Longueuil; on the 2nd crossing on foot to St. Lambert; on the 13th commenced laying a railroad track on the ice from Hochelaga to Longueuil, completed on the 30th; on the following day the road was opened; on the 1st April ice began to get bad, on the same day a commencement was made to remove the ice-bridge railroad; April 5th first shove of the ice,; on the 6th ice shoved again; on the 7th a very heavy shove on Island Mouton, it was piled up 44 feet, the water in the harbour at the time was 17 feet above the summer level; on the 13th a large quantity of ice left the harbour; on the 17th river craft arrived from Boucherville; on the 29th April the ice bridge at Cape Rouge gave away; on the 3rd of December the river was full of ice, Longueuil Ferry left for winter quarters; on the 29th roads were commenced on the ice to St. Lambert.
- 1881—The New year commenced with fine weather. On the 5th, railway cars commenced crossing at Longueuil; on the 8th of April the ice commenced breaking up; 13th, channel opposite city clear; on 19th, tug *C. W. Francis* arrived in port, being the first arrival of the season; on the 27th, *S.S. Peruvian* arrived from Sorel where she had wintered; December 31st fine mild weather; the year closed with open navigation, the *Longueuil* making regular trips.
- 1882—Navigation opened on 11th of April, and closed on 9th December.
- 1883—Opening of navigation April 27th, closing December 16th.
- 1884—Opening of navigation April 22nd, closing December 18th.
- 1885—Opening of navigation May 5th, closing December 7th.
- 1886—Opening of navigation April 24th, closing December 4th.
- 1887—Opening May 1st, closing December 23rd.

(Signed)

THOMAS HOWARD.

Harbour Master.

MONTREAL, 10th January, 1888.

No. 32.—DATES on which the Ice broke up and passed the St. Mary's Current, below Montreal, since 1823.

1824.....	April	10	1836.....	April	28
1825.....	March	16	1837.....	do	15
1826.....	April	11	1838.....	do	7
1827.....	do	4	1839.....	do	7
1828.....	March	29	1840.....	do	4
1829.....	April	11	1841.....	do	19
1830.....	.....	.....	1842.....	March	31
1831.....	April	3	1843.....	April	25
1832.....	do	19	1844.....	do	10
1833.....	do	4	1845.....	do	3
1834.....	March	29	1846.....	do	4
1835.....	April	3	1847.....	do	29

No. 33.—NOTES taken by W. Waters, of the Cedars, regarding the Opening and Closing of Navigation above Montreal, at Cascades Wharf and Beauharnois Canal, &c., during the following Seasons, 1842 to 1853.

Dates.	Name of Steamer and Locality.	Dates.	Name of Steamer and Locality.
1842 April 14	Str. Chieftain, 1st trip to Cascades.	1848 April 11	British Queen, to Harwood's Mill.
1843 do 26	do do	1848 do 15	British Queen, to Cascades Wharf.
1843 do 26	Str. Highlander made her trial trip.	1848 do 16	do through Beauharnois Canal.
1844 do 16	Str. Highlander, to Cornwall.	1848 Nov. 11	Beauharnois Canal frozen up.
1844 do 20	Str. Chieftain, 1st trip to Cascades.	1849 April 11	1st steamer ran the Cedar Rapids.
1844 do 1	Steamer ran the Cedar Rapids.	1849 do 20	Mail up through Beauharnois Canal.
1845 do 12	Str. Chieftain, to Cascades Island.	1850 do 21	Str. Lily ran the Cedar Rapids.
1845 do 25	do Cascades Wharf.	1850 do 26	Str. Dewitt, to Cascades Wharf.
1845 do 25	1st raft run the rapids.	1850 do 30	1st steamer through Beauharnois Canal.
1845 Nov. 25	Str. Chieftain, laid up in Beauharnois Canal	1851 Ap. 17 or 15	Str. Dewitt, to Cascades Wharf.
1845 Dec. 9	Str. Highlander, laid up in Cornwall Canal.	1851 April 24	1st steamer through Beauharnois Canal.
1846 Ap. 13 or 15	1st steamer to Cascades.	1851 Dec. 1	1 steamer and 4 barges ran Cedar Rapids.
1846 April 29	Str. Highlander, 1st trip to Cornwall Canal.	1852 May 1	1st steamer ran Cedar Rapids.
1846 May 6	Str. Gildersleeve, through Beauharnois Canal.	1852 do 5	1st mail by Beauharnois Canal.
1847 April 20	Arrival of steamer at Cascades.	1853 April 30	1st mail by str. New Era through Beauharnois Canal.
1847 May 4	Steamer to Kingeton, through Cornwall Canal.	1853 do 28	Arrival of steamer at Cascades. Steamer discontinued after 1853, the traffic having been diverted to Beauharnois Canal.
1847 do 6	Str. Gildersleeve, 1st trip to Beauharnois Canal.		
1848 April 10	British Queen, 1st trip to Cascades Island.		

No. 34.—OPENING OF NAVIGATION at Cascades Wharf, and at the foot of the Beauharnois Canal, 1846 to 1853.

Cascades Wharf.	Foot of Beauharnois Canal.
April 13, 1846.....	April 16, 1846.
do 20, 1847.....	May 5, 1847.
do 10, 1848.....	April 12, 1848.
do 11, 1849.....	do 19, 1849.
do 24, 1850.....	do 26, 1850.
do 15, 1851.....	do 25, 1851.
do 30, 1852.....	May 2, 1852.
do 28, 1853.....	April 29, 1853.

No. 35.—STATEMENT of the dates of Opening and Closing of Navigation at Quebec, Montreal, Kingston and Toronto, from 1814 to 1888.

Years.	QUEBEC.		MONTREAL.		KINGSTON.		TORONTO.	
	Opened.	Closed.	Opened.	Closed.	Opened.	Closed.	Opened.	Closed.
1814	April 28.....	Dec. 7.....						
1815	do 28.....	do 5.....						
1816	do 23.....	Nov. 29.....						
1817	May 6.....	Dec. 5.....						
1818	April 27.....	do 1.....						
1819	do 30.....	do 7.....						
1820	do 24.....	do 1.....						
1821	May 3.....							
1822	April 29.....	Dec. 3.....						
1823	do 25.....							
1824	do 20.....	Dec. 11.....						
1825	do 19.....							
1826	do 22.....	Dec. 21.....						
1827	do 14.....							
1828	do 12.....							
1829	do 18.....							
1830	do 17.....	Dec. 4.....						
1831	do 21.....	Nov. 30.....					Dec. 19.....	
1832	do 29.....	do 30.....					April 27.....	do 4.....
1833	do 19.....	do 25.....					do 7.....	Jan. 1, '34
1834	do 18.....	Dec. 9.....					March 19.....	Dec. 22.....
1835	May 4.....	do 1.....					April 6.....	do 31.....
1836	do 10.....	do 1.....					do 23.....	do 26.....
1837	do 2.....	do 12.....					do 11.....	Jan. 16, '38
1838	do 1.....	Nov. 26.....					do 6.....	Dec. 18.....
1839	April 23.....	Dec. 19.....					do 8.....	do 26.....
1840	do 21.....	do 2.....					March 19.....	do 23.....
1841	May 4.....	do 14.....					April 23.....	do 31.....
1842	April 26.....	do 2.....					March 24.....	do 31.....
1843	May 5.....	do 1.....					April 25.....	Jan. 3, '44
1844	April 23.....	Nov. 29.....					March 9.....	do 12, '45
1845	do 23.....	Dec. 2.....					April 2.....	do 9, '46
1846	do 14.....	do 9.....					March 31.....	
1847	May 11.....	do 3.....					April 11.....	Jan. 6, '48

No. 35.—STATEMENT of the dates of Opening and Closing of Navigation at Quebec, Montreal, Kingston and Toronto, from 1814 to 1888—*Concluded.*

Years.	QUEBEC.		MONTREAL.		KINGSTON.		TORONTO.	
	Opened.	Closed.	Opened.	Closed.	Opened.	Closed.	Opened.	Closed.
1848	April 18.....	Dec. 5.....	.....	.....	April 3.....	Dec. 30.....	.....	.....
1849	do 24.....	do 7.....	.....	.....	do 3.....	do 31.....	.....	.....
1850	do 26.....	do 10.....	.....	.....	do 5.....	do 26.....	.....	.....
1851	do 22.....	do 5.....	.....	.....	do 2.....	do 22.....	.....	.....
1852	do 30.....	do 19.....	.....	.....	do 19.....	Jan. 14, '53	.....	.....
1853	do 26.....	do 3.....	.....	.....	do 4.....	do 5, '54	.....	.....
1854	May 5.....	do 5.....	April 25.....	Dec. 6.....	do 10.....	do 13, '55	.....	.....
1855	do 8.....	Nov. 27.....	do 28.....	do 12.....	do 17.....	do 1, '56	April 2.....	Dec. 19
1856	April 22.....	Dec. 2.....	do 24.....	do 3.....	do 8.....	Dec. 31.....	do 17.....	do 23
1857	do 28.....	do 4.....	do 18.....	do 13.....	do 2.....	Feb. 2, '58	Feb. 27.....	do 30
1858	do 16.....	do 3.....	do 9.....	do 12.....	do 26.....	Jan. 8, '59	March 4.....	do 21
1859	do 26.....	Nov. 29.....	do 4.....	do 11.....	do 15.....	Dec. 25.....	Feb. 7.....	do 30
1860	do 20.....	Dec. 8.....	do 10.....	do 7.....	do 12.....	Jan. 10, '61	Jan. 10.....	do 31
1861	do 26.....	do 17.....	do 24.....	do 22.....	do 8.....	do 4, '62	do 2.....	do 31
1862	do 11.....	do 5.....	do 23.....	do 7.....	do 14.....	do 17, '63	do 2.....	do 30
1863	May 1.....	do 4.....	do 25.....	do 12.....	do 16.....	do 1, '64	do 7.....	do 21
1864	April 19.....	do 13.....	do 13.....	do 11.....	do 5.....	do 4, '65	Feb. 3.....	do 29
1865	do 18.....	do 9.....	do 10.....	do 16.....	March 23.....	do 5, '66	March 25.....	do 30
1866	do 27.....	do 15.....	do 19.....	do 15.....	April 11.....	do 5, '67	April 3.....	do 26
1867	do 17.....	Nov. 29.....	do 22.....	do 6.....	do 8.....	Dec. 18.....	March 28.....	do 9
1868	do 23.....	do 28.....	do 17.....	do 9.....	March 31.....	do 24.....	April 6.....	do 12
1869	do 27.....	do 27.....	do 25.....	do 6.....	April 17.....	Jan. 8, '70	do 1.....	do 3
1870	do 16.....	Dec. 2.....	do 18.....	do 18.....	do 13.....	Dec. 31.....	do 3.....	do 24
1871	do 22.....	Nov. 27.....	do 8.....	do 1.....	March 16.....	do 25.....	March 11.....	Nov. 30
1872	do 30.....	do 26.....	May 1.....	do 8.....	April 23.....	do 21.....	April 12.....	Dec. 10
1873	do 28.....	do 22.....	April 23.....	Nov. 26.....	do 24.....	Jan. 14, '74	do 14.....	Nov. 26
1874	do 28.....	do 25.....	do 25.....	Dec. 13.....	March 28.....	do 5, '75	March 16.....	Dec. 20
1875	do 29.....	do 23.....	May 3.....	Nov. 29.....	April 19.....	Dec. 23.....	April 16.....	Nov. 20
1876	May 6.....	do 24.....	April 27.....	Dec. 10.....	do 18.....	do 20.....	do 11.....	Dec. 9
1877	April 25.....	do 26.....	do 17.....	Jan. 2, '78	do 9.....	Jan. 8, '78	March 25.....	do 19
1878	do 20.....	do 25.....	March 30.....	Dec. 23.....	March 11.....	do 2, '79	do 9.....	do 16
1879	do 29.....	do 28.....	April 24.....	do 19.....	April 21.....	Dec. 28.....	do 25.....	do 24
1880	do 30.....	do 27.....	do 17.....	do 3.....	March 23.....	do 21.....	Feb. 19.....	do 8
1881	May 1.....	do 24.....	do 21.....	Jan. 2, '82	April 12.....	Jan. 12, '82	April 16.....	do 19
1882	do 5.....	do 25.....	do 11.....	Dec. 9.....	March 7.....	do 4, '83	Feb. 27.....	do 9
1883	do 2.....	do 24.....	do 26.....	do 16.....	April 19.....	Dec. 31.....	April 15.....	do 21
1884	April 30.....	Dec. 12.....	do 22.....	do 18.....	do 19.....	do 31.....	March 30.....	do 19
1885	do 29.....	Nov. 21.....	May 5.....	do 7.....	do 28.....	Jan. 8, '86	April 25.....	Jan. 8, '86
1886	do 29.....	do 24.....	April 24.....	do 4.....	do 9.....	Dec. 30.....	March 20.....	Dec. 4
1887	do 30.....	do 28.....	May 1.....	do 22.....	do 19.....	do 30.....	April 12.....	do 24

For dates of opening and closing of navigation at other ports and on the canals of Canada, together with the draft of water, etc., see general report Public Works, 1867-1882, pages 906-935, and subsequent annual reports Public Works, also annual reports on Railways and Canals, up to 1888.

No. 36.—LAKE CHAMPLAIN AND ERIE CANAL ROUTES.

The following table, taken from the Reports of the Canal Commissioners and Superintendent of Public Works of the State of New York, shows the dates of opening and closing of the Hudson River, from 3rd March, 1824, to 1888; opening of Champlain Canal, from 1st May, 1867, to 1882; also, the time of opening and closing the Erie Canal, from 1824 to 1888, and the opening of Lake Erie, from 1827 to 1888.

Years.	HUDSON RIVER.			CHAMPLAIN CANAL.		ERIE CANAL.			LAKE ERIE.
	Opened.	Closed.	No. of Days Open.	Opened.	Closed.	Opened.	Closed.	No. of Days Open.	Opened.
1824	March 3...	Jan. 5...	309			April 30...	Dec. 4...	219	
1825	do 6...	Dec. 13...	283			do 12...	do 5...	228	
1826	Feb. 25...	do 13...	302			do 20...	do 18...	243	
1827	March 20...	Nov. 25...	251			do 22...	do 18...	241	April 21...1827
1828	Feb. 8...	Dec. 23...	320			March 27...	do 20...	269	do 1...1828
1829	April 1...	Jan. 14...	286			May 2...	do 17...	230	May 10...1829
1830	March 15...	Dec. 25...	283			April 26...	do 17...	242	do 5...1830
1831	do 15...	do 6...	262			do 16...	do 1...	230	do 8...1831
1832	do 25...	do 21...	289			do 25...	do 21...	241	April 27...1832
1833	do 21...	do 13...	277			do 19...	do 12...	238	do 28...1833
1834	Feb. 29...	do 15...	291			do 17...	do 12...	240	do 6...1834
1835	March 25...	Nov. 30...	268			do 15...	Nov. 30...	230	May 8...1835
1836	April 4...	Dec. 7...	244			do 25...	do 26...	216	April 27...1836
1837	March 27...	do 14...	261			do 20...	Dec. 9...	234	May 16...1837
1838	do 19...	Nov. 25...	257			do 12...	Nov. 25...	228	March 1...1838
1839	do 25...	Dec. 18...	286			do 20...	Dec. 16...	241	April 11...1839
1840	Feb. 25...	do 5...	285			do 20...	do 2...	228	do 27...1840
1841	March 24...	do 19...	286			do 21...	Nov. 30...	221	do 14...1841
1842	Feb. 4...	Nov. 28...	308			do 20...	do 28...	222	March 7...1842
1843	April 13...	Dec. 10...	242			May 1...	do 30...	214	May 6...1843
1844	March 18...	do 17...	278			April 18...	do 26...	222	Mar. 14...1844
1845	Feb. 24...	do 3...	283			do 15...	do 29...	228	April 3...1845
1846	March 18...	do 14...	275			do 16...	do 25...	224	do 11...1846
1847	April 7...	do 25...	283			May 1...	Nov. 30...	214	do 23...1847
1848	March 22...	do 27...	292			do 1...	Dec. 9...	223	do 9...1848
1849	do 19...	do 26...	286			do 1...	do 15...	219	Mar. 25...1849
1850	do 10...	do 17...	282			April 22...	do 11...	234	do 25...1850
1851	Feb. 25...	do 14...	293			do 15...	do 6...	235	April 2...1851
1852	March 28...	do 23...	270			do 20...	do 16...	239	do 20...1852
1853	do 23...	do 21...	274			do 20...	do 20...	245	do 14...1853
1854	do 17...	do 8...	266			May 1...	do 3...	217	do 29...1854
1855	do 27...	do 20...	268			do 1...	do 10...	224	do 21...1855
1856	April 11...	do 14...	248			do 5...	do 4...	214	May 2...1856
1857	Feb. 27...	do 27...	303			do 6...	do 15...	223	April 27...1857
1858	March 20...	do 17...	273			April 28...	do 8...	225	do 15...1858
1859	do 13...	do 10...	273			do 15...	do 12...	242	do 7...1859
1860	do 6...	do 14...	233			do 25...	do 12...	233	do 17...1860
1861	do 5...	do 23...	294			May 1...	do 10...	224	do 13...1861
1862	April 4...	do 19...	259			do 1...	do 10...	224	do 15...1862
1863	do 3...	do 11...	252			do 1...	do 9...	223	do 3...1863
1864	March 11...	do 12...	277			April 30...	do 8...	223	do 13...1864
1865	do 22...	do 16...	270			May 1...	do 12...	226	do 26...1865
1866	do 20...	do 15...	270			do 1...	do 12...	226	do 28...1866
1867	do 26...	do 8...	257	May 1...		do 6...	do 20...	229	do 21...1867
1868	do 24...	do 5...	252	do 5...		do 4...	do 7...	217	do 19...1868
1869	April 5...	do 9...	248	do 7...		do 6...	do 10...	218	May 1...1869
1870	March 31...	do 17...	261	do 10...		do 10...	do 8...	213	April 16...1870
1871	do 12...	Nov. 29...	268	April 24...		April 24...	do 1...	220	do 1...1871
1872	April 7...	Dec. 9...	247	May 13...		May 13...	do 1...	202	May 6...1872
1873	do 16...	Nov. 22...	221	do 15...		do 15...	do 5...	205	April 29...1873
1874	March 19...	Dec. 12...	269	do 5...		do 5...	do 5...	215	do 18...1874

Generally the same as the Erie Canal.

Generally the same as the Erie Canal.

No. 36.—LAKE CHAMPLAIN AND ERIE CANAL ROUTES—*Concluded.*

Years.	HUDSON RIVER.			CHAMPLAIN CANAL.		ERIE CANAL.			LAKE ERIE.
	Opened.	Closed.	No. of Days Open.	Opened.	Closed.	Opened.	Closed.	No. of Days Open.	Opened.
1875	April 13...	Nov. 29...	229	May 18...		May 18...	Nov. 30...	197	May 12...1875
1876	do 1...	Dec. 2...	245	do 4...		do 4...	Dec. 1...	211	do 4...1876
1877	March 30...	do 31...	277	do 8...		do 8...	do 7...	214	April 17...1877
1878	do 14...	do 20...	282	April 15...		April 15...	do 7...	237	Mar. 24...1878
1879	April 4...	do 20...	261	May 8...		May 8...	do 6...	214	April 24...1879
1880	March 5...	Nov. 25...	266	April 16...		April 20...	Nov. 21...	216	Mar. 14...1880
1881	do 21...	Jan. 2, '82...	288	May 12...		May 17...	Dec. 8...	206	May 1...1881
1882	do 8...	Dec. 5...	273	April 11...		April 11...	do 7...	241	Mar. 26...1882
1883	do 29...	do 15...	261	Generally same as Erie Canal.	Generally same as Erie Canal.	May 7...	do 1...	208	May 4...1883
1884	do 25...	do 19...	269			do 6...	do 1...	209	April 25...1884
1885	April 7...	do 13...	250			do 11...	do 1...	205	May 2...1885
1886	March 30...	do 3...	248			do 1...	do 1...	214	April 26...1886
1887	April 9...	do 20...	255			do 12...	do 1...	204	do 17...1887

See Annual report, 1887, Superintendent of Public Works, State of New York, signed James Shanahan, at Albany.

PART II.

TABLES OF DISTANCES, ETC., ETC.

OCEAN ROUTES

BETWEEN THE

Principal Ports of Canada and the United States, in
North America.

AND THOSE OF

FOREIGN COUNTRIES.

PART II.

INDEX TO TABLES OF DISTANCES.

- No. 1.—Quebec to Liverpool *via* Strait of Belle-Ile and Malin Head, north of Ireland.
- No. 2.—Head of Lake Superior to Liverpool *via* Strait of Belle-Ile and north of Ireland.
- No. 6.—Distances to Liverpool from Halifax, N.S., St. John, N.B., Portland, Me., and Quebec.
- No. 7.—Principal sea-ports of North America to Galway, Liverpool, Havre, Havana and Rio Janiero.
- No. 8.—Canadian and Brazillian Mail Line of Steamships.
- No. 9.—The principal ocean steam routes throughout the world, from England to the West or to North America, West Indies, South America, Asia, &c.
- No. 10.—The principal ocean steam routes throughout the world, from England to the East or to India, China, Japan and Australia, by overland route.
- No. 11.—The principal ocean steam routes throughout the world, from England to the East by the Cape of Good Hope.
- No. 12.—Table of latitudes and longitudes of principal Canadian ports.
- No. 13.—Great circle or air line distances from principal ports of North America and Newfoundland to Japan.
- No. 14.—Definition of geographical or nautical and statute miles.

No. 1.—Quebec to Liverpool, *via* Strait of Belle-Ile and Malin Head, North of Ireland.

From	To	Sections of Navigation.	Geographical Miles.	Statute Miles.
Quebec.....	Saguenay	River St. Lawrence.	106	122
Saguenay	Father Point	do	53	61
Father Point	Lighthouse, west end Anticosti...	do	176	202
West end of Anticosti.....	Cape Whittle, Labrador Coast...	Gulf of St. Lawrence.	175	201
Cape Whittle.....	Belle-Ile Lighthouse, east entrance to Strait.	do	209	240
Belle-Ile.....	Malin Head, North of Ireland....	Atlantic Ocean.....	1,750	2,013
Malin Head.....	Liverpool	do ..and Irish Sea	192	221
Total from Quebec to Liverpool, <i>via</i> Belle-Ile and Malin Head, North of Ireland			2,661	3,060

No. 2.—Head of Lake Superior to Liverpool, *via* Strait of Belle-Ile and North of Ireland.

Sections of Navigation.	Geographical Miles.	Statute Miles.
Head of Lake Superior, at Fond-du-Lac, to Quebec	1,355	1,558
Quebec to Liverpool, <i>via</i> Strait of Belle-Ile and North of Ireland.	2,661	3,060
Total from head of Lake Superior to Liverpool, <i>via</i> Belle-Ile and Malin Head, North of Ireland	4,016	4,618
Route <i>via</i> Strait of Belle-Ile shorter than <i>via</i> Cape Race	158	182

N.B.—Strait of Belle-Ile, 80 miles long by 14 average breadth.

No. 3.—Quebec to Liverpool, *viâ* Cape Race and Malin Head, North of Ireland.

From	To	Sections of Navigation.	Geo-graphical Miles.	Statute Miles.
Quebec.....	Saguenay.....	River St. Lawrence.....	106	122
Saguenay.....	Father Point.....	do.....	53	61
Father Point.....	Métis Point.....	do.....	22	25
Métis.....	Cap Ste-Anne-des-Monts....	do.....	71	82
Cap Ste Anne-des-Monts...	Cap de-la-Madeleine.....	do.....	46	53
Cap de-la-Madeleine.....	Fame Point.....	do.....	29	33
Fame Point.....	Cap des Rosiers.....	do.....	25	29
Cap des Rosiers.....	Cap St-Pierre de Miquelon.	Gulf of St. Lawrence.....	343	394
Cap St-Pierre de Miquelon.	Cape Race.....	Atlantic Ocean.....	132	152
Cape Race.....	Malin Head.....	do.....	1,800	2,070
Malin Head.....	Liverpool.....	do and Irish Sea	192	221
Total from Quebec to Liverpool, <i>viâ</i> Cape Race and Malin Head, North of Ireland			2,819	3,242

No. 4.—Head of Lake Superior to Liverpool, *viâ* Cape Race and North of Ireland.

Sections of Navigation.	Geo-graphical Miles.	Statute Miles.
Head of Lake Superior, at Fond-du-Lac, to Quebec.....	1,355	1,558
Quebec to Liverpool, <i>viâ</i> Cape Race and North of Ireland.....	2,819	3,242
Total from Head of Lake Superior to Liverpool, <i>viâ</i> Cape Race and Malin Head, North of Ireland.....	4,174	4,800
N.B.—Route <i>viâ</i> Cape Race longer than <i>viâ</i> Strait of Belle-Ile.....	158	182

No. 5.—Port Arthur (Prince Arthur's Landing), North Shore of Lake Superior to Liverpool, *viâ* Strait of Belle-Ile and North of Ireland.

Sections of Navigation.	Geo-graphical Miles.	Statute Miles.
Port Arthur, North Shore of Lake Superior, to Quebec.....	1,250	1,438
Quebec to Liverpool, <i>viâ</i> Strait of Belle-Ile and Malin Head, North of Ireland....	2,661	3,060
Total from Port Arthur to Liverpool, <i>viâ</i> Belle-Ile and Malin Head, North of Ireland.....	3,911	4,498
N.B.—Route <i>viâ</i> Cape Race longer than <i>viâ</i> Strait of Belle-Ile.....	158	182

No. 6.—Distance to Liverpool, from Halifax, N.S.; St. John N.B.; Portland, State of Maine; and Quebec, as measured on Colton's Map of 1861.

Halifax to Liverpool, *via* Cape Clear.

From	To	Sections of Navigation.	Distance in Miles.	
			Geographical.	Statute
Halifax, N.S.....	Cape Clear.....	Across Atlantic to S. W. end of Ireland...	2,200	2,530
Cape Clear.....	Liverpool.....	Up St. George's Channel.....	330	380
		Total.....	2,530	2,910

St. John to Liverpool, *via* Cape Clear.

St. John, N.B.	Cape Sable.....	Across Bay of Fundy to S. W. end of Nova Scotia.....	180	207
Cape Sable.....	Cape Clear.....	Across Atlantic to S. W. end of Ireland...	2,310	2,656
Cape Clear.....	Liverpool	Up St. George's Channel	330	380
		Total.....	2,820	3,243

Portland to Liverpool, *via* Cape Sable and Cape Clear.

Portland, State of Maine.	Cape Sable.....	Across Bay of Fundy to S. W. end of Nova Scotia	210	242
Cape Sable.....	Cape Clear.....	Across Atlantic to S. W. end of Ireland..	2,310	2,656
Cape Clear.....	Liverpool	Up St. George's Channel	330	380
		Total.....	2,850	3,278

Quebec to Liverpool, *via* Cape Race and North of Ireland.

Quebec.....	Cape Race.....	River and Gulf of St Lawrence, to S. W. point of Newfoundland.....	827	951
Cape Race	Malin Head.....	Across Atlantic to N. end of Ireland.....	1,800	2,070
Malin Head.....	Liverpool.....	Down North Channel.....	182	221
		Total.....	2,819	3,243
Quebec to Liverpool, <i>via</i> Strait of Belle-Ile and Malin Head, North of Ireland.....			2,661	3,060

For further particulars see preceding tables of distances.

In tables Nos. 1 to 6 inclusive, 1 Geo. M. = 1.15 St. M.

In the Railway tables, part IV, of this Appendix, the figures used are 1 Geo. M. = 1.158664 St. M.; this will explain certain differences.

No. 7.—TABLE of distances from the principal sea-ports in North America to Galway, Liverpool, Havre, Havana and Rio Janeiro, etc.

From	To	Geographical Miles.
Quebec	Louisburg, <i>vid</i> Cape North	742
do	Galway, <i>vid</i> Belle-Ile, Colton's Map	2,392
do	Liverpool, <i>vid</i> Belle-Ile do	2,661
do	do <i>vid</i> Cape Race do	2,819
do	Havre, <i>vid</i> Belle-Ile do	2,761
do	do <i>vid</i> Cape Race do	2,919
do	Havana do	2,891
do	Rio Janeiro do	5,546
Montreal	Liverpool, <i>vid</i> Cape Race	2,958
do	do <i>vid</i> Belle-Ile	2,800
Louisburg	Galway	2,100
do	Liverpool	2,350
do	Havre	2,450
do	Havana	1,700
do	Rio Janeiro	5,200
Halifax	Galway	2,240
do	Liverpool	2,500
do	Havre	2,600
do	Havana	1,600
do	Rio Janeiro	5,100
St. John	Galway	2,450
do	Liverpool	2,700
do	Havre	2,500
do	Havana	1,550
do	Rio Janeiro	5,050
Portland	Liverpool	2,856
Boston	Galway	2,600
do	Liverpool	2,895
do	Havre	2,995
do	Havana	1,530
do	Rio Janeiro	4,935
New York	Galway	2,700
do	Liverpool	3,094
do	Havre	3,228
do	Havana	1,240
do	Rio Janeiro	4,885
Philadelphia	Liverpool	3,275
do	Havre	3,358
do	Havana	1,190
do	Rio Janeiro	4,990
Baltimore	Liverpool	3,450
do	Havre	3,543
do	Havana	1,160
do	Rio Janeiro	5,000
Richmond	Liverpool	3,380
do	Havre	3,473
do	Havana	1,090
do	Rio Janeiro	4,930
New Orleans	Liverpool	4,780
do	Havre	4,838
do	Havana	595
do	Rio Janeiro	5,315

No. 8.—CANADIAN and Brazilian Mail Line of Steamships.

From	To	Inter- mediate Mileage.	Total Distances	Remarks.
Montreal	Quebec	160	This Company only ran its steamers for a short time, and then suspended service, on account of its inability to comply with the conditions imposed by the French Government to enable it to claim the subsidy promised by that Government. See Appendix No. 30, Part II, Rep. Pub. W., 1867-82.
Quebec	Gaspé	350	510	
Gaspé	Halifax	400	910	
Halifax	St. Thomas	1,584	2,494	
St. Thomas	Para	1,328	3,820	
Para	Maranhao	350	4,210	
Maranhao	Ceara	440	4,650	
Ceara	Pernambuco	390	5,040	
Pernambuco	Bahia	430	5,470	
Bahia	Rio Janeiro	825	6,295	
		6,295		

No. 9.—The principal Ocean Steam Routes throughout the world, with Distances in Nautical or Geographical Miles, from England to the West—Canada, United States, West Indies, South America, Asia, &c.

From	To	Miles from England.
Liverpool	New York	3,094
do	York Factory, Hudson's Bay	2,966
do	Quebec	2,661
do	Montreal	2,800
do	Vancouver <i>via</i> Canadian Pacific Railway	5,309
do	Yokohama, Japan, <i>via</i> do	9,683
do	do Suez Canal, Strait of Malacca and Singapore	11,043
do	do Suez Canal and Strait of Sunda	11,629
do	do Panama Canal	12,814
Southampton	St. Thomas (West Indies)	3,670
do	Jamaica do	4,270
do	Colon or Aspinwall (Central America)	4,820
do	Panama do	4,865
do	Callao (South America)	6,250
do	Valparaiso do	7,650
do	Demerara do	4,460
do	Bahia (Brazil)	4,408
do	Rio Janeiro (Brazil)	5,140
do	Buenos Ayres (La Plata)	6,178
do	San Francisco (by Panama)	8,190
do	Victoria, B.C. do	8,950
do	Wellington (New Zealand) (by Panama)	11,400
do	Yokohama (Japan) do	12,710
do	Shanghai (China) do	13,745

22 Mercator's Map of the World, as regards Southampton.

No. 10.—The Principal Ocean Steam Routes throughout the World, with Distances in Nautical or Geographical Miles, and the average time in days, from England to the East—India, China, Japan and Australia, by Overland Route.

From	To	Miles from England.	Days from England.	Remarks.
Southampton	Gibraltar, Europe	1,151	5	
do	Malta, Mediterranean	2,132	9	
do	Alexandria, Africa	2,951	14	
do	Suez do	3,203	15	
do	Aden do	4,511	21	
do	Bombay, India.....	6,175	30	
do	Galle, Ceylon, India.....	6,645	32	
do	Madras do	7,190	36	
do	Calcutta do	7,960	40	
do	Penang do	7,888	38	
do	Singapore do	8,239	40	
do	Hong Kong, China	9,676	49	
do	Shanghai do	10,546	54	
do	Pekin do	11,273	59	
do	Nagasaki, Japan.....	11,016	60	
do	Yokohama, Yedo (re-named Tokio), Japan	11,586	65	
do	King George's Sound, Australia.....	9,975	48	
do	Melbourne do	11,315	54	
do	Sydney do	11,875	57	
do	Auckland, New Zealand	13,083	64	
do	Otaga do	12,423	62	

The above may be shortened 4 days by the Continental Route from London to Marseilles *viâ* Paris and thence to Alexandria in 9 days instead of 14, as in the above *viâ* Gibraltar.

No. 11.—The Principal Ocean Steam Routes throughout the World, with Distances in Nautical or Geographical Miles, and the average time in Days. Route to the East by the Cape of Good Hope.

From	To	Miles from England.	Days from England.	Remarks.
Southampton.....	Cape of Good Hope.....	5,850	38	
do	Natal	6,570	44	
do	Mauritius.....	8,162	53	
do	Madras, India	13,000	66	
do	Calcutta, India.....	13,700	69	
do	Melbourne, Australia.....	11,720	60	
do	Sydney do	12,280	64	
do	Otago, New Zealand.....	13,040	70	
do	Auckland do	13,540	72	
Melbourne, Australia.....	Liverpool, by Cape Horn.....	13,200	66	

See Mercator's Map of the World.

No. 12.—TABLE of Latitudes and Longitudes of Principal Canadian Ports.

	North Latitude.			West Longitude.		
	°	'	"	°	'	"
Halifax, N.S., dockyard observatory.....	44	39	04	63	35	00
Louisburg, N.S., lighthouse.....	45	54	39	59	57	15
Sydney, N.S., E. Church tower.....	46	08	45	60	12	50
Pictou, N.S., tower of custom house.....	45	40	50	62	42	10
Charlottetown, P.E.I., province building.....	46	14	10	63	07	37
St. John, N.B., time ball on custom house.....	46	16	42	66	03	45
Fredericton, N.B.....	46	03	00	66	38	15
Quebec citadel.....	46	49	12	71	12	15
Three Rivers, Que.....	46	23	00	72	33	00
Montreal, Que.....	45	31	00	73	33	00
Ottawa, Ont.....	45	23	00	75	42	00
Kingston, Ont., city clock.....	44	15	15	76	28	30
Toronto, Ont., lighthouse on Queen's Wharf.....	43	38	20	79	28	35
Hamilton, Ont.....	43	54	00	79	57	00
Rondeau, Ont., lighthouse, south end of east pier.....	42	16	35	81	54	25
Port Colborne, Ont., lighthouse, west pier.....	42	53	00	79	19	30
Goderich, Ont., lighthouse.....	43	45	10	81	32	30
Collingwood, Ont., lighthouse on breakwater.....	44	31	00	80	02	10
Port Arthur.....	48	24	00	89	28	00
Winnipeg, Man.....	49	52	00	97	08	00
Victoria, B.C.....	48	30	00	123	25	00

GREAT CIRCLE OR AIR LINE DISTANCES.

No. 13.—GREAT CIRCLE or Air Line Distances in Geographical Miles, as per Map of the Dominion of Canada. Published by order of the Hon. the Minister of the Interior, the 1st November, 1878.

From	To	Miles.
Yokahama, Japan.....	Port Simpson.....	3,865
do.....	Port Moody (Burrard Inlet).....	4,374
do.....	San Francisco.....	4,470
San Francisco.....	New York.....	2,228
do.....	Montreal.....	2,202
Burrard Inlet.....	do.....	1,992
Port Simpson.....	do.....	2,194
St. John, Newfoundland.....	Cape Clear.....	1,670
do.....	Tory Island.....	1,693
Montreal.....	Quebec (River St. Lawrence).....	145
do.....	Cape Race (via St. Paul).....	1,013
do.....	Belle-Ile.....	892
Belle-Ile.....	Tory Island.....	1,657
Cape Race.....	do.....	1,736
do.....	Cape Clear.....	1,708
Tory Island.....	Liverpool.....	240
Cape Clear.....	do.....	310
Halifax.....	Cape Race.....	470
Portland.....	do.....	767
Boston.....	do.....	808
New York.....	do.....	1,010

No. 14.—DEFINITION OF GEOGRAPHICAL OR NAUTICAL AND STATUTE MILES.

A nautical mile, or a sea mile, is the length of one minute of longitude of the earth at the equator, at the level of the sea, or the $\frac{1}{21,600}$ part of the earth's equatorial circumference. By the United States standard, and as used by the Coast Survey, its length is 1.152664 common statute or land miles; 1855.11 metres; 2028.69 yards; or 6086.07 feet; consequently, one degree of longitude at the equator=39.160 land miles; and a land mile=0.86755 of a nautical mile. By British standard the sea mile is about 4 inches longer than by United States. Sometimes one minute of a mean *latitude* is taken as a nautical mile. A minute of latitude at the equator is about 6,046 feet; and at the Poles about 6,107; the mean of which is 6,076½ feet.

Lengths of a degree of longitude in different latitudes, and at the level of the sea. These lengths are in common land or statute miles of 5,280 feet. Since the figure of the earth has never been *precisely* ascertained, these are but close approximations.

Degree of Latitude.	Miles.	Degree of Latitude.	Miles.	Degree of Latitude.	Miles.	Degree of Latitude.	Miles.	Degree of Latitude.	Miles.	Degree of Latitude.	Miles.
0	99.16	14	67.12	28	61.11	42	51.47	56	38.76	70	23.72
2	69.12	16	66.50	30	59.94	44	49.83	58	36.74	72	21.43
4	68.99	18	65.80	32	58.70	46	48.12	60	34.67	74	19.12
6	68.78	20	65.02	34	57.39	48	46.36	62	32.55	76	16.78
8	68.49	22	64.15	36	56.01	50	44.54	64	30.40	78	14.42
10	68.12	24	63.21	38	54.56	52	42.67	66	28.21	80	12.05
12	67.66	26	62.20	40	53.05	54	40.74	68	25.98	82	9.66

Intermediate ones may be found correctly by simple proportion. See Trautwine — at pages 74 and 75.

PART III.

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TABLES OF DISTANCES, ETC.
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INTERPROVINCIAL ROADS

AND

LAND ROUTES TO THE SEABOARD;

GOVERNMENT RAILWAYS

AND

GOVERNMENT TELEGRAPH LINES,

TOGETHER WITH

**TABLES OF THE BRITISH POSSESSIONS THROUGHOUT THE WORLD,
POPULATION AND EXTENT OF THE GLOBE,**

**AND TABLE OF LARGEST EMPIRES,
ETC., ETC.**

PART III.

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- No. 3. Land route: Distances from St-Félicien, near west end of Lake St. John, to St-Jérôme, at south-east end of Lake, and thence to Baie des Ha! Ha!
- No. 4. Population of the Counties of Chicoutimi and Saguenay, from Census of 1881.
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- No. 6. Population of various settlements between Tadoussac and Labrador, on the north shore of the St. Lawrence.
- No. 7. Prince Edward Island Railway and connections.
- No. 8. Distances from Quebec to Maritime Provinces *via* Intercolonial Railway.
- No. 9. Distances from Quebec to Maritime Provinces *via* Témiscouata Road and the railways in the Valley of the St. John.
- No. 10. Distances from Port Arthur (Prince Arthur's Landing) to Winnipeg, by the Dawson Route.
- No. 11. Distances from Quebec to Port Arthur and Winnipeg *via* North Shore and Canadian Pacific Railway.
- No. 12. Manitoba and North-West Territory: Population, property, navigation.
- No. 13. Government Telegraph Lines constructed and projected. Summary showing proportions of Land and Cable Telegraph Lines owned or operated by the Government in the several Provinces.
- No. 14. Area and population of the Globe; compiled, as far as possible, from the last Official Census of each country.
- No. 15. Table of the British Possessions throughout the world, with their population and area.
- No. 16. Table of largest Empires.
- No. 17. Population of the Globe by races.
- No. 18. Population of the Globe by religions.

No. 1 A.—FORMER Mail Road—Quebec to Lake St. John, in Winter.

From	To	Inter- mediate Mileage.	Total Mileage.
Quebec	Boundary Post	15	
Boundary Post	1st Camp, Lachance (Stoneham) ...	8	23
1st Camp, Lachance (Stoneham)	2nd do Noël	11½	34½
2nd do Noël	3rd do Lac des Roches	9	43½
3rd do Lac des Roches	4th do Lake Jacques-Cartier	14	57½
4th do Lake Jacques-Cartier	5th do Pikauba	13	70½
5th do Pikauba	6th do Bédard	12	82½
6th do Bédard	7th do Rivière Upika	12	94½
7th do Rivière Upika	8th do do Pika	10½	105
8th do do Pika	9th do do -aux-Ecorces	11	116
9th do do -aux-Ecorces	10th do Lake Belle-Rivière	10½	126½
10th do Lake Belle-Rivière	St. Jérôme, at lower end of Lake St. John, on south side	14	140½
St. Jérôme	Chicoutimi	50	

Mail passes three times a week, winter and summer.

Time ; 20 hours, Quebec to Lake Jacques-Cartier (per mail).

do 28 hours, Lake Jacques-Cartier to St-Jérôme (per mail).

Mails discontinued

since 1883.

Total 48 hours, Quebec to Lake St. John (per mail).

Total distance 140½ miles, Quebec to Lake St. John.

Mails in summer are sent by steamer *viâ* Chicoutimi.

Mails in winter are sent *viâ* Baie-St-Paul, St-Urbain and Chicoutimi.

REMARKS.

FORMER MAIL ROAD—QUEBEC TO LAKE ST. JOHN.

Messrs. Blaiklock and Duberger, Provincial Land Surveyors, first examined the country between Quebec and Lake St. John in 1847-48, for a road, but did not find a practicable route throughout.

In 1863 Messrs. Valée and Picard located and opened, at their own expense, the first five miles of the road from Stoneham.

In 1864, with the aid of other citizens from Quebec, they continued to locate and open it as far as Lake Jacques-Cartier, for a total distance of about thirty miles.

Mr. Jean Gagnon afterwards, at the request of the Rev. G. Tremblay, curate of Beauport, located the remainder of the line towards St-Jérôme, on the east side of Lake St. John, and stated that the aggregate length of the hills between Lake Jacques-Cartier and Lake St. John did not exceed three and a-half miles.

In 1877 the Local Government of the Province of Quebec undertook the construction of the road, which is about 24 feet in width.

The depth of snow in winter varies from 3 to 3½ feet.

RAILWAY—QUEBEC TO LAKE ST. JOHN.

A railway is now in progress of construction since 1879, from Quebec to Lake St. John, running south to Lake St. Joseph, from the crossing of the River Jacques-Cartier direct to St. Raymond, thence *viâ* River Batiscan and Lake Edward to the Township of Roberval, near the River Ouïatchouan, at Lake St. John, through a considerable extent of good agricultural and finely timbered country, and with practicable grades.

The summit intervening between the St. Lawrence and Lake St. John is 1,348 feet, and is at 123 miles from Quebec.

The summit can be surmounted by grades varying from 20 to 80 feet per mile for most of the distance, and from 80 to 132 on the remainder, say for 25 miles.

According to a memorandum furnished 29th November, 1887, by J. G. Scott, secretary and manager of the railway, the quantity of work done and remaining to be done, up to that date, was as follows:—

Railway—Quebec to Lake St. John.	Mileage.	
	Intermedi-ate.	Total
Railway—In progress of construction since 1879:—		
Quebec to St-Raymond. Operated by Company, 1882-83	36	
St-Raymond to Lake Simon. do 1883-84	10	46
Lake Simon to Rivière-à-Pierre. do 1884-86	12	58
Rivière-à-Pierre to Lake Kiskisink. Operated by contractor, 1887	78	136
Remainder to Pointe-aux-Trembles Junction, near Lake St. John. Com-pleted, 1887	41	177
Remainder do To be located and constructed, including extension westward to deep-water terminus at or near Roberval, Lake St. John, 1888	13	190

QUEBEC AND LAKE ST. JOHN RAILWAY.

TRAFFIC FOR THE YEAR ENDING 31ST MARCH, 1887.

Mileage operated by contracting Company from Quebec to Rivière-à-Pierre, being 58 miles. According to Annual Report signed by T. LeDroit, President, and J. G. Scott, Secretary, 12th May, 1887.

Description.	Number.
Passengers.....	67,994
Tons of freight moved.....	44,040
<i>Freight classified as follows:—</i>	
Firewood.....	20,025
Deals and lumber.....	7,530,000
Square Timber.....	62,500
Other Goods.....	6,804

A branch line of railway from Lake St. John to Chicoutimi about 70 miles in length, eastward, was subsidized 23rd June, 1887, by the Federal Government, by the Act 50-51 Victoria, chapter 59. It is to be commenced within 2 and completed within 4 years from 1st August, 1887.

The branch line connecting the Canadian Pacific Railway Branch of Grandes Piles at St. Tite, with the Lake St. John Railway at the River Jeannotte, at the west end of Lake Edward, about 55½ miles in length, is nearly half completed.

A third branch, about 30 miles in length, has been proposed to connect the main line at Lake Edward with La Tuque some 66 miles above the Grandes Piles, or 100 above Three Rivers, on the River St. Maurice. If the Government grant a subsidy to this branch, the company offers to place a steamboat on the section of the river between the Grandes Piles railway terminus and La Tuque, which is navigable for boats of light draught.

When the main line is completed, it will be necessary to place a steamboat on Lake St. John and to construct landing piers and lighthouses at Roberval, Metabetchouan and other eligible points.

ST. MAURICE, QUEBEC AND SAGUENAY REGION.

In the immediate vicinity of the railway there are 6 millions of acres, of which at least one-half is reported as being well adapted for settlement.

Between the St. Maurice and the Saguenay the extent of territory to be settled and developed is estimated at 28 millions of acres.

LAKE ST. JOHN REGION.

On the northern, north-eastern and western sides of Lake St. John there is a vast extent of alluvial soil of great depth and fertility. The soil on the south shore is not so fertile nor so deep as upon the north and west shores. As the lake is sheltered by mountains, the climate is comparatively mild, less subject to variation and more regular than in the rest of the Province of Quebec, as established by meteorological observations. (See comparative statement of thermometrical observations made and altitudes above the sea level measured during J. Richardson's exploration of 1870, at pages 358, 359, Gen. Rep. P. W., 1867-82.)

Heat and rain are not so excessive as in the greater part of the district of Quebec.

The climate is as mild as that of Montreal, and is highly favourable for the culture of all sorts of grain and vegetables, including fall wheat, beets and turnips, and is especially adapted for the raising of horned cattle, sheep and pigs.

Spring begins 2 to 3 weeks earlier than at Quebec, and the soil is ready for the cultivation of vegetables before the lake ice disappears.

Ice begins to form in November, and the lake is afterwards frozen over so that it can be travelled over with safety, with heavy loads, after the 10th of December. Ice begins to disappear along the borders of the lake towards the middle of April. The whole of the lake is free from ice towards the 12th of May. The bed of the lake consists of limestone which crops out on its western shore. The dimensions, elevation and depth of the lake are:

	Miles.
Greatest length.....	23
do width.....	20
Contour.....	85
Area.....	365½

Elevation above the sea 278 feet, per report 8th March, 1881, of A. L. Light, Ch. Eng. R., P. Q.

Elevation above the sea 293 feet, per Richardson's report, June, 1870.

Depth of lake varies generally from 3 feet at one mile from shore to 12 and 54 feet at 1½ to 3 miles from shore, and to 60 feet and more towards the middle of the lake, where the greatest depth varies from 60 to 225 feet.

The entire territory yet to be colonized and developed by means of railway and steamboat communication, in the St. Maurice, Quebec, Saguenay and Lake St. John regions, contains as much cultivable land as that now occupied in the two Provinces of New Brunswick and Nova Scotia.

The settlement of the country along the main line of railway from Quebec to Lake St. John and the branch line to St. Tite on the Canadian Pacific branch of railway from Three Rivers to the Grandes Piles, on the St. Maurice, is progressing rapidly since 1882-83.

N.B.—For a full description of the Lake St. John and Saguenay regions, as regards climate, soil, minerals, forests, products, &c. see App. No. 8, by G. F. Bail- lairgé, D. M. P. W., pp. 344 to 446 of Gen. Rep., P. W., 1867-82. See also report of A. L. Light, Chf. Eng. Gov. Rys., P. Q., 9th March, 1881, in answer to an Order of the House of Commons, 14th Feb., 1881.

For subsidies granted to Quebec and Lake St. John Railway and branches, see following pages.

No. 1 B.—SUBSIDIES granted to Railway from Quebec to Lake St. John.
Probable total length, 179 miles.

Year.	Act.	By whom Granted.	Subsidy.
1882.....	45 Vic., chap 14...	By Federal Government— St-Raymond to Lake St. John, 120 miles, subsidized at \$3,200 per mile, nor exceeding in the whole.....	\$ 384,000
1883.....	46 do 25...	St-Raymond to Lake St. John, 25 miles, subsidized at \$3,200 per mile, not exceeding in the whole.....	80,000
1885.....	48-49 do 59...	From its junction on the North Shore Railway to St. Raymond, upon condition of the Company extending their road to a point 50 miles north of St. Raymond, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
1886.....	49 do 10...	To the Quebec and Lake St. John Railway Co., for 95 miles of their railway, from a point 50 miles north of St-Raymond to Lake St. John, in the Province of Quebec, a subsidy not exceeding \$1,961 per mile, nor exceeding in the whole (in addition to the subsidy granted by 45 Vic., chap. 14, and 46 Vic., chap. 25, of \$3,200 per mile).....	186,295
1887.....	50-51 do 24...	To the Quebec and Lake St. John Railway Company, for 9 miles of their railway, the distance not covered by the previous subsidies granted from the City of Quebec to Lake St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... To be commenced within 2 and completed within 4 years from 1st August, 1887.	28,800
1882.....	45 do 23...	Total by Federal Government..... The Provincial Government have granted \$5,000 in money and 5,000 acres of land per mile, on 170 miles, by Act 45 Vic., chap. 23, of 1882, and previous Acts passed.	775,095
1886.....	49-50 do 76...	Total, exclusive of land subsidy..... \$850,000 According to this Act, the land subsidy of 5,000 acres per mile, or of 850,000 acres on 170 miles, may be converted into a cash subsidy of 35c. per acre, payable when the land subsidy is due and of 35c. additional per acre, after the Government have sold the land, and been paid for it, providing the Company apply for such conversion within 2 years from the passing of this Act, 21st June, 1886. Land subsidy converted into cash, at option of Company..... \$595,000	
1883.....		Total by Provincial Government..... The Municipal Council of Quebec, under By-law of 9th Feb., 1883, have granted.....	1,445,000 350,000
		Total subsidies, Quebec and Lake St. John Railway.....	2,570,095

No. 1 C.—SUBSIDY granted to the Saguenay and Lake St. John Railway.
Probable length, 70 miles.

Year.	Act.	By whom Granted.	Subsidy.
1887. June 23.	50-51 Vic., chap. 59	By the Federal Government— To the Saguenay and Lake St. John Railway, for thirty miles of their railway from Lake St. John towards Chicoutimi, or from Chicoutimi towards Lake St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole To be commenced within two and completed within four years from 1st August, 1887.	\$ 96,000

The probable terminus will be at St. Alphonse, 10 miles below Chicoutimi.

The distance from Chicoutimi to Pointe-aux-Trembles Church by the most direct existing road is 61.75 miles

The last subsidy was transferred in 1887 by the Saguenay and Lake St. John Company to the Company of the Quebec and Lake St. John Railway.

In a letter dated 6th June, 1888, Mr. E. Ménard, merchant of Roberval, states that he has built a wharf there, 75 feet long, 25 wide and 20 feet in height, and a steamer 120 long by 30 wide, which will be ready for service on Lake St. John during the summer of 1888; he has, also, prepared some buoys to indicate the channel through the lake, where he estimates that about 30 are required.

No. 1 D.—SUBSIDY granted to Railway from Grandes Piles, on the St. Maurice River, to its junction with the Quebec and Lake St. John Railway.

Probable length, 55½ miles.

Year.	Act.	By whom Granted.	Subsidy.
1885.			\$
July 20.	48-49 Vic., chap. 59	By Federal Government— For a line of railway from the Grandes Piles, on the River St. Maurice, to its junction with the Lake St. John Railway, a distance of about 50 miles, in lieu of the subsidy granted by 47 Vic., chap 8, for a line of railway from the Grandes Piles, on the River St. Maurice, to Lake Edward, a subsidy of \$17,600.	
1887.			
June 23	50-51 Vic., chap. 24	To the St. Lawrence and Lower Laurentian and Saguenay Railway Company, for the section of their railway from Grandes Piles, on the St. Maurice River, to its junction with the Quebec and Lake St. John Railway (in lieu of the subsidy granted by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter fifty-nine, for a line of railway from Grandes Piles, on the St. Maurice River, to its junction with the Lake St. John Railway, a distance of about fifty miles), a subsidy of To be commenced within two and completed within four years from 1st August, 1887.	217,600

N.B.—This branch line of railway was opened to traffic, for a distance of 20 miles, north-eastward from St. Tite Station, on the Piles Railway, a branch of the C. P. R., 1st December, 1888. The quantity of work done and remaining to be done, 1st December, 1887, was as follows:—

	Miles.
1. Railway—In operation from St. Tite. Length.	22.5
2. Track laid—Ready for rails do ..	3.0
3. To be constructed to Junction at River Jeannotte, a branch of the River Batiscan, at west end of Island of Lake Edward do ..	30.0
Total from Grandes Piles to Junction do ..	55.5

A steamboat has recently been constructed for service on the River St. Maurice between the terminus of the Grandes Piles Railway and La Tuque. It will probably be available during the summer of 1888.

LAND ROUTE.

No. 2.—DISTANCES around Lake St. John, as measured on the Map published by the Department of Crown Lands, Quebec, in June, 1880.

Names of Places.	Inter- mediate Distances.	Total Distances	Remarks.
	Statute Miles.	Statute Miles.	
Mouth of Petite-Décharge			At E. end of Lake St. John.
St-Gédéon-de-Grand-Mont.....	4·00	4·00	do by road not completed.
Mouth of Belle-Rivière.....	3·50	7·50	do by Shore Road.
St-Jérôme.....	4·50	12·00	At S.E. do do
Mouth of River Metabetchouan.....	6·00	18·00	On S. side of Lake St. John by Shore Road.
Pointe-aux-Trembles, or St-Louis-de-Chambord.....	5·00	23·00	do do
Mouth of River Ouitchouan	4·50	27·50	do do
Notre-Dame-du-Lac, or Roberval.....	6·00	33·50	On W. do do
Pointe-Bleue Mission, Branch Road.....	See below.		
St-Prime, on S. side River aux Iroquois	8·00	41·50	On S.W. do do
St-Félicien, on S. side of River Chomouchouan.....	See below		
Outlet of River Chomouchouan.....	1·50	43·00	At S.W. end do
do Mistassini.....	5·50	48·50	At N.W. end do
do Peribonca.....	10·50	59·00	Northernmost end of Lake St. John, no road
Mouth of Grande-Décharge.....	19·25	78·25	N.E. end or foot of do
do Petite do	2·50	80·75	At E. end do do
From Notre-Dame-du-Lac, going north, to Pointe-Bleue Mission or the Indian Reserve.....	4·50		On S.W. side of Lake St. John.
From St-Prime to St-Félicien, on the S. side of the River Chomouchouan, following the shortest road to the river.....	7·50		St-Félicien is seven miles above outlet of River Chomouchouan.
Distance by direct unfinished road.....	8·50		Eight and one-half miles from St. Prime to St-Félicien by shortest, unfinished road shown on map of 1880.

N.B.—See Appendix No. 8, of General Report on Public Works, 1867-82, containing description of Lake St. John and River Saguenay.

LAND ROUTE.

No. 3.—DISTANCES from St.-Félicien, near upper or west end of Lake St. John, to St. Jérôme, at south-east end of lake, and thence by the shortest post route to the Baie des Ha! Ha! as measured on the map published by the Department of Crown Lands, Quebec, in June, 1880.

Names of Places.	Inter- mediate Distances.		Total Distances.	Remarks.
	Statute Miles.	Statute Miles.		
St-Félicien.....	8.50	38.00		On S. side of River Chomouchouan, seven miles above its outlet at S.W. or upper end of Lake St. John.
St-Prime.....	8.00	29.50		At S.W. end of Lake St. John, Shore Road.
Pointe-Bleue Mission—Indian Reserve.....				Branch road, 4½ miles N. from Notre Dame.
Notre-Dame-du-Lac, or Roberval.....	6.00	21.50		On S.W. side of Lake St John, Shore Road.
Mouth of River Oniatchouan.....	4.50	15.50		On S. shore do do
Pointe-aux-Trembles, or St-Louis de Chambord.....	5.00	11.00		On S. side do do
Mouth of River Metabetchouan.....	6.00	6.00		do do do
St-Jérôme (see note below).....	0.00	0.00		At S.E. end do do
Hébertville.....	9.50	9.50		By the most direct road eastward.
St-Syriac-de-Kaskouia (see note).....	14.50	24.00		By road on N. side of Lake Kinogami.
Grand-Brûlé do.....	14.75	38.75		do do
Chicoutimi do.....	12.00	50.75		By road on W. side of River Chicoutimi.
St-Alphonse-de-Bagotville.....	10.00	60.75		At head or W. end of Baie-des-Ha! Ha! by shortest road southward.
St-Alexis de la Grande Baie.....	2.50	63.25		At S.W. end of Baie-des-Ha! Ha! by the shortest road southward.
N.B.				
St-Syriac-de-Kaskouia to St. Domini- que, on east side of Rivière aux Sables.....		10.50		Road is along W. side of Rivière-aux- Sables.
St-Syriac-de-Kaskouia to Chicoutimi, by road along west side of Rivière aux Sables, except upper portion.....		20.50		Six and one-quarter miles shorter than road passing by way of Grand-Brûlé.
Grand-Brûlé to St. Dominique.....		16.50		By road up River Chicoutimi and down Rivière-aux-Sables.
Head of Baie-des-Ha! Ha! below Chi- coutimi.....		24.30		By water route.
Head of Baie-des-Ha! Ha! above Tad- oussac.....		60.26		do

REMARK.—The mileage, in the first portion of the above table, is given from St. Jérôme going upward to St-Félicien, and from St-Jérôme going downward to St-Alphonse.

No. 4.—POPULATION of the Counties of Chicoutimi and Saguenay, from Census of 1881.

Names of Parishes, &c., from Lake St. John downwards.	No. of Families.	No. of Persons.	Total.		Remarks.
			Families.	Persons.	
COUNTY OF CHICOUTIMI.					
<i>Around Lake St. John.</i>					
Township of Normandin.....	53	322	.....	.....	W. end of lake.
St-Félicien.....	114	530	.....	.....	S. side of River Chomouchouan.
St-Prime.....	167	956	.....	.....	S.W. end of lake.
Notre-Dame-du-Lac, or Pointe-Bleue, or Roberval.....	211	1,186	.....	.....	S.W. side of lake.
St-Louis de Chambord or Pointe-aux-Trembles	182	1,067	.....	.....	W. side of lake.
St-Jérôme.....	277	1,803	.....	.....	S.E. end of lake.
St-Gédéon de Grand Mont.....	110	654	.....	.....	E. end of lake.
St-Joseph d'Alma.....	113	710	.....	.....	On Island between Grande and Petite-Décharges.
			1,227	7,228	
<i>Between Lake St. John and Chicoutimi.</i>					
Hébertville.....	421	2,501	.....	.....	1½ miles above Lake Vert.
St-Syriac de Kaskouia or Kinogami.....	40	262	.....	.....	N. side Lake Kinogami.
St-Dominique, Rivière-aux-Sables.....	220	1,511	.....	.....	E. side Rivière-aux-Sables.
Grand-Brûlé or Laterrière.....	172	1,320	.....	.....	6 miles below outlet of Lake Kinogami.
			853	5,594	
<i>Along the River Saguenay.</i>					
St-François-Xavier (Parish of Chicoutimi).....	355	2,687	.....	.....	S. side of River Saguenay.
Ste-Anne.....	199	1,260	.....	.....	N. do do
Chicoutimi, Town.....	327	1,935	.....	.....	S. do do
St-Fulgence.....	135	845	.....	.....	N. do do
St-Alphonse.....	153	1,071	.....	.....	W. end Baie-des-Ha! Ha!
Bagotville (village only).....	88	508	.....	.....	do do
St-Alexis.....	287	1,749	.....	.....	S.W. do do
Anse-St-Jean.....	89	653	.....	.....	S. side of River Saguenay.
			1,642	10,708	
			3,723	23,530	
COUNTY OF SAGUENAY.					
Tadoussac, at mouth of River Saguenay.....	209	1,542	209	1,542	N. side.
(Population of Village comprised in Parish, 59 families; 341 persons.)					
North Shore, below Tadoussac.....	.....	.....	.....	7,337	
Total.....	.....	.....	.....	32,409	

No. 5.—TABLE of Distances from Quebec to Labrador, along North Shore of the St. Lawrence.

From	To	Intermediate Mileage.	Total Mileage from Quebec.	Remarks.
Quebec.....	Beauport.....	3	3	Provincial Highway.
Beauport.....	Montmorency Falls.....	4	7	do
Montmorency Falls.....	Ange-Gardien.....	3	10	do
Ange-Gardien.....	Château-Richer.....	6	16	do
Château-Richer.....	Ste-Anne-de-Beaupré.....	6	22	do
Ste-Anne-de-Beaupré.....	St-Joachim.....	5	27	do
St-Joachim.....	St-Tite-des-Caps.....	9	36	do
St-Tite-des-Caps.....	St. Paul's Bay.....	24	60	do
St. Paul's Bay.....	Les Eboulements.....	9	69	do
Les Eboulements.....	St-Irénée.....	9	78	do
St-Irénée.....	Pointe-à-Pic.....	9	87	do
Pointe-à-Pic.....	Murray Bay.....	3	90	do
Murray Bay.....	Cap-à-l'Aigle.....	3	94	do
Cap-à-l'Aigle.....	St-Fidèle.....	6	99	do
St-Fidèle.....	St-Siméon or Black River.....	10	109	do
St-Siméon.....	Port-au-Persil.....	8	117	do
Port-au-Persil.....	Pointe-au-Bouleau.....	9	126	do
Pointe-au-Bouleau.....	Anse-du-Portage.....	5	131	do
Ferry Anse-du-Portage (across mouth of River Saguenay).....	Anse-à-l'Eau.....	1	133	do
Anse-à-l'Eau.....	Tadoussac.....	1	134	do
Tadoussac.....	Les Petites-Bergeronnes.....	9	143	do
Les Petites-Bergeronnes.....	Escoumains.....	9	151	do
Escoumains.....	Mille-Vaches.....	18	169	do
Mille-Vaches.....	Portneuf.....	9	178	Beach used—portages.
Portneuf.....	Saut-au-Cochon.....	7	185	do
Saut-au-Cochon.....	Îlots de Jérémie.....	18	203	Track req. through forest.
Îlots de Jérémie.....	Betsiamits (Betsiamits).....	7½	210½	Beach used.
Betsiamits (Betsiamits).....	Pointe-aux-Outardes.....	12	222½	do
Pointe-aux-Outardes.....	Manicouagan.....	15	237½	Track req. through forest.
Manicouagan.....	River Godbout.....	27	264½	do do
River Godbout.....	Pointe-des-Monts.....	13	276½	do do
Pointe-des-Monts.....	Trinité.....	7	283½	Beach used.
Trinité.....	Îlots-à-Caribou.....	7½	291	do
Îlots-à-Caribou.....	Baie-des-Kani.....	22	313	do
Baie-des-Kani.....	Jambon.....	8	321	Track req. through forest.
Jambon.....	River Ste-Marguerite.....	12	333	do do
River Ste-Marguerite.....	Sept-Iles.....	12	345	do do
Sept-Iles.....	River Moisy.....	19	364	Beach used.
River Moisy.....	River à la Truite.....	8	372	do
River à la Truite.....	Cormoran.....	8	380	do
Cormoran.....	Pigou.....	7	387	do
Pigou.....	River au Bouleau.....	7	394	Fine beach—short portage.
River au Bouleau.....	River Matémek.....	7	401	do do
River Matémek.....	River Chaloupe.....	8	409	do do
River Chaloupe.....	River Sheldrake.....	7	416	do do
River Sheldrake.....	River Tonnerre.....	7	423	do do
River Tonnerre.....	Portage du Loup-Marin.....	8	431	do do
Portage du Loup-Marin.....	River Magpie.....	7	438	do do
River Magpie.....	River St-Jean.....	7	445	do do
River St-Jean.....	Longue-Pointe.....	9	454	do do
Longue-Pointe.....	Poste de Mingan.....	5	459	do do
Poste de Mingan.....	Pointe-aux-Esquimaux.....	18	477	do do
Pointe-aux-Esquimaux.....	Nataskouan.....	64	541	do do
Nataskouan.....	Tshikaska.....	18	559	
Tshikaska.....	Mécatina.....	75	634	
Mécatina.....	Bonne-Espérance.....	99	733	
Bonne-Espérance.....	Anse-au-Blanc Sablon.....	24	757	Boundary of Labrador,
Anse-au-Blanc Sablon.....	Forteau Bay.....	13	769	Newfoundland & Canada.
Forteau Bay.....	Point Amour lighthouse.....	4½	773	

N.B.—See No. 13, for Telegraph Lines, North Shore and Chicoutimi Branch from St. Paul's Bay.

No. 6.—POPULATION of various Settlements between Tadoussac and Labrador, on the North Shore of the St. Lawrence.

Names of Places.	Census Returns.		Church Returns.		
	No. of Persons.	No. of Persons.	No. of Families.	No. of Families.	No. of Persons.
	1871.	1881.	1864.	1881.	1881.
Tadoussac	765	1,542	Not obtained..	131	1,070
Escoumains	1,023	520	do	163	1,133
Mille-Vaches		1,115	do }		
Portneuf	1,790		do }	109	1,037
Saut-au-Cauchon			2	45	290
Îlots-de-Jérémie			1		
*Betsiamits (Setsiamits or Bersimis)	552		110	176	687
Pointe-aux-Outardes			5		
Manicouagan	86	120	3	13	100
*River Godbout			17	13	59
Pointe-des-Monts	106	243	3		
Trinité			3		
Île-aux-Céifs					
Pointe-aux-Anglais				24	127
Rivière-Pentecôte					
Oailles-Rouges					
Îlots-à-Caribou				9	65
*Rivière-Ste.-Marguerite			2 }		
*Sept-Îles	191		35 }	83	385
Rivière-Moisy	336	241	18 }	22	114
Rivière-à-la-Truite			2		
Cormoran			2		
Pigon			6		
Rivière-au-Bouleau			2		
River Matémek			2		
River Chaloupe			2		
River Sheldrake			6 }		
Petit Manitou				24	133
Rivière-au-Tonnerre			5	16	90
Rivière-du-Loup-Marin			3		
River Magpie			6	42	240
Rivière St-Jean			13	27	173
*Longue-Pointe			14 }		
*Mingan	550		110 }	75	310
Pointe-aux-Esquimaux	862	1,775	75	181	967
Betchouan, &c				35	177
Nataakouan	358	480	44	53	286
Nampissipi					
Havre-à-la-Croix				22	90
Mecatina	280	410	Not obtained }		
Tête-à-la-Baleine				48	254
Baie-des-Moutons					
Tabatière					
Anse-les-Dunes				89	425
St.-Augustin					
Blanc-Sablon					
Bonne-Espérance	266	341	Not obtained..		
*Romaine				68	245
	7,175	6,787	491	1,468	8,457

*See remarks on next page.

In places of preceding table marked thus (*) the population is divided as follows:—

Name of Place.	Whites.		Indians.	
	No. of Families.	No. of Persons.	No. of Families.	No. of Persons.
Bethiamits	56	207	120	480
River Godbout	7	45	6	14
Rivière Ste.-Marguerite and Sept-Iles.....	18	110	65	275
Longue-Pointe and Mingan.....	18	96	57	214
Romaine			69	245
	99	458	316	1,238

Population of settlements given in Census of 1871 and Census of 1881 includes intermediate places.

The returns for 1864 were obtained from Rev. C. Arnaud, Oblat Missionary, and those for 1881 were furnished by the kindness of His Lordship the Bishop of Rimouski for places from Sant-au-Cochon to Romaine; and by Rev. Father Laberge, Secretary to His Lordship the Bishop of Chicoutimi, for Tadoussac, Escoumains, Mille-Vaches and Portneuf.

No. 7.—DISTANCES—Prince Edward Island Railway and Connections.

From	To	Intermediate Mileage.	Total Mileage from Charlottetown.	Remarks.
Charlottetown	County Line.....	32	.....	Via P.E.I. Railway.
County Line	Summerside	17	49	do
Summerside	Alberton	53	102	do
Alberton	Tignish	14	116	do
Charlottetown	Mount Stewart	22	.....
Mount Stewart.....	Georgetown.....	24	46	do
do	Souris	39	61	do

WINTER ROUTE *via* THE CAPES.

Charlottetown	County Line.....	32	.....	Via P.E.I. Railway.
County Line	Cape Traverse.....	16	48	Stage.
Cape Traverse	Cape Jourimain	12	60	Ice boats.
Cape Jourimain	Au-Lac	45	105	Stage.
Au-Lac	St. John, N.B.	131	236	Intercolonial Railway.
do	Halifax, N.S.	145	250	do
do	Quebec, P.Q.	542	617	do

WINTER ROUTE *via* GEORGETOWN AND PICTOU.

Charlottetown.....	Georgetown	46	.....	P.E.I. Railway.
Georgetown	Pictou	45	91	Steamer "Northern Light."
Pictou	Truro	52	143	Intercolonial Ry. (Pictou Branch.)
Truro	Halifax, N.S.	62	205	do do
do	St. John, N.B.	214	357	Intercolonial Railway.
do	Quebec, P.Q.	625	768	do

No. 8.—DISTANCES from Quebec to Maritime Provinces *via* Intercolonial Railway.

	Intermediate distances.	Distances from Quebec.	
	Miles.	Miles.	
Quebec to Moncton, N.B.	500	.....	Intercolonial Railway.
Moncton to Truro, N.S.	125	625	do
Truro to Halifax, N.S.	62	687	do
Quebec to Moncton, N.B.	500	.....	do
Quebec to St. John, N.B.	89	589	do
Quebec to Moncton, N.B.	500	.....	do
Moncton to Pointe du Chêne, N.B.	18	518	do
Pointe du Chêne to Summerside, P.E.I.	35	553	P. E. I. Navigation Co. Steamers.
Summerside to Charlottetown, P.E.I.	49	602	do Railway.
Quebec to Truro, N.S.	625	.....	Intercolonial Railway.
Truro to New Glasgow, N.S.	43	668	Pictou Branch do
New Glasgow to Pictou, N.S.	9	677	do do
Pictou, N.S., to Charlottetown, P.E.I.	50	727	P. E. I. Navigation Co. Steamers.
Quebec to New Glasgow, N.S.	668	.....	Intercolonial Ry. and Pictou Branch.
New Glasgow to Straits of Canso.	80	748	Eastern Counties Railway.
Straits of Canso to Sydney, C.B.	120	868	Steamers <i>via</i> St. Peter's Canal.

N.B.—The Intercolonial Railway terminus connecting, at Point Lévis, with the Canadian Pacific Railway at Quebec, was shortened 10 miles in 1885.

The distances, therefore, between Quebec and the Maritime Provinces, by this line, are affected accordingly, being 10 miles less than shown in these tables.

No. 9.—DISTANCES from Quebec to Maritime Provinces *via* Témiscouata Road and the Railways in the Valley of the River St. John.

	Intermediate distances.	Distances from Quebec.	
	Miles.	Miles.	
Quebec to Rivière-du-Loup.....	126	.....	Intercolonial Railway.
Rivière-du-Loup to Edmundston, N.B.....	80	206	Témiscouata Road.
Edmundston to Fredericton.....	160	366	New Brunswick Railway.
Fredericton to Fredericton Junction.....	22	388	Fredericton Railway.
Fredericton Junction to St. John.....	46	434	St. John and Maine Railway.
St. John to Halifax, N.S.....	276	710	Intercolonial Railway.
Quebec to Fredericton Junction.....	388	.....	As above.
Fredericton Junction to McAdam Junction.....	40	428	St. John and Maine Railway.
McAdam Junction to St. Andrew's.....	43	471	New Brunswick and Canada Railway.
McAdam Junction to St. Stephen.....	35	463	New Brunswick and Canada Railway.
Quebec to Edmundston.....	206	.....	As above.
Edmundston to Woodstock, N.B.....	113	319	New Brunswick Railway.
Woodstock to McAdam Junction.....	51	370	do and Canada Railway.
McAdam Junction to St. John.....	85	455	St. John and Maine Railway.
McAdam Junction to St. Andrews.....	43	413	New Brunswick and Canada Railway.
McAdam Junction to St. Stephen.....	35	405	New Brunswick and Canada Railway.
	Intermediate distances.	Distances from Quebec.	
	Miles.	Miles.	
St. John, N.B., to Digby, N.S.....	42	.....	} Steamer across Bay of Fundy.
Digby to Annapolis, Railway partly built.	18	60	
Annapolis to Halifax.....	130	190		Windsor and Annapolis Railway.
Digby to Yarmouth.....	67	127	Western Counties Railway.

N.B.—The above table, published in the preceding reports, has been modified in accordance with the most recent railway tables.

From Digby to Annapolis, a railway has been partly built, and is in progress of construction, 1888.

See note on preceding page, respecting new terminus of Intercolonial Railway at Lévis, which is 10 miles shorter than shown above.

No. 10.—DISTANCES from Port Arthur (Prince Arthur's Landing, Lake Superior) to Fort Garry (Winnipeg), by the Dawson Route.

	Statute Miles.	
	Inter- mediate.	Total.
Port Arthur to Lake Shebandowan	45	45
Lake Shebandowan to North-West Angle	312	357
North-West Angle to Fort Garry (Winnipeg)	95	452

The steamboat voyage from Collingwood to Port Arthur is 532 miles.

The Dawson route has been superseded by the portion of the Canadian Pacific Railway now completed and in operation between Port Arthur (Thunder Bay, Lake Superior) and Winnipeg, *via* Rat Portage and Selkirk, a distance of 429 miles. See next table.

No. 11.—DISTANCES from Quebec to Port Arthur and Winnipeg *via* North Shore Railway and Canadian Pacific Railway, to Ottawa; thence *via* Perth, Toronto and Orangeville, by Subsidiary Line of Canadian Pacific Railway, to Owen Sound; thence by C. P. R. Steamers across Lakes Huron and Superior to Port Arthur; thence by main line of Canadian Pacific Railway to Winnipeg.

SUMMER ROUTE BY RAILWAYS AND LAKE STEAMERS, 1884 TO 1888.

From	To	Statute Miles.	
		Inter- mediate.	Total.
Quebec	Montreal (St. Martin's Junction), North Shore Railway	159	159
	Ottawa main line, Canadian Pacific Ry....	108	267
	Perth, subsidiary line, C.P.R.	59	326
	Toronto Junction, 4½ miles from Toronto ..	199	525
	Orangeville	43½	568½
	Owen Sound	73½	642
	Saut - Ste - Marie Canal—Steamer, Lake Huron	250	892
	Port Arthur—Steamer, Lake Superior	280	1,172
	Winnipeg, main line Canadian Pacific Ry	429	1,601

N.B.—The route from Quebec, by North Shore Railway, to Montreal, is 171 miles; thence by Grand Trunk Railway to Toronto, 333 miles; thence to Toronto Junction, 4½, or 508½ miles in all from Quebec.

For distances by above route to Port Moody and Yokohama from Liverpool, see Part IV, Table No. 2.

For comparative tables of distances from Liverpool, England, on the Atlantic, to Yokohama, Japan, on the Pacific, by the shortest ocean routes, and by the shortest trunk lines of railway in Canada and the United States, in North America, see Part IV.

For cost of construction of Canadian Pacific and North Shore Railway, for subsidies thereto and to other railways, and for other details, see Part IV.

No. 12.—MANITOBA and North-West Territory—Population—Property—Navigation.

Localities.	1884.	
	Population.	Value of Assessable Property.
Emerson, frontier of United States, 65 miles from Winnipeg, branch of Canadian Pacific Railway	1,500	\$ 706,725
Winnipeg	26,000	27,432,900
Portage-la-Prairie	2,551	2,300,000
Brandon	2,082	3,014,306
Regina	613	500,000
Calgary	300	500,000

POPULATION AND VOTERS.—The following is a classified summary of the population and voters in each of the new electoral divisions, in 1886.

Localities.	Population.	Voters.
Assiniboia	795	506
Beautiful Plains	1,665	654
Brandon East	2,919	1,247
Brandon West	2,855	1,396
Carillon	1,861	642
Cartier	1,112	788
Cypress	2,194	913
Dennis	2,735	1,289
Dufferin North	1,750	1,294
Dufferin South	1,607	1,872
Emerson	4,813	869
Kildonan and St. Paul	787	563
Lakeside	Incomplete.	Incomplete.
La Verandrye	2,739	920
Lorne	2,210	1,149
Minnedosa East	2,372	1,339
Minnedosa West	1,400	814
Morris	7,398	1,700
Mountain	2,419	1,196
Norfolk	1,918	925
Portage	Incomplete.	Incomplete.
Rockwood	1,771	902
Russell	1,420	744
St. Andrews	1,639	701
St. Boniface	2,149	807
St. Clements	1,046	605
St. François-Xavier	1,026	1,057
Shoal Lake	2,175	1,731
Souris	1,185	529
Springfield	1,262	638
Turtle Mountain	3,048	1,371
Westbourne	1,195	850
Winnipeg (North and South)	19,574	7,891
Woodlands	1,721	952

Rivers.	Navigable Length.	Number of Steamboats.
	Miles.	
Red River	100	10
River Assiniboine	700	2
Lake Winnipeg	350	9
River Saskatchewan	1,000	5
Athabasca and Peace Rivers	1,000	1

No. 13.—GOVERNMENT TELEGRAPH LINES.
CONSTRUCTED.

Names of Stations.		Lengths—Distances in Miles.			Established.
		Inter-mediate	Total.	Complete Lines.	
<i>Newfoundland.</i>					
Port-aux-Basques	Cape Ray Lighthouse	14		14	April, 1, 1883.
<i>Cape Breton Section.</i>					
Meat Cove	Aspee Bay	10½			Nov. 7, 1880; Aug. 1, 1882.
Aspee Bay	O'Neil's Harbour (House half way)	15	25½		
O'Neil's Harbour	Ingonish North Bay	9	34½		April 1, 1883.
Ingonish North Bay	do Harbour	10½	45		
Ingonish Harbour	McLennan's	23	68		
McLennan's	Ste-Anne (South Bay)	19	87		
Ste-Anne	Baddeck (Loop line)	13	100		Jan. 1, 1882.
Baddeck	Englishtown	6	106		July 19, 1882.
Englishtown	Kelly's Cove	2	108		
Kelly's Cove	Big Bras-d'Or (of this ½ mile cable)	6	114		
Big Bras-d'Or	North Sydney	12½	126½		Nov. 7, 1880.
	Land lines	126			
	Cable	0½		126½	
<i>Magdalen Islands.</i>					
Amherst	Amherst Lighthouse	9			June 10, 1881.
do Lighthouse	Etang-du-Nord Village	15	24		Dec. 1, 1881.
Etang-du-Nord Village	do Lighthouse	1	25		do
do Lighthouse	House Harbour (of this 1¼ mile cable)	8	33		do
House Harbour	Wolfe Island	28½	61½		Sept. 25, 1881.
Wolfe Island	Grosse-Ile	11	72½		Aug. 17, 1880.
Grosse-Ile	Grand Entry	11	83½		Feb. 18, 1882.
do	Bird Rock (all cable)	18½	101½		Aug. 20, 1881.
do	Meat Cove do	55	156½		Nov. 7, 1880.
	Land lines	83½			
	Cable	73½		156½	
<i>Low Point, C.B., Nova Scotia.</i>					
Lingan	Low Point	5		5	Aug. 1, 1881.
<i>Nova Scotia Section.</i>					
Dartmouth .....	.....	0			Oct, 1879.
Musquodoboit .....	.....	28½	28½		
Ship Harbour, via Olam Cove .....	.....	23½	52		
Tangier .....	.....	20½	7 ½		
Sheet Harbour .....	.....	15	9 ½		
Beaver do .....	.....	10	106		
Liscomb .....	.....	36	126½		
Sherbrooke .....	.....	11½	148		
Isaac's Harbour .....	.....	36	184		
Manthorn's Cove .....	.....	3	187		
Torbay .....	.....	10	197		
Whitehaven Loop .....	.....	11	208		

No. 13.—GOVERNMENT TELEGRAPH LINES—*Continued.*CONSTRUCTED—*Continued.*

Names of Stations.		Lengths—Distances in Miles.			Established.
From	To	Inter- mediate	Total.	Complete Lines.	
<i>Escuminac.</i>					
Chatham	Black Brook	5½			
Black Brook	Baie-du-Vin	15	20½		
Baie-du-Vin	Escuminac	9½	30		
Escuminac	Point Escuminac Lighthouse.	12	42		
				42	Feb. 1, 1885.
<i>Quarantine.</i>					
Quebec	L'Ange-Gardien	13			
L'Ange-Gardien	St-Pierre (Cable ¾ miles)	4	17		
St. Pierre	St-Pétronille	4½	21½		Dec. 1, 1884.
St-Pétronille	St-Laurent	6½	28		
St. Laurent	St-Jean	7	35		
St-Jean	St-François	6¾	41¾		March 1, 1885.
St-François	Grosse-Ile Wharf (including 5½ miles cable)	9	50¾		
Grosse-Ile Wharf	Hospital	1½	52		June, 1885.
	Miles.				
	Land lines	46			
	Cables	6			
				52	

No. 13.—GOVERNMENT TELEGRAPH LINES—Continued.

CONSTRUCTED—Continued.

Names of Stations.		Lengths—Distances in Miles.			Established.
From	To	Inter-mediate	Total.	Complete lines.	
BAY OF FUNDY.					
<i>Campo-Bello Section, N.B.</i>					
East Port, Maine.....	Welchpool (cable 1¼ miles)...	3¾	.....	.....	May 1, 1881.
Welchpool.....	Cable Hut (Liberty Cove)....	7½	.....	9¼	
<i>Grand Manan Section.</i>					
Liberty Cove.....	Cable Hut (Long Eddy) cable	7¼	.....	.....	Nov. 18, 1880.
Long Eddy.....	Flagg's Cove.....	3	10½	.....
Flagg's Cove.....	Woodward's Cove.....	6	16½	.....	Nov. 26, 1880.
Woodward's Cove.....	Grand Harbour.....	2	18½	.....	Jan. 18, 1881.
Grand Harbour.....	Seal Cove.....	4½	22¾	.....	Nov. 1, 1882.
Seal Cove.....	Southern Head.....	5½	28½	.....	Jan. 18, 1881.
	Land.....	29		28½	
	Cables.....	9¾			
		38¾		38¾	
<i>Anticosti.</i>					
Gaspé Basin.....	L'Anse-à-Fougère.....	28	.....	.....	Oct. 16, 1881.
L'Anse-à-Fougère.....	South West Point (all cable) across south channel of St. Lawrence.....	44¼	72¼	72¼	do
Fox Bay.....	Heath Point.....	23	.....	.....	Aug. 11, 1881.
Heath Point.....	South Point.....	32½	55½	.....	July 20, 1881.
South Point.....	Shallop Creek.....	17½	73	.....	July 27, 1881.
Shallop Creek.....	Salt Lake.....	52½	125½	.....	July 7, 1881.
Salt Lake.....	South-West Point.....	15	140½	.....	Oct. 19, 1881.
South-West Point.....	Jupiter River.....	7	147½	.....	Oct. 18, 1880.
Jupiter River.....	Otter River.....	17½	165	.....
Otter River.....	Becscie River.....	22	187	.....	Oct. 8, 1881.
Becscie River.....	Cape Eagle (Ellis Bay).....	10	197	.....
Cape Eagle.....	West Bay.....	14	211	.....	Aug. 1, 1881.
West Point.....	English Bay.....	3	214	.....	July 1, 1882.
	Land Line.....	242		214	
	Cable.....	44¼		286¼	
<i>South Shore, St. Lawrence.</i>					
Grand-Métis.....	Gaspé Basin.....	206	.....	206	
(Subsidized by Government —Great North-Western Telegraph Co.)					

No. 13.—GOVERNMENT TELEGRAPH LINES—Continued.
CONSTRUCTED AND PROJECTED.

Names of Stations.		Lengths—Distances in Statute Miles.			Established.
From	To	Inter-mediate	Pro-gressive	Complete Lines.	
<i>North Shore, St. Lawrence.</i>					
Quebec	Murray Bay	90	.....	.....	Line of the G. N.-W. Tel. Co.
Murray Bay	St-Fidèle	10	10	.....	} July 23, 1881.
St-Fidèle	St-Siméon	11	21	.....
St-Siméon	Baie des Rochers	12	33	.....
Rivière-aux-Ouards	St. Etienne (Loop Line)	17	.....	.....	Nov., 1886
Baie des Rochers	Anse du Portage	11	44	.....	July 23, 1881.
Anse-du-Portage	Tadoussac (cable 1½ miles across mouth of Saguenay)	2	46	.....	} Nov. 7, 1881.
Tadoussac	Bergeronnes	15	61	.....
Bergeronnes	Escoumains	12	73	.....
Escoumains	Saut-au-Mouton	16	89	.....	} October, 1882.
Saut-au-Mouton	Portneuf Village	11½	100½	.....
Portneuf Village	do Lighthouse	9	109½	.....
do Lighthouse	Saut-au-Cochon	7	116½	.....	} August, 1883.
Saut-au-Cochon	Betsiamits (Bersimis)	31	147½	.....
Betsiamits (Bersimis)	Pointe-aux-Outardes (cable)	12	159½	.....
Pointe-aux-Outardes	Manicouagan	18	177½	.....	October, 1883.
Manicouagan	River Godbout (cable)	26	203½	.....	do
River Godbout	Pointe-des-Monts	18½	222	.....	Dec., 1883.
Pointe-des-Monts	Trinity Bay	7½	22½	.....	do
Trinity Bay	Pentecost	31	260½	.....	Dec. 24, 1884.
Pentecost	Sept-Iles (*see note below)	100	36½	.....	Feb. 4, 1885.
Sept-Iles	River Moisy (*see note below)	18	378½	.....
	Total in operation	395½			
	Land Lines	356½			
	Cables	39½			
				395½	Feb. 4, 1885.
River Moisy	River Chaloupe (*see note)	60			Nov. 1, 1886.
River Chaloupe	Poste de Mingan	50			} Estm't'd distance Projected.
Poste de Mingan	Pointe-aux-Esquimaux	18			
Pointe-aux-Esquimaux	Nataakonon	64			
Nataakonon	Tshikaska	18			
Tshikaska	Wapitagam	42			
Wapitagam	Mecatina	33			
Mecatina	Shecatina	50			
Shecatina	Bonne Espérance	49			
Bonne-Espérance	Anse-au-Blanc-Sablon	24			
Anse-au-Blanc-Sablon	Forteau Bay	12			
Forteau Bay	Point Amour Lighthouse	4½			
	Total distance	820			

N.B.—The north shore telegraph line under the control of a private company, from Quebec down to Murray Bay, has been extended by the Federal Government since 1881, from Murray Bay down to a point 45 miles below the River Moisy, 1st November, 1886, and is to be continued to Forteau Bay, 12 miles east of Anse-au-Blanc-Sablon, or to Point Amour Lighthouse, at upper entrance of Strait of Belle-Ile.

See preceding tables Nos. 5, 6, 7.

The distances given on No. 5, do not agree with those given above, for the reason that the distances had to be estimated in many cases, and also because the telegraph line does not follow the same route throughout.

*Note.—The distances given in earlier tables were estimated on measurements by water between headlands. By actual measurement the telegraph line, as built, around the bays, &c, is as follows:

Pentecost to Sept-Iles	100 Miles.
Sept-Iles to River Moisy	18 do
River Moisy down to Birch River (15 miles W. of Chaploupe)	45 do

No. 13.—GOVERNMENT TELEGRAPH LINES—Continued.

CONSTRUCTED.

Names of Stations.		Lengths—Distances in Statute Miles.			Established.
From	To	Inter-mediate	Totals.	Complete Lines.	
<i>Chicoutimi.</i>					
Baie-St-Paul.....	St-Urbain	9	.....	.....	} Sept. 1, 1881.
St-Urbain	Petit Lac Hal Hal (La Cruche)	37	46	.....
Petit Lac Hal Hal (La Cruche).....	St-Alexis	31½	77½	.....
St-Alexis	St-Alphonse de Bagotville	3	80½	.....
St-Alphonse de Bagotville.....	Chicoutimi	11½	92	.....
	Land line			92	
<i>North-West Lines.</i>					
Qu'Appelle Ry. Station.....	Fort Qu'Appelle	17	.....	.....	Jan., 1883.
Fort Qu'Appelle.....	Touchwood	46	63	.....	Sept., 1883.
Touchwood	Humbolt.....	78	141	.....	1878-9.
Humbolt	Saskatchewan.....	55	196	.....	Nov., 1883.
Saskatchewan	Battleford.....	85	281	.....	1878-9.
Saskatchewan (Clark's Crossing).....	Prince Albert, Branch Line.....			83	Dec., 1883.
Battleford	Fort Pitt New Line.....	89	370	.....	Aug., 1887.
Fort Pitt.....	Victoria do	138½	508½	.....	do 1887.
Victoria.....	Fort Saskatchewan do	49	557½	.....	do 1887.
Fort Saskatchewan.....	Fort Edmonton do	24	581½	.....	1878-9.
				581½	
<i>Branches.</i>					
Clark's Crossing	Saskatoon			14	} May, 1885.
Edmonton.....	St. Albert.....			9	
<i>Sections South of Railway.</i>					
*Galt Junction	Lethbridge.....	107	.....	.....	} May, 1885. June, 1885.
Lethbridge	McLeod.....	28½	135½	.....
McLeod	Fort McLeod	½	136	136	
Moose Jaw.....	Wood Mountain.....			90½	
	Total, North-West Lines.....			914	

* Leased to North-Western Coal and Navigation Company.

N.B.—The construction of the new line from Battleford to Edmonton, north side of the North Saskatchewan, was completed and the old line abandoned in August, 1887.

This new line was built partly of iron poles, the lengths, &c., are as hereunder:—

Battleford to Fort Pitt, iron poles.....	Miles.
Fort Pitt to Moose, tamarac poles	89
Moose to Victoria do	62
Victoria to Fort Saskatchewan, tamarac poles	76½
Fort Saskatchewan to Edmonton do	49
	24
Total	300½

No. 13.—GOVERNMENT TELEGRAPH LINES—Continued.

BRITISH COLUMBIA, GOVERNMENT TELEGRAPH LINES.

CONSTRUCTED.

Localities.		Constructed MILES	Miles.
From	To		
<i>British Columbia.</i>			
Vancouver Island Land Lines—			
Victoria.....	Departure Bay.....	1878	74½
Nanaimo.....	Valdes.....	1881	15
Victoria.....	Clover Point.....	1884	2½
Cable connection with Washington Territory—			
Clover Point.....	Dungeness.....	1884	17
Straits of Georgia Cables—			
Saanich Arm Crossing.....	.....	1878 & 1881	2
Gabriola Island Crossing.....	.....	1881	1
Valdes Island.....	Point Gray.....	1881	20
Mainland British Columbia Land Lines—			
Point Gray.....	Granville.....	1881	15
Granville.....	New Westminster.....	1881	11½
New Westminster.....	Matsqui (including cables).....	1864 & 1881	35½
Matsqui.....	Cache Creek do.....	1864 & 1878	181
Cache Creek.....	Barkerville, Cariboo.....	1865 & 1878	272½
do.....	Kamloops.....	1878	48
Fraser River Crossings (main lines), 2 cables			
½ mile each.....	.....	1881	½
Branch Lines—			
New Westminster or Ladner's Landing.....		.....	18
(Including ½ mile cable crossing Fraser River)		.....
New Westminster to Port Moody.....		.....	7½
Total miles.....		.....	721½

N.B.—Plus 44 miles of an additional wire between New Westminster and the United States boundary line, 8 miles from Matsqui.

	Miles.
Land line.....	680½
Cables.....	41
	<u>721½</u>

See next page.

No. 13.—GOVERNMENT TELEGRAPH LINES—*Concluded.*

BRITISH COLUMBIA, GOVERNMENT TELEGRAPH LINES.

PORTION TRANSFERRED TO CANADIAN PACIFIC RAILWAY COMPANY.

	Miles.
The old lines extending from Victoria to Cache Creek (including cables across Straits of Georgia).....	356
And from Cache Creek to Kamloops.....	48
Also Branch lines :—	
New Westminster to Port Moody.....	7½
Victoria to Dungeness. Cable across Strait San-Juan-de-Fuca.	19½
Total transferred to C.P.R. Co.....	<u>431</u>

PORTION OPERATED FOR GOVERNMENT, BY CANADIAN PACIFIC RAILWAY COMPANY.

The new line, 4 miles in length, which has been constructed and connects Ashcroft Station with Cache Creek.

	Miles.
This line and that extending from Cache Creek to Barkerville.....	272½
And the Branch line, New Westminster to Ladner's Landing.....	18
Total operated for Government, by C. P. R. Co.....	<u>290½</u>
Total old lines.....	<u>721½</u>

MEMO.—Ashcroft Station is located on the railway line. The "Ashcroft" indicated on the printed maps, was a temporary office, some distance westward, and since abandoned.

Distance between Victoria and Nanaimo, say 73 miles.

Distance between Victoria and Esquimalt, say 3 miles.

No. 13. — SUMMARY showing proportions of Land and Cable Telegraph Lines, owned, subsidized, transferred or operated by Government, in the several Provinces.

	Distances in Miles.				Grand Total.
	Length of Line.		Total Length.		
	Land.	Cables.	Land.	Cables.	
Newfoundland—Subsidized line— Port-aux-Basques to Cape Ray	14		14		14
Nova Scotia—					
Sydney to Meat Cove	126	$\frac{1}{2}$			
Dartmouth to Torbay (subsidized)	208		334		
Low Point to Lingan	5		339		
Barrington to Cape Sable Island	16	$1\frac{1}{2}$	365	$2\frac{1}{2}$	$367\frac{1}{2}$
Mabou to Cheticamp	53		408		$410\frac{1}{2}$
New Brunswick—					
Bay of Fundy lines	29	$9\frac{1}{8}$	29	$9\frac{1}{8}$	
Chatham to Escominac	42		71		$80\frac{1}{2}$
Quebec—					
South Shore (subsidized) from Grand-Métis to Gaspé Basin	206				
Great North-Western Telegraph Company's Offices					
Magdalen Islands	$83\frac{3}{8}$	$73\frac{3}{8}$	$280\frac{3}{8}$		
Anticosti Island	242	$44\frac{1}{2}$	$531\frac{3}{8}$	$117\frac{3}{8}$	
North Shore of St. Lawrence	$356\frac{1}{2}$	$39\frac{1}{2}$	$887\frac{3}{8}$	$156\frac{3}{8}$	
Chicoutimi	92		$979\frac{3}{8}$	$156\frac{3}{8}$	
Quarantine, Gross-Ile	46	6	$1,025\frac{3}{8}$	$162\frac{3}{8}$	$1,188\frac{1}{2}$
North-West Territory	914				914
British Columbia	$680\frac{1}{2}$	41			$721\frac{1}{2}$
Totals	$3,113\frac{1}{8}$	$216\frac{1}{2}$			$3,328\frac{3}{8}$

See Notes on the preceding pages, respecting *Quebec, North-West Territory and British Columbia lines.*

T A R I F F

IN

GOVERNMENT TELEGRAPH LINES.

No. 13.—TARIFF ON GOVERNMENT TELEGRAPH LINES.—

Intermediate Distances. Miles	OFFICES. (The lines whereon these Offices are located, run North and North-East from Baie- St-Paul.)	Progressive Distances.												
		Chicoutimi.	St-Alphense.	St-Alexis.	La-Cruche(Lac Ha | Ha |)	St-Urbain.	Baie-St-Paul.	Murray Bay.	St-Fidèle.	St-Siméon.	Tadoussac.	Bergeronnes.	Escoumains.	Saut-au-Mouton.
0	Chicoutimi.....	0	15	15	15	15	15	20	20	20	20	20	20	25
11½	St-Alphonse.....	0	6	15	15	15	15	20	20	20	20	20	20	20
3	St-Alexis.....	0	0	15	15	15	15	20	20	20	20	20	20	20
31½	La-Cruche (Lac Ha | Ha |).....	0	0	0	15	15	15	15	15	20	20	20	20	20½
27	St-Urbain.....	0	0	0	0	15	15	15	15	15	15	15	20	20
9	Baie-St-Paul.....	0	0	0	0	0	15	15	15	15	15	15	20	20
30	Murray Bay.....	0	0	0	0	0	0	15	15	15	15	15	20	20
10	St-Fidèle.....	0	0	0	0	0	0	0	15	15	15	15	15	15
11	St-Siméon.....	0	0	0	0	0	0	0	0	15	15	15	15	15
25	Tadoussac.....	0	0	0	0	0	0	0	0	0	15	15	15	15
15	Bergeronnes.....	0	0	0	0	0	0	0	0	0	0	15	15	15
12	Escoumains.....	0	0	0	0	0	0	0	0	0	0	0	0	15
16	Saut-au-Mouton.....	0	0	0	0	0	0	0	0	0	0	0	0	0
21½	Portneuf.....	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Saut-au-Cochon.....	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Betsiamits.....	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Manicouagan.....	0	0	0	0	0	0	0	0	0	0	0	0	0
29	River Godbout.....	0	0	0	0	0	0	0	0	0	0	0	0	0
18½	Pointe-des-Monts.....	0	0	0	0	0	0	0	0	0	0	0	0	0
7½	Trinity Bay.....	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Pentecost.....	0	0	0	0	0	0	0	0	0	0	0	0	0
29½	Sept-Iles.....	0	0	0	0	0	0	0	0	0	0	0	0	0
19	River Moisy.....	0	0	0	0	0	0	0	0	0	0	0	0	0
45	River Chaloupe.....	0	0	0	0	0	0	0	0	0	0	0	0	0
50	Mingan.....	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Pointe-aux-Esquimaux.....	0	0	0	0	0	0	0	0	0	0	0	0	0

North Shore, River and Gulf of St. Lawrence.

Portneuf.	Saint-au-Cochon.	Betsiamits.	Manicouagan.	River Godbout.	Pointe-des-Monts.	Trinity Bay.	Pentecost.	Sept-Iles.	River Moisy.	River Chaloupe.	Mingan.	Pointe-aux-Esquimaux.
222½	238½	269½	296½	325½	344	351½	382½	412	431	476	526	544
25	25	25	25	35	35	35	35	35	35	35	35	35
25	25	25	25	35	35	35	35	35	35	35	35	35
25	25	25	25	35	35	35	35	35	35	35	35	35
20	20	25	25	25	25	35	35	35	35	35	35	35
20	20	25	25	25	25	25	25	35	35	35	35	35
20	20	25	25	25	25	25	25	35	35	35	35	35
20	20	20	20	25	25	25	25	25	35	35	35	35
15	20	20	20	20	25	25	25	25	25	35	35	35
15	15	20	20	20	25	25	25	25	25	35	35	35
15	15	20	20	20	20	20	25	25	25	35	35	35
15	15	15	20	20	20	20	20	25	25	25	35	35
15	15	15	15	20	20	20	20	25	25	25	35	35
0	15	15	15	20	20	20	20	20	25	25	35	35
.....	0	15	15	15	20	20	20	20	20	25	25	35
.....	.....	0	15	15	15	15	15	20	20	25	25	25
.....	.....	.....	0	15	15	15	15	20	20	20	25	25
.....	.....	.....	.....	0	15	15	15	15	20	20	25	25
.....	.....	.....	.....	.....	0	15	15	15	20	20	20	20
.....	.....	.....	.....	.....	.....	0	15	15	15	20	20	20
.....	.....	.....	.....	.....	.....	.....	0	15	15	15	20	20
.....	.....	.....	.....	.....	.....	.....	.....	0	15	15	20	20
.....	.....	.....	.....	.....	.....	.....	.....	.....	0	15	15	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	15	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	15
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0

NOTE.

The Tariff is for messages of 10 words or under, exclusive of address and signature.

Where the charge is 25 cents or under, add 1 cent for each additional word.

Where the charge is 35 cents, add 2 cents for each additional word.

For business with offices west of Baie-St-Paul and terminating at Quebec, add 15 cents and 1 cent to the Government line tariff.

For business with offices west of Baie-St-Paul, beyond Quebec, add the full rate of the Great North-Western Telegraph Company to the Government line tariff.

All local business, that is, business between offices on the Government lines, must be checked direct.

All through business, that is, business going beyond the Government lines, must be checked (the proportion for "This Line" and "Other Lines" respectively) with Baie-St-Paul, the Repeating and Transfer Office.

No. 13.—GOVERNMENT TELEGRAPH LINES.

LOCALITIES—DISTANCES—TARIFFS.

Location of Lines.	Extreme Distance in Miles.			Rate for a Message of 10 words; and for each extra word. The address and signature not charged for.
	Land Lines.	Cable.	Totals.	
Nova Scotia—				
Between North Sydney and Meat Cove, Cape North.....	126	$\frac{1}{2}$	126 $\frac{1}{2}$	25c. and 2c.
Between Barrington and Cape Sable Island light.	16	1 $\frac{3}{4}$	17 $\frac{3}{4}$	12c. and 1c.
New Brunswick—				
Between offices on Grand Manan.....	21	.....	.....	15c. and 1c.
do do do and Campo Bello	8	7 $\frac{1}{4}$	.....	25c. and 2c.
do do do do and	.....	1 $\frac{1}{2}$	.....	{ 25c. and 2c. 15c. and 1c.
Between Chatham and Escuminac.....	42	.....	80 $\frac{1}{2}$	
Quebec—				
Between offices on Magdalen Islands.....	83 $\frac{3}{4}$	.....	.....	25c. and 2c.
do do do and North Sydney	126 $\frac{1}{2}$	73 $\frac{3}{4}$	200 $\frac{1}{4}$	75c. and 5c.
do do Anticosti Island.....	214	.....	.....	25c. and 2c. 75c. and 5c.
do do do and Gaspé.....	28	44 $\frac{1}{2}$	286 $\frac{1}{2}$	
do do North Shore St. Lawrence, east of Bersimis.....	.....	.....	.....	15c. & 1c. } According 35c. & 2c. } to distance.
do do North Shore St. Lawrence, east and west of Bersimis.....	430 $\frac{1}{2}$	30 $\frac{1}{2}$	469 $\frac{1}{2}$	
do do Orleans Island.....	24	.....	.....	15c. and 1c.
do do do and Quebec.....	17	$\frac{3}{4}$	.....	15c. and 1c.
do do do and Grosse Ile.....	5	6 $\frac{1}{2}$	.....	25c. and 1c.
do do Grosse Ile and Quebec.....	.....	.....	52	25c. and 1c.
North-West Territory—				
Between Qu'Appelle and Edmonton.....	537	.....	.....	75c. and 5c.
Branch lines, Clark's Crossing to Prince Albert..	83	.....	.....
do do do Saskatoon.....	14	.....	.....
do Edmonton to Fort Saskatchewan.....	24 $\frac{3}{4}$	.....	.....
do do do Fort Albert.....	9	.....	.....
do Galt Junction to Fort McLeod.....	136	.....	.....
do Moose Jaw to Wood Mountain.....	90 $\frac{1}{2}$	.....	894 $\frac{1}{2}$	
Between intermediate offices 25c. and 2c. to 75c. and 5c., according to distance.				
EXAMPLE—Qu'Appelle to Fort Qu'Appelle, 17 miles, 25c. per 10 words and 2c. for each additional word. Qu'Appelle to Battleford, 281 miles, 50c. for 10 words and 3c. for each additional word.				
British Columbia—				
Between Ashcroft and Barkerville.....	276 $\frac{1}{2}$	.....	276 $\frac{1}{2}$	50c. and 3c.
do intermediate offices 25c. and 2c. to 50c. and 3c., according to distance, as explained in example given above.				

In proportion to population Canada enjoys greater telegraphic accommodation than any other country in the world, there being within the Dominion one station to every 1,914 persons, as contrasted with one to every 3,700 persons in the United States and one to every 6,508 persons in Great Britain. The value of such means of communication, even in distant places, where the population is at present sparse, makes the emigrant feel not far from home, no matter where he may be settled in the Dominion, and at the same time enables him to dispose of his crops, etc., to the best possible advantage.

No. 14.—AREA and Population of the Globe. Compiled, as far as possible, from the last official Census of each country; and where no Census has been made the figures are taken from the most reliable estimates.

Continent.	Country.	Years of Census.	Area English square Miles.	Population.
Europe	Austro-Hungary	1880	240,274	37,882,712
	Belgium	1885	11,373	5,853,279
	British Isles, Gibraltar, &c.	1881	121,609	35,416,120
	Bulgaria	1881	24,899	2,007,919
	Denmark and Iceland.	1880	58,759	2,002,704
	France	1886	204,092	38,218,903
	German Empire	1885	211,196	46,852,680
	Greece	1879	28,014	1,979,453
	Holland (Netherlands)	1885	12,648	4,336,012
	Italy	1885	114,410	29,699,785
	Montenegro	1879	3,550	250,000
	Portugal	1881	35,552	4,708,178
	Roumania .....	.....	46,314	5,376,000
	Russia, in Europe .....	.....	2,261,526	93,973,425
	Servia	1886	18,759	1,952,321
	Spain	1884	197,767	16,958,178
	Sweden and Norway	1885	294,184	6,489,669
	Switzerland	1880	15,992	2,846,102
	Turkey, in Europe .....	.....	128,013	8,987,049
		Total	4,020,731	345,790,479
Asia	Afghanistan .....	.....	278,600	2,500,000
	Arabia .....	.....	1,500,000	3,265,000
	Beluchistan .....	.....	140,000	1,000,000
	British India, exclusive of Native States ..	.....	1,129,630	208,670,421
	Chinese Empire, including French Poss. ....	.....	4,519,150	420,279,110
	East India Islands .....	.....	786,500	34,500,000
	Farther India .....	.....	873,151	36,504,250
	Independent Turkistan .....	.....	194,345	3,000,000
	Japan .....	.....	148,456	36,700,118
	Persia .....	.....	610,000	7,654,000
	Portuguese Settlements .....	.....	7,923	843,256
	Russia, in Asia .....	.....	6,195,783	10,028,435
	Turkey do .....	.....	730,006	16,174,156
	India (Native States) .....	.....	471,549	52,002,924
	Total .....	.....	17,585,073	833,121,670
Africa	Abyssinia .....	.....	158,000	3,000,000
	Algeria and other French Possessions .....	.....	575,421	5,000,000
	British South Africa .....	.....	466,000	3,000,000
	Central Africa, including Somah & Gallas. ....	.....	4,000,000	50,000,000
	Egypt	1882	394,345	6,500,000
	Gold Coast, Sierra Leone (S.A.) .....	.....	19,784	711,546
	Liberia .....	.....	15,000	1,100,000
	Lower Guinea .....	.....	280,000	2,000,000
	Madagascar .....	.....	228,500	3,500,000
	Morocco .....	.....	219,000	8,000,000
	Orange Free State	1880	41,640	133,518
	Portuguese Settlements .....	.....	697,335	2,488,506
	Sahara .....	.....	2,500,000	5,000,000
	Senegambia .....	.....	147,000	4,000,000
	Soudan .....	.....	1,250,000	30,000,000
	Transvaal .....	.....	112,700	800,000
	Tripoli .....	.....	344,000	1,200,000
	Tunis .....	.....	45,718	2,000,000
	Zanzibar .....	.....	625	200,000
Congo (Free States) .....	.....	1,056,200	27,000,000	
	Total .....	.....	12,541,266	155,633,570

N.B.—French Possessions in Asia—about 90,000 square miles—17 millions of souls.

No. 14.—AREA and Population of the Globe, &c.—Continued.

Continent.	Country.	Years of Census.	Area English square Miles.	Population.
North America.....	Dominion of Canada.....	1881	3,470,392	4,550,000
	Greenland (Territory free from ice).....	1879	34,015	10,000
	Mexico.....	1882	743,948	10,447,974
	Newfoundland.....	1881	42,734	196,411
	United States.....	1880	3,557,009	50,550,000
	Total North America.....			7,848,098	65,754,385
South America (including all the West Indies.)	West Indies.....		150,000	2,600,000
	Argentine Republic.....		515,700	2,942,000
	Bolivia.....	1861	772,548	1,952,079
	Brazil.....	1885	3,219,003	12,933,375
	Chili.....	1885	293,290	2,570,442
	Columbia.....	1881	504,773	4,000,000
	Ecuador.....		251,326	1,004,651
	Guiana.....	1881	178,370	341,800
	Patagonia.....		375,000	200,000
	Peru.....	1876	405,123	3,000,000
Uruguay.....	1884	73,538	660,000	
Venezuela.....	1884	632,695	2,121,988	
Total South America.....			7,371,366	34,176,335
Total North and South America.....			15,219,464	99,930,720
Australasia.....	Australia.....	1884	2,952,941	2,669,872
	New Zealand.....	1886	104,403	620,500
	Tasmania.....	1884	26,375	130,541
	Total.....			3,083,719	3,420,913
Polynesia.....			350,000	30,200,000

RECAPITULATION.

		Square Miles.	Population.
Europe ..	Say.....	4,020,731	346,000,000
Asia ..	do ..	17,585,073	833,000,000
Africa ..	do ..	12,541,266	155,000,000
America.....	do ..	15,219,464	100,000,000
Polynesia.....	do ..	3,433,719	30,200,000
Grand total.....		52,800,253	1,464,200,000

No.15.—TABLE of the British Possessions throughout the World, with their Population and Area in English Square Miles, according to Bartholomewin 1887.

	Area.	Population.
In Europe—	Eng. sq. miles.	
British Islands	121,483	35,241,482
Heligoland	$\frac{1}{2}$	2,001
Gibraltar	$1\frac{3}{8}$	18,381
Malta and Gozo	124	154,256
	121,609	35,416,120
In Asia—		
Cyprus	3,707	186,173
British India (including Native States)	1,382,624	253,891,821
Ceylon	25,365	2,761,396
Andaman and Nicobar Islands	3,192	20,128
Straits Settlement	1,445	540,000
Burma, Upper	190,000	4,000,000
North Borneo and Hong Kong	22,041	310,402
Labuan Island, Aden, Kuria, Muria Island, Perim and Mosha, and Kamarin, Keeling and Socotra Islands	1,593	51,569
	1,629,967	261,761,489
In Oceania—		
New South Wales	309,175	921,268
Queensland	668,224	309,913
South Australia	903,690	317,043
Victoria	87,884	961,276
Western Australia	975,920	32,958
Tasmania	28,375	130,541
New Zealand	104,403	605,736
Norfolk, Fiji Islands, &c.	96,779	266,872
	3,172,450	3,545,607
In Africa—		
Cape Colony and Dependencies	219,700	1,252,347
Basuto Land	10,293	128,000
Natal	18,755	418,731
Beehuans Land	184,500	33,000
Walvisch Bay	480	800
Sierra Leone	1,000	60,546
Gambia River	69	14,150
Gold Coast and Lagos, St. Helena	19,900	743,250
Ascension, Trestan D'Acunham, Mauritius, &c.	1,104	371,172
North Amsterdam and St. Paul	28	
	455,829	3,021,896
In North America—		
Dominion of Canada	3,406,542	4,324,810
Newfoundland	42,734	196,411
Bermudas	19	14,898
Bahamas	5,390	43,521
Jamaica	4,193	580,804
Turk and Caicos Islands and Cayman Island	447	7,178
British Honduras	7,562	27,452
West Indies	1,570	444,566
	3,468,457	5,639,630
In South America—		
Trinidad	1,755	166,628
British Guiana	85,435	269,330
Falkland Islands	6,500	1,553
South Georgia	1,570	
	95,250	437,511
Total of British Empire	8,943,562	309,822,353

No. 16.—TABLE of Largest Empires.

Names.	Area in square miles.	Population at last Census.	Population per square mile.
British Empire	8,950,000	310,000,000	34·6
Russian do	8,500,000	104,000,000	12·3
Chinese do	4,500,000	420,000,000	91·4
United States	3,600,000	51,000,000	14·1
Brazilian Empire	3,200,000	13,000,000	4·0
French Republic and Colonies	1,000,000	62,000,000	62·0
German Empire	400,000	47,000,000	117·5
Spain (including Colonies)	360,000	25,000,000	69·4
Italy	115,000	30,000,000	260·0

No. 17.—POPULATION OF THE GLOBE BY RACES.

Race.	Location.	Population.
Indo-Germanic or Aarian.....	Europe, Persia, etc.....	553,000,000
Mongolian, or Turanian.....	Greater part of Asia.....	641,000,000
Semitic and Hamitic.....	North Africa, Arabia..	65,000,000
Negro and Bantu.....	Central Africa.....	152,000,000
Hottentot and Bushmen.....	South Africa.....	200,000
Malay and Polynesian.....	Australasia and Polynesia.....	36,000,000
American Indian	North and South America.....	16,000,000
Total.....	.....	1,464,200,000

No. 18.—POPULATION OF THE GLOBE BY RELIGIONS.

Christians.....	394,000,000
Jews.....	7,000,000
Mohammedans	171,000,000
Buddhists.....	503,000,000
Brahmins.....	178,000,000
Heathen and Fetish Worshipers.....	171,000,000
Various and Unknown.....	40,200,000
Total	1,464,200,000

PART IV.

COMPARATIVE TABLES OF DISTANCES, ETC.,
FROM LIVERPOOL, ENGLAND, ON THE ATLANTIC,
TO YOKOHAMA, JAPAN, ON THE PACIFIC,
BY THE SHORTEST OCEAN ROUTES,
AND BY THE SHORTEST TRUNK LINES OF RAILWAY,
IN CANADA AND THE UNITED STATES, IN NORTH AMERICA
CONNECTING THE TWO OCEANS.

Also:

BY THE SUEZ CANAL,
AND BY THE PANAMA CANAL.

N.B.—The longest route from Liverpool to Yokohama, through Canada, is shorter than the shortest route through the United States, *vid* Boston, Chicago and San Francisco.

The shortest summer route is *vid* Quebec.

When the short line railway, *vid* Montreal, Leanozville and Mattawamkeag is completed, the shortest winter route will be *vid* St. Andrews or St. John, N.B.

The terminus of the Canadian Pacific Railway has been located at Vancouver, and other portions of this railway have been constructed whereby its length has been increased since the following tables were prepared; this, however, does not affect the total distance from Liverpool to Yokohama beyond 27 miles, which is unimportant.

Ref. No. 35,526.

Exclusive of items 41 to 51.

PART IV.

INDEX to Comparative Tables of Distances, &c., from Liverpool, England, to Yokohama, Japan, by the shortest Ocean and Railway Routes, through Canada to Port Moody and the United States to San Francisco.

No. 1...	A 1.....	QUEBEC Route:—Liverpool to Quebec <i>via</i> Cape Race; thence to Port Moody <i>via</i> North Shore and Canadian Pacific Railways; also, by water from Victoria, Vancouver Island, to San Francisco.
No. 1...	A 2.....	QUEBEC Route:—Liverpool to Quebec <i>via</i> Strait of Belle-Ile; thence to Port Moody <i>via</i> North Shore and Canadian Pacific Railways; also, by water from Victoria Vancouver Island, to San Francisco.
No. 2...	B	QUEBEC, Owen Sound, Lakes Huron and Superior Route:—By North Shore Railway to Montreal; Canadian Pacific Railway to Ottawa; thence Subsidiary Line of C.P.R. to Owen Sound; thence across Lakes Huron and Superior to Port Arthur; thence C.P.R. to Port Moody. Summer route by railway and lake steamers, 1884-88.
No. 3...	C	QUEBEC and Chicago Route:—By North Shore Railway to Montreal; Grand Trunk Railway to Detroit; United States Railway to Chicago, St. Paul and Emerson; thence C.P.R. to Winnipeg and Port Moody.
No. 4...	D 1.....	LOUISBOURG and Quebec Route, with Branch Lines to St. John, St. Andrew's, &c.:—By Intercolonial, North Shore and Canadian Pacific Railways.
No. 5...	D 2	LOUISBOURG, St. John, Mattawamkeag, Sherbrooke, Montreal and Port Moody Route:—By Intercolonial, New Brunswick, International, Grand Trunk and Canadian Pacific Railways.
No. 6...	E 1.	HALIFAX and Quebec Route, with Branch Lines to St. John and St. Andrew's:—By Intercolonial, North Shore and Canadian Pacific Railways.
No. 7...	E 2.....	HALIFAX St. John, Mattawamkeag, Sherbrooke, Montreal and Port Moody Route:—By Intercolonial, New Brunswick, International, Grand Trunk and Canadian Pacific Railways.
No. 8...	F 2.....	ST. JOHN, Edmundston and Quebec Route:—By Fredericton and Edmundston Railway, Témiscouata Road and Intercolonial Railway to Quebec; thence to Port Moody by North Shore and Canadian Pacific Railways.
No. 8...	F 1.....	ST. JOHN, Moncton and Quebec Route:—By Intercolonial Railway from St. John to Quebec <i>via</i> Moncton; thence to Port Moody by North Shore and Canadian Pacific Railways.
No. 9...	F 3.....	ST. JOHN, Mattawamkeag, Sherbrooke, Montreal and Port Moody Route:—By New Brunswick, International, Grand Trunk and Canadian Pacific Railways.
No. 10...	G 1.....	ST. ANDREW'S, Edmundston, Rivière-du-Loup and Quebec Route:—By New Brunswick Railway, Témiscouata Road and Intercolonial Railway; thence to Port Moody by North Shore and Canadian Pacific Railways.
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No. 23...	D 2, E 2, E 3, G 2	SUBSIDY granted to the International Railway Company for 49 miles of their Railway from Sherbrooke, in the Province of Quebec, to the International Boundary Line.
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No. 30...	K 1	NEW YORK, Chicago and San Francisco Route:—By Chicago, Detroit and Niagara Falls Short Line—Chicago, Rock Island and Pacific—Union Pacific and Central Pacific Railways.
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No. 37...	M 2.....	BALTIMORE, Cincinnati, St. Louis and San Francisco Route :—By Cincinnati, Washington and Baltimore and St. Louis and San Francisco Railways.
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No. 50...	THE principal projects of Interoceanic Canals across the Isthmus of Panama, examined by the International Congress of 1879.
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A. 1 to H.

ROUTES THROUGH CANADA

VIA

PORT MOODY.

FOR DETAILS, SEE Nos. 1 TO 25.

FOR SUMMARY OF CANADIAN ROUTES, SEE No. 19.

For Routes through United States *via* San Francisco, see I 1 to O, or No. 26 to 42.

For Summary of United States Routes, see No. 43.

For Pacific Railway, etc., see No. 44.

For Panama and Suez Canals, etc., see Nos. 45 to 51.

ROUTES A 1, A 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 1.—QUEBEC ROUTE.

By Main Trunk Line of North Shore and Canadian Pacific Railways.

Also Water and Railway Route to Victoria, Vancouver Island, and San Francisco, California.

From	To	Intermediate Mileage. Statute Miles.	Geo- graphical Miles.	Statute Miles.
Liverpool	Quebec <i>via</i> Cape Race..... Atlantic Ocean		2,819 0	3,249
Quebec	Three Rivers North Shore Railway	77	66·8	77
	St. Martin Junction, 12 miles from Montreal	82	137·9	159
	Ottawa..... Canadian Pacific Railway	108	231·6	267
	Sudbury Junction.....	324	512·7	591
	Port Arthur	547	997·3	1,138
	Winnipeg	429	1,359·5	1,567
	Portage la Prairie.....	56	1,408 0	1,623
	Brandon.....	77	1,474·8	1,700
	Qu' Appelle.....	191	1,640·5	1,891
	Regina	33	1,669·2	1,924
	Calgary	482	2,087·3	2,406
	Stephen	123	2,194·0	2,529
	Savona Ferry.....	268	2,426·5	2,797
	Port Moody.....	215	2,613·1	3,012
Port Moody.....	Yokohama..... Pacific Ocean		4,374·0	5,042
Total—Liverpool.....	Yokohama <i>via</i> Cape Race, Quebec and Main Trunk Line of North Shore and Canadian Pacific Railways A 1.		9,806·0	11,303
	Deduct difference between Cape Race and Strait of Belle- Ile		158·0	182
Total—Liverpool.....	Yokohama <i>via</i> Strait of Belle-Ile		9,648·0	11,121
Total—Quebec.....	do		6,987·0	8,054
Liverpool	Port Moody <i>via</i> Quebec, N. S. and C. P. Railways.....		5,431·7	6,261
Port Moody.....	Nanaimo, Vancouver Island..... Across Strait of Georgia.....		39·0	45
Nanaimo.....	Victoria do Along N.E. side of Strait Railway.....		63·3	73
Total—Liverpool.....	do do Strait of Georgia		5,5·4·0	6,379
Victoria.....	San Francisco, California..... Pacific Ocean		759·0	875
Total—Liverpool.....	do <i>via</i> Quebec and Port Moody.....		6,293·0	7,254
Total—Quebec.....	San Francisco <i>via</i> Quebec and Port Moody		3,474·0	4,005

N.B.—For details respecting North Shore and Canadian Pacific Railways and branches, as regards portions completed, subsidies, cost, &c., see tables Nos. 13, 14, 20 to 25.

For comparative statements of distances on various routes, see tables Nos. 17, 18, 19.

The railway from Nanaimo to Victoria, and thence to Esquimalt, some 3 miles further, was completed 16th October, 1886.

ROUTE B.

Distances from Liverpool, England, to Yokohama, Japan.

No. 2.—QUEBEC, OWEN SOUND, LAKES HURON AND SUPERIOR ROUTE.

By North Shore Railway to Montreal; main trunk line of Canadian Pacific Railway to Ottawa; thence subsidiary line of Canadian Pacific Railway to Owen Sound; thence across Lakes Huron and Superior to Port Arthur; thence main line, Canadian Pacific Railway, to Port Moody.

Summer route by railway and lake steamers, 1884-1888.

From	To	Intermediate Mileage. Statute Miles.	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Quebec <i>via</i> Cape Race..... Atlantic Ocean		2,819 0	3,249
Quebec.	Three Rivers North Shore Railway	77	66 8	77
	St. Martin Junction, 12 miles from Montreal.....	82	137 9	159
	Ottawa..... Canadian Pacific Railway	108	231 6	267
	Perth..... Subsidiary line, Canadian Pacific Railway	59	282 8	326
	Toronto Junction, 4½ miles from Toronto.	199	455 4	525
	Orangeville.....	43½	493 1	568 5
	Owen Sound.....	73½	556 9	642
	Saut-Ste-Marie Canal..... Lake Huron	250	773 8	892
	Port Arthur..... Lake Superior	280	1,016 7	1,172
	Winnipeg..... Canadian Pacific Railway	429	1,388 9	1,601
	Portage la Prairie.....	56	1,437 5	1,657
	Brandon.....	77	1,504 3	1,734
	Qu'Appelle.....	191	1,670 0	1,925
	Regina.....	33	1,698 7	1,958
	Calgary.....	482	2,116 8	2,440
	Stephen.....	123	2,239 5	2,563
	Savona Ferry.....	268	2,456 0	2,831
	Port Moody.....	215	2,642 5	3,046
Port Moody.	Yokohama..... Pacific Ocean		4,374 0	5,042
Total—Liverpool	Yokohama, <i>via</i> Quebec, North Shore Railway and subsidiary line of Canadian Pacific Railway, Lakes Huron and Superior <i>via</i> Cape Race.....		9,835 0	11,337
	Deduct difference between Cape Race and Strait of Belle-Ile.....		158 0	182
	Yokohama, <i>via</i> Strait of Belle-Ile.		9,677 0	11,155

N.B.—For comparative statement of distances from Montreal and Ottawa to Toronto, *via* Canadian Pacific main trunk, subsidiary and branch lines, and Grand Trunk Railway, see No. 15.

For comparative statement of distances on the various routes, see Nos. 17, 18, 19.

The Canadian Pacific Railway Company constructed a direct line of railway from Montreal to Toronto, *via* Vaudreuil and Perth, in 1886-87, 349 miles in length.

The Grand Trunk Railway from Montreal to Toronto is 333 miles.

ROUTE C.

Distances from Liverpool, England, to Yokohama, Japan.

No. 3.—QUEBEC AND CHICAGO ROUTE.

By North Shore Railway to Montreal; thence Grand Trunk Railway to Detroit; thence United States Railways to Chicago, St. Paul and Emerson; thence Canadian Pacific Railway to Winnipeg and Port Moody.

United States and Canada.

From	To	Intermediate Mileage. Statute Miles.	Geo- graphical Miles.	Statute Miles.
Liverpool.	Quebec <i>viâ</i> Cape Race..... Atlantic Ocean		2,819·0	3,249
Quebec.	Montreal..... North Shore and O.P.R.	171	148·4	171
	Toronto..... Grand Trunk Railway	333	437·2	504
	Detroit.....	231	637·6	735
	Chicago..... United States Railways	268	870·2	1,003
	St. Paul West.....	410	1,225·8	1,413
	Minneapolis.....	10	1,234·5	1,423
	Emerson.....	381	1,565·1	1,804
	Winnipeg..... Canadian Pacific Railway	66	1,622·3	1,870
	Portage la Prairie.....	53	1,670·9	1,926
	Brandon.....	77	1,737·7	2,003
	Qu'Appelle.....	191	1,903·4	2,194
	Regina.....	33	1,932·0	2,227
	Calgary.....	482	2,350·2	2,709
	Stephen.....	123	2,456·9	2,832
	Savona Ferry.....	268	2,689·4	3,100
	Port Moody.....	215	2,875·9	3,315
Port Moody.....	Yokohama..... Pacific Ocean		4,374·0	5,042
Total—Liverpool	Yokohama <i>viâ</i> Cape Race, Quebec and Chicago.....		10,069·0	11,606
	Deduct difference between Cape Race and Strait of Belle-Ile....		158 0	183
	Yokohama <i>viâ</i> Strait of Belle-Ile, Quebec and Chicago.....		9,911·0	11,424

N.B.—For comparative table of distances from the various points along this route to Port Moody, see No. 16.

For comparative statement of distances on various routes, see Nos 17, 18, 19.

ROUTE D 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 4.—LOUISBOURG AND QUEBEC ROUTE WITH BRANCH LINES TO ST. JOHN, ST. ANDREW'S, &O.

By Intercolonial, North Shore and Canadian Pacific Railways.

From	To	Intermediate Milesge. Statute Miles.	Geo-graphical Miles.	Statute Miles.
Liverpool.....	Louisbourg Atlantic Ocean	.....	2,350·0	2,709
Louisbourg.....	Port Mulgrave..... Projected Railway	80	69·4	80
	New Glasgow...Branch Intercolonial Railway	80	138·8	160
	Truro.....	43	176·1	203
	Moncton..... Intercolonial Railway	125	284·6	329
	Chatham Junction.....	72	347·0	400
	Rimouski.....	237	552·6	637
	Rivière-du-Loup.....	65	609·0	702
	Quebec.....	126	718·3	828
	St-Martin Junction..... North Shore Railway	159	856·3	987
	Montreal.....	12	866·7	999
	Ottawa <i>via</i> St-Martin..... Canadian Pacific Ry.	108	950·0	*1,095
	Sudbury Junction.....	324	1,231·0	1,419
	Port Arthur.....	547	1,705·6	1,966
	Winnipeg.....	429	2,077·8	2,395
	Portage-la-Prairie.....	56	2,126·4	2,451
	Brandon.....	77	2,193·1	2,528
	Qu'Appelle.....	191	2,358·9	2,719
	Regina.....	33	2,387·5	2,752
	Calgary.....	482	2,805·7	3,234
	Stephen.....	123	2,912·4	3,357
	Savona Ferry.....	268	3,144·9	3,625
	Port Moody.....	215	3,331·4	3,840
Port Moody.....	Yokohama..... Pacific Ocean	.....	4,374·0	5,042
Total—Liverpool....	Yokohama <i>via</i> Louisbourg, Intercolonial, North Shore and Canadian Pacific Railways.....	.....	10,055·0	11,591
Liverpool.....	Louisbourg..... Atlantic Ocean	.....	2,350·0	2,709
Louisbourg.....	Truro..... Branch Intercolonial Railway	.....	176·0	203
Truro.....	Halifax..... Intercolonial Railway	.....	54·0	62
Total—Liverpool....	Halifax <i>via</i> Truro and Intercolonial Railway.....	.....	2,580·0	2,974
Liverpool.....	Louisbourg.....	.....	2,350·2	2,709
Louisbourg.....	Truro.....	.....	176·1	203
Truro.....	Moncton.....	.....	108·4	125
Moncton.....	St. John.....	.....	77·2	89
Total—Liverpool....	St. John <i>via</i> Louisbourg, Truro, Moncton.....	.....	2,711·9	3,126
	St. Andrew's do do.....	.....	2,785·6	3,211
	St. Stephen do do.....	.....	2,856·7	3,293

N.B.—For comparative statements of distances on various routes, and subsidies, see Nos. 17, 18, 19, 21, and notes at the end of these tables.

The distance from Louisbourg to a point opposite Port Mulgrave (Canso) according to Survey made in 1885, is 83 miles; the grades are 80 feet to the mile, and the work is heavy.

See report, C. Schreiber, Chief Engineer, Government Railways, 18th Jan., 1886.

See Note No. 21, respecting subsidy, etc.

See Note under table No. 4, part III, respecting new terminus of Intercolonial Railway, whereby it was shortened by 10 miles, in 1885.

* The 12 miles from St. Martin Junction to Montreal are not included in the totals which follow.

ROUTE D 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 5.—LOUISBOURG, ST. JOHN, MATTAWAMKEAG, SHERBROOKE, MONTREAL AND PORT MOODY ROUTE.

From	To	Geo-graphical Miles.	Statute Miles.
Liverpool.....	Louisbourg Atlantic Ocean	2,350	2,709
Louisbourg.....	New Glasgow—See Route D 1	139	160
New Glasgow	St. John, N.B..... Intercolonial Railway	223	257
St. John.....	Mattawamkeag Junction...St. John & Maine and European & North American Railways.....	128	147.
MattawamkeagJunc- tion.....	Lake Megantic.....Projected continuation of International Railway	117	135
Lake Megantic.....	Sherbrooke	80	69
Sherbrooke.....	Montreal..... Grand Trunk Railway	88	101
Montreal	St-Martin Junction..... Canadian Pacific Railway	10	12
St. Martin Junction.	Port Moody..... Canadian Pacific Railway—For details, see D 1	2,475	2,853
Total—Louisbourg.	Port Moody..... Railway	3,240	3,734
Port Moody	Yokohama Pacific Ocean	4,374	5,042
Total—Liverpool	Yokohama, <i>via</i> Louisbourg, St. John, Mattawamkeag, Sher- brooke, Montreal and Port Moody.....	9,964	11,485

N.B.—For comparative statements of distances on the various routes, see Nos. 17, 18, 19.

For subsidies, see Nos. 21, 23, and notes at the end of these tables.

St. John to Vanceboro'..... New Brunswick Railway, 91.5 Statute Miles.

Vanceboro' to Mattawamkeag Maine Central Railway, 56.0 do

Vanceboro' to Portland do 250.7 do

The above is called the "Short Line Railway" between Montreal and the Atlantic Ocean; when completed, as is probable, in 1888, the Canadian Pacific Railway will extend from its new terminus "Vancouver" (14 miles west of Port Moody), on the Pacific, to Louisbourg or Sydney, Cape Breton, on the Atlantic.

See tables Nos. 7, 9, 11, and notes Nos. 21, 23, 24.

ROUTE E 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 6.—HALIFAX AND QUEBEC ROUTE WITH BRANCH LINES TO ST. JOHN AND ST. ANDREW'S.

By Intercolonial, North Shore and Canadian Pacific Railways.

From	To	Intermediate Mileage. Statute Miles.	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Halifax, Nova Scotia..... Atlantic Ocean		2,500·0	2,881
Halifax.....	Truro..... Intercolonial Railway	62	53·8	62
	Moncton	125	162·2	187
	Chatham Junction.....	72	224·7	259
	Rimouski	237	430·3	496
	Rivière du Loup	65	486·7	581
	Quebec	126	598·0	687
	Three Rivers	77	663·8	764
	St-Martin Junction	82	733·9	846
	Ottawa	108	817·6	954
	Sudbury Junction	324	1,108·7	1,278
	Port Arthur	547	1,583·3	1,825
	Winnipeg	429	1,955·5	2,254
	Portage la Prairie.....	56	2,004·0	2,310
	Brandon	77	2,070·8	2,387
	Qu'Appelle.....	191	2,236·5	2,578
	Regina	33	2,265·2	2,611
Calgary.....	482	2,683·3	3,093	
Stephen	123	2,790·0	3,216	
Savona Ferry	268	3,022·5	3,484	
Port Moody	215	3,209·1	3,699	
Port Moody.....	Yokohama		4,374·0	5,042
Total--Liverpool	Yokohama, <i>via</i> Halifax, Quebec and C.P.R.		10,083·0	11,622
Liverpool.....	Halifax		2,499·4	2,881
Halifax.....	Truro		53·8	62
Truro.....	Moncton		108·4	125
Moncton.....	St. John		77·2	89
Total--Liverpool	St. John, <i>via</i> Halifax and Moncton.		2,738·8	3,157
St. John.....	St. Andrew's.....		73·7	85
Total--Liverpool	St. Andrew's, <i>via</i> Halifax, Moncton and St. John.....		2,812·5	3,242

N.B.—For comparative statements of distances on the various routes, see Nos. 17, 18, 19.
For subsidy, see No. 24.
See notes at end of these tables.

ROUTE E 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 7.—HALIFAX, ST. JOHN, MATTAWAMKEAG, SHERBROOKE, MONTREAL AND PORT MOODY ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Halifax..... Atlantic Ocean	2,500	2,881
Halifax.....	St. John..... Intercolonial Railway	239	276
St. John.....	Montreal <i>via</i> St. Martin Junction—For details, see Route D 2.	393	452
Montreal.....	Port Moody—For details, see Route D 1.....	2,485	2,865
Total—Halifax.....	Port Moody..... Railway	3,117	3,593
Port Moody.....	Yokohama..... Pacific Ocean	4,374	5,042
Total—Liverpool....	Yokohama, <i>via</i> Halifax, St. John, Mattawamkeag, Sherbrooke, Montreal and Port Moody.....	9,991	11,516

N.B.—For comparative statements of distances on the various routes, see Nos. 17, 18, 19.
For subsidy, see Nos. 23, 34.

See notes at end of these tables, respecting Short Line Railway as adopted.

ROUTES F 1, F 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 8.—St. JOHN, NEW BRUNSWICK AND QUEBEC ROUTE, with Branch Line to St. ANDREW'S.

By Fredericton and Edmundston Railway, Témiscouata Road and Intercolonial Railway to Quebec; thence by North Shore and Canadian Pacific Railways.

From	To	Intermediate Mileage. Statute Miles.	Geo-graphical Miles.	Statute Miles.
Liverpool.....	St. John..... Atlantic Ocean.....		2,700·0	3,112
St. John.....	Fredericton Junction..... New Brunswick Railway	46	39·9	46
	Fredericton.....	22	59·0	68
	Edmundston.....	160	187·8	228
	Rivière-du-Loup, Témiscouata Road..... Railway	80	267·2	308
	Quebec..... Intercolonial Railway	126	376·5	434
	Three Rivers..... North Shore Railway	77	443·3	511
	St. Martin Junction, 12 miles from Montreal.....	82	514·5	593
	Ottawa..... Canadian Pacific Railway	108	608·2	701
	Sudbury Junction.....	324	889·2	1,025
	Port Arthur.....	547	1,363·7	1,572
	Winnipeg.....	429	1,736·0	2,001
	Portage-la-Prairie.....	56	1,784·6	2,057
	Brandon.....	77	1,851·4	2,134
	Qu'Appelle.....	191	2,017·1	2,325
	Regina.....	33	2,045·7	2,358
Calgary.....	482	2,463·8	2,840	
Stephen.....	123	2,570·6	2,963	
Savona Ferry.....	268	2,803·1	3,231	
Port Moody.....	215	2,989·6	3,446	
Port Moody.....	Yokohama..... Pacific Ocean.....		4,374·0	5,042
Total—Liverpool	Yokohama, via St. John, Fredericton, Quebec, North Shore and Canadian Pacific Railways..... F. 2.		10,063·6	11,600
Liverpool.....	St. John..... Atlantic Ocean.....		2,700·0	3,112
St. John.....	Moncton..... Intercolonial Railway.....		77·2	89
Moncton.....	Quebec.....		433·8	500
Total—Liverpool	Quebec, via St. John, Moncton..... Intercolonial Railway		3,211·0	3,701
	Ottawa, via St. John, Moncton..... Intercolonial, North Shore and Canadian Pacific Railways.....		3,442·0	3,968
	Winnipeg.....		4,570·0	5,268
	Port Moody.....		5,824·0	6,713
	Yokohama..... Pacific Ocean. F. 1.		10,197·0	11,755
St. John.....	Halifax, via Moncton and Truro..... Intercolonial Railway		239·4	276
	Fredericton, via Fredericton Junction.....		59·0	68
	St. Andrew's, via Grand Southern Railway.....		73·7	85

N. B.—For comparative statements of distances on the various routes, see Nos. 17, 18, 19. For subsidy, Edmundston to Rivière-du-Loup, see No. 23. Railway completed in summer of 1888. See notes at end of these tables.

ROUTE F 3.

Distances from Liverpool, England, to Yokohama, Japan.

No. 9.—ST. JOHN, MATTAWAMKEAG, SHERBROOKE, MONTREAL AND PORT MOODY ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	St. John..... Atlantic Ocean	2,700	3,112
St John.....	Mattawamkeag Junction... St. John and Maine and European and North American Railways.....	128	147
Mattawamkeag Junc- tion.....	Montreal, <i>via</i> St. Martin Junction—For details, see Route D 2	265	305
Montreal.....	Port Moody—For details, see Route D 1.....	2,485	2,865
Total—St. John.....	Port Moody..... Railway	2,878	3,317
Port Moody.....	Yokohama..... Pacific Ocean	4,374	5,042
Total—Liverpool.....	Yokohama, <i>via</i> St. John, Mattawamkeag, Sherbrooke, Mon- treal and Port Moody.....	9,952	11,471

N.B.—For comparative statements of distances on the various routes, see Nos. 17, 18, 19.
 For subsidy, see No. 23.
 St. John to Vanceboro'..... New Brunswick Railway, 91.5 Statute Miles.
 Vanceboro' to Mattawamkeag..... Maine Central Railway, 56.0 do
 See notes at end of these tables.

ROUTE G 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 10.—ST. ANDREW'S, NEW BRUNSWICK AND QUEBEC ROUTE with Branch Line to St. John.
By Woodstock and Edmundston, Intercolonial, North Shore and Canadian Pacific Railways.

From	To	Intermediate Mileage. Statute Miles.	Geo- graphical Miles.	Statute Miles.
Liverpool.....	St. Andrew's Atlantic Ocean		2,680·0	3,089
St. Andrew's.....	McAdam Junction... New Brunswick Railway	43	37·3	43
	Woodstock.....	51	81·5	94
	Edmundston.....	113	179·6	207
	Rivière-du-Loup..... Témiscouata Road	80	249·0	287
	Quebec..... Intercolonial Railway	126	358·3	413
	Three Rivers..... North Shore Railway	77	425·1	490
	St-Martin Junction, 12 miles from Montreal. ...	82	496·2	572
	Ottawa..... Canadian Pacific Railway	108	589·9	680
	-udbury Junction.....	324	871·0	1,004
	Port Arthur.....	547	1,345·6	1,551
	Winnipeg.....	429	1,717·8	1,980
	Portage-la-Prairie.....	56	1,766·3	2,036
	Brandon.....	77	1,833·1	2,113
	Qu'Appelle.....	191	1,998·8	2,304
	Regina.....	33	2,027·5	2,337
	Calgary.....	482	2,445·6	2,819
	Stephen.....	123	2,552·3	2,942
	Savona Ferry.....	268	2,784·8	3,210
	Port Moody.....	215	2,971·3	3,425
Port Moody.....	Yokohama Pacific Ocean		4,374·0	5,042
Total—Liverpool.....	Yokohama, via St Andrew's, Woodstock, Que- bec, North Shore and Canadian Pacific Railways.....		10,025·3	11,556
Liverpool.....	St-Andrew's Atlantic Ocean		2,680·0	3,089
St. Andrew's.....	McAdam Junction Railway	43	37·3	43
McAdam Junction...	Fredericton Junction.....	40	34·7	40
Fredericton Junction	Fredericton.....	22	19·1	22
Fredericton.....	Edmundston.....	160	138·8	160
Edmundston.....	Rivière-du-Loup. Témiscouata Road. Rail- way completed in 1888.....	80	69·4	80
Rivière-du-Loup.....	Quebec..... Intercolonial Railway	126	109·3	126
		471		
Total—Liverpool... ..	Quebec, via St. Andrew's, McAdam Junction, Fredericton, Edmundston and Rivière-du- Loup.		3,088·6	3,560
Fredericton.....	St. John, via Fredericton Junction.... Railway	68	59·0	68
St. Andrew's.....	St. John, via Grand Southern Railway.	85	73·7	85

N.B.—For comparative statements on the various routes, see Nos. 17, 18, 19. For subsidy from Edmundston to Rivière-du-Loup, see No. 22; see notes also at end of these tables.

ROUTE G 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 11.—ST. ANDREW'S, MATTAWAMKEAG, SHEBROOKE, MONTREAL AND PORT MOODY ROUTE.

From	To	Geo-graphical Miles.	Statute Miles.
Liverpool	St. Andrew's.....Atlantic Ocean	2,680	3,089
St. Andrew's.....	Mattawamkeag Junction, New Brunswick and European and North American Railways.....	91	105
Mattawamkeag Junction.....	Montreal <i>via</i> St. Martin Junction—For details, see Route D 2.	265	305
Montreal.....	Port Moody—For details, see Route D 1.....	2,485	2,865
Total—St. Andrew's.	Port Moody..... Railway	2,841	3,275
Port Moody.....	Yokohama..... Pacific Ocean	4,374	5,042
Total—Liverpool. ...	Yokohama, <i>via</i> St. Andrew's, Mattawamkeag, Sherbrooke, Montreal and Port Moody.....	9,895	11,406

N.B.—For comparative statements of distances on the various routes, see Nos. 17, 18 and 19.
 For subsidy, see No. 23.
 St. Andrew's to Vanceboro'.....New Brunswick Railway, 49 Statute miles.
 Vanceboro' to Mattawamkeag Junction.....Maine Central do 56 do
 See notes at end of these tables.

ROUTE H.

Distances from Liverpool, England, to Yokohama, Japan.

No. 12.—CHATHAM, NEW BRUNSWICK, EDMUNDSTON AND QUEBEC ROUTE.
 By Projected Railway.

From	To	Intermediate Mileage. Statute Miles.	Geo-graphical Miles.	Statute Miles.
Liverpool	Chatham, R. Miramichi. Atlantic Ocean, <i>via</i> Cape Race.....		2,558·0	2,949
Chatham.....	Chatham Junction..... Intercolonial Railway	9	7·8	9
	Edmundston..... Projected Railway	165	143·0	165
	Quebec..... Projected Railway	170	290·6	335
	Montreal, St. Martin Junction..... North Shore Railway	169	428·5	494
	Ottawa..... Canadian Pacific Railway	108	522·3	602
	Winnipeg.....	1,300	1,650·1	1,902
	Port Moody.....	1,445	2,903·7	3,347
Port Moody.....	Yokohama..... Pacific Ocean		4,374·0	5,042
Total—Liverpool	Yokohama, <i>via</i> Projected Railway, Chatham, Edmundston and Quebec.....		9,896·0	11,366

N.B.—For comparative statements of distances on the various routes, see Nos. 17, 18 and 19.
 See notes also at end of these tables.

DETAILS—

No. 13.—NORTH SHORE RAILWAY,
CANADIAN PACIFIC RAILWAY,

NAMES AND SECTIONS OF RAILWAYS	Total from Win- nipeg.	Total from Mon- treal.	Total from Que- bec via St- Martin.	Com- menced.	Completed or to be Completed.	Probable Expenditure on Railway by Federal Government.
NORTH SHORE RAILWAY.						
Quebec.....	1,587	.....	0	.....	.....	} Conditional Cash Sub- sidies to Government, Province of Quebec, by Act 47 Vic., cap. 8 Quebec to Montreal Not added below.
Quebec to St-Martin Junction	1,408	12	159	1874	1878	
St-Martin Junction to Montreal.....	1,420	c	171	.....	.....
CANADIAN PACIFIC RAILWAY.						
EASTERN DIVISION—MAIN LINE.						
<i>Montreal to Ottawa—Includes 12 miles to Junction.....</i>						
	1,300	120	267	1875	1878	} Cash Subsidy to Gov- ernment, Province of Quebec, by Act 47 Vic., cap. 8, 19th April, 1884. Montreal to Ottawa
Ottawa to Pembroke.....	1,195	225	373	1871	1877	
Pembroke to Mattawan.....	1,101	319	466	1879	1882	
Mattawan to Callander.....	1,075	345	492	1880	do	
<i>Eastern Section, per Contract C. P. R. Co.</i>						
<i>Eastern Section.</i>						
Callander to Sudbury Junction.....	976	444	591	1881	1883	} Cash Subsidy to C. P. R. Co Land
Sudbury Junction to Michipicoton....	766	654	801	1883	Per con- tract 1886.	
Michipicoton to Pic.....	628	794	941	do	do	
Pic to Nepigon (Red Rock)	496	924	1,071	do	do	
Nepigon (Red Rock) to Port Arthur..	429	991	1,138	do	Complet- ed 1884.	
WESTERN DIVISION.						
<i>Thunder Bay Section.</i>						
Port Arthur to Ignace	277	1,143	1,290	1876	1883	} <i>Various Contracts.</i> Port Arthur to Sel- kirk
<i>Wabigoon Section.</i>						
Ignace to Rat Portage	132	1,288	1,435	1878	do	

ROUTE A.

QUEBEC TO MONTREAL.

MONTREAL TO PORT MOODY.

Probable Expenditure on Railway by Federal Government.	REMARKS.
\$ cts.	
1,914,000.00	<p>North Shore Railway—Quebec to Montreal—171 miles built by Hon. Thos. McGreevy, under contract from the Provincial Government of Quebec, dated 24th September, 1874. See Act 39 Vic., cap. 2, 24th December, 1875.</p> <p>North Shore Railway—Montreal to Ottawa—Built by Duncan McDonald, under contract from the Provincial Government of Quebec, dated 16th November, 1875. See Act 39 Vic., cap. 2, 24th December, 1875.</p> <p>Amount expended by Provincial Government of Quebec on North Shore Railway—Quebec to Ottawa :—</p> <p style="padding-left: 40px;">Amount paid to 30th June, 1883...\$13,117,730.54</p> <p style="padding-left: 40px;">do voted for year 1884..... 239,475.00</p> <hr style="width: 50%; margin-left: 0;"/> <p>Total Expenditure exclusive of \$2,250,000 of claims in dispute .....\$13,357,205.54</p> <p style="text-align: right;"><i>See Note No. 20 respecting subsidies by Fed. Gov., 1884.</i></p> <p>North Shore Railway, sold by Provincial Government :—</p> <p style="padding-left: 40px;">From St. Martin—Eastern Section\$4,000,000.00 To North Shore Railway Syndicate 4th March, 1882.</p> <p style="padding-left: 40px;">From Montreal—Western Section. 3,600,000.00 To Canadian Pacific Railway Co., 4th March, 1882.</p> <p style="padding-left: 80px;">Total.....\$7,600,000.00 <i>See Act 45 Vic., cap. 19 and 20—27th May, 1882.</i></p>
1,440,000.00	
1,440,000.00	<p>Canada Central Railway—Built by a private Company.</p> <p>Canada Central Railway—Extension subsidized from Pembroke to Callander, purchased by Canadian Pacific Railway Co.</p> <p>Contract to Canadian Pacific Railway Company—Awarded 21st October, 1880. Ratified by Act 44 Vic., cap. 1, 1881. Deposit by Company, 16th February, 1881, \$1,000,000 with Minister of Finance.</p> <p>Loan to Canadian Pacific Railway Company \$23,500,000, and an advance therefrom of \$7,500,000 to complete Railway, 1st May, 1886, from Callander to Savona Ferry (Kamloops), per Act 47 Vic, cap. 1, 5th March, 1884.</p> <p>Construction of Pacific Railway, commenced by Canadian Pacific Railway Company at Callander and Winnipeg.</p>
10,000,000.00	<p>Exclusive of Branch Line to Algoma, Lake Huron, 93 miles.</p>
12,500,000.00	<p>Land Subsidy, Eastern Section—Assumed at 650 miles, and 9,615.35 acres per mile = 6,250,000 acres.</p> <p>Land Subsidy represents 6,250,000 acres, valued at \$2 per acre for Main Line, between Callander and Port Arthur.</p> <p>Heaviest rock cutting extends 95 miles between Pic and Nepigon.</p> <p>Trains running 35 miles eastward from Port Arthur in September, 1883.</p>
14,113,122.00	<p>Railway from Port Arthur to Winnipeg, constructed by various contractors; portions of it completed by Canadian Pacific Railway Co., as per O.C., July, 1883. Contract price, \$946,000 for completion, etc.</p>
	<p>Regular trains from Port Arthur to Winnipeg since first week of May, 1883.</p> <p>Selkirk to St. Boniface, 22 miles, and St. Boniface to Emerson, 63 miles, built 1877-80.</p>

DETAILS—
No. 13.—NORTH SHORE RAILWAY,
CANADIAN PACIFIC RAILWAY,

NAMES AND SECTIONS OF RAILWAYS.	Total from Win- nipeg.	Total from Mon- treal.	Total from Que- bec and St. Martin.	Com- menced.	Completed or to be Completed.	Probable Expenditure on Railway by Federal Government.
CANADIAN PACIFIC RAILWAY— <i>Continued.</i>	Miles.	Miles.	Miles.	Miles.	Completed.	
<i>WESTERN DIVISION—Continued.</i>						
<i>Rat Portage Section.</i>						
Rat Portage to Selkirk	21	1,399	1,546	1878	1883	Selkirk to Winnipeg.
Selkirk to Winnipeg	0	1,420	1,567	1876	1881	
<i>Brandon Section.</i>						
Winnipeg to Portage-la-Prairie.....	56	1,476	1,623	1881	.....	Central Section. — Selkirk to Savona Ferry (Kamloops.) Cash Subsidy to C. P. R. Co.
Portage-la-Prairie to Brandon.....	133	1,553	1,700	do	Nov., 1881	
<i>Broadview Section.</i>						
Brandon to Broadview	364	1,684	1,831	do	1882	
<i>Regina Section.</i>						
Broadview to Qu'Appelle.....	324	1,744	1,891	1882	do	Oct., 1882
Qu'Appelle to Regina.....	357	1,777	1,924	do	do	
Regina to Moose Jaw	398	1,818	1,965	do	1882	
<i>Swift Current Section.</i>						
Moose Jaw to Swift Current	511	1,931	2,078	do	do	
<i>Medicine Hat Section.</i>						
Swift Current to Maple Creek.....	597	2,017	2,164	do	Feb., 1883	Land Subsidy to C. P. R. Co.
Maple Creek to Medicine Hat.....	660	2,080	2,227	1883	1883	
<i>Crowfoot Section.</i>						
Medicine Hat to Langevin	695	2,115	2,262	do	do	
Langevin to Bassano	757	2,177	2,324	do	do	
Bassano to Gleichen	786	2,205	2,352	do	do	
<i>Calgary Section.</i>						
Gleichen to Calgary, on Bow River...	839	2,259	2,406	do	do	
Calgary to Morley	881	2,301	2,448	do	do	
Morley to Kananaskis (Padmore).....	893	2,313	2,460	do	do	
Kananaskis to Canmore.....	908	2,326	2,473	do	do	
<i>Rocky Mountain Section.</i>						
Canmore to Silver City.....	938	2,358	2,505	do	do	
Silver City to Laggan	955	2,375	2,522	do	Nov., 1883	
Laggan to Stephen—Summit, R.M.....	962	2,382	2,529	do	1884	
Stephen—Summit, R.M., to Savona Ferry (Kamloops).....	1,230	2,650	2,797	1884	1885	

**ROUTE A.
QUEBEC TO MONTREAL.
MONTREAL TO PORT MOODY.**

Probable Expenditure on Railway by Federal Government	REMARKS.
\$ cts.	
375,000.00	Cost of railway, St. Boniface to Emerson, \$1,121,798-05.
	Length of Central Section, per contract. Assumed at 1,350 miles.
	Cash Subsidy, Central Section. 1st 900 miles, at \$10,000 per mile..... \$9,000,000 00
	do do 2nd 450 do 13,333 do 6,000,000 00
	Total Cash Subsidy, Central Section..... <u>\$15,000,000 00</u>
15,000,000.00	
	Opening for traffic to Regina authorized in October, 1882. Commencing 585 miles west of Winnipeg, the track was laid for 376 miles on Mail Line, together with 25½ miles of Sidings, from 18th April to 28th November, 1883, or in 9½ months.
7 500,000.00	Land Subsidy, Central Section. 1st 900 miles, at 12,500-00 acres per mile 11,250,000 acres per contract.
	Land Subsidy, Central Section. 2nd 450 miles, at 16,666 66 acres per mile..... 7,500,000 do
	Total Land Subsidy, Central Section..... <u>18,750,000 do</u>
	Land Subsidy represents 18,750,000 acres, valued at \$2 per acre for Main Line, between Selkirk and Savona Ferry, on Central Section. For Cash and Land Subsidies to Canadian Pacific Railway Company,—See Contract, 21st October, 1880—Ratified by Act 44 Vic., cap. 1, 15th February, 1881.
	Trains running to a point 40 miles west beyond Calgary in September, 1883.
	On 28th November, 1883, railway built from Winnipeg—westward to within 1¼ miles from Summit. Regular trains running to Summit, 20th July, 1884—47 miles further than in March, 1884.
	Railway constructed about 70 miles west from Stephen, on Summit, up to August, 1884.

DETAILS—

No. 13.—NORTH SHORE RAILWAY
CANADIAN PACIFIC RAILWAY,

NAMES AND SECTIONS OF RAILWAYS.	Total from Win- nipeg.	Total from Mon- treal.	Total from Que- bec <i>via</i> St. Martin.	Commenced.	Completed or to be Completed.	Probable Expenditure on Railway by Federal Government.
	Miles.	Miles.	Miles.		Completed.	
CANADIAN PACIFIC RAILWAY— <i>Continued.</i>						
<i>Western Section, B.C. (Not included in Contract to C.P.R. Co.)</i>						
Savona Ferry to Emory's Bar, Fraser River	1,359	2,779	2,926	1880	Time per contract, July, 1885.	.....
Emory's Bar to Port Moody, Burrard Inlet, Pacific Ocean.....	1,445	2,865	9,012	Feb. 22, 1882	do	.....
.....
.....	.....	.....	.....	1877	1878	.....
.....	.....	.....	.....	July, 1871	1881	.....
TOTAL MAIN LINE , of which 1,177 miles built by C.P.R. Co., to within one mile of Stephen, on Summit, in 1881-82-83, and trains running there- on 1,131 miles in March, 1884. Regu- lar trains to Summit, 20th July, 1884. Last spike driven east of Kamloops, and a special train passed through to Port Moody 7th Nov., 1885. Entire Railway opened for regular passenger and freight traffic, from Quebec to Victoria, 28th July, 1886.						
.....	.....	2,865	3,012	.....	.....	.....
Pembina Branch.....	.....	.....	.....	1877	1880	.....
West of Red River. Abandoned .....	.....	.....	.....	.....	1880	.....
Georgian Bay Branch. Former line abandoned .....	.....	.....	.....	.....	.....	.....
Carried forward .....	.....	.....	.....	.....	.....	.....

* See Note at foot of this table respecting total length of Railway, to which 41 miles should be added, for the reasons stated.

ROUTE A.

QUEBEC TO MONTREAL.

MONTREAL TO PORT MOODY.

Probable Expenditure on Railway by Federal Government.	REMARKS.
\$ cts.	
9,104,040.00	Constructed by D. O. Mills, Contractor—The last 29 miles from Boston Bar to Emory's Bar is one of the heaviest on Line. The track to be laid throughout towards September, 1884.
2,486,255.00	Constructed by A. Onderdonk, Contractor—Track to be laid throughout towards July, 1884.
338,094.00	Engine houses and station buildings on portions of railway, built by Federal Government, West of Port Arthur.
397,539.67	Rolling stock on portions of railway, built by Federal Government, West of Port Arthur.
<u>\$104,694,052.05</u>	Total, exclusive of Telegraph Lines, Branch Lines and Surveys.
669,961.84	Telegraph Lines, prior to contract with Canadian Pacific Railway Co., 21st October, 1880, were built for 1,747 miles from Fort William to British Columbia. Line on Fraser River, and 1,200 miles from Fort William to Edmonton were operated in April, 1878.
3,262,696.50	Surveys from Callander to Port Moody, etc., 1871 to 1881.
<u>\$108,626,710.39</u>	Out of which \$12,289,211.87, Cash Subsidy to Canadian Pacific Railway Company up to 31st December, 1883, exclusive of Land Subsidy = 13,582,707 acres, of which one-fifth to be retained by Government according to contract, 21st October, 1880, and Act 44 Vic., cap. 1, 15th February, 1881.
1,121,798.05	Pembina Branch, 63 miles south from Winnipeg to Emerson. Total cost, 85 miles from Selkirk, \$1,496,798.05.
159,488.15	West of Red River—Portion of Trunk Line before it was changed to present route.
63,728.35	Georgian Bay Branch, south of Lake Nipissing—from Callander—Abandoned.

DETAILS—

No. 18.—NORTH SHORE RAILWAY,
CANADIAN PACIFIC RAILWAY,

NAMES AND SECTIONS OF RAILWAYS.	Total from Win- nipeg.	Total from Mon- treal.	Total from Que- bec <i>via</i> St. Martin.	Commenced.	Completed or to be Completed.	Probable Expenditure on Railway by Federal Government.
	Miles.	Miles.	Miles.			
Brought forward.....	Completed.	.....
CANADIAN PACIFIC RAILWAY— Concluded.						
Branch Line from Sudbury Junction to Algoma Mills and Sault-Ste-Marie	1883	1887	.....
TOTAL PROBABLE COST of C.P.R. from Montreal to Port Moody	1875	1879, except Gates.	.....
TOTAL, inclusive of Fort Frances Lock

N.B.—For Branch and Subsidiary Lines of Canadian Pacific Railway,—*See* Table No. 14.
For Details of Subsidies granted to North Shore Railway, from Quebec to Montreal, and
For Summary of Routes A, B, C, D, E, F, G, H, from Liverpool, England, to Yokohama,
do I 1 to O, through United States, *via* San Francisco,—*See* No. 43.
See Note at end of this Appendix, respecting completion of Railway,—shortest route between
Railway Company
Since this table has been prepared, the Terminus of the Railway, westward, has been located
constructed, which increases the total length of the Railway by 41 miles. This
Liverpool and Yokohama, beyond 27 miles, which is unimportant.

ROUTE A.

QUEBEC TO MONTREAL.

MONTREAL TO PORT MOODY.

Probable Expenditure on Railway by Federal Government.	REMARKS.
\$ cts.	
Omitted.	Present Branch Line, north of Lake Nipissing, from Sudbury Junction to Algoma Mills, Lake Huron, 93 miles built by Canadian Pacific Railway Co, 1884 to 1886. Continued to Saut-Ste-Marie, 107 miles further westward. Entire Branch Line completed and opened 1887.
\$108,971,724.94 288,278.51	This represents only the probable expenditure by the Federal Government. Fort Frances Lock, at the foot of Rainy Lake on the Dawson Route, 237 miles west from Port Arthur, Thunder Bay, Lake Superior, and 215 miles east from Winnipeg by the Dawson Route.
Omitted.	Dawson Route. Overland and Water Route, from Port Arthur to Lake of the Woods and Winnipeg and Fort William Road. Expenditure for construction only, \$1,027,915.12, includes \$72,193.01 for Boats.
\$110,260,003.45	Out of which \$56,219,925.78 cash payments up to 1st July, 1884, including branch from Winnipeg to Emerson, and exclusive of Land Subsidy to Canadian Pacific Railway Company. Trunk Line to be completed 1st May, 1886, as per agreement with Canadian Pacific Railway Company, dated 7th March, 1884, in consideration of a loan of \$22,500,000, and an advance therefrom of \$7,500,000, per Act 47 Vic., cap. 1. Loan to be repaid on or before 1st May, 1891, with interest at 5 per cent.

Canadian Pacific Railway, from Montreal to Ottawa, in 1884,—See No. 20.
Japan, through Canada, *vid* Port Moody,—See No. 19.

Liverpool, London, and Yokohama, Japan, also respecting repayment of loan to Canadian Pacific
at Vancouver, about 14 miles further westward, and the Rocky Mountain Section has been definitely
will be given in detail, in a subsequent report; this, however, does not affect the total distance between

DETAILS—ROUTE A—Continued.

CANADIAN PACIFIC RAILWAY.

No. 14.—Main Trunk, Branch and Leased Lines, 1887.

	Statute Miles.	Statute Miles.
<i>Transcontinental Line or Main Trunk.</i>		
Opened throughout for regular passenger and freight traffic 26th July, 1886, Montreal to Vancouver	2,905	2,905
<i>Branch Lines.</i>		
Eastern Division, including continuation of main line, St. Martin's Junction to Quebec, 159 M.....	484	
Western Division.....	436	
Pacific do	8	928
<i>Leased Lines.</i>		
Ontario and Quebec Section	745	
Atlantic and North-West Section or Short Line across State of Maine.....	325	
St. Lawrence and Ottawa Section	57	1,127
Total Mileage of the Company's Lines 31st December, 1887.....	.....	4,960

REMARKS.

ALGOMA BRANCH—SUDBURY TO SAUT-SŒ-MARIE.

Saut-Sainte-Marie Railway Bridge and United States Connections.

The extension of the Branch line from Algoma to Saut-Ste-Marie, about 107 miles in length, together with the bridge across the River Ste-Marie, were practically completed in December, 1887.

The company, under their contract with the Government for the construction of the Algoma Branch, are entitled to the lands for the road bed, stations, etc., in so far as such lands are vested in the Crown.

The bridge was built under a charter granted to the "Saut-Ste-Marie Bridge Company." One half interest in this bridge belongs to the Canadian Pacific Company, the other half being divided between the two United States lines to Minneapolis and St. Paul and to Duluth.

The first train *via* North Bay and Sudbury and thence over the Algoma Branch to the Saut, left the Northern Railway station at Allandale on Friday night, 23rd December, with a large party on board from Toronto and other places, to record their votes on Monday, the 26th, on the by-law granting a bonus of \$20,000 to the C. P. R., on condition that the company locate their station, freight sheds, etc., in the centre of the town.

The distance by railway from Toronto to the Saut is as follows:—

	Miles.
Toronto to Allandale, Northern Railway.....	63
Allandale to Gravenhurst, do	111
Gravenhurst to North Bay, North-Western Railway.....	116
	290
North Bay to Sudbury, C.P.R. Main Line.....	80
	80

Sudbury to Algoma, C.P.R. Branch Line.....	96	
Algoma to Saut-Ste-Marie.....	107	
		203

Total, Toronto to Saut-Ste-Marie.....	<u>573</u>
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The distance from Ottawa to the Saut by railway is shorter :—

Ottawa to Sudbury, C.P.R. Main Line.....	323
Sudbury to Saut-Ste-Marie, C.P.R. Branch Line.....	203

Total, Ottawa to Saut-Ste-Marie.....	<u>526</u>
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The first through train from Toronto to North Bay was run on 29th Jany., 1886.

The opening of the International Bridge at the Saut was inaugurated on Saturday, 31st Dec., 1887.

The United States connections with Duluth and St. Paul and Minneapolis, will be ready for regular traffic before August, 1888.

DETAILS—ROUTE B.

No. 15.—COMPARATIVE STATEMENT.

Distances from Montreal and Ottawa to Toronto, *vid* Canadian Pacific and Grand Trunk Railways.

From	To	Geo- graphical Miles.	Statute Miles.
Montreal.....	Ottawa..... <i>vid</i> C. P. R.	104	120
Ottawa.....	Perth..... do	51½	59
Perth.....	Toronto (Union Station)..... do	176½	203½
Montreal.....	Toronto..... <i>vid</i> C. P. R.	331½	392½
Montreal.....	Prescott..... <i>vid</i> G. T. R.	96	112
Prescott.....	Brockville..... do	11½	13
Brockville.....	Kingston..... do	40½	47
Kingston.....	Toronto (Union Station)..... do	139½	161
Montreal.....	Toronto..... <i>vid</i> G. T. R.	289½	333
Ottawa.....	Toronto (Union Station) <i>vid</i> C. P. R.....	227½	262½
do.....	do <i>vid</i> P., St. L. and O., and G. T. R.	238½	275
do.....	do <i>vid</i> Brockville, C.P.R. and G.T.R.	245½	283

N.B.—See table of distances No. 2.
See notes also at end of these tables.

DETAILS—ROUTE C.

No. 16.—COMPARATIVE TABLE OF DISTANCES - Statute Miles.

From Quebec and other places to Port Moody, *via* North Shore, Grand Trunk, United States and Canadian Pacific Railways.
Present Summer and Winter Route.
Canadian and United States Territories.

From	To	Intermediate.	Quebec.	Montreal.	Toronto.	Detroit.	Chicago.	St. Paul.	Winnipeg.
Quebec.....	.....	.....	0	171	504	735	1,003	1,413	1,870
Quebec.....	Montreal.....	171	171	0	333	564	832	1,242	1,689
Montreal.....	Toronto.....	333	504	333	0	231	499	909	1,366
Toronto.....	Detroit.....	231	735	564	231	0	268	678	1,135
Detroit.....	Chicago.....	268	1,003	832	499	268	0	410	867
Chicago.....	St. Paul, W.....	410	1,413	1,242	909	678	410	0	457
St. Paul.....	Minneapolis.....	10	1,423	1,252	919	688	420	10	447
Minneapolis.....	St. Vincent.....	379	1,802	1,631	1,298	1,067	799	389	68
St. Vincent.....	Emerson.....	2	1,804	1,633	1,300	1,069	801	391	66
Emerson.....	Winnipeg.....	66	1,870	1,699	1,366	1,136	867	457	0
Winnipeg.....	Portage la Prairie.....	56	1,926	1,755	1,422	1,191	923	513	56
Portage la Prairie.....	Brandon.....	77	2,003	1,832	1,499	1,268	1,000	590	138
Brandon.....	Qu'Appelle.....	181	2,194	2,023	1,690	1,459	1,191	781	324
Qu'Appelle.....	Regina.....	33	2,227	2,056	1,723	1,492	1,224	814	357
Regina.....	Swift Current.....	154	2,381	2,210	1,877	1,646	1,378	968	511
Swift Current.....	Medicine Hat.....	149	2,530	2,359	2,026	1,795	1,527	1,117	660
Medicine Hat.....	Gleichen.....	125	2,655	2,484	2,151	1,920	1,652	1,242	785
Gleichen.....	Calgary.....	54	2,709	2,538	2,205	1,974	1,706	1,226	859
Calgary.....	Canmore.....	67	2,776	2,605	2,272	2,041	1,773	1,363	906
Canmore.....	Silver City.....	32	2,808	2,637	2,304	2,073	1,805	1,395	938
Silver City.....	Stephen, summit of Rocky Mountains.....	24	2,832	2,661	2,328	2,097	1,829	1,419	962
Stephen.....	Savona's Ferry.....	+268	3,100	2,929	2,596	2,365	2,097	1,687	1,230
Savona's Ferry.....	Emory's Bar.....	+129	3,229	3,058	2,725	2,494	2,226	1,816	1,369
Emory's Bar.....	Port Moody.....	80	3,315	3,144	2,811	2,580	2,312	1,902	1,445

N.B.—† Estimated.—In progress, July, 1884.

‡ Nearly completed do

Last spike driven 7th Nov., 1885, and entire line opened to passenger and freight traffic, 26th July, 1886.

See table of distances No. 3.

For progress made since July, 1884, see notes at end of these tables.

ROUTES A, B, C, *via*

No. 17.—COMPARATIVE STATEMENT of Distances in Geographical and Statute Miles and Inland Ports of Canada, etc , and to

For Details—See Route.	Quebec.		Montreal.		Toronto.		Ottawa.		Winnipeg.		Port Moody Strait of Georgia, B. C.	
	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.
...	2,819	3,249	City 2,958	City. 3,409	3,247	3,742	3,061	3,529	.....	.....	.....	.....
A 1	2,819	3,249	St. Martin Junction. 2,957	St. Martin Junction. 3,408	.....	.....	3,051	3,516	4,178	4,816	5,432	6,261
A 2	2,861	3,067	City. 2,967	City. 3,420	.....	.....	2,893	3,334	4,020	4,634	5,274	6,079
B.	2,819	3,249	St. Martin Junction. 2,957	St. Martin Junction. 3,408	Junction. 3,274	Junction. 3,774	3,051	3,516	4,208	4,850	5,462	6,295
			City. 2,967	City. 3,420	City. 3,277	City. 3,778						
C	2,819	3,249	City. 2,967	City. 3,420	City. 3,256	City. 3,753	.....	.....	4,441	5,119	5,695	6,564

N.B.—For routes D, E, F, G, H—See Comparative Statement No. 18.
 For details of route A 1 to H—through Canada *via* Port Moody—See Nos. 1 to 25.
 For routes I 1 to O—through United States *via* San Francisco—See Nos. 26 to 43.
 For summary of routes A 1 to H—through Canada—See No. 19.
 For summary of routes I 1 to O—through United States—See No. 43.
 See note at foot of table No. 13, respecting distances, etc.

SEA-PORT OF QUEBEC.

on the various Routes indicated from Liverpool, England, to the principal Sea-ports Yokohama on the Eastern Coast of Japan.

Victoria, B C., <i>via</i> Nanaimo (Projected Rail- way)		Yokohama, East Coast of Japan.		Route.
Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	
.....	.....	.....	.....	Atlantic Ocean <i>via</i> Malin Head, North of Ireland, Cape Race, Newfoundland, Gulf and River St. Lawrence, etc. Water route throughout.
5,534	6,379	9,806	11,303	Atlantic <i>via</i> Cape Race to Quebec, North Shore and Canadian Pacific Railways to Port Moody, and Pacific Ocean to Yokohama, Japan.
5,376	6,197	9,648	11,121	Atlantic <i>via</i> Strait of Belle-Ile. Remainder the same as preceding route. The Cape Race route is 158 geographical miles = 182 statute miles longer than <i>via</i> Belle-Ile.
5,564	6,413	9,835	11,337	Atlantic <i>via</i> Cape Race to Quebec; thence North Shore and Canadian Pacific Railways <i>via</i> Montreal, Ottawa, Perth, Toronto, and Orangeville to Owen Sound; thence across Lake Huron to Saut-Ste-Marie Canal; thence across Lake Superior to Port Arthur; thence Canadian Pacific Railway to Winnipeg and Port Moody; thence across Pacific Ocean to Yokohama, Japan. This is the present summer route through Canada. For same route <i>via</i> Strait of Belle-Ile, deduct 158 geographical miles = 182 statute miles.
5,797	6,682	10,069	11,606	Atlantic <i>via</i> Cape Race, North Shore Railway to Montreal; thence Grand Trunk Railway to Detroit; thence <i>via</i> United States Railways to Chicago and Emerson; thence Canadian Pacific Railway to Winnipeg. This was the winter route through Canada and the United States, pending the completion of the Canadian Pacific Railway, north of Lake Huron and Superior, between Sudbury Junction and Port Arthur, and on the Rocky Mountains, between the summit and Savona's Ferry. On 20th July, 1884, the unfinished portions, then in progress, were estimated at 420 miles north of Lakes Huron and Superior, and at 268 miles on the Rocky Mountains. For progress made since July, 1884, see notes at the end of these tables.

ROUTES D, E, F, G, H, VIA SEA-PORTS OF NOVA SCOTIA AND NEW BRUNSWICK.

No. 18.—COMPARATIVE STATEMENT of Distances in Geographical and Statute Miles, on the various Routes indicated from Liverpool, England, to the principal Sea-ports and Inland Ports of Canada, and to Yokohama on the Eastern coast of Japan—Continued.

For Details—See Route.	LOUISBOURG.		HALIFAX.		ST. JOHN.		ST. ANDREW'S.		CHATHAM.		QUEBEC.		MONTREAL.		OTTAWA.		WINNIPEG.		PORT MOODY.		YOKOHAMA.		DESCRIPTION OF ROUTES.
	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	Geographical Miles.	Statute Miles.	
D 1....	2,350	2,709							Junction. 2,697 Town. 2,705	Junction. 3,109 Town. 3,118													Louisbourg Route <i>via</i> projected railway about 80 miles long to Port Mulgrave, Strait of Canso; thence <i>via</i> New Glasgow and Truro, Intercolonial, North Shore and Canadian Pacific Railways. The distances by this route to Halifax, St. John and St. Andrew's are shown on table of details No. 4.
D 2....	2,350	2,709			2,712	3,126																	Louisbourg Route <i>via</i> Intercolonial R., to St. John, 417 M.; thence <i>via</i> Mattawamkeag, Lake Mégantic and Sherbrooke to Montreal, 452 M. by St. John and Maine, International and Grand Trunk Railways. See table No. 5. For further details, see Halifax Route <i>via</i> St. John, Mattawamkeag and Sherbrooke to Montreal, below.
E 1....			2,500	2,881					Junction. 2,724 Town. 2,732	Junction. 3,140 Town. 3,149													Halifax Route <i>via</i> Intercolonial, North Shore and Canadian Pacific Railways. Halifax to St. John, 276 M. by Intercolonial R., and thence 85 M. by Grand Southern Railway to St. Andrew's. For details respecting this route, see table No. 6.
E 2....			2,500	2,881	2,739	3,157																	Halifax Route <i>via</i> Truro and Moncton to St. John by Intercolonial 276 M.; thence to Mattawamkeag Junction, 147½ M., by St. John and Maine Railway; thence to Lake Mégantic by International Railway projected extension of about 135 M.; thence to Sherbrooke by the latter Railway, 69 M.; thence by Grand Trunk Railway, 101 M. to City of Montreal; thence 2,865 M. to Port Moody. The distance by this route to Quebec, <i>via</i> International Railway to Sherbrooke, and thence by Grand Trunk Railway, is 21 M. greater than to Montreal, or 3,630 M. from Liverpool. See table No. 7.
F 1....					2,700	3,112			Junction. 2,839 Town. 2,847	Junction. 3,273 Town. 3,282													St. John, New Brunswick, Route <i>via</i> Intercolonial Railway to Moncton and Quebec; thence <i>via</i> North Shore R. to Montreal; thence by Canadian Pacific Railway to Port Moody. For details respecting this route, see table No. 8.
F 2....					2,700	3,112																	St. John, N.B., Route <i>via</i> Fredericton and New Brunswick Railways to Edmundston, 228 M.; thence 80 M. Témiscouata railway to Rivière du Loup; thence 126 M. by Intercolonial Railway to Quebec; thence <i>via</i> North Shore Railway, 171 M. to Montreal; thence Canadian Pacific Railway, 2,865 M. to Port Moody. See table No. 8.
F 3....					2,700	3,112																	St. John, N.B., Route <i>via</i> Sherbrooke to Montreal, 452 M. by the St. John and Maine, the International and Grand Trunk Railways—St. John <i>via</i> Sherbrooke to Quebec, 473 M. St. John to Louisbourg, by Intercolonial Railway, 417 M. See table No. 9.
G 1....							2,680	3,089															St. Andrews, New Brunswick, Route <i>via</i> Canada and New Brunswick Railways to Woodstock, 94 M.; thence 113 M. to Edmundston; thence to Rivière du Loup, 80 M. by Témiscouata Railway; thence 126 M. by Intercolonial R. to Quebec; thence <i>via</i> North Shore R. and C.P.R. to Port Moody, 3,012 M. See table No. 10.
G 2....							2,680	3,089															St. Andrew's, N.B., Route <i>via</i> Mattawamkeag and Sherbrooke, 410 M. to Montreal, by St. John and Maine Railway, International and Grand Trunk Railways. See Halifax Route by these lines of Railway, or table No. 11. St. Andrew's to Quebec, by same route <i>via</i> Sherbrooke, 431 M. St. Andrew's to St. John, by Grand Southern Railway, 85 M. St. Andrew's to Chatham, by Grand Southern and Intercolonial R., 246 M.
H....									Town. 2,558	Town. 2,919													Chatham Route, New Brunswick, <i>via</i> Cape Race, 2,949 statute miles from Liverpool, Atlantic Ocean. Chatham to Edmundston, 165 M., and thence to Quebec, 170 M., <i>via</i> projected "Quebec and Chatham Railway," thence North Shore Railway, 159 miles to St. Martin Junction; thence 2,853 M. to Port Moody, by the Canadian Pacific Railway; thence 5,042 S.M. across Pacific Ocean to Yokohama on East coast of Japan. See table No. 12. Chatham to St. John, by Intercolonial Railway, 161 M., and thence 85 M. by Grand Southern Railway to St. Andrew's. For Chatham Route <i>via</i> Strait of Belle-Ile, deduct 158 geographical or 182 statute miles from each of the distances on this route from Liverpool.

N.B.—For Routes A 1, A 2, B and C, see Comparative Statement No. 17.
For Details of Routes A 1 to H, through Canada *via* Port Moody, see Nos. 1 to 25.
For Routes I 1 to O, through United States *via* San Francisco, see Nos. 26 to 43.
For Summary of Routes A 1 to H, through Canada, see No. 19.
For Summary of Routes I 1 to O, through United States, see No. 43.
See Note at foot of table No. 13, respecting distances, and new terminus at Vancouver, on the Pacific Coast.

SUMMARY.

No. 19.—ROUTES A, B, C, D, E, F, G, H.

COMPARATIVE STATEMENT of Distances between Liverpool, England, and Yokohama, Japan, on the respective Routes indicated, through Canada *via* Port Moody.

For Details see	Routes.	Geo-graphical Miles.	Statute Miles.
A 2.....	Quebec, Ottawa and Port Moody <i>via</i> Strait of Belle-Ile	9,648	11,121
A 1.....	Quebec, Ottawa and Port Moody <i>via</i> Cape Race	9,806	11,303
B	Quebec, Ottawa, Owen Sound, Lakes Huron and Superior, and Port Moody <i>via</i> Cape Race	9,835	11,337
H	Chatham, Quebec, Ottawa and Port Moody <i>via</i> Cape Race	9,836	11,338
G 2.....	St. Andrew's, Mattawamkeag, Sherbrooke, Montreal, Ottawa and Port Moody	9,895	11,406
F 3.....	St. John, Mattawamkeag, Sherbrooke, Montreal, Ottawa and Port Moody	9,952	11,471
D 2.....	Louisbourg, St. John, Mattawamkeag, Sherbrooke, Montreal, Ottawa and Port Moody	9,964	11,485
E 2.....	Halifax, St. John, Mattawamkeag, Sherbrooke, Montreal, Ottawa and Port Moody	9,991	11,516
G 1.....	St. Andrew's, Edmundston, Rivière du Loup, Quebec, Ottawa and Port Moody	10,025	11,556
D 1.....	Louisbourg, Quebec, Montreal, Ottawa and Port Moody	10,055	11,591
F 2.....	St. John, Edmundston, Rivière du Loup, Quebec, Ottawa and Port Moody	10,064	11,600
C	Quebec, Montreal, Toronto, Detroit, Chicago, St. Paul, Emerson, Winnipeg and Port Moody <i>via</i> Cape Race	10,069	11,606
E 1.....	Halifax, Quebec, Montreal, Ottawa and Port Moody	10,083	11,622
F 1.....	St. John, Moncton, Quebec, Montreal, Ottawa and Port Moody	10,197	11,755

N.B.—See Comparative statements, Nos. 17 and 18—Routes through Canada.
 See Summary, No. 43—Routes through the United States *via* San Francisco.
 See Note at foot of table No. 13, respecting distances.
 See Notes at end of tables.

No. 20.—NOTE—ROUTES A 1, A 2.

SUBSIDIES GRANTED

To North Shore Railway from Quebec to Montreal, 159 miles.

Canadian Pacific Railway from Montreal to Ottawa, 120 miles.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidies.
1884.		<i>By Federal Government.</i>	\$
April 19	47 Vic., c. 8.....	To the Government of the Province of Quebec, in consideration of their having constructed the railway from Quebec to Ottawa, forming a connecting line between the Atlantic and Pacific coasts, <i>via</i> the Intercolonial and Canadian Pacific Railways, and being, as such, a work of national and not merely Provincial utility, a subsidy not exceeding \$6,000 per mile for the portion between Quebec and Montreal, 159 miles, nor exceeding in the whole.	954,000
		and for the portion between Montreal and Ottawa, 120 miles, \$12,000 per mile, nor exceeding in the whole	1,440,000
		For the extension of the Canadian Pacific Railway, from its terminus at St. Martin's Junction, near Montreal, or some other point on the Canadian Pacific Railway, to the harbour of Quebec, in such manner as may be approved by the Governor in Council, a subsidy not exceeding \$6,000 per mile, not exceeding in the whole.	960,000
July 20	48-49 Vic., c. 58.	do do additional...	340,000
1884.			
April 19	47 Vic., c. 8.....	For a line of railway and bridge between the Jacques-Cartier Union Railway Junction with the Canadian Pacific Railway and St. Martin's Junction, connecting the Jacques-Cartier Union Railway with the North Shore Railway proper, a subsidy not exceeding in the whole.	200,000
1887.			
June 23	50-51 Vic., c. 24.	To the Jacques-Cartier Union Railway Company, for extending and completing their railway, a subsidy of	20,000
		Total	3,914,000

N.B.—See tables of distances, &c., Nos. 1, 13.

For cash and land subsidies granted by Federal Government to Canadian Pacific Railway between Ottawa and Port Moody, see No. 13.

See Notes at end of tables.

No. 21.—NOTE—ROUTES D 1, D 2.

SUBSIDIES GRANTED

For the Construction of a Railway from Oxford Station, on the Intercolonial Railway, to Louisbourg or Sydney, in the Province of Nova Scotia.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidies.
1882.		<i>By Federal Government.</i>	\$
May 17 1883.	45 Vic., cap. 14.	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 (70 miles).....	224,000
May 25 1884.	46 Vic., cap. 25...	The railway from Canso to Louisbourg or Sydney, in the Province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (80 miles).	256,000
April 19 1886.	47 Vic., cap. 8.....	For the construction of a line of railway from Oxford Station, on the Intercolonial Railway, to Sydney or Louisbourg, a subsidy not exceeding \$30,000 per annum, for fifteen years, or a guarantee of a like sum for a like period as interest on the bonds of the company undertaking the work, in addition to the subsidies previously granted, and also a lease or transfer to such company of the Eastern Extension Railway, from New Glasgow to Canso, with its present equipment...	450,000
		Total.	930,000
June 2 1886.	49 Vic., cap. 14...	The Minister of Railways and Canals is hereby authorized to construct a railway from a point on the Strait of Canso to Louisbourg or Sydney, as a public work; and "The Government Railway Act, 1881," shall apply to such railway, and the location and all other incidents of the work shall be determined by the Governor in Council. See Act 44 Vic., cap. 25.	

R E M A R K S .

The subsidy of \$224,000 is for the construction of a shorter and more direct line, estimated at about 70 miles in length.

The distance from New Glasgow to Port Mulgrave, on Gut of Canso, by the existing railway, is 79½ miles.

The existing railway from Oxford to New Glasgow is 90 miles in length, via Truro.

The distance from Oxford to Truro is 47 miles, and thence to New Glasgow, 43 miles.

For tables of distances on Louisbourg routes, see Nos. 4 and 5

The survey of a line from Canso to Louisbourg was completed towards the end of 1885, the distance being 83 miles, the grades 80 feet to the mile and the work heavy. See report 18th January, 1886, of C. Schreiber, Chief Engineer of Government Railways, who states:—"Mr. Donkin is now engaged making a survey of a line commencing at the same point, on the Strait of Canso, as the Louisbourg line, and running west and north of the Great Bras-d'Or Lake, until the Narrows are crossed and reached, after which, taking as direct a line as possible to Sydney. About two-thirds of this line are surveyed, and the grades prove to be severe and the works of construction heavy."

The survey of the line from Canso to Sydney was completed in 1887; this line was adopted for the railway which was contracted for towards end of 1887.

No. 22.—NOTE—ROUTES F 2, G 1.

SUBSIDIES GRANTED

For the Construction of a Railway from Edmundston or Little Falls, New Brunswick to Intercolonial Railway, at Rivière-du-Loup, in the Province of Quebec.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidies.
1882.		<i>By Federal Government.</i>	\$
May 17	45 Vic., cap. 14...	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 (for 75 miles) A 240,000.	
1885.			
July 30	48-9 Vic., cap. 58	For a railway from a point on the Intercolonial Railway at Rivière-du-Loup or Rivière Ouelle, in the Province of Quebec, to Edmundston in the Province of New Brunswick, a subsidy not exceeding \$2,800 per mile, for 75 miles, and \$6,000 per mile for 8 miles, nor exceeding in the whole \$28,000; the said subsidy to be in addition to the subsidy authorized to be granted in aid of the construction of the said railway by the Act 45 Vic., cap. 14, and constituting with the subsidy so authorized, a subsidy not exceeding in the whole To be commenced within 2 and completed within 4 years from 1st August, 1885.	Including ¹ A. 498,000
1887.			
June 23	50-1 Vic., cap. 24	To the Temiscouata Railway Company, for 30 miles of a branch of their railway from Edmundston towards the St. Francis River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole To be commenced within 2 and completed within 4 years from 1st August, 1887.	96,000
Total.....			594,000

REMARKS.

TEMISCOUATA RAILWAY, RIVIÈRE-DU-LOUP TO EDMUNDSTON.

Contract awarded 21st June, 1886, to Temiscouata Railway Company.

Railway, per contract, to be completed 1st August, 1889.

Track finished, 18 miles.

Track laid, 45 miles, Rivière-du-Loup end.

Track laid, 12 miles, Edmundston end.

The whole line graded and structures built.

All the iron in Rivière-du-Loup and Edmundston for entire line.

Track expected to be laid throughout towards end of December, 1887.

Track being laid at the rate of about 1½ mile per day.

Tank, engine and station house being built, December, 1887.

Road will be open for traffic 1st July, 1888.

For details of route, see tables Nos. 8 and 10.

No. 23.—NOTE—ROUTES D 2, E 2, F 3, G 2.

SUBSIDY GRANTED

To the International Railway Company, for 49 miles of Railway, from Sherbrooke, in the Province of Quebec, to the International Boundary Line.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidy.
1883.		<i>By Federal Government.</i>	\$
May 25	48 Vic., cap. 25...	To the International Railway Company, for 49 miles of their railway, from Sherbrooke, in the Province of Quebec, to the International Boundary Line, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. In connection with the extension of this road through Maine, to connect with New Brunswick, at or near Vanceboro', or south of that point.	156,800

N.B.—For tables of distances on route *via* International Railway, State of Maine and Canada, see Nos. 5, 7, 9, 11, 24.

Contract to complete the road and lay steel rails, awarded to Intercolonial Railway Company, 20th July, 1883.

No. 24.—NOTE—ROUTES D 2 TO G 2.

SUBSIDIES GRANTED

For the construction of a Railway, connecting Montreal with the Harbours of St. Andrew's, St. John and Halifax, by the shortest and best practicable route.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidies.
1884.		<i>By Federal Government.</i>	\$
April 19	47 Vic., c. 8.....	For the construction of a line of railway connecting Montreal with the harbours of St. John and Halifax by the shortest and best practicable route, after the report of competent engineers, a subsidy not exceeding \$170,000 per annum for fifteen years, or a guarantee of a like sum for a like period as interest on hands of the company undertaking the work.	A
1885.			2,550,000
July 20	48-49 Vic., c. 58.	For a line of railway from the south bank of the St. Lawrence River, opposite or near Montreal, to the harbours of St. Andrew's, St. John and Halifax, <i>via</i> Sherbrooke, Moosehead Lake, Mattawamkeag, Harvey, Fredericton and Salisbury, a subsidy not exceeding \$50,000 per annum for 20 years, forming in the whole, together with the subsidy authorized by the Act 47 Vic., cap. 8, for a line of railway connecting Montreal with the said harbours of St. John and Halifax by the shortest and best practicable route, which the line above described is found to be, a subsidy not exceeding \$250,000 per annum, the whole of which shall be paid in aid of the construction of such line of railway for a period of 20 years, or a guarantee of a like sum for a like period, as interest on the bonds of the company undertaking the work.....	Including A
		According to O.C. 40,130, of 14th June, 1886, this last subsidy of \$250,000 per annum is to be apportioned as follows:—	5,000,000
		\$ Miles.	
		River St. Lawrence to Lennoxville... 71,100 ... 100	
		International Boundary to Mattawamkeag..... 115,500 ... 134	
		Harvey to Salisbury..... 63,400 ... 113	
		Each year for 20 years...\$250,000 ... 347	

N.B.—The Original Contract, 14th Dec., 1885, to International Railway Company, was transferred 6th Dec., 1886, with assent of Government, to the Atlantic North-West Railway Company. Railway under this contract to be completed 1st July, 1889. The latter company granted a perpetual lease of their line and interests, 6th Dec., 1886, to the Canadian Pacific Railway Company.
See preceding tables of distances, Nos. 5, 7, 11, and also details of Short Lines, as adopted at end of tables.

No. 25.—NOTE—EXTENSION OF ROUTES A 1, A 2.

SUBSIDY GRANTED

For the Construction of a Railway and Telegraph Line from Esquimalt to Nanaimo on Vancouver Island, British Columbia (71½ miles).

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidy.
1884. April 19	47 Vic., cap. 6...	<p style="text-align: center;"><i>By Federal Government.</i></p> <p>“The Government of British Columbia shall obtain the authority of the Legislature to convey to the Government of Canada, three and one-half millions of acres of land in the Peace River district of British Columbia, in one rectangular block, east of the Rocky Mountains, and adjoining the North-West Territory of Canada.</p> <p>“The Government of Canada shall, upon the adoption by the Legislature of British Columbia of the terms of this agreement, seek the sanction of Parliament to enable them to contribute to the construction of a railway from Esquimalt to Nanaimo the sum of \$7,000,000, and they agree to hand over to the contractors who may build such railway, the lands which are or may be placed in their hands for that purpose by British Columbia; and they agree to take security, to the satisfaction of the Government of that Province, for the construction and completion of such railway on or before the 10th day of June, 1887; such construction to commence forthwith.”</p> <p>According to agreement, dated 20th August, 1883, with the Esquimalt and Nanaimo Railway Company, contractors, the Federal Government granted to them a subsidy in money of \$750,000 (seven hundred and fifty thousand dollars), together with the land, in Vancouver Island, granted by the Province to the Crown, for the purpose of railway construction (except such parts thereof as may have, at any time heretofore, been reserved for naval or military purposes); materials for the construction of the railway and telegraph to be admitted free of duty; the whole line between Esquimalt and Nanaimo to be completed by the 10th of June, 1887.....</p>	<p style="text-align: center;">\$</p> <p style="text-align: right;">750,000</p>

N.B.—For table of distances, see No. 1.

See notes at end of these tables.

Railway and telegraph line, Esquimalt to Nanaimo, completed 17th September, 1886.

No. 26 A.—SUBSIDIES GRANTED

Towards the Extension of the Canadian Pacific Branch Railway between Montreal and St. Jérôme, 33 miles in length, to Le Désert, on the River Gatineau.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidies.
1883.			\$
May 25	46 Vic., c. 25.....	To the Montreal and Western Railway Company, for the first 50-mile section of their railway, out of St. Jérôme, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole To be commenced within two and completed within four years from 1st July, 1883.	Cancelled 160,000
1884.			
April 19	47 Vic., c. 8.....	To the Montreal and Western Railway Company, for a line of railway from the end of the line subsidized in the now last Session of Parliament, towards Le Désert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... Same conditions as preceding.	Cancelled. 160,000
1886.			
June 2	49 Vic., c. 10.....	To the Montreal and Western Railway Company, for 70 miles of their railway from St. Jérôme, north-westerly towards Le Désert, in the Province of Quebec, a subsidy of \$6,161 per mile, in lieu of the subsidies granted by 46 Vic., cap. 25, and 47 Vic., cap. 8, not exceeding in the whole To be commenced within two and completed within four years from 1st August, 1886.	351,276

No. 27 A.—SUBSIDIES GRANTED

For a branch of the Intercolonial Railway from Metapediac eastward, towards Paspébiac, on the north shore of the Baie des Chaleurs.

Year.	Act.	Nature of Grant and by whom Granted.	Money Subsidies.
1883.			\$
May 25..	46 Vic., chap. 25...	To the Baie des Chaleurs Railway Company, for 100 miles of their railway from Metapediac, on the Intercolonial Railway, to Paspébiac, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	320,000
		To be commenced within two years from 1st July next, and to be completed within four years.	
1884.	47 Vic., chap. 8....	For a branch of the Intercolonial Railway, from Metapediac eastward, towards Paspébiac, 20 miles, in the Province of Quebec, a sum not exceeding in the whole.....	300,000
1886-87.	.....	To be constructed by the Government of Canada.	Nil.

I TO O.

ROUTES THROUGH THE UNITED STATES

VIA

SAN FRANCISCO.

FOR DETAILS, SEE Nos. 26 TO 43.

FOR SUMMARY OF UNITED STATES ROUTES, SEE No. 43.

FOR ROUTES THROUGH CANADA *via* PORT MOODY,

SEE Nos. 1 TO 25.

FOR SUMMARY OF CANADIAN ROUTES, SEE No. 19.

ROUTE I 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 26 B.—PORTLAND, *MONTREAL*, CHICAGO AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Portland..... Atlantic Ocean	2,856	3,292
Portland.....	Montreal..... Grand Trunk Railway	258	297
Montreal.....	Chicago..... do	726	837
Chicago.....	San Francisco. For details, see K 1.....	2,106	2,428
Total—Portland	San Francisco..... Railway	3,090	3,562
San Francisco.....	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool	Yokohama, <i>via</i> Portland, Montreal, Chicago and San Francisco	10,416	12,006

ROUTE I 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 27 B.—PORTLAND, *NIAGARA FALLS*, CHICAGO AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Portland..... Atlantic Ocean	2,856	3,292
Portland.....	Boston..... Boston and Maine Railway	101	116
Boston.....	Chicago..... Chicago, Detroit and Niagara Falls Short Line	871	1,004
Chicago.....	San Francisco. For details, see K 1.....	2,106	2,428
Total—Portland	San Francisco..... Railway	3,078	3,548
San Francisco.....	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama, <i>via</i> Portland, Niagara Falls, Chicago and San Francisco.....	10,404	11,992

ROUTE J 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 28.—BOSTON, CHICAGO AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Boston..... Atlantic Ocean	2,895	3,337
Boston.....	Chicago—Chicago, Detroit and Niagara Falls Short Line..	871	1,004
Chicago.....	San Francisco—For details, see K 1.....	2,106	2,428
Total—Boston.....	San Francisco..... Railway	2,977	3,432
San Francisco.....	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama, <i>via</i> Boston, Chicago and San Francisco.....	10,342	11,921

ROUTE J 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 29.—BOSTON, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Boston..... Atlantic Ocean	2,895	3,337
Boston.....	New York—New York, New Haven and Hartford Railway.	203	234
New York.....	Philadelphia..... Pennsylvania Railway	78	90
Philadelphia.....	St. Louis—Cincinnati, Washington and Baltimore Railway.	883	1,018
St. Louis.....	San Francisco..... St. Louis and San Francisco Railway.	2,112	2,435
Total—Boston.....	San Francisco..... Railway	3,276	3,777
San Francisco.....	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama, <i>via</i> Boston, St. Louis and San Francisco.....	10,641	12,266

ROUTE K 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 30.—NEW YORK, CHICAGO AND SAN FRANCISCO ROUTE.

From	To	Geo-graphical Miles.	Statute Miles.
Liverpool.....	New York.....Atlantic Ocean	3,094	3,567
New York.....	Chicago—Chicago, Detroit and Niagara Falls Short Line..	823	948
Chicago.....	Omaha.....Chicago, Rock Island and Pacific Railway	434	500
Omaha.....	Ogden.....Union Pacific Railway	896	1,033
Ogden.....	San Francisco.....Central Pacific Railway	776	896
Total—New York'...	San Francisco.....Railway	2,929	3,376
San Francisco.....	Yokohama.....Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama <i>via</i> New York, Chicago and San Francisco..	10,493	12,095

ROUTE K 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 31.—NEW YORK, CINCINNATI, St. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo-graphical Miles.	Statute Miles.
Liverpool.....	New York.....Atlantic Ocean	3,094	3,567
New York.....	St. Louis—Cincinnati, Washington and Baltimore Railway	961	1,108
St. Louis.....	San Francisco.....St. Louis and San Francisco Railway	2,112	2,436
Total—New York. ...	San Francisco.....Railway	3,073	3,543
San Francisco.....	Yokohama.....Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama <i>via</i> New York, Cincinnati, St. Louis and San Francisco.....	10,637	12,262

ROUTE K 3.

Distances from Liverpool, England, to Yokohama, Japan.

No. 32.—NEW YORK, INDIANAPOLIS, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	New York..... Atlantic Ocean	3,094	3,567
New York	St. Louis— <i>via</i> Vandalia line:— New York, Philadelphia, Washington, Baltimore, Indian- apolis and St. Louis Railway	924	1,065
St. Louis	San Francisco.....St. Louis and San Francisco Railway	2,112	2,435
Total—New York	San Francisco..... Railway	3,036	3,500
San Francisco	Yokohama ... Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama <i>via</i> New York, Indianapolis, St. Louis and San Francisco.....	10,600	12,219

ROUTE L 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 33.—PHILADELPHIA, CHICAGO AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Philadelphia..... Atlantic Ocean	3,275	3,775
Philadelphia	Bethlehem Junction..... Philadelphia and Reading Railway	49	56
Bethlehem Junction..	Chicago—Chicago, Detroit and Niagara Falls Short Line ..	783	903
Chicago	San Francisco..... See Route K 1.	2,106	2,428
Total—Philadelphia	San Francisco..... Railway	2,938	3,387
San Francisco	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama <i>via</i> Philadelphia, Chicago and San Francisco....	10,683	12,314

ROUTE L 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 34.—PHILADELPHIA, CINCINNATI, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo-graphical Miles.	Statute Miles.
Liverpool.....	Philadelphia..... Atlantic Ocean	3,275	3,775
Philadelphia... ..	St. Louis... Cincinnati, Washington and Baltimore Railway	883	1,018
St. Louis.....	San Francisco..... St. Louis and San Francisco Railway	2,112	2,435
Total—Philadelphia.	San Francisco..... Railway	2,995	3,453
San Francisco	Yokohama Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama, <i>via</i> Philadelphia, Cincinnati, St. Louis and San Francisco	10,740	12,380

ROUTE L 3.

Distances from Liverpool, England, to Yokohama, Japan.

No. 35.—PHILADELPHIA, INDIANAPOLIS, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo-graphical Miles.	Statute Miles.
Liverpool	Philadelphia..... Atlantic Ocean	3,275	3,775
Philadelphia	St. Louis—Vandalia Line :—New York, Philadelphia, Washington, Baltimore, Indianapolis and St. Louis Railway	846	975
St. Louis.....	San Francisco..... St. Louis and San Francisco Railway	2,112	2,435
Total—Philadelphia.	San Francisco..... Railway	2,958	3,410
San Francisco	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama, <i>via</i> Philadelphia, Indianapolis, St. Louis and San Francisco.....	10,703	12,337

ROUTE M 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 36.—BALTIMORE, CHICAGO AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Baltimore..... Atlantic Ocean	3,450	3,977
Baltimore.....	Chicago..... Baltimore and Ohio Railway	740	853
Chicago.....	San Francisco	2,106	2,428
	..... See Route K 1		
Total—Baltimore....	San Francisco	2,846	3,281
	..... Railway		
San Francisco	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama, <i>via</i> Baltimore, Chicago and San Francisco.....	10,766	12,410

ROUTE M 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 37.—BALTIMORE, *CINCINNATI*, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Baltimore..... Atlantic Ocean	3,450	3,977
Baltimore	St. Louis... Cincinnati, Washington and Baltimore Railway	798	920
St. Louis	San Francisco St. Louis and San Francisco Railway	2,112	2,435
Total—Baltimore....	San Francisco..... Railway	2,910	3,355
San Francisco	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool.....	Yokohama, <i>via</i> Baltimore, Cincinnati, St. Louis and San Francisco.....	10,830	12,484

ROUTE M 3.

Distances from Liverpool, England, to Yokohama, Japan.

No. 38.—BALTIMORE, INDIANAPOLIS, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Baltimore Atlantic Ocean	3,450	3,977
Baltimore	St. Louis— <i>Vandalia Line</i> :—		
Baltimore	Harrisburg Junction..... Northern Central Railway	74	85
Harrisburg Junct'n	St. Louis..New York, Philadelphia, Washington, Baltimore, Indianapolis and St. Louis Railway	755	870
St. Louis.....	San Francisco..... St. Louis and San Francisco Railway	2,112	2,435
Total—Baltimore	San Francisco..... Railway	2,941	3,390
San Francisco	Yokohama Pacific Ocean	4,470	5,152
Total Liverpool.....	Yokohama, <i>via</i> Baltimore, Indianapolis, St. Louis and San Francisco.....	10,861	12,519

ROUTE N 1.

Distances from Liverpool, England, to Yokohama, Japan.

No. 39.—RICHMOND, LOUISVILLE, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Richmond..... Atlantic Ocean	3,380	3,895
Richmond	Huntingdon..... Richmond and Ohio Railway	364	419
Huntingdon	Lexington..... Richmond and Ohio Railway	121	139
Lexington	Louisville..... Louisville and Nashville Railway	82	94
Louisville	Mount Vernon..Louisville, Evansville and St. Louis Railway	182	187
Mount Vernon	St. Louis..... Louisville and Nashville Railway	66	76
St. Louis.....	San Francisco..... St. Louis and San Francisco Railway	2,112	2,435
Total—Richmond	San Francisco..... Railway	2,907	3,350
San Francisco	Yokohama Pacific Ocean	4,470	5,152
Total—Liverpool	Yokohama, <i>via</i> Richmond, Louisville, St. Louis and San Francisco.....	10,757	12,397

ROUTE N 2.

Distances from Liverpool, England, to Yokohama, Japan.

No. 40.—RICHMOND, *CINCINNATI*, ST. LOUIS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	Richmond..... Atlantic Ocean	3,380	3,895
Richmond	Washington Richmond, Fredericksburgh and Potomac Ry.	101	116
Washington	St. Louis... .. Cincinnati, Washington and Baltimore Ry.	763	880
St. Louis.....	San Francisco.....St. Louis and San Francisco Ry.	2,112	2,435
Total—Richmond ...	San Francisco..... Railway	2,976	3,431
San Francisco	Yokohama Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama, <i>viâ</i> Richmond, Cincinnati, St. Louis and San Francisco	10,826	12,478

ROUTE N 3.

Distances from Liverpool, England, to Yokohama, Japan.

No. 41.—RICHMOND, NEW ORLEANS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.	Richmond..... Atlantic Ocean	3,380	3,895
Richmond	Atlanta Richmond and Danville Railway	476	549
Atlanta	Montgomery..... Western Railway of Alabama	152	175
Montgomery	New Orleans Louisville and Nashville Railway	278	321
New Orleans.....	El Paso...Galveston, Harrisburg and San Antonio Railway System.....	1,049	1,209
El Paso.....	Tulare..... Southern Pacific Railway	8:2	947
Tulare	San Francisco Central Pacific Railway	218	251
Total—Richmond ...	San Francisco..... Railway	2,995	3,452
San Francisco	Yokohama Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama, <i>viâ</i> Richmond, New Orleans and San Francisco	10,845	12,499

ROUTE O.

Distances from Liverpool, England, to Yokohama, Japan.

No. 42.—NEW ORLEANS AND SAN FRANCISCO ROUTE.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool	New Orleans..... Atlantic Ocean	4,780	5,510
New Orleans	El Paso..... Galveston, Harrisburg and San Antonio Rail- way System	1,049	1,209
El Paso	Tulare	822	947
Tulare	San Francisco	218	251
Total—New Orleans.	San Francisco Railway	2,089	2,407
San Francisco.....	Yokohama	4,470	5,152
Total—Liverpool	Yokohama, <i>via</i> New Orleans and San Francisco.....	11,339	13,069

SUMMARY.

No. 43.—ROUTES I 1 TO O—BOTH INCLUSIVE.

COMPARATIVE STATEMENT.

DISTANCES between Liverpool, England, and Yokohama, Japan, on the respective Routes indicated, through the United States, *via* San Francisco.

For Details See	Routes.	Geo- graphical Miles.	Statute Miles.
J 1.....	Boston, Chicago and San Francisco	10,342	11,921
I 2.....	Portland, Niagara Falls, Chicago and San Francisco.....	10,404	11,992
I 1.....	Portland, Montreal, Chicago and San Francisco.....	10,416	12,006
K 1.....	New York, Chicago and San Francisco	10,493	12,095
K 3.....	New York, Indianapolis, St. Louis and San Francisco	10,600	12,219
K 2.....	New York, Cincinnati, St. Louis and San Francisco.....	10,637	12,262
J 2.....	Boston, St. Louis and San Francisco.....	10,641	12,266
L 1.....	Philadelphia, Chicago and San Francisco	10,683	12,314
L 3.....	Philadelphia, Indianapolis, St. Louis and San Francisco	10,703	12,337
L 2.....	Philadelphia, Cincinnati, St. Louis and San Francisco	10,740	12,380
N 1.....	Richmond, Louisville, St. Louis and San Francisco	10,757	12,397
M 1.....	Baltimore, Chicago and San Francisco	10,766	12,410
N 2.....	Richmond, Cincinnati, St. Louis and San Francisco.....	10,826	12,478
M 2.....	Baltimore, Cincinnati, St. Louis and San Francisco	10,830	12,484
N 3.....	Richmond, New Orleans and San Francisco	10,845	12,499
M 3.....	Baltimore, Indianapolis, St. Louis and San Francisco	10,861	12,519
O.....	New Orleans and San Francisco	11,339	13,069

N.B.—See Summary No. 19—Routes through Canada, *via* Port Moody.

 No. 44.—CANADIAN PACIFIC RAILWAY.

NOTES.

1. The Opening of the Railway from Quebec to Vancouver.
 2. The Equipment up to 31st December, 1888.
 - 3, 4, 5, 6. The Traffic, Earnings, Operating Expenses, and description of Freight carried, for the Years 1884-85-86-87.
 7. The Transfer of the North Shore Railway, between Quebec and Montreal, to the Canadian Pacific Railway Company.
 8. The Repayment of the Federal Government Loan.
 9. The Surrender of Monopoly Rights.
-

NOTE 1.

The last spike was driven, east of Kamloops, and a special train passed through to Port Moody, on the 7th November, 1885.

On the 28th June, 1886, a through train left Montreal for Port Moody, reaching the former terminus on schedule time.

The railway was opened for regular passenger and freight traffic, 26th July, 1886, from Quebec to Vancouver, the present Pacific terminus, which has been located fourteen miles westward of Port Moody, the former terminus, for the greater convenience of ocean and other vessels.

The entire length of the railway, according to the time-table published by the Canadian Pacific Railway Company, 26th July, 1886, is as follows:—

	Statute Miles.
Quebec to Vancouver <i>via</i> St. Martin Junction, without stopping at Montreal.....	3,053
Quebec to Vancouver <i>via</i> Montreal.....	3,078

CANADIAN PACIFIC RAILWAY.

NOTE 2.—EQUIPMENT up to 31st December, each year.

Description.	1885. Number.	1886. Number and Cost.	1887. Cost.
Locomotives	336	372	
First and Second Class Passenger Cars, Baggage Cars and Colonists' Sleeping Cars	289		
First Class Sleeping and Dining Cars	31		
Parlor Cars, Official and Paymasters' Cars	25		
Freight and Cattle Cars, all kinds	7,838		
Conductors' Vans	168		
Boarding, Tool and Auxiliary Cars	48		
	8,399	8,880	
		\$10,520,959	\$10,570,933

NOTE 3.—TRAFFIC.

Description.	Year.	Number.	Average Rate per Mile.	Mileage of all the Company's Lines.
			Cents.	
Passengers	1885	1,660,719	2.45	4,338
	1886	1,899,319	2.10	4,651
	1887	.....	1.98	4,960
Tons of Freight	1885	1,996,355	1.20	4,338
	1886	2,046,195	1.10	4,651
	1887	.....	1.006	4,960

It is worthy of note that throughout Canada the average local railway tolls are lower than in any other country; and that in the older provinces of Canada especially, they are lower than in any other district in America or in Europe.

The results of the operation of the Canadian Pacific Railway for 1885, 1886, 1887, were obtained from tolls far below those of most of the neighbouring lines in the United States, as partly shown by the comparative statement published in the Public Works Report of 1885-86.

CANADIAN PACIFIC RAILWAY.

NOTE 4.—Earnings.

Details.	1884.	1885.	1886.	1887.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Passengers	1,980 902 30	2,859,222 98	3,170,713 69	3,453,818 49
Freight	3,410,365 39	4,881,865 58	6,112,379 89	6,924,130 47
Mails	85,736 83	137,151 92	205,024 18	241,949 05
Express	95,671 68	172,303 01	206,872 41	235,035 09
Parlor and Sleeping Cars	43,492 60	73,523 55	118,658 99	176,826 39
Miscellaneous, Telegraphs, etc.....	134,352 47	244,428 08	268,154 43	574,653 31
Total, Gross Earnings	5,750,521 27	8,368,493 12	10,081,803 59	11,606,412 80

NOTE 5.—Operating Expenses.

Details.	1884.	1885.	1886.	1887.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Conducting Transportation		1,225,801 71		1,831,211 21
Maintenance of Way and Structures.....		961,330 34		1,871,175 41
Motive Power.....		1,915,250 49		2,969,716 91
Maintenance of Cars		399,084 37		612,052 66
Parlor and Sleeping Cars		24,098 99		52,468 57
Expenses of Lake Steamers		165,430 08		122,724 91
General Expenses		452,280 47		482,150 08
Commercial Telegraph				180,794 89
Total Expenses.....	4 558 630 75	5,143,276 45	6,378,317 59	8,102,294 64
Net Earnings	*1,191,890 53	†3,225,216 67	3,703,486 00	3,504,118 16
Deduct fixed charges accruing during the year			3,068,042 00	3,250,263 81
Surplus			635,444 00	253,854 35

*Including construction material available, \$623,193.

†Including construction material available, \$716,418.

NOTE 6.—Description of Freight Carried.

Description.		1885.	1886.	1887.
Flour.....	Brls.	Most of the statistics lost by the burning of C. P. R. station and offices at Winnipeg.	1,000,044	1,010,157
Grain.....	Bush.		10,960,582	15,013,957
Live Stock.....	Head.		244,257	205,572
Lumber.....	Feet.		327,700,432	310,180,542
Firewood.....	Cords		75,625	97,541
Manufactured Articles	Tons.		473,698	470,699
All other Articles	"		498,940	534,976
Freight in general	"		1,996,355	

NOTE 7.—TRANSFER OF THE NORTH SHORE RAILWAY—QUEBEC TO MONTREAL.

The Eastern Section of the North Shore Railway, between Quebec and Montreal, was transferred by the North Shore Railway Company, or Syndicate, to the Grand Trunk Railway Company, for the purpose of being operated by the latter, according to an agreement dated 27th February, 1883; it was afterwards placed under their control and in their possession by a subsequent agreement dated 20th April, 1883.

The Grand Trunk Railway Company transferred their rights on the aforesaid railway to the Federal Government, on the 19th September, 1885, under the authority of an Order in Council, according to the 2nd and 3rd sections of the Act 48 Vic., chap. 58, of 1885.

The Federal Government transferred the same railway to the Canadian Pacific Railway Company, on the same day, 19th September, 1885, under another Order in Council, in accordance with the provisions of the 3rd section of the above cited Act, which grants a subsidy, with the subsidies theretofore granted, amounting to \$1,500,000, as an aid towards procuring free access, by the Canadian Pacific Railway Company, to the Harbour of Quebec.

In pursuance of their agreement with the Grand Trunk Railway Company, the Federal Government are to pay them, out of the above sum, under certain conditions, the sum of \$525,000. They are also to pay them the value of all fuel purchased by the Grand Trunk Railway Company expressly for the use of the North Shore Railway, for the autumn and winter of 1885-86. They are moreover to assume or cause the parties responsible therefor, to assume the liabilities of the North Shore Railway Company, with respect to the following claims:—

For the Palais Harbour property at Quebec.....	\$45,000
For land at Quebec, due to Robert H. McGreevy.....	15,000
For land in Hochelaga, due to H. Robert, and payable in 1888.....	22,500

The Federal Government, according to their agreement with the Canadian Pacific Railway Company, are to apply the interest on the sum of \$970,000 out of the \$1,500,000, at the rate of four per cent. per annum, in whole or in part, as may be required, towards the payment of the interest on the first mortgage bonds of the North Shore Railway Company, including those held by the Government of Quebec, as collateral security for the balance of the price of the said railway; the payment of such interest, by the Federal Government, to be made only in the event of the net receipts of the operation of the railway, after paying the operating expenses thereof, proving insufficient to meet the interest; but when the net receipts of the said railway shall be sufficient to pay the interest on the said bonds, the Canadian Pacific Railway Company shall cease to have any further claim or demand upon the Federal Government, in respect to the above \$970,000.

NOTE 8.—THE REPAYMENT OF THE FEDERAL GOVERNMENT LOAN.

Act 49 Vic., chap. 9, 2nd June, 1886, provides for the payment and settlement of the full amount due, with interest, of the loans and advances heretofore authorized to be made to the company by the Government, amounting in all to the sum of \$29,880,912, of which \$19,150,700 to be paid in two equal instalments, the first on 1st May and the second on 1st July, 1886, both with interest upon payment thereof. The land grant to the company shall be reduced by such number of acres as shall be sufficient, computing the value thereof at \$1.50 per acre, to extinguish the balance of the loan of \$29,880,912 mentioned in the Act 48-49 Vic., chap. 57, that is to say, the company will return to the Government land sufficient to cover the balance of \$29,880,912. Repayment was made in accordance with the Act.

NOTE 9.—THE SURRENDER OF MONOPOLY RIGHTS.

The agreement executed during the Session of the Dominion Parliament, 1888, between the Federal Government and the Company provides for the termination of the restrictions contained in clause 15 of the original contract between the Government and the Company respecting charters for railways extending to the International boundary.

It will place the Company in a position to provide at a very low rate of interest the necessary capital required for permanent improvements of the railway, additional rolling stock and facilities of all kinds for its rapidly increasing traffic, so that the surplus earnings may not in future be absorbed for these purposes, but may be devoted to the payment of dividends to the shareholders.

The above agreement was sanctioned by Act Vict. 52, chap. , 22nd May, 1888.

By this Act, the monopoly clause of the Act 44 Vict., chap. 1 is repealed. The Government of Canada may guarantee the payment of interest, until maturity, at three and one-half per cent. per annum on bonds of the Company issued to an amount not exceeding fifteen millions of dollars, or its equivalent in sterling money; the principal of such bonds to be payable not later than fifty years from their date, and the principal and interest to be secured as set forth in the agreement in the schedule of this Act.

The Company will expend the proceeds of the sale of the bonds to be issued, as stated in the schedule A of the said agreement:—

1. On account of capital expenditure on main line between Quebec and Vancouver, in buildings of various kinds, snow sheds, sidings, permanent bridges, filling trestles, reducing grades and curves, and other improvements and facilities, and on vouchers and pay rolls.....	\$ 5,498,000
2. For required rolling stock, locomotives, box cars, passenger cars, flat cars, tool cars, snow ploughs, etc.	5,250,000
3. For required improvements on the said main line, elevators, bridges, locomotive shops, filling trestles, sidings, docks, lake and coast steamers—the residue, whatever it may be, estimated at.....	4,252,000
	<u>\$15,000,000</u>

NOTE.—The expenditure on item 3 may be increased, and for that purpose the expenditure on either of the other items may be diminished.

No. 45.—COMPARATIVE DISTANCES.

FROM LIVERPOOL, ENGLAND, TO YOKOHAMA, JAPAN.

According to most recent authorities up to 1888.

By the following Routes.

No. 1.—CANADA.

PRESENT SUMMER ROUTE.

Quebec Route—the Shortest across North America.

By the Canadian Pacific Railway.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Quebec, <i>via</i> Strait of Belle-Ile..... Atlantic Ocean	2,661	3,067
Quebec.....	Vancouver—Direct..... Canadian Pacific Railway	2,648	3,053
Vancouver.....	Yokohama..... Pacific Ocean	4,362	5,028
Total—Liverpool.....	Yokohama, <i>via</i> Strait of Belle-Ile, Quebec and Canadian Pacific Railway..... Summer Route	9,671	11,148

N.B.—The route across the Atlantic to Quebec, *via* Cape Race, is 168 Geographical=182 Statute miles longer than *via* Strait of Belle-Ile.

No. 2.—CANADA.

PROJECTED WINTER ROUTE.

By the St. John, Mattawamkeag, Sherbrooke, Montreal and Vancouver Route.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	St. John, New Brunswick..... Atlantic Ocean.	2,700	3,112
St. John.....	Montreal. By Short Line Railway <i>via</i> Mattawamkeag and Sherbrooke.....	393	452
Montreal.....	Vancouver..... Canadian Pacific Railway	2,521	2,906
Total—St. John.....	Vancouver..... Railway	2,914	3,358
Vancouver.....	Yokohama..... Pacific Ocean	4,362	5,028
Total—Liverpool.....	Yokohama, <i>via</i> Short Line and Canadian Pacific Railway. Projected Winter Route.....	9,976	11,498

N.B.—For details of route St. John to Montreal, see tables Nos. 5, 23, 24. The portion of the route between St. John and Montreal, across the State of Maine, is in progress of construction, and is to be completed 1st July, 1889, according to contract.

No. 3.—CANADA.

PRESENT WINTER ROUTE.

Halifax and Quebec Route.

By the Intercolonial and Canadian Pacific Railways.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Halifax, Nova Scotia..... Atlantic Ocean	2,500	2,881
Halifax.....	Quebec... Intercolonial Railway, shortened 10 miles in 1885	589	679
Quebec.....	Vancouver—Direct..... Canadian Pacific Railway	2,648	3,053
Total—Halifax.....	Vancouver..... Railway	3,237	3,732
Vancouver.....	Yokohama..... Pacific Ocean	4,362	5,028
Total—Liverpool....	Yokohama, <i>via</i> Intercolonial and Canadian Pacific Rail- ways..... Winter Route	10,099	11,641

No. 4.—UNITED STATES.

BOSTON, CHICAGO AND SAN FRANCISCO.

The shortest Route of the United States.

From	To	Geo- graphical Miles.	Statute Miles.
Liverpool.....	Boston..... Atlantic Ocean	2,895	3,337
Boston.....	Chicago... Chicago, Detroit and Niagara Falls. Short Line	871	1,004
Chicago.....	Omaha..... Chicago, Rock Island and Pacific Railway	434	500
Omaha.....	Ogden..... Union Pacific Railway	896	1,033
Ogden.....	San Francisco..... Central Pacific Railway	776	895
Total—Boston.....	San Francisco..... Railway	2,977	3,432
San Francisco.....	Yokohama..... Pacific Ocean	4,470	5,152
Total—Liverpool....	Yokohama, <i>via</i> Boston, Chicago and San Francisco. The shortest route in the United States.....	10,342	11,921
DIFFERENCE IN FAVOUR OF CANADA.			
	Quebec Route..... During season of navigation	671	773
	Halifax and Quebec Route..... During Winter	243	280
	St. John; Mattawamkeag and Montreal.... Projected Winter Route.....	366	423

Nos. 5—6.—EUROPE AND ASIA.

SUEZ CANAL ROUTE.

All Water—Eastward.

From	To	Geo- graphical Miles.
ROUTE No. 5.		
Liverpool.....	Gibraltar	1,268
	Suez. By the Atlantic and Mediterranean Ocean and by the Suez Canal from Port Said to Suez	3,184
	Aden or south end of Red Sea, at western entrance to the Strait of Bab-el-Mandeb	4,484
	Pointe de Galle, at southern end of the Island of Ceylon. By the Indian Ocean	6,709
	Singapore, at south-east end of the Strait of Malacca.....	8,133
	Yokohama, Japan. By China Sea and North Pacific Ocean.....	11,043
ROUTE No. 6.		
Liverpool	Strait of Sunda, between the Islands of Sumatra and Java. By the Atlantic and Mediterranean Oceans, Suez Canal and Indian Ocean	8,374
	Yokohama, Japan. By Java Sea, China Sea and North Pacific Ocean	11,629

N.B.—Suez Canal from Port Said on the Mediterranean to Suez at north or upper end of Red Sea 766 kilometres = 103 S.M. = 89.4 G.M. in length. Total quantity of excavation done on this Canal, 15,000,000 cubic metres = 98,100,000 cubic yards, Eng. measure.

No. 7.—CENTRAL AMERICA.

PANAMA CANAL ROUTE.

All Water—Westward.

From	To	Geo-graphical Miles.
Liverpool	Panama, Central America, <i>via</i> Bermuda Cuba and Hayti Pass and Jamaica, North Atlantic Ocean and Carribbean Sea	4,785
Panama	Yokohama, on south-east coast of Japan..... North Pacific Ocean	8,029
Liverpool	Yokohama Total	12,814

No. 8.—SUMMARY.

COMPARATIVE DISTANCES—LIVERPOOL TO YOKOHAMA.

By preceding Routes, Nos. 1 to 7.

Number of Route.	Routes.	Geo-graphical Miles.
CANADA—NORTH AMERICA.		
1	Quebec and Vancouver. Present summer route, the shortest across the Continent, comprising 3,053 Statute miles or 2,648 G.M. of railway	9,671
2	St. John, Montreal and Vancouver. By Short Line, <i>via</i> Mattawamkeag, State of Maine, and Lennoxville, comprising 234 S.M. = 203 G.M. of railway in progress.	9,976
3	Halifax, Quebec and Vancouver. By the Intercolonial and Canadian Pacific Railways. Present winter route, comprising 3,732 S.M. = 3,237 G.M. of railway.....	10,099
UNITED STATES—NORTH AMERICA.		
4	Boston, Chicago and San Francisco. The shortest route of the United States, comprising 3,432 S.M. = 2,977 G.M. of railway	10,342
EUROPE AND ASIA.		
5	Gibraltar, Suez Canal, Strait of Malacca and Singapore.....	11,043
6	do do and Strait of Sunda	11,629
CENTRAL AMERICA.		
7	Bermuda and Jamaica on North Atlantic Ocean and Carribbean Sea, Panama Canal and North Pacific Ocean.	12,814

No 46.—SHORT LINE, EASTWARD OF MONTREAL, AS ADOPTED.

WEST AND SOUTH OF MONCTON.

Montreal to Moncton and Halifax.

Sections of Railway.	Length. Statute Miles.	Annual Subsidy.
		\$
Montreal to River St. Lawrence (Lachine Bridge) already constructed.....	9	
River St. Lawrence to Lennoxville..... Under contract	100	71,100
Lennoxville to Moose River, a point about 8 miles east of the western boundary between the Province of Quebec and the State of Maine, covered by the International Railway, already constructed.....	89	
Moose River to Mattawamkeag, a station on the Maine Central Railway. Under contract.....	134	115,500
Mattawamkeag to Harvey Station, on the New Brunswick Railway. Running arrangements made on existing roads.....	81	
Harvey to a point on the International Railway near Salisbury Station. Under contract.....	113	63,400
Remaining distance on Intercolonial Railway to Moncton.....	10	
Total—Montreal to Moncton, as adopted by O.C. 14th June, 1886, apportioning the \$250,000.	536	250,000
do Moncton to Halifax, <i>via</i> Intercolonial Railway.....	188	
do Montreal to Halifax by Short Line.....	724	
do do do C.P.R. and Int. R.....	850	
Difference in favour of Short Line.....	126	

N.B.—The original contract for the construction of the connecting links of the Short Line Railway, between Montreal and Moncton, or for 347 out of the 536 miles, was awarded 14th Dec., 1885, to the International Railway Company, who transferred it 6th Dec., 1886, with the assent of Government, to the Atlantic and North-West Railway Company. Railway under this contract to be completed 1st July, 1889.

By an indenture dated the 6th of Dec., 1886, the Canadian Pacific Railway Company have obtained a lease in perpetuity of the line and interests of the Atlantic and North-West Railway Company.

The line of railway, called the "Short Line," eastward of Montreal, is in progress; the bridge across the River St. Lawrence at Lachine, about 1 mile below the entrance of the Lachine Canal, and 9 miles west of Montreal, was commenced in 1886 and completed and the first special passenger train passed over it on the 25th July, 1887, at 4 p.m., with Sir George Stephen, Sir Donald Smith, Hon. J. H. Pope, W. C. Van Horne, Vice President, R. B. Angus and F. G. Shaughnessy.

The Canadian Pacific Railway, called the "Short Line," westward of Montreal, *via* Vaudreuil, St. Polycarpe and Smith's Falls to Parth, Peterboro' and Toronto, was completed towards the autumn of 1887; the iron bridges on this new line, across the River Ottawa, at Ste. Anne and Vaudreuil, and across the River Delisle, &c., are independent of those on the Grand Trunk Railway.

LACHINE BRIDGE.

Plans for this bridge were first approved by an Order in Council, of 1st April, 1882, and subsequently modified by an O.C., of 14th November, 1885. The plans, so approved show a steel bridge with stone piers, having two spans of 408 feet each, two of 269 feet each, and eight of 242 feet each. The central 216 feet of each of the two channel spans affords a height of 60 feet above ordinary summer water level, these two spans are on the cantilever principle.

No. 47.—SHORT LINE, EASTWARD OF MONTREAL, AS ADOPTED.

EAST OF MONCTON.

Moncton to Sydney, &c.

Sections of Railway.	Length	Money Subsidies.
	Miles.	\$
Moncton to Oxford, <i>via</i> Intercolonial Railway, already constructed.	80	
Oxford to New Glasgow. New link to connect the Intercolonial Railway with the Eastern Extension Railway, instead of present Intercolonial Railway route <i>via</i> Truro, 89 miles in length. Placed under contract with the Eastern Extension Railway Co., 28th July, 1882; work discontinued by company in August, 1883, and new tenders for completion called for 20th October, 1887, for 42 miles.	70	224,000
New Glasgow to Port Mulgrave, on Gut of Canso, by the existing Eastern Extension Railway.	80	
Canso, at Point Tupper, passing Mc'ntyre Lake, the Grand Narrows, and the south shore of the Little Bras d'Or to Sydney, with a branch to North Sydney, the length of the main line being 91.5 miles, and that of the branch 3.25 miles. (From Sydney a railway is already in existence to Louisbourg) Location decided by O.C., 29th October, 1886. Tenders were called for shortly afterwards and the contract was awarded, 28th January, 1887, to Sims and Slater. Railway to be completed, 30th June, 1888.	91.5	From Oxford 706,000
Total, Moncton to Sydney, eastward.	321.5	930,000
do do Montreal, westward.	536.0	5,000,000
do Montreal to Sydney, Short Line.	857.5	5,930,000

N.B.—The distance from Canso to Louisbourg according to survey of 1895 is 83 miles, or 8.5 less than to Sydney.

Total distance therefore from Montreal to Louisbourg, by Short Line, 849.0 miles.

No. 48.—CANADIAN PACIFIC RAILWAY AND OCEAN ROUTE.

VOYAGE OF THE "ABYSSINIA" ACROSS THE PACIFIC.

The Company's Pioneer Steamship.

YOKOHAMA TO VANCOUVER.

The steamship "Abyssinia," the first of the Canadian Pacific Railway Company's trans-pacific line, left Yokohama, Japan, on Tuesday, the 31st of May, at 7 a. m., with a cargo of 1,200 tons of tea, as well as other merchandise, and a number of passengers. She arrived at Vancouver dock at 5 30 a. m., Tuesday, 14th June, having passed Victoria at 3-10 p. m. without stopping there, and anchored in English Bay at 9-25 p. m. the previous day.

The first 8 days out, the weather was thick, at times foggy, and the winds were high and variable, which prevented sails being used, and it was not until the last days of the voyage, on entering the Straits of San Juan de Fuca, that sail was set. Nothing of importance occurred during the trip, and no accidents of any kind marred the pleasure of those on board the "Abyssinia," which was commanded by Captain Marshall.

She made her course over what is known as the "Great Circle," and found it to be 10 miles shorter than the distance set down on the Canadian Pacific Railway map.

Passengers from Liverpool to Yokohama, by the Canadian Pacific Railway from Quebec to Vancouver, avoid the hot weather that is experienced on the Suez Canal route from Liverpool to Yokohama, *via* the Straits of Malacca, which is 1,372 miles longer, the total distance on the former route being about 9,671 and on the latter 11,043 miles.

The distance from Hong Kong to Vancouver is 5,758 miles, and from Yokohama to Vancouver, on the Great Circle, 4,334 miles (28 shorter than in preceding tables 1, 2, 3)

The voyage from Yokohama to Vancouver was made in 13 days and 14 hours. The longest run made in 24 hours was 324 miles, and the shortest 279 miles.

A portion of the cargo of tea by the "Abyssinia" was consigned to Everett, Fraser & Co., New York, to whom it was sent through by express on the same day that she arrived at Vancouver, making the fastest time on record from Yokohama to the Atlantic coast.

No. 49.—PANAMA CANAL.

Panama Canal from Colon or Aspinwall on the Atlantic to Panama on the Pacific, 73 kilomètres = 45·4 S. M. = 39·4 G. M. in length, with an excellent harbour at each end, and a railway in operation along the canal, which is now in progress and is expected to be completed towards 1890.

The total estimated quantity of excavation for a through cut without locks, on this canal, is 46,150,000 cubic metres = 60,364,200 cubic yards, English measure.

A CHANGE OF PLANS.

The Panama Canal to have Locks, instead of being a Tide-water Route, for the present, so as to render it available to Navigation as soon as possible.

It is stated that the plans of M. de Lesseps regarding the Panama Canal have been changed, and that the marine highway will be built with locks instead of a tide-water canal, as was at first intended, although the original plan of making it a tide-water route, M. de Lesseps says, is to be carried out eventually.

Henry B. Slaven, president of the Contracting and Dredging Company, which has been actively engaged in the work of digging the canal since the start, arrived at New York from Europe on the 28th of November, 1887.

In an interview the latter said:—"The canal is more than half done. It is open at present for vessels drawing 15 feet of water for 20 kilomètres = 12·43 statute miles out of the total length of 73 K. = 45·4 S. M. That section of 20 K. or 12·43 S. M. is on the Atlantic end of the canal, and we dredged it ourselves. We will have 24 K. or 14·9 S. M. done by 1st July, and a French company on the Pacific end will have 5 more K. or 3·1 S. M. completed. Beyond our work there is a 20 kilomètre section that a French company has contracted to do, but it has done very little on it. If the French contractors do as they ought to do, that section will give the shareholders no concern. There is left, however, a section, 25 K. = 15·53 S. M. long, that contains the ridge or backbone of the Isthmus. The elevations run from 50 to 287 feet above the mean level of the two oceans. A good deal of work has been done on this section, but it is here of course that the greatest amount of digging has to be done. (According to the original project examined by the International Congress in 1879, the maximum depth of cutting for a tide-water canal is 87 mètres = 285·4 English feet above water surface for a distance of 1 K. = 0·62 S. M. If a tunnel of 6 K. = 3·728 S. M. is constructed, the depth of cutting can be reduced to 34 metres = 111·5 feet. If locks are constructed, 13 will be required, and the depth of cutting will be still further reduced.) M. Eiffel, who is probably best known in America, as the builder of the tower 1,000 feet high in Paris for the next exposition, has the contract for the locks. He and M. de Lesseps will go to Panama in January, 1888. The locks will be made chiefly of iron, and will be water-lifts. M. Slaven further stated that the company had \$35,000,000 cash on hand, and that there would be no difficulty in getting enough money to complete the work." See *Montreal Gazette*, 30th Nov. 1887.

No. 50.—PRINCIPAL PROJECTS
OF
INTEROCEANIC CANALS
ACROSS THE
CENTRAL AMERICAN ISTHMUS
EXAMINED BY THE
INTERNATIONAL CONGRESS OF 1879.

1.—ISTHMUS OF TÉHUANTÉPEC ROUTE, MEXICO.

Length, 240 kilomètres, or 149·13 English statute miles.
Number of locks, 120.
Time of transit, 12 days.
Canal practicable only with locks.

2.—LAKE NICARAGUA AND COSTA-RICA ROUTE.

Length, 292 kilomètres, or 181·44 statute miles, English.
Number of locks, 17.
Time of transit, 4½ days.
Canal practicable only with locks.

3.—ISTHMUS OF PANAMA ROUTE, COLUMBIA, WITH A SINGLE REACH.

No Locks nor Tunnels--Adopted by International Congress.

Length, 73 kilomètres, or 45·35 English statute miles.
Time of transit, 2 days.

Maximum height of cutting above water:—87 metres = 285·4 English feet, for a distance of 1 kilomètre nearly, or 0·62 English statute mile.

The same project may be executed and the depth of cutting may be diminished by slightly modifying the route and by constructing a tunnel of 6 kilomètres = 3·728 statute miles in length, and 34 mètres = 111·5 English feet in height, above mean sea level.

At Panama, a canal may also be constructed with locks. This route would require 13 locks. The Panama route therefore presents facilities for diverse modes of construction and advantages greater than on any of the other routes. ❧

4.—SAN BLAS ISTHMUS ROUTE, COLUMBIA.

Length, 53 kilomètres, or 32·93 English statute miles.
Length of tunnel, 16 kilomètres, or 9·94 English statute miles.
Time of transit, 1 day.

5.—ATRATO-NAPIPI ROUTE, COLUMBIA.

Length, 290 kilomètres, or 180·2 English statute miles.
Number of locks, 2.
Length of tunnel, 4 kilomètres, or 2·49 English statute miles.
Time of transit, 3 days.

NOTA.

SUEZ CANAL.

The Suez Canal is 166 kilomètres = 103.15 statute miles in length. The excavation for its construction amounted to 75 millions of cubic mètres, equal to 93,100,000 cubic yards, English.

No port for landing, no railway and no water fit for drinking, were available when the work was begun.

PANAMA CANAL.

On the Panama proposed canal, if constructed with a single reach, without locks and without tunnels, the estimated quantity of excavation is 46,150,000 cubic mètres, or 60,364,200 cubic yards, English.

There is a good port very frequently resorted to, at each terminus, a railway along the entire route, and an abundance of potable water.

NICARAGUA CANAL.

On the Nicaragua proposed canal, with locks, the estimated quantity of excavation is 53,793,000 cubic mètres, or 70,361,244 cubic yards, English.

There is no port available at either of its termini, the port of Greytown, on the Atlantic, being now entirely obstructed by sand deposits from the river San Juan. There is no railway, but potable water is abundant.

FRENCH AND ENGLISH MEASURES.

1 mètre, French measure	= 3.28 English feet.
1 cubic mètre, French measure	= 1.308 cubic yards, English measure.
1 kilomètre, French measure	= 0.62139 statute miles, English measure.
1 statute mile, English	= 0.86755 geographical miles, English.
1 geographical mile, English	= 1.162664 statute mile, English.

No. 51.—SUEZ CANAL.

England still continues to reap the chief marine benefits accruing from the existence of the Suez Canal, in which, as the result of a bold stroke of policy on the part of the late Lord Beaconsfield, she is a large and controlling shareholder. Of the 395,840 shares of the company, 176,602 were purchased from the Khedive of Egypt by the British Government. The canal is about 100 miles long, connecting the Mediterranean and the Red Sea, thus affording a very much shorter route to the East than the old round-about route by way of Cape Horn.

By the completion of the Canadian Pacific Railway, the British military authorities have now an alternative route by which troops could be expeditiously forwarded to India without being under the necessity of passing through foreign territory. The Suez Canal, in case of war, might be blockaded or so obstructed, by the sinking of vessels, as to interfere with navigation. In such a contingency Canada's great highway from ocean to ocean would prove invaluable, and the day may yet come when its importance from a military stand-point, may be more seriously regarded than it appears to be at present.

From a summary of the last annual report of the Suez Canal Company, it appears that the number of vessels which passed through the canal in 1887 was 3,137, their gross tonnage being 8,430,643 tons. Of the 3,137 vessels which passed through the canal last year, 2,330 were British, leaving 807 carrying other flags. Of this number, 183 carried the flag of France, 159 Germany, 138 Italian, 123 Holland, 82 Austria and Hungary, 28 Austria, 26 Spain, 22 Russia. Only three American vessels passed through the canal during the year. The number of persons that passed through as passengers was 173,788, of whom 91,996 were soldiers, 53,415 civil passengers, and 19,610 Mohammedan pilgrims. (See *Montreal Gazette*, April, 1888.)

ADDENDUM.

SEE NO. 22. PART II.

RAILWAYS TO HUDSON'S BAY.

SUBSIDIZED Railway—Winnipeg to or near Port Nelson, Hudson's Bay:—
 Total length 650 miles.
 Total land subsidy..... 6,880,000 acres.
 See Act 49 Vict., Chap. 73, 1886, also O. C. 11th May, 1885.
 Railway to be completed on or before 11th May, 1890.

PROPOSED RAILWAY—LAKE NIPISSING TO HUDSON'S BAY.

1st Section—North Bay, near eastern extremity of Lake Nipissing, 20 miles west of Callendar Station, C. P. R., to Lake Temiscamingue.....	81 miles.
2nd Section—Lake Temiscamingue to Lake Abittibi	94, “
3rd Section—Lake Abittibi to Moose Factory, Hudson's Bay.....	175 “
Total length, about.....	350 “

A Company for the construction of this railway was incorporated in 1884 by Act 47 Vict., Chap. 80.

This Act was amended by Act 49 Vict., Chap. 77, 1886, granting an extension of time.

Work to be commenced.....	2nd June, 1888
1st Section to be completed.....	1890
2nd do do	1892
3rd do do	1894

LAKE ST. JOHN TO HUDSON'S BAY.

Lake St. John is at about the same distance of 350 miles from the Hudson's Bay establishment near the mouth of the River Rupert, on the east side and near the southern end of James Bay, as Lake Temiscamingue is from Moose Factory on the west side of the same bay, at its southern end.

A straight line from Lake St. John to Hudson's Bay would pass at about 60 miles to the south of Great Lake Mistassini, which discharges into the River Rupert, which is equal to, if not greater than the River Saguenay.

PART V.
EXPENDITURE ON PUBLIC WORKS,
CANADA,
PRIOR TO AND SINCE CONFEDERATION,
1st JULY, 1867.

EXPENDITURE

ON THE

CONSTRUCTION OF PUBLIC WORKS,

UPPER AND LOWER CANADA,

PRIOR TO CONFEDERATION, 1ST JULY, 1867.

SUMMARY of Expenditures by the Provincial Governments on the construction of the Public Works of Lower and Upper Canada, prior to Confederation, 1st July, 1867.

Works.	Lower Canada now Prov. of Quebec.	Upper Canada now Prov. of Ontario.	Totals.
	\$ cts.	\$ cts.	\$ cts.
Canals (exclusive of River Improvements)	6,912,308 24	16,188,747 01	23,101,055 25
Works on navigable rivers, or improvement of rivers.....	14,394 61	13,959 72	28,354 33
Total, Canals and Rivers.....	6,926,702 85	16,202,706 73	23,129,409 58
Harbours and piers.....	1,366,378 66	855,139 53	2,221,518 19
Lighthouses, beacons and buoys.....	1,144,890 70	541,300 14	1,685,990 84
Slides, dams, piers and booms	748,783 18	597,869 49	1,346,652 67
Roads, including Turnpike and Colonization Roads	3,760,381 25	3,113,623 69	6,874,004 94
Bridges, exclusive of those on Turnpike and Colo- nization Roads, the cost of which includes that of bridges.....	353,357 81	256,927 27	610,285 08
Public Buildings, exclusive of those constructed by charitable institutions or private donations....	4,094,687 85	5,141,872 85	9,236,560 70
Provincial Vessels, one-half of total cost charged to each Province.....	253,856 41	253,856 42	507,712 83
Total cost of Works, exclusive of Railways.	18,648,838 71	26,963,296 12	45,612,134 83
Railways, exclusive of subsidiary lines in United States	43,276,252 42	93,486,964 58	136,763,217 00
(See Note A, below.)			
Total cost of Works, including Railways...	61,925,091 13	120,450,260 70	182,375,351 83
Deduct :—Expenditure from other than Govern- ment Funds, so far as ascertained.	37,336,301 26	84,828,450 50	122,164,751 76
Total Government Expenditure.....	24,588,789 87	35,621,810 20	60,210,600 07
Note A.—Government Expenditure on Railways, included above.....	7,098,893 26	13,165,906 75	20,264,800 01

For details of above Summary, see Appendix No. 70 of General Report on Public Works, 1867, pages 481 to 613, by G. F. BAILLIARÉ.

EXPENDITURE ON PUBLIC WORKS,
CANADA,
FOR
CONSTRUCTION AND IMPROVEMENTS,
MAINTENANCE AND REPAIRS,
1867-1886,
ACCORDING TO STATEMENTS OF
O. DIONNE,
Accountant of the Department of Public Works.

1867—

No. 1.—STATEMENT showing amounts contributed by Municipalities, &c.,
in following

Number.	Work.	Fiscal Year			
		1871.		1872.	
		I.	\$ cts.	II.	\$ cts.
	Harbours—				
1	Bayfield (Municipality of Stanley).....				
2	Cobourg (Commissioners Harbour Trust, Cobourg).....				
3	Collingwood (Northern Railway Co.).....				
4	Goderich (Municipality Township of Goderich).....				
5	Meaford (do St. Vincent).....				
	Total, Harbours.....				
	Rivers—				
6	River Napanee, Ont.....				
7	do Thames do.....	198	2,400 00		
	Total, Rivers.....		2,400 00		
8	Roads and Bridges—				
	Portage du Fort Bridge (Grant by Ontario Government).....			252	1,500 00
	Grand Totals.....		2,400 00		1,500 00

N.B.—The figures in 1st column of each year, indicate the part and page in "Public Accounts," except where otherwise indicated.

1877.

towards the Construction, &c., of the undermentioned Works, and included Statements.

ended 30th June.										Total.	Number.
1873.		1874.		1875.		1876.		1877.			
II.	\$ cts.	II.	\$ cts.	II.	\$ cts.	II.	\$ cts.	II.	\$ cts.	\$ cts.	
								254	10,000 00	10,000 00	1
								254	25,507 49	25,507 49	2
		190	15,505 00	237	12,763 26					28,268 26	3
				239	10,000 00					10,000 00	4
				238	10,000 00					10,000 00	5
			15,505 00		32,763 26				35,507 49	83,775 75	
						251	5,000 00			5,000 00	6
										2,400 00	7
							5,000 00			7,400 00	
144	4,000 00									5,600 00	8
	4,000 00		15,505 00		32,763 26		5,000 00		35,507 49	96,675 75	

1878—

No. 2.—STATEMENT showing amounts contributed by Municipalities, &c., towards and following Statements, from

Number.	Name of Work.	Expenditure from 1st July, 1867, to 30th June, 1877.		1878.	
		\$	cts.	\$	cts.
Public Buildings—					
1	Quebec Citadel "Cliff" (Corporation of the City of Quebec) .....	.....	.....	.....	.....
2	do Fortifications (Her Majesty the Queen's Gift) .....	.....	.....	.....	.....
3	Ottawa Drill Shed (Corporation of the City of Ottawa).....	.....	.....	.....	.....
	Totals, Public Buildings.....	.....	.....	.....	.....
Harbours—					
4	Bayfield (Municipality of Stanley)	10,000	00	.....	.....
5	Cobourg (Commissioners, Harbour Trust, Cobourg)	25,507	49	.....	.....
6	Collingwood (Northern Railway Co.)	28,268	26	.....	.....
7	Goderich (Municipality, Township of Goderich)	10,000	00	.....	.....
8	Meaford (do St. Vincent)	10,000	00	.....	.....
9	Rondeau (County Council, Kent) .....	.....	.....	.....	.....
	Totals, Harbours	83,775	75	.....	.....
Rivers—					
10	Napanee, Ontario	5,000	00	.....	.....
11	Thames, Ontario.....	2,400	00	.....	.....
	Totals, Rivers	7,400	00	.....	.....
Roads and Bridges—					
12	Portage du Fort Bridge (Grant, Ontario Government)	5,500	00	.....	.....
	Grand Totals	96,675	75	.....	.....

1882.

the CONSTRUCTION, &c., of the undermentioned Works, and included in previous 1st July, 1867, to 30th June, 1882.

Year ended 30th June.								Total for 15 Years ended 30th June, 1882.	Number.
1879.		1880.		1881.		1882.			
II.	\$ cts.	II.	\$ cts.	II.	\$ cts.		\$ cts.	\$ cts.	
.....	247	2,500 00	.....	.....	2,500 00	1
.....	246	2,433 33	.....	.....	2,433 33	2
276	2,050 00	228	2,950 00	.....	.....	.....	.....	5,000 00	3
.....	2,050 00	.....	2,950 00	.....	4,933 33	.....	.....	9,933 33	
.....	10,000 00	4
.....	25,507 49	5
.....	28,268 26	6
.....	10,000 00	7
.....	10,000 00	8
.....	274	300 00	300 00	9
.....	300 00	84,075 75	
.....	5,000 00	10
.....	2,400 00	11
.....	7,400 00	
.....	5,500 00	12
.....	2,050 00	.....	2,950 00	.....	4,933 33	.....	300 00	106,909 08	

1883—1886.

No. 3.—STATEMENT showing amounts contributed by Municipalities, &c., towards the CONSTRUCTION, &c., of the undermentioned Works, and included in previous and following Statements.

Number.	Works.	Fiscal Year ended 30th June,						Total to 30th June, 1886.	Number.				
		1883		1884		1885				1886.			
		From 1st July, 1867, to 30th June, 1882.	II.	\$	cts.	II.	\$	cts.	*II.	\$	cts.	Total to 30th June, 1886.	Number.
1	Public Buildings—												
2	Quebec Citadel ("Cliff")	2,500 00										2,500 00	1
3	do Drill Shed.....	2,433 33				297	5,558 20		339	20,527 40		26,085 60	2
4	do Fortifications.....	6,000 00										2,433 33	3
5	Ottawa Drill Shed.....											5,000 00	4
6	Sarnia Immigrant Shed.....											117 00	5
7	Winnipeg Drill Shed.....											7,030 00	6
	do Post Office.....											414 00	7
	Totals, Public Buildings.	9,933 33					531 00			9,583 47		43,579 93	
8	Harbours and Breakwaters—												
9	St. John Harbour, N.B.....											1,751 97	8
10	Esyfield do Ont.....	10,000 00				323	1,751 97					10,000 00	9
11	Belleville do do.....	25,507 49				xxxix	3,154 50					3,154 50	10
12	Cobourg do do.....	28,268 26				5	450 00					25,957 49	11
13	Collingwood do do.....	10,000 00										28,268 26	12
14	Goderich do do.....											10,000 00	13
15	L'Original Wharf do do.....											1,000 00	14
16	Newford Harbour do do.....	10,000 00										10,000 00	15
17	Morpeh do do.....											4,202 27	16
18	Newcastle do do.....											2,500 00	17
	Owen Sound do do.....		xxxix	13,000 00								13,000 00	18
19	Port Arthur do do.....		294									25,000 00	19
20	Port Elgin do do.....											5,000 00	20
21	Rondeau do do.....	300 00				3 9	736 80		331	2,303 49		3,000 00	21
22	Thornbury do do.....											7,000 00	22
23	Warton do do.....											21,000 00	23
	Totals, Harbours, &c....	84,075 75					25,447 30			16,890 34		168,134 49	

ABSTRACT STATEMENT of Yearly Expenditure in each Province, on Construction and Improvements of Public Works, Canada, from 1st July, 1867, to 30th June, 1886.

Year.	Nova Scotia.		P. E. Island.		New Brunswick.		Quebec.		Ontario.		Manitoba.		North-West Territories.		British Columbia.		Miscellaneous.		Total.	
	\$	cts	\$	cts	\$	cts	\$	cts	\$	cts	\$	cts	\$	cts	\$	cts	\$	cts	\$	cts
1868...	485,206	86			22,090	19	138,939	77	133,510	38							130	18	779,877	38
1869...	212,088	11			109,272	81	62,432	59	182,298	76	4,213	13							570,285	80
1870...	420,800	64			387,909	49	387,909	49	202,915	99	52,565	60	15,232	30					2,099,761	44
1871...	1,163,816	09			509,169	15	1,393,861	21	768,730	86	74,717	15	17,443	35					3,835,502	60
1872...	1,798,130	55			2,844,835	81	1,870,732	69	1,468,805	44	146,805	44							7,206,413	30
1873...	1,553,792	15			2,878,278	32	1,614,501	99	1,037,753	09	131,128	07							7,422,076	82
1874...	1,127,544	47			2,141,337	86	1,534,380	78	1,833,625	49	120,808	13							6,729,824	67
Total.	6,761,358	87	69,000	00	9,626,311	56	6,792,749	95	4,182,292	62	628,236	52	32,675	65	639,392	00	12,015	24	28,814,091	41
1875...	1,433,812	58	85,393	79	1,782,061	44	1,588,187	87	2,401,697	15	326,467	20	236,363	63	522,582	06	14,660	97	8,391,226	63
1876...	683,243	17	120,909	25	634,529	87	1,397,275	70	4,143,771	35	967,823	23	614,864	87	433,065	32	8,519	56	8,994,002	32
1877...	566,366	41	266,425	60	773,230	77	2,303,294	75	3,941,443	00	353,871	58	188,611	87	327,524	21	5,870	89	8,706,637	11
1878...	238,412	84	61,183	08	436,594	40	1,701,403	30	3,736,133	69	958,835	99	71,343	44	186,127	87	8,886	99	7,372,931	63
1879...	238,123	09	72,857	08	314,768	42	1,481,659	12	3,652,781	55	446,273	41	16,150	60	89,624	01	17,828	15	6,330,085	43
Total.	3,159,958	09	606,768	80	3,941,204	90	8,471,818	77	17,575,826	64	3,083,271	41	1,077,334	41	1,522,923	57	55,766	56	39,794,873	15
1880...	169,014	87	49,755	99	432,962	85	2,724,989	97	3,656,606	62	1,708,014	88	67,387	99	144,545	84	12,455	36	8,965,734	07
1881...	260,083	99	52,058	44	363,883	26	1,500,736	14	4,047,365	02	947,639	03	45,261	13	1,057,396	36	16,217	85	8,290,641	17
1882...	362,971	93	37,641	02	263,395	20	1,508,616	04	2,876,566	33	58,063	32	1,794,678	21	1,729,138	81	36,036	23	8,427,137	19
1883...	660,158	53	59,340	63	630,297	27	2,194,518	17	8,389,204	64	81,321	08	4,190,599	58	3,861,594	00	35,818	86	15,040,652	76
1884...	1,640,310	55	177,498	06	714,796	96	2,311,468	25	6,861,855	48	184,161	40	80,424	16	6,821,260	95	69,469	48	18,861,245	29
1885...	427,428	44	183,968	40	736,212	39	1,573,185	61	7,751,258	57	167,765	69	91,242	90	4,409,686	65	50,670	08	16,391,418	73
1886...	411,722	51	128,579	72	755,542	47	2,047,380	65	3,428,275	25	258,280	31	123,906	13	3,831,528	28	24,964	71	10,810,160	03
Total.	3,831,690	72	728,842	26	3,897,090	40	13,868,894	83	31,611,131	96	3,405,245	71	6,383,300	10	21,855,150	69	245,632	57	85,756,979	24
Grand Total.	13,753,007	68			17,464,608	86													154,225,883	80
		-22	30																313,414	37
																			24,017,466	26
																			7,483,310	16
																			154,225,883	80

N.B.—After the above was prepared, a transfer of \$22.30 was made from Nova Scotia to New Brunswick, on account of Bale-Verto Canal, in 1876-77.

EXPENDITURE ON ACCOUNT OF WORKS AUTHORIZED BY SPECIAL ACTS OF PARLIAMENT, FROM 1ST JULY, 1867, TO 30TH JUNE, 1886.

Number.	Name of Work.	Amount Authorized.	Expenditure from 1st July, 1867, to 30th June, 1882.	Fiscal Year ended 30th June,				Total to 30th June, 1886.	Number.
				1883.	1884.	1885.	1886.		
1	St. Lawrence River—Deepening between Quebec and Montreal—	\$ 1,500,000							
	36 Vic., cap. 60.....	280,000							
	45 do 41.....	900,000							
	46 do 38.....		280,000	110,000	300,000	149,504 10	2,339,504 10		1
	49 do 19.....	750,000							
2	Quebec Harbour Improvement—	\$ 1,200,000							
	36 Vic., cap. 62.....	250,000							
	43 do 17.....	375,000							
	45 do 47.....	300,000							
	47 do 9.....	750,000							
3	Lévis Graving Dock—	\$ 500,000							
	38 Vic., cap. 56.....	100,000							
	46 do 40.....	150,000							
	47 do 10.....		66,540	200,529	282,931	434,493 85	2,389,493 85		2
	Totals.....	6,587,000	3,255,000	*447,529	692,931	717,555 92	5,534,555 92		
4	Three Rivers Harbour—								
	48, 49 Vic., cap. 76.....								
	Totals.....								

* N.B.—The expenditure on account of "Esquimaux Graving Dock" (\$141,915.98) is now included in cost of Harbours, British Columbia, the works having been assumed by the Dominion Government under authority of 47 Vic., cap. 6, sec. 10; also of O. C. (No. 47,350) dated 19th May, 1884. See Statement No. 23 of App. No. 27, by O. Dionne, Acct. Rep. P. W., 1885-86.

1867—

CONSTRUCTION AND IMPROVEMENTS
ABSTRACT STATEMENT of Expenditure from 1st

Number.	Works.	ENTERED CONFEDERATION			
		1st July, 1867.	1st July, 1873.	1st July, 1867.	
		Nova Scotia.	P. E Island.	New Brunswick.	Quebec.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
1	Intercolonial Railway.....	7,621,764 09	.....	13,181,560 39	10,423,024 67
2	Nova Scotia and New Brunswick Railways.....	1,801,461 80	.....	824,689 28	.....
3	Eastern Extension Railway.....	1,286,551 68	.....	.....	.....
4	Short Line Railway.....	127,312 41	.....	14,215 13	20,697 44
5	Prince Edward Island Railway.....	.....	621,729 78	.....	.....
6	Pacific Railway.....	.....	.....	.....	.....
7	Oûteau Landing Railway Bridge.....	.....	.....	.....	522 00
8	Carleton Branch.....	.....	.....	85,610 69	.....
9	Railway surveys.....	7,897 85	.....	6,451 63	7,715 56
10	do subsidies.....	.....	.....	297,600 00	1,200,264 00
11	Canals.....	518,466 20	.....	44,387 53	12,137,918 78
12	Road Dyke along Lake St. Francis.....	.....	.....	.....	9,317 84
	Totals, Railways and Canals.....	11,363,394 12	621,729 78	14,454,514 65	23,799,460 27
13	Public Buildings.....	377,607 65	167,459 77	1,625,998 11	2,691,635 43
14	Harbours and Breakwaters.....	1,195,349 90	416,754 62	823,786 25	849,431 68
15	Rivers—Improvements of.....	117,402 66	45,143 54	177,817 22	557,671 97
16	Dredges.....	125,594 42	24,518 07	116,202 41	38,143 89
17	Slides and Booms.....	.....	.....	.....	355,367 87
18	Roads and Bridges.....	.....	.....	2,368 34	105,165 06
19	Telegraph Lines.....	71,694 29	.....	20,421 73	273,695 97
20	Lighthouses.....	429,528 99	56,591 94	171,107 10	380,488 05
21	Dominion Steamers.....	72,413 35	72,413 34	72,413 35	72,413 36
22	Monuments.....	.....	.....	.....	.....
	Totals, Public Works.....	2,389,591 26	782,881 28	3,010,114 51	5,324,003 28
	Grand Totals.....	13,752,985 38	1,404,611 06	17,464,629 16	29,123,463 55

N.B.—For amounts contributed by municipalities, &c., towards the construction or improvements of Public Works, see Statements Nos. 1, 2, 3, on preceding pages.

a Including \$20,431.61 spent in Maine, U.S.

b do \$196,292.36 expenditure on account "Cape Traverse Branch," viz.:

1882-3.	\$	434 00
1883-4.		126,745 94
1884-5.		70,394 09
1885-6.		4,668 33

Total \$196,292 36

c Including \$24,529,912.87 subsidy paid to the Canadian Pacific Railway Co. d Spent in U.S.

See Statement No. 24, of App. No. 27 by O. Dionne, Accountant, Rep. P.W., 1885-86.

1886.

OF THE PUBLIC WORKS OF CANADA.

July, 1867 (date of Confederation), to the 30th June, 1886.

ENTERED CONFEDERATION				Miscellaneous, not apportioned to any of the Provinces.	Total up to 30th June, 1886.	Number.
1st July, 1867.	15th July, 1870.		20th July, 1871.			
Ontario.	Manitoba.	North-West Territories.	British Columbia.			
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
					31,226,349 15	1
					2,626,151 17	2
					1,286,551 68	3
				a 22,576 85	184,801 83	4
					b 621,729 78	5
26,201,179 21	5,805,617 33	6,865,698 70	21,972,232 70		c 60,845,727 94	6
					522 00	7
					85,610 69	8
				d 8,161 62	30,226 66	9
1,392,110 00	50,000 00		422,520 00		3,362,494 00	10
17,122,725 15		32,675 65		42,575 12	29,898,688 43	11
					9,317 82	12
44,717,014 36	5,825,617 33	6,898,374 35	22,394,752 70	73,313 59	130,178,171 15	
4,612,169 14	e 657,263 24	452,867 29	369,639 02	193,909 83	e 11,148,549 48	13
2,882,057 55	1,776 39		987,571 80	17,112 96	7,173,841 15	14
248,775 26	76,818 20	33,620 63	69,281 12		1,326,530 60	15
91,045 21	47,105 69		28,133 62	1,919 62	472,662 93	16
71,461 06					426,818 93	17
757,674 32	376,508 93	1,919 53			1,243,636 18	18
23,868 86	72 00	76,528 36	102,963 76	11,882 98	581,127 95	19
265,185 46	1,690 86		65,124 24	4,869 47	f 1,374,486 11	20
					289,653 40	21
				10,405 92	g h 10,405 92	22
8,952,236 86	1,161,135 31	564,935 81	1,622,713 56	240,100 78	24,047,712 65	
53,669,251 22	7,016,752 64	7,463,310 16	24,017,466 26	313,414 37	154,225,883 80	

e Exclusive of \$279,689.14, assumed or to be assumed by the Provincial Government of Manitoba. For details, See Statement No. 18 of Supplement P. W. R., 1886.

f Expended : { Through Department of Public Works \$ 75,588 51
do do Marine and Fisheries 1,298,897 60
\$ 1,374,486 11

g Expended through the Department of Marine.

h Cartier Monument \$ 10,346 77
Brant do 59 15
\$ 10,405 92

1867—

MAINTENANCE AND REPAIRS OF PUBLIC

ABSTRACT STATEMENT of Expenditure, for each Province

Number.	Work.	ENTERED CONFEDERATION		
		1st July, 1867.	1st July, 1873.	1st July, 1867.
		Nova Scotia.	P. E. Island.	New Brunswick.
		\$ cts.	\$ cts.	\$ cts.
1	Intercolonial Railway.....	8,441,110 60	.....	13,150,033 51
2	do Windsor Branch.....	83,226 24	.....	.....
3	do Eastern Extension.....	213,839 14	.....	.....
4	Prince Edward Island Railway.....	.....	2,456,744 20	.....
5	Pacific Railway.....	.....	.....	.....
6	Railways Generally.....	.....	.....	.....
7	Canals.....	34,037 34	.....	.....
	Totals, Railways and Canals.....	8,772,213 32	2,456,744 20	13,150,033 51
8	Public Buildings.....	76,695 28	30,384 22	56,424 13
9	do Salaries of Engineers.....	8,928 54	5,411 12	16,865 28
10	do Heating.....	3,945 19	1,912 55	15,057 57
11	Harbours and Breakwaters.....	.....	.....	.....
12	Rivers—Maintenance of Buoys, &c.....	.....	.....	250 00
13	Dredges.....	39,080 35	9,749 40	23,496 73
14	Dredging (not apportioned).....	160 09	27 64	27 64
15	Slides and Booms.....	.....	.....	.....
16	Roads and Bridges.....	.....	.....	.....
17	Telegraph Lines.....	10,869 48	24,333 25	9,576 76
	Miscellaneous, viz :—			
18	Surveys.....	47,544 26	15,145 28	50,204 25
19	Arbitrations.....	.....	.....	.....
20	Tug Service between Montreal and Kingston.....	.....	.....	.....
21	Agent and Contingencies, British Columbia.....	.....	.....	.....
22	Sundries.....	.....	.....	.....
	Totals, Public Works.....	187,223 19	86,963 46	171,902 36
	Grand Totals.....	8,959,436 51	2,543,707 66	13,321,935 87

See Statement No. 9, App. No. 27, by O. Dionne, Acct., Rep P. W., 1885-86.

The expenditure up to 1st July, 1887, will be given, in detail, by Accountant in the supplement of P. W. Rep., 1887-88.—G. F. B.

1886.

WORKS OF CANADA—*Concluded.*

from 1st July, 1867 (date of Confederation) to 30th June, 1886.

ENTERED CONFEDERATION					Miscellaneous, not apportioned to any of the Provinces.	Total up to 30th June, 1886.	Number.
1st July, 1867.		15th July, 1870.		20th July, 1871.			
Quebec.	Ontario.	Manitoba.	N - W. Territories	British Columbia.			
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	
6,896,205 78						28,487,349 89	1
						83,226 24	2
						213,839 14	3
						2,456,744 20	4
		320,787 18				320,787 18	5
						33,472 08	6
2,872,178 63	4,355,334 94					86,390 25	7
9,768,384 41	4,355,334 94	320,787 18				119,862 33	
400,855 75	3,667,520 57	71,734 27	8,547 76	22,023 59	1,367 15	4,335,552 72	8
19,896 81	38,333 88		695 00	2,735 00		92,865 61	9
37,930 74	30,448 92	9,514 68	1,668 17	1,389 35	2,378 46	104,245 63	10
142 98	213 70				13,036 17	13,392 85	11
3,008 26						3,258 26	12
25,140 85	12,298 51	4,000 00		21,353 11	2,221 13	137,340 08	13
46,502 66	61,197 91	88 00			13,230 82	121,234 76	14
842,787 43	494,945 54				48 52	1,337,781 49	15
1,063 39	526,872 17	74,983 11				602,918 67	16
47,477 93	67 82		74,294 91	498,770 73	28,769 41	694,160 29	17
156,372 07	191,249 62	6,475 86	1,113 99	5,658 71	42,410 75	516,174 79	18
					103,650 15	103,650 15	19
48,151 43	48,151 41					96,302 84	20
				29,235 41		29,235 41	21
					11,919 37	11,919 37	22
1,629,330 30	5,071,300 03	166,795 92	86,319 83	581,165 90	219,031 93	8,200,032 92	
11,397,714 71	9,426,634 97	487,583 10	86,319 83	581,165 90	338,894 26	47,143,392 81	

ERRATA.

Page	Line from top of Page.	Line from bottom of Page.	Instead of	Read
9	11	.....	203 (statute miles West Light, Anticosti, to Father Point)	202 (miles).
.....	20	.....	17 (S. M. Beauharnois Canal).....	11 (miles).
13	.....	5	Channels.....	Canals.
14	.....	22	35 (greatest length, St. Mary's River).....	55 (miles).
.....	.....	8	38 (greatest length, Lake St. Francis).....	33 (miles).
17	11	.....	12 (depth water on sills, Welland Canal).....	14 (feet).
20	14	.....	24·90 (nautical miles per chart, Iles St. Louis, lowerend)	14·90 (nautical miles)
.....	16	1	90 (fathoms, depth of River Petit Saguenay)	98 (fathoms).
.....	.....	10	Petits Ilets—53 (nautical miles, of 1st column)	52 (nautical miles).
.....	.....	.....	56·50 (statute miles, of 3rd column).....	57·50 (statute miles).
23	4	.....	Les Escoumains	Les Escoumains.
.....	27	.....	15,583 (tons register in 1860, Chicoutimi)	15,853 (tons).
.....	.....	.....	885 (crew in 1865, Chicoutimi).....	385 (crew).
.....	.....	19	8 (vessels at Escoumains in 1869)	9 (vessels).
.....	.....	17	11,614 (tons register in 1871, Chicoutimi).....	11,714 (tons register)
24	14	.....	2,364 (statute miles Strait of Belle-Ile to Port Arthur, Lake Superior)	2,264 (statute miles).
.....	.....	18	96 (miles N. W. Angle Lake of the Woods to Fort Garry).....	95 do
.....	.....	17	530 (miles, Collingwood to Port Arthur).....	532 do
.....	.....	9	Athabaska.....	Athabasca.

DOMINION OF CANADA.

ANNUAL REPORT

OF THE

MINISTER OF RAILWAYS AND CANALS

FOR THE PAST

FISCAL YEAR FROM 1ST JULY, 1886, TO 30TH JUNE, 1887,

ON THE WORKS UNDER HIS CONTROL.

SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF THE REVISED STATUTES
OF CANADA, CHAPTER 37, SECTION 28.

PRINTED BY ORDER OF THE HOUSE OF COMMONS.



OTTAWA:
PRINTED BY MACLEAN, ROGER & CO., WELLINGTON STREET,
1888.

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REPORT

1886-1887.

*To His Excellency the Most Honourable the Marquess of Lansdowne,
Governor General of Canada, &c., &c., &c.*

MAY IT PLEASE YOUR EXCELLENCY :

I have the honour to submit the Annual Report of the Department of Railways and Canals for the fiscal year ended 30th June, 1887.

This report is submitted in accordance with the provisions of the Revised Statutes of Canada, 1886, Cap. 37, Section 28.

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.

Attached hereto (Appendix 1, page 3) will be found a statement showing the amounts expended during the past fiscal year in construction, repairs, and maintenance of the several works under the Department.

RAILWAYS.

The present Report deals with those Railways of the Dominion directly controlled by the Federal Government, and others towards the construction of which subsidies have been authorized.*

There is prepared by this Department, and laid before Parliament annually, a special Statistical Report embodying returns made by Canadian railway companies, as required by statute. These returns give information as to railroad operations in Canada.

*It should be observed that while the usual reports furnished by the Superintending officers, and to be found in the appendices hereto, deal with the fiscal year only, the General Report of the Minister contains information on points of interest relating to subsidized lines of railway up to the end of December, 1887.

CANADIAN PACIFIC RAILWAY.

This Report does not deal with the various branches and extensions of the Company, but merely with the main portion forming the line of communication between the Atlantic and Pacific as to which Government aid has been afforded.

TRUNK LINE.

	Miles.	
Quebec to St. Martin's Junction, (13 miles north of Montreal).....	159	
<hr/>		
Montreal (at the head of Atlantic Ocean Navigation) to St. Martin's Junction	13	
St. Martin's Junction to Callander	331	
For this portion the Company were subsidized direct by the Government under their contract.	Callander to Port Arthur.....	649
	Port Arthur to Red River (opposite Winnipeg)....	428
	Red River to Savona's Ferry	1,257
	Savona's Ferry to the waters of the Pacific Ocean at Port Moody.....	213
	<hr/>	2,547
<hr/>		
Total, Montreal to Port Moody, Burrard Inlet.	<u>2,891</u>	

The company have extended their line by building a branch, 15 miles long, from Port Moody west to Vancouver, on Burrard Inlet. They have also a branch to New Westminster, on the River Fraser.

The beginning of the fiscal year 1886-87 found the company's line completed and in operation from ocean to ocean, the first through train having left Montreal for Port Moody on the 28th of June, 1886.

The following, though appearing in last year's Report, is here repeated, as recounting action taken during the fiscal year for the closing of matters between the Government and the company under their contract, and the several financial arrangements entered into from time to time with which the Government has been concerned, the company's indebtedness to the Government being discharged.

On the 30th of March, 1886, an agreement was entered into, subject to the approval of Parliament, by which the company undertook to pay to the Government the amount stated therein to have been actually advanced them out of the \$20,000,000 secured by first mortgage bonds, namely, \$19,150,700, which amount constituted its indebtedness, together with the interest thereon, as provided in the

Act, and the Government on its side agreed to accept a portion of the company's lands for the balance, namely, \$9,880,912, with interest, the value of such lands to be computed at \$1.50 an acre.

On the 2nd of June, 1886, assent was given to an Act 49 Vic., chap. 9, ratifying the above agreement.

Steps were at once taken to carry it into effect. On the 1st of May, 1886, the company paid \$9,987,347.28, and on the 1st of July, a further sum of \$9,163,352.72, making the total, \$19,150,700.

The amount of the balance to be covered by the acceptance of lands being \$9,880,912, or with interest up to the 1st of May, 1886, \$10,189,521.33, the land grant will be reduced by an equivalent number of acres, computed, as fixed by the Act, at \$1.50 per acre, namely, 6,793,014 acres, leaving the company's land subsidy 18,206,986 acres.

By special provision of this Act, 49 Vic., chap. 9, authority was given for the release of the security held under the terms of the company's contract to ensure the continuous operation of the road for ten years, should the retention of such security appear unnecessary in the public interest on the completion of the railway to the seaboard and its being opened for traffic. This security was \$5,000,000 of land grant bonds.

On the 2nd of November, 1886, an Order in Council was passed authorizing the closing up of all the matters outstanding between the Government and the company, and a final agreement was signed, accordingly, on the 15th and 20th of that month, comprising the acceptance by the Government of the work executed by the company, as fulfilling the conditions of their contract; the transfer to and acceptance by the company of the portions of the road constructed by the Government, subject to adjustment by the Government of deficiencies, if any, in respect of the construction of the western section; the payment to the company of the balance of their subsidy; the release of the security held for operation, and the deposit by the company with the Government of \$1,000,000 of land grant bonds as security that the company will, whenever required by the Government, improve the portion of their line passing Mount Stephen, in the Rockies. A copy of this agreement, together with the Order in Council authorizing it, will be found in the appendices on page 179.

The arrangements immediately contemplated in the above mentioned agreement have been duly carried out, and the whole road is now the property of the Canadian Pacific Railway Company.

[1887]

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PAYMENTS TO CANADIAN PACIFIC RAILWAY COMPANY.

Subsidy Account.

Amount of subsidy under the contract.....	...	\$25,000,000 00
Amount paid up to the end of the fiscal year 1882-83 (30th June, 1883)		\$7,533,076 60
Amount paid during fiscal year 1883-84		7,254,208 27
do do 1884-85		6,862,201 00
do do 1885-86		2,890,427 00
From 1st July, 1886, to 31st December, 1886 (balance).....		460,087 13
		<u>—————\$25,000,000 00</u>

CANADIAN PACIFIC RAILWAY LOAN ACCOUNT.

Exclusive of the Interest calculations.

PAYMENTS by Government to the Canadian Pacific Railway Company during the fiscal years—

1883-84.....	\$10,953,462
1884-85.....	9,701,438
1885-86.....	995,800
	<u>—————\$21,650,700</u>

To pay 3 per cent. dividends half yearly on \$65,000,000 stock up to August 17, 1893.....	7,380,912
	<u>—————</u>
	<u>\$29,031,612</u>

PAYMENTS by the Canadian Pacific Railway Company to the Government—1886.

May 1 Cash.....	\$ 9,987,347
July 1 Cash.....	9,163,353
Land purchased by the Government from the Company to cover the balance at \$1.50 per acre.....	9,880,912
	<u>—————</u>
	<u>\$29,031,612</u>

ALGOMA BRANCH, AND SAULT STE. MARIE RAILWAY BRIDGE.

By the Act 49 Vic., chap. 9 (1886), it was provided that the company might, on payment and settlement of their indebtedness to the Government, issue mortgage bonds on their line of railway, constructed and to be constructed, between their main line (at Sudbury Junction) and the Sault Ste. Marie, the proceeds to be applied to the completion of the branch and the bridge over the River St. Marie, the by-laws authorizing such issue being approved by the Governor in Council.

The company having duly passed such by-laws, they were approved by an Order in Council dated the 19th of May, 1887, and the company proceeded to construct the remaining portion of the branch, namely, from Algoma Mills to the Sault. A bridge across the River St. Marie, under the charter granted to the Sault Ste. Marie Bridge Company, has also been built. By the completion of this branch and bridge direct communication is made with the American railway system. The work has been carried on rapidly, and at the date of the present report (Dec. 31st, 1887) both the branch and the bridge are practically completed.

Under the company's contract with the Government they are entitled to receive for this branch the lands required for the road bed, stations, station grounds, etc., in so far as such lands are vested in the Crown.

COMMUNICATION EAST AND SOUTH FROM CALLANDER.

The Canadian Pacific Railway Act of 1874 made provision for the construction under subsidy of a line to connect the eastern terminus with existing or proposed railroads to the east. On the 4th of November, 1874, the subsidy of \$12,000 a mile authorized by that Act was granted by Order in Council to the Canada Central Railway Company for 120 miles of an extension of their road to a point about 85 miles from Georgian Bay (from which bay it was, at that time, proposed to run a branch line east,) the amount of this subsidy aggregating \$1,440,000. On the 18th April, 1878, an Order in Council passed, which was ratified by a resolution of the House of Commons on the 7th of May, authorizing the acceptance of a proposal made by that company to build a connecting line from their road at Pembroke westward, to a point, at the south-east corner of Lake Nipissing, further west than had originally been contemplated, for the subsidy named. The work was commenced, and the road was completed in 1883. This railway was acquired by the Canadian Pacific Railway Company, who also acquired the road between Pembroke and Ottawa, 105 miles. The company purchased in 1882 the section between Ottawa and Montreal known as the Western Division of the Quebec, Montreal, Ottawa and Occidental Railway, built and owned by the Province of Quebec, the length of this road being 120 miles, and in the year 1885 they acquired, under special statutory provision, the line of the North Shore Railway between Montreal and Quebec, also built by the Provincial Government, thus completing the line of railway communication between the coasts of the Atlantic and the Pacific.

South from Callander, communication with the Ontario railway system is made by a subsidized line, the Northern Pacific Junction Railway.

The following table shows the total length of the road on the main line completed by the company in each year so as to admit of the running of regular trains thereon :—

	Miles.	Total.
By the close of 1881.....	161	161
do 1882.....	440	601
do 1883.....	473	1,074
do 1884.....	358	1,432
do 1885.....	477	1,909
	===	===

The following shows the dates on which, by Order in Council, authority was given for the transference to the company of possession and right to operate portions of the line constructed by the Government:—

By Order in Council of the 9th of April, 1881,—the Pembina Branch and the portion between Selkirk and Cross Lake.

By Order in Council of the 12th of January, 1882,—the portion between Telford (Cross Lake) to Rat Portage.

By Orders in Council of the 2nd and 30th of April, 1883,—“Section B” from Eagle River to Kee watin (3 miles west of Rat Portage), also covering operation from Prince Arthur's Landing.

By Order in Council of the 29th of July, 1885,—Savona's Ferry, Lake Kamloops, to Port Moody.

By an Order of the 2nd of November, 1886, and an agreement thereunder of the 15th and 20th, the portions of the road constructed by the Government were transferred and conveyed to the company “free and clear of all liens and charges thereon existing or due by the Government at the time when the possession and right to run and work such portions were respectively transferred to the company by the Government,” but subject to adjustment and correction in respect of the western section.

The following shows the several statutes and agreements executed thereunder respecting the Canadian Pacific Railway Company and the Government—:

Act.	Deed.	Object.
44 Vic., ch. 1, 1881.....	21st Oct., 1880.....	Contract.
45 Vic., ch. 53, 1882.....	.....	Change of pass through Rockies.
	10th Nov., 1883.....	10 year dividend security.
47 Vic., ch. 1, 1884.....	7th March, 1884.....	Loan, \$22,500,000.
48-49 Vic., ch. 55, 1885.....	25th July, 1885.....	1st mortgage bond issue.
48-49 Vic., ch. 58, 1885.....	19th Sept., 1885.....	To acquire the North Shore Railway.
49 Vic., ch. 9, 1886.....	30th March, 1886.....	To repay loan and close accounts.

NORTH SHORE RAILWAY.

Under the provisions of the Act passed in 1885, 48-49 Vic., cap. 58, the grant of a sum of \$1,500,000 was authorized as a subsidy to secure free access to the port of Quebec for the trains and traffic of the Canadian Pacific Railway; the arrangements to be facilitated by the acquisition of the North Shore Railway by the Government from the Grand Trunk Railway by means of such subsidy, and the subsequent transfer or lease of the road to the Canadian Pacific Railway Company.

The said sum of \$1,500,000 was arrived at as follows:—

By the Act 47 Vic., ch. 8 (see No. 23), there was granted for the extension of the road from St. Martin's Junction to Quebec a subsidy not exceeding.....	\$ 960,000
Also by the same Act (see No. 34), for a line between the Jacques Cartier Union Railway Junction and St. Martin's Junction, a subsidy not exceeding.....	200,000
Also by the Act 48-49 Vic., ch. 58 (see No. 64), (which united the two above mentioned subsidies in the one object of obtaining free access for the traffic of the Canadian Pacific Railway from St. Martin's Junction to Quebec), a further subsidy not exceeding.....	340,000
Total.....	\$1,500,000
*Of this, the amount applied to the purchase of the road was.....	530,000
Balance.....	\$970,000

This balance was expended in the purchase of bonds of the road.

Under special agreements to this end, dated the 19th of September, 1885, executed under authority of an Order in Council of that date, the said road from St. Martin's Junction to Quebec was acquired by the Government and transferred to the Canadian Pacific Railway Company.

Attached to the present report will be found diagrams, prepared by the Chief Engineer of Government Railways, showing in comparative form the length of the several trans-continental routes from Liverpool to Yokohama, Japan, and Shanghai, China. The speed by rail is reckoned at 32 miles an hour, and by steamer at 16 miles.

*A further sum of \$35,373.04 was temporarily paid by the Government to the Grand Trunk Railway Company on account of fuel taken over. This amount has to be refunded by the Canadian Pacific Railway Company.

GOVERNMENT RAILWAYS IN OPERATION.

The several lines operated and maintained by the Government during the past fiscal year, ended the 30th June, 1887, were :—

	Miles.
The Intercolonial and its extensions.....	880
Eastern Extension Railway.....	80
Windsor Branch (maintained only).....	32
Prince Edward Island.....	212
	<hr/>
Total mileage.....	1,204
	<hr/> <hr/>

Details respecting these railways and their operation will be found in Appendix No. 5, p. 10, from the Chief Engineer and General Manager, and in the following appendices from the Chief Superintendent and other officials of the road.

The through ocean mail line from Point Lévis, Quebec, to Halifax, is 688 miles in length.

The length of roads operated was increased by the completion of the Indian-town Branch of the Intercolonial, fourteen miles in length.

The General Revenue Accounts for 1886-87 show the following as the financial position of these roads for the past fiscal year. The average length of road operated for the whole fiscal year was 1,191 miles, the Indian town branch not having been opened until the 1st of December, 1887 :—

—	Expenditure.	Earnings.	Profit.	Loss.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Intercolonial	2,828,115 58	2,596,009 83	.....	232,105 75
Eastern Extension.....	94,254 04	64,107 10	.....	30,146 94
Windsor Branch (earnings, one third of entire receipts).....	26,042 33	25,327 58	.....	714 75
Prince Edward Island.....	204,237 45	155,303 37	.....	48,934 08
				<hr/>
Total loss on working.....	.....	.....	.....	311,901 52

 INTERCOLONIAL RAILWAY.

LENGTH OF LINE.

Ocean Mail Line.

	Miles.
Point Lévis 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
Dalhousie Junction to Dalhousie.....	7
St. Charles Loop Line.....	14
Dartmouth Branch.....	5
Indiantown Branch.....	14
	— 192
	—
	880
	==

Wharf 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
Rivière du Loup Town to Wharf.....	4
	—
	10.5
	==

Capital Account.

The total cost of the road and equipment chargeable to capital account at the close of the fiscal year, 1885-86, according to last year's report, was.....\$44,172,743.16]

The expenditure charged to capital account for the year ended 30th June, 1887, is as follows :—

[1887]

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Halifax extension.....	\$ 12,613 07	
Increased accommodation, St. John.....	18,547 66	
Settlement of claims connected with the original construction of the Intercolonial Railway	4,146 35	
For rolling stock.....	67,516 37	
Sleeping cars.....	14,237 11	
Applying air brakes to locomotives.....	78,506 94	
St. Charles Branch.....	230,103 79	
Dartmouth Branch.....	5,334 92	
Dalhousie Branch.....	2,082 50	
Rivière du Loup Town Branch.....	6,938 87	
Indiantown Branch.....	9,141 45	
Pictou Town Branch.....	248,133 48	
Amount paid on judgment in case of Windsor and Annapolis Railway vs. Western Counties' Railway and the Queen.....	125,936 75	
		<u>\$823,239 26</u>
Making the total cost up to 30th June, 1887.....	\$14,995,982 42	<u><u></u></u>

Revenue Account.

The gross earnings for the year were.....	\$2,596,009 83
The working expenses were.....	2,828,115 58
	<u>Excess of expenditure over earnings..... \$ 232,105 75</u>
The gross earnings, compared with those of the previous year, show an increase of.....	<u><u>\$ 212,809 06</u></u>
The value of the stores in hand, including steel rails and fuel, at the end of the year 1886-1887, was..	<u><u>\$ 678,109 97</u></u>

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

	Miles.
1886-87.....	5,466,488
1885-86.....	4,823,353
Increase.....	<u><u>643,135</u></u>

The car mileage, compared with that of last year, was:—	
1886-87	52,001,928
1885-86	47,211,083
Increase.....	4,790,845
The train mileage, compared with that of last year, was:—	
1886-87	4,512,599
1885-86	4,039,877
Increase	472,722
The working expenses per mile run by engines, were:—	
	Cents.
1886-87	51·74
1885-86	51·61
Increase	0·13
The working expenses per mile run by trains, were:—	
1886 87	62·67
1885 86	61·61
Increase	1·06
Expense per mile of railway:—	
1886 87	3,265 72
1885-86	2,891 10
Increase	374 62
The gross tonnage carried was:—	
	Tons.
1886-87	1,131,334
1885-86	1,008,545
Increase	122,789
The total number of passengers carried was:—	
1886-87	940,144
1885-86	889,864
Increase	50,280

Compared with last year there was an increase of 50,280 in the number of passengers and an increase of 12,789 tons in the freight carried, an increase also of \$212,809.06 in the earnings of the road. The expenditure exceeded the receipts, and that by a considerable sum, \$232,105.75, but as in former years, the working expenses of the Intercolonial have been charged with the cost of works of improvement and addition of a character usually placed to the capital account, and to this cause is largely due the extent of the year's expenditure. The exceptionally severe snow storms of the winter also entailed heavy cost; the direct expenditure for clearing snow being \$92,000, over double the average cost for the last six years, while the indirect cost may be set down as at least \$100,000.

The expensive work of substituting 67 lb. steel rails for the 56 lb. rails in use, has been continued; 78 miles having been laid with the heavier rail.

One hundred and forty-three miles of new fences of improved pattern were built during the year; 40 new sidings were put in, and various other means were adopted for increasing the efficiency and security of the road, as to which the detail reports to be found in the annexed appendices give evidence.

The freight traffic increase of the year has extended to the following important articles, amongst others:—Flour, grain, lumber, live stock and coal. With regard to the last named, the development of which is a matter of peculiar interest both to the coal producing districts and the Upper Provinces, there has been a steady increase throughout the last few years, the quantity carried last year being 175,512 tons as against 165,791 in the previous year, and 570 tons in the year 1879. The low rate charged for transport and the distance of haulage of cars back to the mines, empty, render this branch of traffic, though advantageous to the country, unenumerative to the road.

The sleeping car service has been conducted by the Department, and the extension of the system to the second class passenger travel has been found to work to their comfort and satisfaction. Sleeping cars are being provided in the trains meeting the mail steamers at Rimouski in summer and Halifax in winter. This mail train service during the summer has been carried on with a speed and regularity which, in the winter months, owing to the heavy snow storms affecting the road, it was found impossible always to maintain.

On page 11 of the appendices will be seen a table showing the extent of the freight and passenger traffic year by year since the year 1876-77 (when the railway was opened as a through trunk line) together with the yearly earnings. Its study will give an interesting general view of the business of the road during this period.

WINDSOR BRANCH.

The Windsor and Annapolis Railway Company are permitted to continue the operations of this line, which is 32 miles in length; the arrangement being that the
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company pay all charges in connection with the working ; two-thirds of the gross earnings being allowed them for such purpose, the Government taking the remaining one-third, and assuming all cost of maintenance.

All charges for superintendence and supervision of maintenance of works are borne by the Intercolonial, whose chief officer performs the duty.

The earnings and expenditure for the year ended the 30th June, 1887, were as follows :—

Expenditure for maintenance of way and works.....	\$26,042 33
Gross earnings accruing to the Government.....	25,327 58
Excess expenditure.....	715 75
Government earnings, in comparison with those of the previous year :—	
1886-87	\$25,327 58
1885-86	23,658 11
Increase	1,669 47
Expenditure in comparison with that of the previous year :—	
1886-87	\$26,042 33
1885-86	19,229 49
Increase.....	\$ 6,812 84

The additional cost of the year's operations is due to the substitution of steel for iron rails on a portion of the road, the construction of a new station and freight house, and the laying of new sidings.

The line is in good order.

EASTERN EXTENSION RAILWAY.

This line of railway is eighty miles long, extending from the Pictou Branch of the Intercolonial Railway, at New Glasgow to Port Mulgrave on the Strait of Canso, thence connecting with Cape Breton by means of a ferry.

The line, with its equipment, was, on the 9th January, 1884, purchased by the Dominion Government from the Government of the Province of Nova Scotia, together with rights possessed by that Government in the Pictou Branch between Truro and Pictou ; also, the ferry built for the passage of the Strait of Canso.

The road is worked by a staff directed by the chief officers of the Intercolonial.

The cost of the road and equipment amounted on the 30th June, 1887, to \$1,284,495 76, no addition having been made to capital amount during the year.

The expenditure of the year amounted to.....	\$94,254 04
The gross earnings were.....	64,107 10
Loss.....	\$30,146 94

The earnings of the road, in comparison with those of the year 1885-86, show a decrease of \$2,786.01, the cause operating adversely last year being still in force, namely, the absence of the large fish traffic from the Straits of Canso; American fishermen being barred from landing their fish in Canada.

The expenditure during the past fiscal year was somewhat less than that of the previous year. It comprised the sum of \$28,980.65 for renewals of ties and fencing.

The facilities for communication between Port Mulgrave and Halifax have been improved by the running of a through train, to the advantage of Cape Breton travel.

INDIANTOWN BRANCH.

This branch of the Intercolonial extends from Derby Station, on that road, up the South-West Miramichi River to Indiantown, a distance of 14 miles. The work was placed under contract in September, 1884. It is now completed and in operation.

PICTOU TOWN BRANCH.

In the session of 1886, Parliament voted an appropriation towards the construction of a branch of the Intercolonial Railway, from a point at or near Stelarton to the town of Pictou. On the 17th of November an Order in Council was passed approving of a location by the adoption of which the length of the line will be 13.84 miles, and authorizing the proceeding with the work. Contracts were accordingly entered into on the 22nd of December, 1886, to this end. Though not fully completed at the close of the fiscal year, the work was far advanced.

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.

	Miles.
Cape Traverse Branch, County Line Station to Cape Traverse.....	13
Royalty Junction to Charlottown.....	5
Mount Stewart to Souris.....	39
	<u>57</u>
	<u>211½</u>

Capital Account.

The total cost of the road and equipment chargeable to capital account at the close of fiscal year 1885-86 was.....	\$3,735,980 89
The expenditure charged to this account for the year ended the 30th June, 1887, being the amount expended on new coal shed and extension of yard at Charlottetown.....	5,800 00
Total expenditure on capital account to the 30th of June, 1887.....	<u>\$3,741,780 89</u>

Revenue Account.

The working expenses and receipts for the year ended 30th of June, 1887, were :—	
Gross expenses.....	\$ 204,237 45
Gross earnings.....	155,303 37
Excess of expenditure over earnings.....	<u>\$ 48,934 08</u>
The gross earnings, compared with those of the previous year, were :—	
1885-1886.....	\$ 155,584 36
1886-87.....	155,303 37
Decrease.....	<u>\$ 280 99</u>
The gross expenditure, compared with that of the previous year, was :—	
1885-86.....	\$ 216,744 34
1886-87.....	204,237 45
Decrease.....	<u>\$ 12,506 89</u>

The engine mileage was :

	Miles.
1886-87... ..	316,763
1885-86... ..	310,434
	<hr/>
Increase.....	6,329
	<hr/> <hr/>

The train mileage was :—

1885-86.....	249,848
1886-87.....	248,864
	<hr/>
Decrease.....	984
	<hr/> <hr/>

The car mileage was :—

1885-86.....	1,235,647
1886-87.....	1,249,892
	<hr/>
Increase.....	14,245
	<hr/> <hr/>

The value of the stores on hand on the 30th June, 1887, was \$114,155.01.

The road and its equipments have been satisfactorily maintained throughout the year.

CAPE TRAVERSE BRANCH.

This line was opened for traffic on the 22nd January, 1885. Its object is to facilitate communication between the Prince Edward Island Railway and the Intercolonial. The branch leaves the island railway at County Line station and runs to Cape Traverse, a distance of thirteen miles. Across the strait to Cape Tormentine, on the mainland, the distance is nine miles. Here, by the line of the New Brunswick and Prince Edward Island Railway Company, about forty miles in length, connection is made with the Intercolonial Railway at Sackville. In winter time the ice-boats land at Cape Traverse. This ice-boat service is conducted by the Marine Department, the mails being taken to and met at Cape Traverse by special trains. The working of this service is satisfactory.

CARLETON BRANCH RAILWAY.

In the year 1885 Parliament voted the sum of \$85,000 "to purchase the Carleton Branch Railway, with harbour frontage, wharf and town lots and all other property of the company" owning the road, "the Carleton, City of St. John Branch Railroad Company," the said road extending from Fairville, where it joins the line of the New Brunswick Railway Company, to Carleton on the south side of the

River St. John, N.B., a distance of $3\frac{6}{10}$ miles. In the following year, an Act, 49 Vic., chap. 16, was passed, reciting that 4,700 out of the 5,000 shares of the company's capital stock had been purchased by the Government; declaring the work to be one for the general advantage of Canada, and authorizing the issue of a proclamation either with or without the purchase of the outstanding shares, vesting the road in the Crown.

By October, 1887, the whole of the remaining shares were acquired, with the exception of 33, the value of which is \$552, and a proclamation was issued on the 5th October, 1887, under the authority of an Order in Council of the same date declaring the road vested in the Crown from and after the 8th of that month. By an agreement dated the 1st of January, 1886, an interchange of running powers between the Intercolonial Railway and the New Brunswick Railway Company over the Carleton Branch Railway and the portion of the line of the company, namely, between Fairville and the St. John Cantilever Bridge, respectively, has been effected.

SUBSIDIZED LINES.

By the Acts of Parliament below specified, authority has been placed in the hands of the Governor in Council to grant, upon certain conditions, pecuniary aid towards the construction of various lines of railway throughout the Dominion, as follows, namely:—

By the Act 45 Vic., cap. 14 (1882). (*Assented to 17th May, 1882*):—

1. 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
(NOTE.—*Further subsidized by 46 Vic., ch. 25.*)
2. 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
(NOTE.—*Further subsidized by 46 Vic., ch. 25; 48-49 Vic., ch. 59; 49 Vic., ch. 10, and 50-51 Vic., ch. 24.*)
3. 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
(NOTE.—*Further subsidized by 48-49 Vic., ch. 58.*)
4. 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
(NOTE.—*Further subsidized as part of a line to Sydney or Louisburg by 47 Vic., ch. 8.*)

The said subsidies to be granted 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, and to be payable out of the Consolidated Revenue Fund of Canada, by instalments on the completion of each ten miles of railway, proportionate to the value of the portion so completed in comparison with the whole work undertaken, such proportion to be established by the report of the said Minister; provided always, that the granting of such bonuses or subsidies, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting therewith, as the Governor in Council may determine.

By the special Act 45 Vic., cap. 55 (1882). (*Assented to 17th May, 1882*):—

5. A subsidy authorized in favour of "The Chignecto Marine Transport Railway Company," provided that they construct and thereafter maintain and operate a ship railway, to be approved by the Government, across the Isthmus of Chignecto from the Gulf of St. Lawrence to the Bay of Fundy, per year, for twenty-five years..... \$150,000
(NOTE.—Amended by the special Act 49 Vic., ch. 18.)

By the Act 46 Vic., cap. 25 (1883). (*Assented to 25th May, 1883*):—

6. To the Baie des Chaleurs Railway Company, for 100 miles of their railway, from Matapedia, on the Intercolonial Railway, to Paspébiac, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 320,000
(NOTE.—See also 49 Vic., ch. 17, as to additional vote.)
7. To the Caraquet Railway Company, for 36 miles of their railway, from a point near Bathurst to Caraquet, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 115,200
(NOTE.—Further subsidized by 47 Vic., ch. 8, and 50-51 Vic., ch. 24.)
8. To the Gatineau Valley Railway Company, for the first 50 mile section of their railway, from Hull Station, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 160,000
(NOTE.—Cancelled by 48 49 Vic., ch. 59.)
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9. To the Great American and European Short Line Railway Company, for 80 miles of their railway from Canso to Louisburg or Sydney, in the Province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 256,600
 (NOTE.—*This was amended by the Act 47 Vic., cap. 8, sec. 2, the words "To the Great American and European Short Line Railway Company" being struck out, and the word "the" being inserted for the word "their" and the words and figures "for 80 miles of" being omitted. The line was further subsidized by 47 Vic., ch. 8, as part of a line from Oxford Station to Sydney or Louisbourg, finally authorized as a Government work by Act 49 Vic., ch. 14.*)
10. To the International Railway Company, for 49 miles of their railway from Sherbrooke, in the Province of Quebec, to the International boundary line, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 156,800
 In connection with the extension of this road through Maine to connect with New Brunswick, at or near Vanceborough or south of that point.
11. To the Northern and Western Railway Company, for 32 miles of their railway, from the Intercolonial Railway, near the Miramichi, to Moran's, near Demphy Village, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 102,400
 (NOTE.—*Cancelled by 47 Vic., ch. 8.*)
12. To the Montreal and Western Railway Company, for the first 50 mile section of their railway, out of St. Jérôme, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 160,000
 (NOTE.—*Cancelled by 49 Vic., ch. 10.*)
13. To the Napanee, Tamworth and Quebec Railway Company, for 28 miles of their railway, from Napanee to Tamworth, in the Province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 89,600
14. To the Quebec and Lake St. John Railway Company, for 25 miles of their railway, from St. Raymond to Lake St. John, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 80,000
 In addition to the subsidy granted by the Act forty-fifth Victoria, chapter fourteen.
 (NOTE.—*Further subsidized by the Act 43-49 Vic., ch. 59, 49 Vic., ch. 10, and 50-51 Vic., ch. 24.*)

- 15.** For a railway from the Intercolonial Railway at Petitcodiac to Havelock Corner, in the Province of New Brunswick, 12 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
- 16.** For a railway from Gravenhurst to Callander, 110 miles, a subsidy not exceeding \$6,000 per mile, nor exceeding in the whole..... 660,000
In addition to the subsidy granted by the Act forty-fifth Victoria, chapter fourteen.

“The nine subsidies first mentioned to be granted to the companies hereinbefore named respectively; and the two subsidies last mentioned to be granted 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; and all the eleven lines above mentioned, and also the lines of railway in respect of which it is provided by the Act forty-fifth Victoria, chapter fourteen, that subsidies may be granted, shall be commenced within two years from the first day of July next, and completed within a reasonable time, not to exceed four years from and after the passing of this Act, 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 each company with the Government, and which the Government is empowered to make; and all the said subsidies authorized by this Act, respectively, to be paid out of the Consolidated Revenue Fund of Canada by instalments, on the completion of each section of not less than ten miles of railway, proportionate to the value of the portion so completed in comparison with the whole work undertaken, to be established by the report of the said Minister: Provided always, that the granting of such subsidies shall be subject to such conditions for securing such running powers or traffic arrangements and other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized as the Governor in Council may determine.”

By the special Act 46 Vic., cap. 26 (1883). (*Assented to 25th May, 1883*):—

- 17.** An advance authorized in favour of the “St. John Bridge and Railway Extension Company,” to enable them to build a railway bridge across the River St. John, N.B., with railway connection with the Intercolonial, such advance to be secured by a mortgage on their entire property, not to exceed 80 per cent. of the expenditure on the work, nor a total sum of.....\$ 500,000

By the Act 47 Vic., cap. 8 (1884). (*Assented 19th April, 1884*):—

- 18.** To the Government of the Province of Quebec, in consideration of their having constructed the railway from Quebec to Ottawa, forming a

connecting line between the Atlantic and Pacific coasts *via* the Intercolonial and Canadian Pacific Railway, and being as such a work of national and not merely provincial utility, a subsidy not exceeding \$6,000 per mile for the portion between Quebec and Montreal, 150 miles, nor exceeding in the whole..... 954,000

19. And for the portion between Montreal and Ottawa, 120 miles, \$12,000 per mile, nor exceeding in the whole.....1,440,000

20. For the construction of a line of railway connecting Montreal with the harbours of St. John and Halifax by the shortest and best practicable route, after the report of competent engineers, a subsidy not exceeding \$170,000 per annum, for fifteen years, or a guarantee of a like sum for a like period as interest on bonds of the company undertaking the work, per year for fifteen years..... 170,000

(NOTE.—*Further subsidized by the Act 48-49 Vic., ch. 58, sec. 1, sub-sec. 2.*)

21. For the construction of a line of railway from Oxford Station, on the Intercolonial Railway, to Sydney or Louisburg, a subsidy not exceeding \$30,000 per annum for fifteen years, or a guarantee of a like sum for a like period as interest on the bonds of the company undertaking the work, in addition to the subsidies previously granted, and also a lease or transfer to such company of the Eastern Extension Railway, from New Glasgow to Canso, with its present equipment, per year for 15 years..... 30,000

(NOTE.—*Authorized as a Government work by 49 Vic., ch. 14.*)

22. To the Quebec Central Railway Company, for a line of railway from Beauce Junction to the International boundary line, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 211,200

23. For the extension of the Canadian Pacific Railway, from its terminus at St. Martin's Junction, near Montreal, or some other point on the Canadian Pacific Railway, to the harbour of Quebec, in such manner as may be approved by the Governor in Council, a subsidy not exceeding \$6,000 per mile, nor exceeding in the whole..... 960,000

(NOTE.—*Further subsidized by the Act 48-49 Vic., ch. 58, sec. 2. See also, below, subsidy for line between Jacques Cartier Junction and St. Martin's Junction, both subsidies being united by the Act last named.*)

24. To the Irondale, Bancroft and Ottawa Railway Company, for a line of railway from the Victoria branch of the Midland Railway, to the village of Bancroft, in the township of Dungannon, county of Hastings, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 160,000

- 25.** To the Pontiac Pacific Junction Railway for a line of railway from Hull or Aylmer to Pembroke, provided the Ottawa river is crossed at some point not east of Lapasse, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 272,000
- 26.** To the Gatineau Railway Company, for a line of railway from Kazabazua to Le Desert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 160,000
(NOTE.—Cancelled by Act 48-49 Vic., ch. 59.)
- 27.** To the Napanee, Tamworth and Quebec Railway Company, for a line of railway from Tamworth to Bogart and Bridgewater, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 70,400
(NOTE.—Cancelled by Act 48-49 Vic., ch. 59.)
- 28.** To the Montreal and Western Railway Company, for a line of railway from the end of the line subsidized in the now last Session of Parliament, towards Le Desert, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 160,000
(NOTE.—Cancelled by 49 Vic., ch. 10.)
- 29.** To the Northern and Western Railway Company, for a line of railway from Fredericton to the Miramichi River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (instead of the subsidy proposed in 1883)..... 128,000
(NOTE.—Further subsidized by 48-49 Vic., ch. 59, and by 49 Vic., ch. 10.)
- 30.** To the Erie and Huron Railway Company, for a line of railway from Wallaceburg to Sarnia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 96,000
- 31.** To the Ontario and Pacific Railway Company, for a line of railway from Cornwall to Perth, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 262,400
NOTE.—Further subsidized by 50-51 Vic., ch. 24.)
- 32.** To the Kingston and Pembroke Railway Company, for a line of railway from Mississipi to Renfrew, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 48,000
- 33.** To the Great Northern Railway Company, for that portion of their railway between St. Jérôme and New-Glasgow, in the county of Terrebonne, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 32,000

- 34.** For a line of railway and bridge between the Jacques Cartier Union Railway Junction with the Canadian Pacific Railway and St. Martin's Junction, connecting the Jacques Cartier Union Railway with the North Shore Railway proper, a subsidy not exceeding in the whole..... 200,000
(NOTE.—See Act 48-49 Vic., ch. 58, sec. 2.)
- 35.** For a line of railway from Richibucto to St. Louis, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 22,400
- 36.** For a line of railway from Hopewell to Alma, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 51,200
- 37.** For a line of railway from St. Andrews to Lachute, in the county of Argenteuil, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 22,400
(NOTE.—Cancelled by 49 Vic., ch. 10.)
- 38.** For a line of railway from the Grand Piles, on the River St. Maurice, to Lake Edward, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 217,600
(NOTE.—Cancelled by 48-49 Vic., ch. 59.)
- 39.** For a line of railway from Annapolis to Digby, in the Province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 64,000
(NOTE.—See arrangements authorized by Act 50-51 Vic., ch. 25.)
- 40.** For a line of the Central Railway, from the head of Grand Lake to the Intercolonial Railway, between Sussex and St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 128,000
- 41.** To the Caraquet Railway Company, for the extension of their line of railway from Caraquet to Shippegan Harbor, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 76,800
(NOTE.—In addition to subsidy granted by 46 Vic., ch. 25 ; further subsidized by 50-51 Vic., ch. 24.)
- 42.** For a branch of the Intercolonial Railway, from Matapediac eastward towards Pasbebiac, twenty miles, in the Province of Quebec, a sum not exceeding in the whole..... 300,000
- 43.** For a branch of the Intercolonial Railway, from Derby Station to Indiantown, fourteen miles, a sum not exceeding in the whole... 140,000
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“The subsidies hereinbefore mentioned as to be granted to companies named for that purpose, shall be granted to such companies, respectively; the other subsidies shall be granted to such companies as shall be approved by the Governor in Council as having established, to his satisfaction, their ability to construct and complete the said railways, respectively. All the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of July next and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, except the line mentioned in the fourth section of this Act, which shall be commenced within one year, and shall also be constructed according to descriptions and specifications and upon conditions 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 in each case by the company with the Government, and which the Government is hereby empowered to make; the location also of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed, in comparison with that of the whole work undertaken, to be established by the report of the said Minister. The subsidies to the Province of Quebec shall be capitalized and the interest shall be payable at such time and in such manner as the Government of Canada shall agree upon with the Government of the said Province. The two subsidies last mentioned in the list are for works to be constructed by the Government of Canada.

“Provided always, that the granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized as the Governor in Council may determine.”

By the special Act 47 Vic., cap. 6 (1884). (*Assented to 19th April, 1884*):—

44. Relating to an agreement with the Province of British Columbia, authority was given *inter alia* for the grant of a subsidy to “the Esquimalt and Nanaimo Railway Company” in aid of the construction of a line of railway and telegraph between the points named; such subsidy to be in lands *en bloc* on Vancouver Island, the boundaries being fixed by the Act, and in money..... \$750,000

By the Act 48-49 Vic., cap. 59 (1885). (*Assented to 20th July, 1885*):—

45. To the Ottawa, Waddington and New York Railway and Bridge Company, for a line of railway from Ottawa to Waddington, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 166,400

- 46.** To the New Brunswick and Prince Edward Railway Company, for a line of railway from Sackville to the Straits of Northumberland, at or near Cape Tormentine, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 118,400
- 47.** To the Montreal and Sorel Railway Company, for a line of railway from St. Lambert to Sorel, a subsidy not exceeding \$1,600 per mile, nor exceeding in the whole 72,000
- 48.** To the Brockville, Westport and Sault Ste. Marie Railway Company, for a line of railway from Brockville to Westport, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 128,000
- 49.** To the Quebec and Lake St. John Railway Company, for a line of railway from its junction on the North Shore Railway to St. Raymond, upon condition of the Company extending their road to a point 50 miles north of St. Raymond, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 96,000
- (NOTE.—*In addition to the subsidy granted by the Acts 45 Vic., ch. 14 and 46 Vic., ch. 25.*)
- 50.** To the Northern and Western Railway Company, for a line of railway from the northern end of the 40 miles subsidized between Fredericton and the Miramichi River by 47 Victoria, chapter 8, to Boiestown, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.. 19,200
- 51.** To the Montreal and Champlain Junction Railway Company, for a line of railway from Brosseau's to Dundee, a subsidy not exceeding \$300 per mile, nor exceeding in the whole..... 30,000
- (NOTE.—*Further subsidized by Act 50 51 Vic., ch. 24.*)
- 52.** To the Thunder Bay Colonization Railway Company, for a line of railway from the Murillo station of the Canadian Pacific Railway to the east end of Whitefish Lake, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 92,000
- 53.** To the Central Ontario Railway Company, for a line of railway from Coe Hill or Rathburn, to Bancroft, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole... 64,000
- 54.** To the Belleville and North Hastings Railway Company, for a line of railway from the village of Madoc to the junction with the Central Ontario Railway at Eldorado, a subsidy not exceeding \$1,500 per mile, nor exceeding in the whole..... 10,500

(NOTE.—*Further subsidized by 49 Vic., ch. 10.*)

- 55.** For a line of railway from Long Sault to the foot of Lake Temiscamingue, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 25,600
 (NOTE.—Further subsidized by 49 Vic., ch. 10, and the whole amended by the Act 50-51 Vic., ch. 24.)
- 56.** For a line of railway from a point on the Canada Southern Railway near Comber, to Lake Erie, at or near the village of Leamington, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 44,800
 (NOTE.—Further subsidized by the Act 50-51 Vic., ch. 24.)
- 57.** To the Napanee, Tamworth and Quebec Railway Company, for a line of railway from Tamworth towards Bogart and Bridgewater, 16 miles, in lieu of the subsidy granted by 47 Vic., chap. 8, a subsidy of..... 70,000
 (NOTE.—Cancelled by Act 49 Vic., ch. 10.)
- 58.** To the Gatineau Railway Company, for a line of railway from Hull station towards Le Desert, a distance of 62 miles, in lieu of the subsidies granted by 46 Victoria, chapter 25, and 47 Victoria, chapter 8, a subsidy of..... 320,000
 (NOTE.—Substituted.)
- 59.** For a line of railway from the Grand Piles, on the River St. Maurice, to its junction with the Lake St. John Railway, a distance of about 50 miles, in lieu of the subsidy granted by 47 Victoria, chapter 8, for a line of railway from the Grand Piles, on the River St. Maurice, to Lake Edward, a subsidy of..... 217,600
 (NOTE.—Cancelled by Act 50-51 Vic., ch. 24.)
- 60.** To the Canada Atlantic Railway Company, for a line of railway from Valleyfield to a point one and a half miles west of Johnson's, a subsidy not exceeding \$1,600 per mile, and from one and a half miles west of Johnson's to Lacolle; also from the present terminus at Ottawa to the Chaudière Falls, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 96,000
 (NOTE.—Further subsidized by 49 Vic., ch. 10 and for their bridge over the St. Lawrence by 50-51 Vic., ch. 24.)
- 61.** For a line of railway from Indiantown *vid* the Miramichi Valley, to its junction with the Northern and Western Railway at or near Boies-town, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 140,800

“ The subsidies hereinbefore mentioned as to be granted to companies named for that purpose, shall be granted to such companies, respectively; the other subsidies shall be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways, respectively. All the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council; and shall also be constructed according to descriptions and specifications and upon conditions 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 in each case by the Company with the Government, and which the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies, respectively, shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister :

“ Provided always, that the granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council may determine.”

By the Act 48-49 Vic., cap. 58 (1885). (*Assented to 20th July, 1885*) :—

62. “ For a railway from a point on the Intercolonial Railway at Rivière du Loup or Rivière Ouelle, in the Province of Quebec, to Edmuntston, in the Province of New Brunswick, a subsidy not exceeding two thousand eight hundred dollars per mile for seventy-five miles, and six thousand dollars per mile for eight miles, nor exceeding in the whole two hundred and fifty-eight thousand dollars; the said subsidy to be in addition to the subsidy authorized to be granted in aid of the construction of the said railway by the Act forty-fifth Victoria, chapter fourteen, and constituting, with the subsidy so authorized, a subsidy not exceeding in the whole four hundred and ninety-eight thousand dollars, and to be granted for the said railway upon the terms and conditions specified in the said Act, and payable out of the Consolidated Revenue Fund of Canada; and for the purpose of incorporating the persons undertaking the construction of the said railway and those who shall be associated with them in the undertaking, the Governor may grant to them under such

corporate name as he shall deem expedient, a charter conferring upon them the franchises, privileges and powers requisite for the said purposes, which shall be similar to such of the franchises, privileges and powers granted to railway companies during the present Session as the Governor shall deem most useful or appropriate to the said undertaking; and such charter, being published in the *Canada Gazette*, with any Order or Orders in Council relating to it, shall have force and effect as if it were an Act of the Parliament of Canada" (additional)..... \$258,000

63. "For a line of railway from the south bank of the St. Lawrence River, opposite or near Montreal, to the harbors of St. Andrews, St. John and Halifax, *vid* Sherbrooke, Moosehead Lake, Mattawamkeag, Harvey, Fredericton and Salisbury, a subsidy not exceeding eighty thousand dollars per annum for twenty years, forming the whole together with the subsidy authorized by the Act forty-seventh Victoria, chapter eight, for a line of railway connecting Montreal with the said harbors of St. John and Halifax by the shortest and best practicable route, which the line above described is found to be, a subsidy not exceeding two hundred and fifty thousand dollars per annum, the whole of which shall be paid in aid of the construction of such line of railway for a period of twenty years, or a guarantee of a like sum for a like period as interest on the bonds of the company undertaking the work: the said subsidy to be so granted upon the terms and conditions of, and payable out of the Consolidated Revenue Fund in the manner specified in the said last mentioned Act in respect of the subsidy thereby authorized in aid of the said line of railway." Per year for twenty years (additional) 80,000

64. "The Governor in Council may grant a further subsidy as an aid towards procuring free access as hereinafter described for the trains and traffic of the Canadian Pacific Railway Company from St. Martin's Junction, near Montreal, or from some other point on their railway to be selected by the said company, to the harbor of Quebec, in such manner as shall be approved by the Governor in Council, that is to say: an additional subsidy not exceeding three hundred and forty thousand dollars, constituting, together with the subsidy authorized by the said last mentioned Act to aid in procuring the extension of the Canadian Pacific Railway to Quebec, and the subsidy also thereby authorized to aid in constructing a line connecting the Canadian Pacific Railway at the Jacques Car-

tier Union Junction with the North Shore Railway proper (which subsidies shall be applicable to the said first mentioned purpose) a sum not exceeding in the whole the sum of one million five hundred thousand dollars, payable out of the Consolidated Revenue Fund of Canada" (*additional*)..... 340,000

The said Act further provided as follows in relation to this matter:—

"If it should be expedient so to do in order to facilitate such access, the Governor in Council may acquire the North Shore Railway, and may apply the said sum of one million five hundred thousand dollars, or any part thereof, in aid of such acquisition; and upon such acquisition may transfer and convey or lease the said railway to the Canadian Pacific Railway Company, subject to such obligations as the Government shall have assumed in acquiring it."

By the Act 49 Vic., cap. 10 (1886). (*Assented to 2nd June, 1886*):

- 65. For a railway from a point at or near Moncton, to Buctouche, in the Province of New Brunswick, thirty miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$ 96,000
(NOTE.—*Further subsidized by 50-51 Vic., ch. 24.*)
- 66. For a railway from Ingersoll *viâ* London to Chatham, in the Province of Ontario, eighty miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 256,000
- 67. To the Northern and Western Railway Company for ten miles of their railway, intervening between the termini of the portions of their railway for which subsidies are already granted, the one from Fredericton and the other from Indiantown, and an extension of two miles down to deep water at Chatham, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 32,000
(NOTE.—*In addition to subsidies granted by Acts 47 Vic., ch. 8, and 48-49 Vic., ch. 59.*)
- 68. To the Caraquet Railway Company, for ten miles of their railway from the end of the present subsidized portion at Lower Caraquet to Shippegan, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 32,000
(NOTE.—*In addition to subsidies granted by 46 Vic., ch. 25, and 47 Vic., ch. 8. This addition was cancelled by 50-51 Vic., ch. 24.*)
- 69. To the Lake Erie, Essex and Detroit River Railway Company, for thirty-seven miles of their railway, from Windsor to Leamington, in the Province of Ontario, a subsidy not exceeding \$3,200 per per mile, nor exceeding in the whole.....,..... 118,400
(NOTE.—*Cancelled by Act 50-51 Vic., ch. 24.*)

- 70.** To the Thunder Bay Colonization Railway Company, for fifty-six miles of their railway, from the end of the present subsidized section to a point near Crooked Lake, in the Province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 179,200
- 71.** To the Parry Sound Colonization Railway Company, for forty miles of their railway, from the Village of Parry Sound to the Village of Sandridge, on the line of the Northern Pacific Junction Railway, in the Province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 128,000
- 72.** For a railway from a point at or near New Glasgow or St. Lin, to or near to Montcalm, in the Province of Quebec, eighteen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 57,600
- 73.** For a railway from Hereford to the International Railway, in the Township of Eaton, in the Province of Quebec, thirty-four miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole. 108,800
- 74.** For a railway from St. Félix to Lake Maskinongé, Parish of St. Gabriel, in the Province of Quebec, ten miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 32,000
- 75.** For a railway from Glenannan to Wingham, in the Province of Ontario, five miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 16,000
- 76.** For a railway from a point at or near the McCann Station on the Intercolonial Railway, to the Joggins, on Cumberland Basin, in the Province of Nova Scotia, twelve miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 38,400
(NOTE.—Further subsidized by Act 50-51 Vic., ch. 24.)
- 77.** For a railway from L'Assomption to L'Epiphanie, in the Province of Quebec, three miles and a half, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 11,200
- 78.** To the Montreal and Western Railway Company, for seventy miles of their railway from St. Jérôme, north-westerly towards Desert, in the Province of Quebec, a subsidy of \$5,161 per mile, in lieu of the subsidies granted by 46 Victoria, chapter 25, and 47 Victoria, chapter 8, not exceeding in the whole..... 361,270

NOTE.—Substituted)

- 79.** For a railway from St. Andrews to the Canadian Pacific Railway at or at any point east of the Town of Lachute, in the County of Argenteuil, in the Province of Quebec, seven miles, in lieu of the subsidy granted by 47 Victoria, chapter 8, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 22,400
(NOTE.—*Substituted*)
- 80.** To the Canada Atlantic Railway Company, for twelve miles of their railway from Clark's Island to Valleyfield and from Lacolle, in the Province of Quebec, to the International boundary, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
(NOTE.—*In addition to the subsidy granted by 48-49 Vic., ch. 59; also further subsidized by 50-51 Vic., ch. 24, for a bridge across the St. Lawrence.*)
- 81.** For a railway from Truro to Newport, in the Province of Nova Scotia, forty-nine miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 156,800
- 82.** To the Quebec and Lake St. John Railway Company, for ninety-five miles of their railway, from a point fifty miles north of St. Raymond to Lake St. John, in the Province of Quebec, a subsidy not exceeding \$1,961 per mile, nor exceeding in the whole (in addition to the subsidy granted by 45 Victoria, chapter 14, and 46 Victoria, chapter 25, of \$3,200 per mile.)..... 186,295
(NOTE.—*Further subsidized by the Act 50-51 Vic., ch. 24.*)
- 83.** To the Cap Rouge and St. Lawrence Railway Company, for twelve miles of their railway from Lorette *via* Cap Rouge to Quebec, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
- 84.** For the construction of wharves and landing stages on the line of the railway from Long Sault to the foot of Lake Temiscamingue, a subsidy of..... 6,000
(NOTE.—*In addition to the subsidy for the construction of the line granted by 48-49 Vic., ch. 59. The addition was cancelled by Act 50-51 Vic., ch. 24.*)
- 85.** To the Gananoque, Perth and James' Bay Railway Company, seventeen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 54,400
- 86.** For a railway from St. Eustache to St. Placide, County of Two Mountains, eighteen miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 57,600

- 87.** For a railway from a point on the Intercolonial Railway through the Stewiacke Valley, on a line which will afford facilities of communication with the Iron Mines, Spring Side, Upper Stewiacke, and Musquodoboit settlements, twenty-five miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 80,000
- 88.** For a railway from Yamaska to the River St. Francis, in the Province of Quebec, ten miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.... 32,000
- 89.** For a railway from Perth Centre Station on the New Brunswick Railway, to a point near Plaister Rock Island, in the Province of New Brunswick, twenty-eight miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 89,600
- (NOTE.—Cancelled by 50-51 Vic., ch. 24.)
- 90.** For a railway from Fredericton to the Village of Prince William, in the Province of New Brunswick, twenty-two miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 70,400
- 91.** For a railway from a point on the Intercolonial Railway near Newcastle or *via* Douglastown to a point on the River Miramichi, opposite the Town of Chatham, in the Province of New Brunswick, six miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 19,200
- 92.** For a railway from a point on the Canadian Pacific Railway to Eganville, in the Province of Ontario, twenty-two miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 70,400
- 93.** To the Belleville and North Hastings Railway Company, for seven miles of their railway from the Village of Madoc to the Junction with the Central Ontario Railway at Eldorado, in the Province of Ontario, a subsidy (in addition to the subsidy of \$1,500 per mile granted by 48-49 Victoria, chapter 59) not exceeding \$1,700 per mile, nor exceeding in the whole..... 11,900
- (NOTE.—additional.)
- 94.** To the Napanee, Tamworth and Quebec Railway Company, for eighteen miles of their railway from Tamworth to Tweed, in lieu of the subsidy granted by 48-49 Victoria, chapter 59, a subsidy of 70,000

(NOTE.—Further subsidized by the Act 50-51 Vic., ch. 24.)

- 95.** To the Albert Railway Company, for their railway from Salisbury to Hopewell, in the Province of New Brunswick, which is a feeder to the Intercolonial Railway, in the form of a loan, repayable at such time and secured in such manner as the Governor in Council determines, a subsidy of..... 15,000

“The subsidies hereinbefore mentioned as to be granted to the companies named for that purpose, shall be granted to such companies, respectively; the other subsidies shall be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively. All the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council, and shall also be constructed according to descriptions and specifications and upon conditions to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in the agreement to be made in each case by the company with the Government, and which the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council, and all the said subsidies, respectively, shall be payable out of the Consolidated Revenue Fund of Canada, by instalments on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister: Provided, always, that the granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council may determine.

By 50-51 Vic., cap. 24 (1887). (*Assented to 23rd June, 1887*):—

- 96.** To the St. Catharines and Niagara Railway Company, for twelve miles of their railway from the City of St. Catharines to the bridge over the Niagara River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... \$38,400
- 97.** To the Vaudreuil and Prescott Railway Company, for thirty miles of their railway from Vaudreuil towards Hawkesbury, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 96,000
- 98.** To the Richmond Hill Junction Railway Company, for five miles of their railway from Richmond Hill Junction on the Northern Railway of Canada to Richmond Hill Village, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 16,000

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- 99.** To the Drummond County Railway Company, for thirty miles of their railway from Drummondville towards Nicolet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 96,000
- 100.** To the Joggins Railway Company, for one and a quarter miles of their railway extending from the southern end of the portion subsidized by the Act forty-ninth Victoria, chapter ten, to the wharves, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (*additional*) 4,000
- 101.** To the Moncton and Buctouche Railway Company, for two miles of their railway from the west end of the portion subsidized by the Act forty-ninth Victoria, chapter ten, to Moncton, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (*additional*). 6,400
- 102.** To the Beauharnois Junction Railway Company, for thirty miles of their railway from St. Martin's towards St. Anicet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 96,000
- 103.** To the Harvey Branch Railway Company, for three miles of their railway from the southern terminus of the Albert Railway to Harvey Bank, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 9,600
- 104.** To the Brantford, Waterloo and Lake Erie Railway Company, for eighteen miles of their railway from the Town of Brantford to the Village of Hagarville or the Village of Waterford, or some intermediate point on the Canada Southern Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 57,600
- 105.** To the Guelph Junction Railway Company, for sixteen miles of their railway from its junction with the Canadian Pacific Railway to the Town of Guelph, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 51,200
- 106.** To the Massawippi Railway Company, for ten miles of their railway from a point on the Atlantic and North-Western Railway, near the Village of Magog, to Ayer's Flat Station, on the Massawippi Valley Railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 32,000
- 107.** To the Napanee and Tamworth and Quebec Railway Company, for four miles of their railway from the north end of the section subsidized by the Act passed in the session held in the forty-eighth [1887]

forty-ninth years of Her Majesty's reign, chapter fifty-nine, to Tweed, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (<i>additional</i>).....	12,800
108. To the Dominion Lime Company, for seven miles of their railway from a point on the Quebec Central Railway, in the Township of Dudswell to the Dudswell Lime Company's quarries, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400
109. To the South Norfolk Railway Company, for seventeen miles of their railway from Port Rowan to the Town of Simcoe, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	54,400
110. To the Jacques Cartier Union Railway Company, for extending and completing their railway, a subsidy of.....	20,000
111. For a line of railway from Mount Forest to Walkerton, twenty-four miles in length, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	76,800
112. To the Oshawa Railway and Navigation Company, for seven miles of their railway from Port Oshawa towards Raglan, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	22,400
113. To the Saguenay and Lake St. John Railway Company, for thirty miles of their railway from Lake St. John towards Chicoutimi, or from Chicoutimi towards Lake St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
114. To the Great Eastern Railway Company, for thirty miles of their railway from the River St. Francois to the Arthabaska Railway, at St. Grégoire Station, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	96,000
115. To the Ontario and Pacific Railway Company, for six miles of their railway from the northern end of the portion subsidized by the Act forty-seventh Victoria, chapter eight, to the town of Perth, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (<i>additional</i>)	19,200
116. To the Caraquet Railway Company, for seven miles of their railway from Lower Caraquet to Shippegan, in lieu of the subsidy granted by the Act forty-ninth Victoria, chapter ten, a subsidy not exceeding in the whole (<i>substituted</i>).....	32,000

- 117.** To the St. Lawrence and Lower Laurentian and Saguenay Railway Company, for the section of their railway from Grand Piles, on the St. Maurice River, to its junction with the Quebec and Lake St. John Railway, in lieu of the subsidy granted by the Act passed in the Session had in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter fifty-nine, for a line of railway from Grand Piles, on the St. Maurice River, to its Junction with the Lake St. John Railway, a distance of about fifty miles, a subsidy of (*substituted*)..... 217,600
- 118.** To the St. John Valley and River du Loup Railway Company, for twenty-two miles of their railway from the Village of Prince William towards the Town of Woodstock, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 70,400
- 119.** To the Lake Temiscamingue Railway Company, for four short sections of railway, in all about two miles in length, to overcome the rapids of the Ottawa River, known as "La Mi-Charge," "La Cave," "Les Erables," and "La Montagne," and for the construction of wharves and landing stages at these rapids, to connect the Canadian Pacific Railway at Mattawa with Lake Temiscamingue by steamboats, railways and other works (in lieu of a portion two miles in length, out of the eight miles of railway subsidized by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter fifty-nine, under which about six miles of railway have already been built from the foot of Long Sault proper to the foot of Lake Temiscamingue, and in lieu also of the subsidy granted by the Act forty-ninth Victoria, chapter ten), a subsidy of (*substituted*)..... 12,400
- 120.** To the Carillon and Grenville Railway Company, for twelve miles of their railway from St. Eustache to Sault au Recollet, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 38,400
- 121.** To the Minudie Branch Railway Company, for five and a-half miles of their railway from its junction with the Joggins Railway, near the River Hebert Railway bridge, to the Village of Minudie, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole [17,600
- 122.** To the Lake Temiscamingue Colonization and Railway Company, for ten and a-half miles of their railway from the Long Sault to Lake Kippewa, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (*additional*)..... 33,600

- 123.** To the Leamington and St. Clair Railway Company, for two miles of their railway from the north end of the section subsidized by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter fifty-nine, to the Village of Comber, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (*additional*)..... 6,400
- 124.** To the Cumberland Railway and Coal Company, for fourteen miles of their railway from a point on the Spring Hill and Parrsboro' Railway, near Spring Hill, to a point on the railway between Oxford and New Glasgow, near Oxford Village, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 44,800
- 125.** To the Montreal and Champlain Junction Railway Company, a subsidy of (*in addition to the subsidy granted by Act 48-49 Vic., Ch. 59.*) 64,000
- 126.** To the Quebec and Lake St. John Railway Company, for nine miles of their railway, the distance which the previous subsidies granted are short of covering from the City of Quebec to Lake St. John, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (*in addition to subsidies granted by Acts 45 Vic., ch. 14; 46 Vic., ch. 25; 48-49 Vic., ch. 59, and 49 Vic., ch. 10*)..... 28,800
- 127.** To the Temiscouata Railway Company, for thirty miles of a branch of their railway from Edmundston towards the St. Francis River, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole (*in addition to subsidies granted for their main line by 45 Vic., ch. 14, and 48-49 Vic., ch. 58*)..... 96,000
- 128.** To the Cornwallis Valley Railway Company, for thirteen miles of their railway from Kentville to Kingsport, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 41,600
- 129.** To the Nova Scotia Central Railway Company, for thirty-four miles of their railway, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole..... 108,800
- 130.** To the Tobique Valley Railway Company, for fourteen miles of their railway from Perth Centre Station towards Plaister Rock Island, in lieu of the subsidy granted by the Act forty-ninth Victoria, chapter ten, for a railway from Perth Centre Station, on the New Brunswick Railway, to a point near Plaister Rock Island, a subsidy of (*substituted*)..... 89,600
- 131.** For a railway from Woodstock towards Centreville, twenty miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole 64,000

- 132.** For a railway bridge over the St. Lawrence River at Coteau Landing, on the line of the Canada Atlantic Railway, a subsidy of fifteen per cent. on the value of the structure, not to exceed (*in addition to subsidies granted for the main line by 48-49 Vic., ch. 59, and 49 Vic., ch. 10*)..... 180,000
- 133.** To the Lake Erie, Essex and Detroit River Railway Company, for twenty-seven miles of their railway, in lieu of the subsidy granted by the Act forty-ninth Victoria, chapter ten, a subsidy not exceeding (*substituted*)..... 118,400

For the purpose of granting corporate powers to persons or companies undertaking the construction of railways or parts of railways, mentioned in the next preceding section, for the construction of which no corporate powers exist at the time of the passing of this Act the Governor in Council may grant to them, under such corporate name as he shall deem expedient, a charter conferring upon them the franchises, privileges and powers requisite for the said purposes, as the Governor in Council shall deem most useful or appropriate to the said undertaking; and such charter being published in the *Canada Gazette*, with any Order or Orders in Council relating to it, shall have force and effect as if it were an Act of the Parliament of Canada.

The subsidies hereinbefore mentioned as to be granted to companies named for that purpose, shall be granted to such companies respectively; the other subsidies, including subsidies granted for railways over a line extending beyond a point to which any company hereinbefore mentioned by name is authorized to construct their railway; shall be granted to such companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to construct and complete the said railways respectively; all the lines for the construction of which subsidies are granted shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council; and shall also be constructed according to descriptions and specifications and upon conditions 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 in each case by the Company with the Government, and which the Government is hereby empowered to make; the location, also, of every such line of railway shall be subject to the approval of the Governor in Council; and all the said subsidies respectively shall be payable out of the Consolidated Revenue Fund of Canada, by instalments, on the completion of each section of the railway of not less than ten miles, proportionate to the value of the portion so completed in comparison with that of the whole work undertaken, to be established by the report of the said Minister, or upon completion of the work subsidized, except as regards the subsidy for the bridge over the St.

Lawrence River upon which shall be paid fifteen per cent. of the value of work done on monthly progress estimates, certified by the Chief Engineer, and upon the approval of the Minister of Railways and Canals.

The granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing such running powers or traffic arrangements and other rights, as will afford all reasonable facilities and equal mileage rates to all railways connecting with those so subsidized, as the Governor in Council determines.

Notwithstanding anything contained in the Act forty-fifth Victoria, chapter fourteen, or in the Act forty-sixth Victoria, chapter twenty-five, the balances of the sums granted for a railway from St. Raymond to Lake St. John and to the Quebec and Lake St. John Railway Company by the said Acts respectively, which have not yet been paid by the Government, may be paid at any time within one year from the passing of this Act, subject to the conditions in the said Acts contained.

LAND SUBSIDIES.

By 47 Vic., cap. 25, clause 7, (1884). *Assented to 19th April, 1884:—*

134. "The Governor in Council is hereby authorized, in aid of the construction of a railway from some point on the Canadian Pacific Railway to Hudson's Bay, to make a free grant of not more than six thousand four hundred acres for each mile of railway within Manitoba, and not more than twelve thousand eight hundred acres for each mile in the North-West Territories."

By 48-49 Vic., cap. 60 (1885). *Assented to 20th July, 1885:—*

135. To the North-Western Coal and Navigation Company (Limited), Dominion lands to an extent not exceeding three thousand eight hundred acres for each mile of the company's railway from Medicine Hat to the coal banks on the Belly River, about one hundred and ten miles.

136. To the Manitoba and South-Western Colonization Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the company's railway, from its commencement at Winnipeg to its terminus at Whitewater Lake, about one hundred and fifty miles.

137. To the Manitoba and North-Western Railway Company, Dominion lands to the extent of six thousand four hundred acres for each mile of the company's railway, for the whole distance from Portage la Prairie to the crossing of the south branch of the River Saskatchewan, twenty miles, from Prince Albert, about four hundred and thirty miles.

138. To the Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company, Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the company's railway, from its commencement near Regina, to the navigable waters of Long Lake.

The said grants, and each of them, may be so made in aid of the construction of the said railways respectively, in the proportion and upon the conditions fixed by the Orders in Council made in respect thereof,—each of the said enterprises being respectively subject to any modification thereof which may hereafter be made by the Governor in Council; and except as to such conditions, the said grants shall be free grants, subject only to the payment by the grantees respectively of the cost of survey of the lands and incidental expenses, at the rate of ten cents per acre in cash on the issue of the patents therefor.

By 49 Vic., cap. 11 (1886). Assented to 2nd June, 1886:—

139. To the Manitoba and North-Western Railway Company, Dominion lands to the extent of six thousand four hundred acres per mile for each mile on the company's branch railway running from a point on the main line of that railway, at or near Todburn, in a north-westerly direction through the county of Russell to the Assiniboine River, near the town of Shellmouth, about twenty-six miles.

140. To the North-West Central Railway Company, or to such other company as may undertake the construction of the railway or a railway from a point on the Manitoba and North-Western Railway, *vid* Rapid City, westward, Dominion lands to the extent of six thousand four hundred acres for each mile of the company's railway, for the whole distance from Brandon Station, on the Canadian Pacific Railway, or from such point on the Manitoba and North-Western Railway as aforesaid, to Battleford, in the Provisional District of Saskatchewan, about four hundred and fifty miles.

141. To the Wood Mountain and Qu'Appelle Railway Company, Dominion lands to the extent of six thousand four hundred acres for each mile of the company's railway for the whole distance commencing at a point in township number four, in range number thirty, west of the second meridian, in the Dominion lands system of survey, passing through the town of Fort Qu'Appelle, to join the Manitoba and North-Western Railway at a point to be fixed for that purpose by the Governor in Council, about two hundred and forty miles.

The said grants, and each of them may be so made in aid of the construction of the said railways respectively, in the proportions and upon the conditions fixed by the Orders in Council made in respect thereof,—each of the said enterprises

being respectively subject to any modification thereof which may hereafter be made by the Governor in Council; and, except as to such conditions, the said grants shall be free grants, subject only to the payment by the grantees respectively of the cost of survey of the lands and incidental expenses at the rate of ten cents per acre in cash on the issue of the patents therefor.

By 50-51 Vic., cap. 23 (1887). Assented to 23rd June, 1887.

142. The Governor in Council may grant to the Alberta and Athabaska Railway Company Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the Company's railway from some point on the Bow River or Canadian Pacific Railway, at or between Calgary and Crowfoot Creek, to a point near the town plot of Edmonton, about three hundred miles.
143. The Governor in Council may grant to the Qu'Appelle, Long Lake and Saskatchewan Railway and Steamboat Company Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the Company's railway, from a point near the northern terminus of the completed portion of that railway, at or near Long Laketon, on the navigable waters of Long Lake, to a point at or near where the fifty-second parallel of latitude crosses the South Saskatchewan River, thence to a point at or near the elbow of the North Saskatchewan River, with branches to Prince Albert and Battleford, about three hundred and twenty-five miles.
144. The Governor in Council may grant to the Medicine Hat Railway and Coal Company Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the Company's railway, from a point at or near Medicine Hat, on the line of the Canadian Pacific Railway, to the coal field in or near townships twelve and thirteen, range six, west of the fourth principal meridian, a distance of about eight miles, to be selected out of such lands as are at the disposal of the Government in the proximity of the line of the Company's railway.

The said grants, and each of them may be so made in aid of the construction of the said railways respectively, in the proportions and upon the conditions fixed by the Orders in Council made in respect thereof,—each of the said enterprises being respectively subject to any modification thereof which may hereafter be made by the Governor in Council; and, except as to such conditions, the said grants shall be free grants, subject only to the payment by the grantees respectively of the cost of survey of the lands and incidental expenses at the rate of ten cents per acre in cash on the issue of the patents therefor.

GOVERNMENT ACTION AS TO SUBSIDIZED LINES.

With regard to the above enumerated lines of railway, the following represents the action taken and the progress made in so far as the Dominion Government has cognizance or concern; only those lines and companies being mentioned as to which definite steps, other than merely preliminary, have been taken towards securing the subsidy. Information has been brought down to the 31st of December, 1887.

Since the system of subsidy to railway enterprise was commenced, the following are the sums paid over, namely:—

For the year 1883-84.....	\$ 208,000
do 1884-85.....	403,245
do 1885-86.....	2,171,249
do 1886-87.....	1,406,533
	\$4,189,027*
Add to the above for the six months that have elapsed since, namely from the 30th of June, 1887, to the 31st December, 1887.....	\$643,280
	\$4,832,307

The Canadian Pacific Railway is not included in the above, nor is the subsidy to the Quebec Government for the line from Ottawa to Quebec, nor advances made on mortgage to the St. John Bridge Company, to the Albert Railway Company or to the Fredericton and St. Mary's Bridge Company.

Albert Southern Railway Company.

(See No. 36.)

By the Act 47 Vic., chap. 8 (1884), a subsidy not exceeding \$51,200 was authorized towards the construction of a line from Hopewell (now called Albert) to Alma, N.B.

Under the authority of an Order in Council of the 8th of May, 1885, a contract for this work, namely, from Albert to the mouth of Salmon River, in the parish of Alma, was made with the Albert Southern Railway Company on the 23rd of that month; the line to be completed by the 1st of July 1887. By an Order in Council of the 4th of April 1887 the company were permitted to change their location, a route *vid* Derry's Corner being adopted,

The time for completion has been extended to 1st of July, 1888. Up to the 31st of December the sum of \$1,000 has been paid from the company's subsidy.

* Note—A tabulated statement of these payments will be found on page 8, Appendix 3.

Baie des Chaleurs Railway Company.

(See Nos. 42 and 6.)

The Act 47 Vic., ch. 8, authorized the expenditure of \$300,000 (revoted in the year 1885) for the construction of a branch of the Intercolonial Railway, to extend for a distance of 20 miles eastward, from Metapedia towards Paspébiac.

Tenders for the work were received, but none of them coming within the limit of expenditure authorized by Parliament, an offer made by the Baie des Chaleurs Railway Company to build and operate this section as a part of their own road from Metapedia to Paspébiac for the amount, was accepted by an Order in Council of the 18th of September, 1885, and a provisional contract was entered into with them on the 7th of November, the section to be finished by the first of July, 1888, plans being furnished and the work supervised by the Department.

By the Act 46 Vic., ch. 25 (1883) a subsidy had been authorized in favour of this company towards the construction of their said road. The limit fixed by the Act being \$3,200 a mile, for 100 miles, or a total of \$320,000.

Provision, however, having been made, as above stated, for the building of the first 20 miles of this distance, the contract entered into with the company, also on the 7th of November, 1885, as authorized by an Order in Council, also of the 18th of September, for the work under this subsidy, dealt with the construction of the last 80 miles only. It contained a clause under which, subject to authorisation from Parliament to that end, the portion, namely, \$3,200 a mile, applicable to the first 20 mile section of the road under the 100 mile subsidy of 1883, should be transferred to the second 20 mile section as an additional subsidy therefor, making the grant for such section \$6,400 a mile.

To this arrangement, approval of Parliament was given, the two agreements above mentioned being ratified and confirmed by the special Act 49 Vic., ch. 17; the date for the completion of the road being fixed by the Act as the 1st of December, 1888, in place of the 25th of May, 1887, as contemplated by their agreement.

The plans for the first 20 miles having been furnished by this Department, works were commenced, and up to the end of the fiscal year, namely, the 30th of June, 1887, there was paid to the company the sum of \$250,000. Further payments have since been made, making the total payments up to the 31st of December, 1887, \$300,300.

The location has been approved up to the 30th mile by an Order in Council of the 15th of October, 1886, and before the end of December, 1887, plans approved by the Department for a further distance, up to the 40th mile, were submitted.

Beauharnois Junction Railway Company.

(See No. 102.)

By the Railway Subsidy Act, 50-51 Vic., ch. 24, the grant of a subsidy not exceeding \$96,000, was authorized in favour of the Beauharnois Junction Railway Company, for their railway from St. Martin towards St. Anicet, the estimated distance being 30 miles.

On the 21st of November, 1887, and under the authority of Orders in Council of the 1st of October and 2nd of November, a contract for the work was made with the company, namely, from St. Martin to Valleyfield towards St. Anicet, the road to be completed by the 1st of December, 1888. By the order first named approval was also given to the location of the road from its junction with the Montreal and Champlain Junction Railway, at St. Martin's to Valleyfield, 19 $\frac{6}{10}$ miles. Up to the 31st of December, 1887, no portion of the subsidy has been paid, but an inspection of the road for a distance of ten miles was requested by the company.

Belleville and North Hastings Railway Company.

(See No. 54.)

By the Act 48-49 Vic., ch. 59 (1885) the grant of a subsidy not exceeding \$10,500, was authorized in favour of the Belleville and North Hastings Railway Company, for a line of railway about 7 miles long, from the village of Madoc to the junction with the Central Ontario Railway, at Eldorado, and by the Act 49 Vic., ch. 10 (1886) a further subsidy was granted to the company for the same railway, namely, \$11,900, making a total subsidy of \$22,400. Under authority of an Order in Council of the 14th of November, 1887, a contract was made with the company on the 12th of December, for the work. The road has been built, but no portion of the subsidy has been paid up to the 31st of December, 1887.

Brockville, Westport and Sault Ste. Marie Railway Company.

(See No. 48.)

By the Act 48-49 Vic., chap. 59 (1885), aid was granted to an extent not exceeding \$123,000 towards the construction of the portion between Brockville and Westport, about 40 miles, of the line of the Brockville, Westport and Sault Ste. Marie Railway.

Under the authority of an Order in Council of the 28th of April, 1886, a contract was made with the company on the 16th of July, 1886, the subsidized road to be finished by the 1st of August, 1889.

Up to the 31st of December, 1887, no portion of the subsidy has been paid.

Buctouche and Moncton Railway Company.

(See No. 65 and 101.)

By the Act 49 Vic., chap. 10 (1886), assistance was authorized for the construction of a railway about 30 miles long, to connect Buctouche, N.B., with the Intercolonial Railway at or near Moncton, the subsidy not to exceed \$96,000.

By the Act 50-51 Vic., chap. 24, an additional subsidy of \$6,400 was granted, making the total subsidy \$102,400.

Under an Order in Council of the 10th September, 1886, an agreement, dated the 16th of that month, was entered into with the Buctouche and Moncton Railway Company for the execution of this work by the 1st of July, 1887. Up to the close of the fiscal year the sum of \$40,480 had been paid from the company's subsidy.

Canada Atlantic Railway Company.

(See Nos. 60, 80 and 132.)

By the Acts 48-49 Vic., ch. 59, and 49 Vic., ch. 10, the Canada Atlantic Railway Company were subsidized to the extent not exceeding \$134,400, for a line from Clarke's Island, in the St. Lawrence, opposite Valleyfield, through Lacolle to the international boundary, about 50 miles; also from the present Ottawa terminus to the Chaudière Falls, and under the authority of Orders in Council, dated the 17th of September, 1885 and 1st of July, 1886, contracts have been made with the company for the work in question, the date for full completion being the 1st of October, 1886.

Upon due inspection, payments have been made, under Orders in Council, the last dated the 24th of August, 1886, to the extent of \$92,864; the work done and so paid for comprises the whole portion between Clarke's Island and Lacolle, a distance of 43.18 miles. By the Act 50-51 Vic., ch. 24, a subsidy not exceeding \$180,000 was authorized for the Coteau bridge across the River St. Lawrence.

Caraquet Railway Company.

(See Nos. 7, 41, 68 and 116.)

Under an Order in Council, dated the 6th of May, 1884, the subsidies authorized by Parliament in 1883 and 1884, for the road of this company from a point near Bathurst, on the Intercolonial Railway, to Shippegan Harbor, amounting to \$192,000, have been granted to them. An agreement was executed under date the 20th of January, 1885, for the construction of the line, the portion from Caraquet to Gloucester Junction Station, near Bathurst, to be completed by the 25th May, 1887, and the whole road by the 1st of July, 1888. By an Act, 49 Vic., ch. 10, a further subsidy of \$32,000 was authorized, covering the last ten miles of the road; for this, however, another act, 50-51 Vic., ch. 24 (1887), was substituted, giving

the same subsidy for 7 miles. A contract was made with the Company on the 19th February 1887 for this subsidy. Of the total subsidies granted, namely, \$224,000, there was paid during the fiscal year \$61,200 making the total payments up to the end of December, 1887, \$170,000. Towards the end of the month, on inspection of the works, an Order in Council was passed authorizing payment of a further sum of \$10,100, but the money had not been paid at the close of the year.

Central Railway Company.

(See No. 40.)

By the Act of 1884, 47 Vic., chap. 8, a subsidy not exceeding \$128,000 was granted in aid of the construction of about 40 miles of the Central Railway from the head of Grand Lake to a point on the Intercolonial Railway between Sussex and St. John, N.B.

Under the authority of an Order in Council of the 5th of June, 1886, a contract was made with the Central Railway Company, on the 7th of July, 1886, for a line from Salmon River at the head of Grand Lake to Norton on the Intercolonial Railway, the work to be completed by the 1st of July, 1888.

Up to the 31st of December, 1887, no portion of the subsidy had been paid.

Chignecto Marine Transport Railway Company.

(See No. 5.)

On the 3rd of February, 1882, this company (which received incorporation the same year, by Act 45 Vic., chap. 76) made a proposal to the Government for the construction of a line of railway for the transport of ships overland across the Isthmus of Chignecto from Tidnish, on Bay Verte in the Gulf of St. Lawrence, to a point at or near the mouth of the River La Planche, in the Bay of Fundy, and by the Act 45 Vic., chap. 55, authority was given for the grant of a subsidy of \$150,000 a year for 25 years, in aid of the work.

No definite action was, however, taken until the 6th of October, 1885, when an Order in Council was passed authorizing entry into agreement with the company subject to the approval of Parliament, and such agreement was executed on the 4th of March, 1886. Under its terms, the subsidy payable is to be \$170,602 a year for 20 years, or such portion thereof as may be required to bring up the net earnings to 7 per cent. per annum on the authorized share and bond capital of the company, \$5,500,000, and to be granted only during the satisfactory performance of the services contemplated, such services comprising the raising, transport, and lowering of vessels of 1,000 tons burden, registered, with full cargo. Should the earnings exceed 7 per cent. per annum, one-half of such surplus is to be paid to the Government until repayment of the whole amount received by said company

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under their subsidy. The whole work is to be completed and equipped by the 1st of July, 1889.

By a special Act, 49 Vic., chap. 18 (1886), this agreement was confirmed and ratified.

Dominion Lime Company.

(See No. 108.)

By the Act 50-51 Vic., chap. 24 (1887), the grant of a subsidy to the Dominion Lime Company was authorized, namely, for a railway of an estimated length of seven miles starting from a point on the Quebec Central Railway, in the township of Dudswell, to the Dudswell Lime Company's quarries, the amount not exceeding \$22,400.

A contract was made with the company on the 12th October, 1887, and the road having been inspected, an Order in Council dated the 31st of December, 1887, has authorized payment of the sum of \$11,840.

Drummond County Railway Company.

(See No. 99.)

By the Railway Subsidy Act of 1887, 50 51 Vic., chap. 24, the grant of aid to an extent not exceeding \$96,000 was authorized to the Drummond County Railway Company for 30 miles of their railway from Drummondville towards Nicolet.

Under the authority of an Order in Council of the 12th of November, 1887, which also approved of the location plans for 12½ miles, a contract was made with the company on the 1st of December, 1887, covering a line from the South Eastern Railway at the Village of Drummondville to the South West branch of the River Nicolet, the road to be completed by the 1st of August, 1891.

No portion of the subsidy had been paid up to the 31st of December, 1887, but an inspection has been asked for by the company.

Erie and Huron Railway Company.

(See No. 30.)

By the Act 47 Vic., chap. 8, authority was given for the grant of a subsidy not exceeding \$96,000 to this company for a line from Wallaceburg to Sarnia, and a contract was entered into with them on the 27th of August, 1885, under an Order in Council of the 6th of that month, the line to be completed by the 1st July, 1887. Under Orders in Council, the last dated the 5th of December, 1886, the whole amount of the subsidy, \$96,000, has been paid, the road being duly completed and inspected.

Esquimalt and Nanaimo Railway Company.

(See No. 44.)

Under the authority of Orders in Council passed in June, 1883, the Honorable Sir Alexander Campbell, during the summer of that year, visited British Columbia, with a view to the settlement of matters in abeyance between the Provincial and Dominion Governments, and arrangements were provisionally entered into by him in respect of the building of a line of railway between Esquimalt and Nanaimo by a company to be subsidized by the Dominion Government.

The arrangements in question were conditional upon approval being accorded by the Legislature of the Province of British Columbia, and by the Parliament of Canada. Subject to such approval, their adoption was sanctioned by an Order in Council of the 27th September, 1883.

By an Act of the Provincial Legislature, sanctioned on the 19th December, 1883, but known as Act "47 Vic., chap. 14," and by an Act of the Dominion Parliament, 47 Vic., chap. 6, such approval was accorded.

These arrangements were expressed in articles of agreement dated the 20th of August, 1883. They comprised the grant of a subsidy in money of \$750,000, together with the land in Vancouver Island granted by the Province to the Crown for the purposes of railway construction; materials for construction of the railway and telegraph to be admitted free of duty; the whole line between Esquimalt and Nanaimo to be completed by the 10th of June, 1887.

A company, "the Esquimalt and Nanaimo Railway Company" was duly incorporated under the provisions of the Act, and proceeded vigorously with the work of construction. Up to the 31st of December, 1885, however, no portion of the subsidy had been paid, the reason for non-payment being that the work done did not comply strictly with the conditions of the contract.

By the specification attached to the company's agreement they were restricted to curves of a radius of not less than 800 feet. In the actual construction, however, a sharper curvature was adopted, and Parliament, by a special Act (49 Vic., ch. 15), and with the concurrence of the Provincial Legislature, agreed to accept the same as complying with the requirements of the Subsidy Act.

In accordance with the authorization so given, an Order in Council was passed on the 14th of June, 1886, cancelling preceding Orders in respect of location, and accepting the location of the entire line 71½ miles, with the curves adopted by the company.

Under authority of Orders in Council, during the fiscal year 1885-86, the sum of \$422,520 was paid, and during the fiscal year 1886-87, the remainder, making a
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total of \$750,000, \$37,500, of the subsidy, as representing the 5 per cent. security to be temporarily held under the contract, after completion, to ensure the making good of any possible defects, was so held until paid under the authority of an Order in Council of the 4th of March, 1887. The railway and telegraph line were duly completed, and, after inspection, permission was given to the company on the 17th of September, 1886, to open their road for public traffic.

Fredericton and St. Mary's Bridge Company.

By the special Act 50-51 Vic., chap. 26 (1887), the Governor in Council was authorized to make advances (secured by a mortgage) to the Fredericton and St. Mary's Bridge Company, in aid of the construction of a railway bridge over the river St. John, such advances not to exceed 80 per cent. of the expenditure as made, nor, in the whole \$300,000.

Upon submission of satisfactory plans for such bridge and its approaches, an Order in Council was passed on the 25th of August under which a deed of mortgage and agreement was executed on the 12th of October, 1887, covering the works in question, and running for a term of 15 years from the date of the first advance, the interest payable being at the rate of 4 per cent. per annum. Under an Order in Council of the 10th of December, 1887, the company have, so far, received an advance of \$78,984. The estimated cost is \$370,000. The work will connect the Fredericton Railway at Fredericton with the Northern and Western Railway at St. Mary's.

Great Eastern Railway Company.

(See No. 88.)

By the Act 49 Vic., chap. 10, authority was given for the grant of a subsidy to an extent not exceeding \$32,000, on an estimated distance of 10 miles, towards the construction of a line from Yamaska to the River St. Francis, Que.; and the Great Eastern Railway Company having applied, and having satisfactorily shown their ability to perform the work, a contract was made with them on the 12th of October, 1886, under the authority of an Order in Council of the 9th of that month, the time for completion being fixed as the 1st of October, 1887.

The road having been completed and inspected, the whole of the subsidy due for its actual distance, 6 miles, namely, \$19,200, has been paid under an Order in Council of the 27th of March, 1887.

Great Northern Railway Company.

(See Nos. 33, 37.)

By the Act 47 Vic., ch. 8, (1884), a subsidy not exceeding \$32,000 was granted to this company for the construction of a line from St. Jérôme to New Glasgow, Que.; the estimated length being 10 miles.

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Under the authority of an Order in Council of the 3rd of February, 1885, a contract for the work was entered into with the company on the 14th of that month, the road to be completed by the 1st of July, 1885.

The line was duly completed and inspected, and under an Order in Council of the 2nd of March, 1885, payment was made therefor, namely, for 7.84 miles, \$25,088.

By the Act 49 Vic., ch. 10, 1886, a subsidy not exceeding \$57,600 was authorized for a line from New Glasgow to Montcalm, a distance of about 18 miles. The Great Northern Railway Company having applied for it, it was granted to them by an Order in Council of the 18th of July, 1887, the contract being made on the 19th of August. The road to be completed by the 1st of August, 1890. No payment had been made up to the 31st of December, 1887.

By the Act 49 Vic., ch. 10, a subsidy not exceeding \$22,400 was granted for a line from St. Andrews to Lachute, Que. For this subsidy the above named company have applied.

Guelph Junction Railway Company.

(See No. 105.)

By the Subsidy Act, of 1887, 50-51 Vic., chap. 24, authority was given for the grant of a subsidy not exceeding \$51,200 to the Guelph Junction Railway Company for sixteen miles of their railway from its junction with the Canadian Pacific Railway to the town of Guelph, Ontario.

Under date the 1st of October, 1887, an Order in Council authorized entry into contract, and such contract was signed on the 5th of November, the date fixed for the completion of the road being the 1st of January, 1889.

Up to the 31st of December, 1887, no portion of the subsidy had been paid.

Harvey Branch Railway Company.

(See No. 103.)

By the Subsidy Act, of 1887, 50-51 Vic., chap. 24, the grant of a subsidy to the Harvey Branch Railway Company was authorized to an extent not exceeding \$9,600 in aid of a line about three miles in length, extending from the southern terminus of the Albert Railway to Harvey Bank.

A contract was entered into with the company on the 3rd of October, 1887, for the work.

International Railway Company.

(See No. 10.)

In 1883 Parliament granted a subsidy of \$156,800 to this company for forty-nine miles of their railway, between Sherbrooke and the International boundary [1887]

line, the object being to enable them to complete their road and lay steel rails. They entered into contract on the 20th of July, 1883, and under successive Orders in Council, they had been paid, prior to the commencement of the year, a total sum of \$144,000, upon a distance of forty-five miles. Under the authority of an Order in Council, dated the 2nd of July, 1887, they have now been paid, for the remaining $2\frac{2}{10}$ miles up to Lennoxville, the further sum of \$8,960; making a total payment of \$152,960 and completing the contract work.

Irondale, Bancroft and Ottawa Railway Company.

(See No. 24.)

By the Act 47 Vic., ch. 8 (1884), the Irondale, Bancroft and Ottawa Railway Company were subsidized, to an extent not exceeding \$160,000 for a line, about 50 miles long, to connect the Victoria Branch of the Midland Railway with the village of Bancroft.

With the sanction of an Order in Council of the 10th July, 1886, a contract was made with the company on the 19th of August, 1886, the first 10 miles to be completed by the 1st of December, 1886, and the remainder by the 1st of July, 1888.

Under the authority of an Order in Council of the 14th of February, 1887, \$15,000 has been paid.

Joggins Railway Company.

(See No. 76.)

By the Act 49 Vic., ch. 10 (1886), authority was given for the grant of aid to an extent not exceeding \$38,400, towards the construction of a railway, the estimated length of which is 12 miles, from a point at or near the McCann Station, on the Intercolonial Railway, to the Joggins, on Cumberland Basin, N. S.

The Joggins Railway Company having applied for this subsidy, and the application being satisfactory, a contract was made with them on the 30th of November, 1886, under the authority of an Order in Council of the 5th of October, the line to be completed by the 1st of November, 1887.

In November, 1887, the company gave notification that the road was ready for public traffic and inspection.

A further subsidy to this company not exceeding \$4,000 having been authorized by the Act 50-51 Vic., ch. 24 (1887), towards the construction of an extension of the line, $1\frac{1}{2}$ mile long, to the wharves on Cumberland Basin, a contract was made with them for the work on the 13th of October, 1887.

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Lake Temiscamingue Colonization Railway Company formerly "La Société de Colonisation du Lac Temiscamingue."

(See No. 55 84 and 119.)

By the Act 48-49 Vic., ch. 59, a subsidy was authorized in aid of the construction of a line of railway from Long Sault to the foot of Lake Temiscamingue surmounting certain rapids on the River Ottawa. The limit of the amount was \$25,600, covering a total distance of 8 miles. Under the authority of an Order in Council of the 17th November, 1885, a contract was entered into for the construction of 6 miles, to be completed by the 1st of January, 1887.

By the Subsidy Act, 49 Vic., chap 10, a further subsidy of \$6,000 was authorized for the building of wharves and landing stages in connection with this line. This was subsequently cancelled, and by the Act 50-51 Vic., chap. 24, 1887, the definition of portions of the road to which the preceding Acts had granted subsidies was corrected, the amount of the subsidy, however, remaining the same, namely, a total of \$31,600,

In conformity with an express provision to that effect in clause 2 of the above cited Act, Letters Patent have been issued under an Order in Council of the 20th of July, 1886, published in the *Canada Gazette* of the 24th, granting a charter for the construction of this railway to the "Lake Temiscamingue Colonization Railway Company."

In September, 1887, an inspection of the section between the foot of the Long Sault, and Lake Temiscamingue was made, and from the subsidy available for this distance, 6 miles, namely 19,200, up to the 31st of December, 1887, the amount paid to this company is \$17,400.

L'Assomption Railway Company.

(See No. 77.)

By the Act 49 Vic., ch. 10, the grant of a subsidy not exceeding \$11,200 was authorized for a short line of railway, $3\frac{1}{2}$ miles long, connecting the village of L'Assomption with the North Shore Railway at L'Epiphanie.

Under date the 16th of September, 1886, a contract, as authorized by an Order in Council of the 28th of August, was entered into with L'Assomption Railway Company for the work in question, the line to be completed by the 1st of January, 1887. Notification of completion was given in January last, and on inspection the balance due the company, has been paid, the total payment being \$11,200.

Leamington and St. Clair Railway Company.

(See No. 56 and 123.)

By the Act 48-49 Vic., chap. 59 (1885), aid was granted to an extent not exceeding \$44,800 towards the construction of a line of railway from a point on the Canada Southern Railway near Comber, to Leamington, on Lake Erie.

By the Act 50-51 Vic. Chap. 24, a further subsidy of 6,400 was granted, making the total subsidy \$51,200.

Under authority of an Order in Council of the 13th of April, 1886, a contract for this work was made with the Leamington and St. Clair Railway Company on the 3rd of May, 1886, the road to be completed by the 1st of August, 1889. After inspection of the road and under Order in Council the sum of \$32,000 has been paid to the company.

Montreal and Champlain Junction Railway Company.

(See No. 51 and 125.)

By the Act 48-49 Vic., chap. 59, a subsidy was authorized to be granted to this company for a line from Brosseau's to Dundee, not exceeding \$30,000. The work was completed and the subsidy was paid in the year 1885-86.

By an Act 50-51 Vic., ch. 24, a further subsidy not exceeding \$64,000 was authorized to be granted to this company. Authority has been given for entry into contract by an Order in Council of the 26th August, 1887, but the contract had not been signed up to the close of the year.

Montreal and Lake Maskinongé Railway Company.

(See No. 74.)

By the Act 49 Vic., chap. 10, (1886) the grant of a subsidy of \$32,000 for a railway from St. Félix to Lake Maskinongé, P. Q., was authorized, and application being made by the Montreal and Lake Maskinongé Railway Company, an Order in Council of the 1st of October, 1887, accepted them as contractors, and an agreement was entered into accordingly on the 29th of September covering the distance, about 10 miles, between St. Félix and St. Gabriel de Brandon, near Lake Maskinongé, the road to be completed by the 1st of December, 1888. Up to the 31st of December, 1887, no portion of the subsidy had been paid.

Montreal and Sorel Railway Company.

(See No. 47.)

By the Act 48-49 Vic., chap. 59, a subsidy not exceeding \$72,000 was authorized to be granted to this company for a line from St. Lambert to Sorel. Under an Order in Council of the 2nd October, 1885, a contract was made with the company
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on the 14th, and under the authority of Orders in Council, the last dated 10th of November, 1886, payments have been made, amounting in all to \$69,922, the road 44.67 miles long, having been completed, with the exception of a small quantity of work, to secure the finishing of which \$1,550 was retained.

New Brunswick and Prince Edward Railway Company.

(See No. 46.)

By the Act 43-49 Vic., chap. 59 (1885), a subsidy, not exceeding \$118,400, was granted to the New Brunswick and Prince Edward Railway Company for the construction of a line between the Intercolonial Railway at Sackville Station to the Straits of Northumberland at or near Cape Tormentine, whence, by ferry, communication could be had with the railway system of Prince Edward Island.

Under the authority of an Order in Council, dated the 19th of April, 1886, a contract was entered into with the company for this work on the 18th May, 1886.

Up to the close of the fiscal year, payments have been made to the extent of \$97,440 under Orders in Council. No further payments were made, but towards the end of the year an inspection showed the road completed (with the exception of some minor work) and an Order in Council was passed on the 31st of December, 1887, authorizing payment of a further sum of \$12,150, which with the sum of \$3,850 retained, and the previous payments, makes up the sum of \$113,440, the actual value of the subsidy.

Napanee, Tamworth and Quebec Railway Company.

(See Nos. 13, 27, 57, 94 and 107.)

In 1883 Parliament authorized a subsidy of \$89,600 to this company, covering their road from Napanee to Tamworth.

A contract, dated 31st December, 1883, was entered into with the company for this work, and upon completion, inspection, and approval of the road, the balance of the subsidy then due was paid under an Order in Council of the 28th of July, 1884.

In the Session of that year Parliament authorized the grant of a further subsidy not exceeding \$3,200 a mile or a total of \$70,400, for an extension of this company's road from Tamworth to Bogart and Bridgewater. In 1885, however, in substitution for this subsidy, Parliament authorized the grant to the company of a subsidy of \$70,000 for a line "from Tamworth towards Bogart and Bridgewater 16 miles." This, again, was cancelled by the Act 49 Vic., ch. 10 (1886), a subsidy of \$70,000 being granted to the company for 18 miles of their railway from Tamworth to Tweed.

By the Act 50-51 Vic., ch. 24 (1887) a further subsidy to this company not exceeding \$12,800 was authorized for four miles of their road to Tweed which on examination had been found to be 22 miles long in place of 18. Up to the 31st of December 1887, no contract has been made for either of these two last subsidies.

Northern and Pacific Junction Railway Company—Gravenhurst to Callander.

(See Nos. 1 and 16)

For the purpose of affording to the Province of Ontario the advantage of direct railway communication with the North-West, it was necessary that a road should be built connecting the Canadian Pacific Railway with the existing railways of Ontario, and such a line was subsidized by the Acts of 1882 and 1883, to the extent of \$12,000 a mile, for a distance of 110 miles, or a total of \$1,320,000. It extends, southwards, from the Canadian Pacific Railway at Nipissing Junction, east of Lake Nipissing, to the village of Gravenhurst, a distance of 111½ miles, there connecting with the railway system of Ontario. Under the authority of an Order in Council, dated the 10th of April, 1884, a contract was entered into on the 12th of April, 1884, with the Northern and Pacific Junction Railway Company (formerly the Northern and North-Western and Sault Ste. Marie Railway Company), for the construction of this line, the same to be completed by the 1st of May, 1886.

Connection was made from north to south in January, 1886, a through train running on the 27th of that month.

By an Order in Council of the 3rd of May, 1886, the time for completion was extended to the 1st of August, 1886.

Up to the 31st of December, 1886, the total payments aggregated \$1,284,400, leaving the sum of \$35,600 to cover finishing the work. No further payments have been made up to the 31st of December, 1887.

Northern and Western Railway Company.

(See Nos. 11, 29, 50 and 61.)

In 1883 Parliament authorized the grant of a subsidy to this company of \$102,400, towards the construction of thirty-two miles of their railway, from the Intercolonial Railway, near the Miramichi, to Moran's, near Demphy Village, N.B. This action was suggested to the House, in view of an application made for aid for a line extending from the Intercolonial Railway at the crossing of the Miramichi River, *via* Boiestown and the Nashwaak Valley to Gibson, on the River St. John, opposite Fredericton. In 1884, no work having meantime been commenced, Parliament voted money for the construction, by the Government, of the portion of this distance, extending from Derby Station, on the Intercolonial Railway, to Indian-

town, and authorized the grant to this company of a subsidy of \$128,000 in aid of their railway from Fredericton to the Miramichi, "instead of the subsidy proposed in 1883."

The contract for the construction of this subsidized line, from Fredericton to the Miramichi, forty miles in length, was signed on the 24th of December, 1884, an Order in Council on the 16th of that month having given approval to the draft of such contract. The date fixed for completion was the 1st of July, 1888.

The location for the whole distance, forty miles, has been approved of by Orders in Council, and the road having been duly completed and inspected, the whole of the subsidy, \$128,000, has been paid to the company.

In 1885, a subsidy in favour of this company was authorized to the extent of \$19,200 for a continuance of their line to Boiestown, and under the authority of an Order in Council of the 6th of November, 1885, a contract was made with the company for the work on the 26th of that month. The location was approved by an Order in Council of the 27th. The line, six miles in length, was to be completed by the 1st of November, 1886. The line being completed, an Order in Council was passed on the 13th of July, 1886, under which payment of \$18,200 was made; the balance, \$1,000, being retained to cover the widening of certain cuttings.

Parliament also, in 1885, authorized the grant of a subsidy to the extent of \$140,800 in aid of the construction of a line of railway from Indiantown, *via* the Miramichi Valley, to its junction with the Northern and Western Railway at or near Boiestown.

The Northern and Western Railway Company having applied for the work, they were accepted, and a contract was made with them on the 26th of November, 1885, as authorized by an Order in Council of the 7th of that month; the location for the whole distance, about 50 miles, being approved of by an Order of the 27th. The line was to be completed by the 1st of August, 1888.

By the Subsidy Act, 49 Vic., ch. 10 (1886) a further grant of \$32,000 to this company was authorized for ten miles of their railway, made up of the portion intervening between the present termini of their already subsidized line and of the two miles extending down to deep water at Chatham.

For this subsidy, a contract was made with the company on the 14th of August, 1886, covering the intervening portion of line only, and omitting the two-mile deep water extension. Under date the 12th of August, 1887, they have entered into an agreement covering the two miles in question, the amount of subsidy available being \$6,400.

At the present date, the 31st of December, 1887, the whole road between Gibson, opposite Fredericton, and Indiantown has been completed and is in operation
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tion, the actual distance being $95\frac{1}{2}$ miles. The total subsidy provided was \$313,600. The amount found to be actually applicable is \$305,600, of this there has been paid to date the sum of \$20,000, and under date the 31st of December, after inspection of the work, an Order in Council has been passed for the payment of the balance, \$75,600.

The portion connecting Indiantown with the Intercolonial Railway, 14 miles, having been built by the Government as a branch of its main road, there is now direct communication between Fredericton and the Intercolonial Railway at Derby, the distance being about $109\frac{1}{2}$ miles.

Nova Scotia Central Railway Company.

(See No. 129)

By the subsidy Act of 1887, 50-51 Vic., ch. 24, the Nova Scotia Central Railway Company were subsidized for 34 miles of their railway, to an extent not exceeding \$108,800. Under an Order in Council of the 16th of September, 1887, the company were admitted to contract on the 17th of October, 1887, the work to be executed being a line of railway, from Lunenburg on the east coast of Nova Scotia, westward, to a point in the district of New Germany, together with a branch, about 12 miles long, south from Lunenburg to Bridgewater, the whole to be completed by the 31st of December 1889. No portion of the subsidy had been paid up to the 31st of December, 1887.

Ontario and Pacific Railway Company.

(See No. 31,115.)

By the Act 47 Vic., chap. 8, the grant of a subsidy to the Ontario and Pacific Railway Company was authorised, namely, to the extent of \$262,400, on an estimated distance of 82 miles, for a line from Cornwall to Perth, and on the 27th of July, 1886, a contract was made with the company, under the authority of an Order in Council of the first day of that month, for the construction of such line *vid* Newington, Chrysler, Manotic and Franktown, the road to be completed by the 1st of July, 1888.

By the Act 50-51 Vic., chap. 24, a further subsidy of \$19,200 for a further distance of six miles was granted, making the total subsidy \$281,600.

No portion of the subsidy has been paid up to the 31st of December, 1887.

Pontiac Pacific Junction Railway Company.

(See No. 25.)

This line was subsidized by Parliament in 1864, to the extent of \$3,200 a mile, not exceeding \$272,000.

Under authority of an Order in Council, dated the 12th of December, 1884, a contract, dated the 22nd of that month, was made with this company for the building of the line subsidized, namely, from Aylmer, Que., to Pembroke, crossing the River Ottawa at a point "not east of Lapasse," the first twenty-seven miles to be completed by the 1st September, 1885 (extended to 15th of December, by Order in Council of the 13th of August, 1885) the second twenty-seven miles by the 1st of July, 1886, and the whole road, estimated at 85 miles west of Aylmer, by the 1st of July, 1887. The time for completion has been extended by an Order in Council of the 9th of July, 1887, to the 1st of July, 1888.

Under authority of Orders in Council payments have been made, up to the close of the past fiscal year, to the extent of \$150,670, and subsequent to that date, namely, up to the 31st December, 1887, a further sum of \$6,960, making a total payment to date of \$157,630, covering a distance of 61 miles from Aylmer.

The location up to the 71st mile from Aylmer has been approved. The road is open for public traffic from Aylmer to Coulonge, 59 miles.

Quebec Central Railway Company.

(See No. 22.)

This company was subsidized in 1884, to the extent of \$211,200, in aid of the construction of sixty-six miles of their railway, from Beauce Junction to the International Boundary.

Under the authority of an Order in Council, dated the 2nd of August, 1884, a contract was made with the company on that date for the construction of a line from Beauce Junction on their trunk line, thence up the valley of the River Chaudière to the frontier, the line to be completed by the 2nd of February, 1888.

The location of the first 23 miles was approved of by an Order in Council of the 8th of May, 1885. The amount of the subsidy paid up to the present date, December 31st, 1887, is \$60,342, covering 15½ miles of road inspected, starting from Beauce Junction.

Quebec and Lake St. John Railway Company.

(Nos. 2, 14, 49, 82 and 126.)

By the Subsidy Act of 1882, a subsidy of \$384,000 was granted for a line from St. Raymond to Lake St. John. By the Act of 1883, the Quebec and Lake St. John Railway Company, engaged in the work of constructing this line, were permitted to receive a further subsidy of \$30,000. By the Act of 1885 a subsidy of \$96,000 was authorized for a line extending from the point of their junction with the North Shore Railway up to St. Raymond, conditionally upon the construction of their line to a point 50 miles north of St. Raymond, and by the Act of 1885 a subsidy was

authorized, not exceeding \$186,295, for the portion, 95 miles, extending from the point 50 miles north of St. Raymond to Lake St. John.

By the Act 50-51 Vic., chap. 24, (1887), an additional subsidy not exceeding \$28,800 was authorized for a distance of 9 miles, the distance which previous subsidies granted were short of covering from the city of Quebec to Lake St. John. By this Act, authority was given for payment (under the usual conditions) of balances payable from the subsidies granted in 1882 and 1883. The aggregate of the subsidies granted to this company is \$775,095.

An agreement was duly entered into on the 4th of September, 1883, in respect of the two subsidies first named, under which this line was to be completed by the 25th of May, 1887, the portion up to Lake Edward to be completed by the 31st of December, 1885, and on the 10th of February, 1886, an agreement was signed covering the third subsidy, that, namely, of 1885. For the subsidies granted in 1886 and 1887, no further contracts are required, these subsidies being applicable to works embraced in the previous contracts.

Up to the 31st of December, 1887, the location of the road has been approved by Orders in Council for a distance of 140 miles north from St. Raymond, and the company have notified the Department that they are ready for a further inspection up to the 140th mile.

Up to the close of the fiscal year 1886-87, there had been paid a total subsidy of 457,991. Since that date a further sum of \$189,293 has been paid, making a total up to the 31st of December, 1887, of \$647,284.

Short Line.

In what is known as the "short line" is comprised a scheme for connecting the city of Montreal, as the commercial capital of the Dominion, with Canadian Atlantic ports, by the shortest and best practicable route. This has for some years past been the subject of attention in Parliament, and in furtherance of it subsidies have, from time to time, been granted; companies have been formed and surveys have been made, both by private parties and by the Government, the outcome being that arrangements have been entered into by which it is hoped that the desired end will be obtained. The scheme may be divided into two sections, namely,—work east of Moncton and west of Moncton.

East of Moncton—Line to Sydney and Louisbourg.

(Nos. 9, 21.)

As a link in the proposed railway connection with the north-east of Cape Breton, the construction of a line, about 70 miles long, between Oxford and New Glasgow, connecting the Intercolonial Railway with the Eastern Extension Rail-
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way, and avoiding a long *détour*, was authorized in 1882, a subsidy of \$224,000 being voted by Parliament for this work.

Under date the 28th July, 1882, a contract was entered into with the Montreal and European Short Line Railway Company for the building of this road, the work to be completed by the 1st of January, 1884.

The company commenced work and continued until the summer of 1883, when they ceased operations. The contract, accordingly, became null and void. As the subsidy was to be paid upon the completion of each ten mile section, and as no one section was completed, no portion of the subsidy was paid.

In the year 1885, the following appropriation was voted by Parliament:—

In aid of the Short Line Railway in Nova Scotia, for settling the unpaid claims of sub-contractors and others for labour, board, etc., in the construction of the said railway between Oxford and New Glasgow, and for acquiring their rights in the railway and in the said claims, the expenditure to be under Order in Council, and to be a first charge on the subsidy for such railway under 45 Victoria, chapter 14.....	\$125,000
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Under an Order in Council of the 14th August, 1885, a special commissioner was appointed, through whom a number of these claims were settled. In 1886 Parliament voted a further sum of \$25,000 for the same purpose and the commissioner has obtained full receipts and assignments from the company's contractors and other parties having interest in the road, the payments made covering liabilities of the company incurred for the construction of the road prior to the cessation of works in August, 1883. Notwithstanding the fact that there have been submitted various propositions from capitalists and others having in view the construction of the short line railway embracing Cape Breton, nothing definite or satisfactory has been arrived at, and consequently it was determined that, rather than delay longer the giving to the people of Cape Breton the advantages of railway communication, the Government should, itself, construct a line through the island.

Cape Breton Railway.

By the Act 49 Vic., ch. 14 (1886) authority was given for the construction, as a public work, of a railway from a point on the Straits of Canso to Louisburg or Sydney, the location to be determined by the Governor in Council.

After a number of surveys had been made on the island, a location from Point Tupper at the Strait of Canso, passing McIntyre Lake, the Grand Narrows and the

South Shore of the Little Bras d'Or Lake to Sydney, with a branch to North Sydney was finally adopted by an Order in Council dated the 29th of October, 1886.

The work was subsequently divided into two sections, the Eastern, about 45 miles long, between Grand Narrows and Sydney, which was let to the lowest tenderer, after public advertisement, on the 28th January, 1887, and the western section between Point Tupper and the Grand Narrows, let, also to the lowest tenderer, on the 27th of July, 1887.

The progress on the Eastern section, between Grand Narrows and Sydney, being unsatisfactory, the work was, in November last, taken out of the hands of the contractors under the terms of their agreement.

The right of way has been acquired, and the owners, in a large number of cases, have been settled with.

The total length of the road from Point Tupper to the point of extension to Sydney and North Sydney is 78 miles, the Sydney extension being 12 and the North Sydney 8 miles, making a total of 98 miles.

The municipalities of both Sydney and North Sydney are providing land for extensions of the road to points in those places which they consider to be more desirable than the termini fixed by the Government location.

West of Moncton—Atlantic and North-West Railway Company.

(Nos. 20, 63.)

In the session of 1885, after a series of careful surveys of the country, between Montreal and the points from which the harbours named can be reached by existing lines, the decision of Parliament in the matter was expressed by the grant of a subsidy in the following Act, 48-49 Vic., ch. 58:—

“ For a line of railway from the south bank of the St. Lawrence River opposite or near Montreal to the harbours of St. Andrews, St. John and Halifax, *via* Sherbrooke, Moosehead Lake, Mattawamkeag, Harvey, Fredericton and Salisbury, a subsidy not exceeding eighty thousand dollars per annum for twenty years, forming in the whole, together with the subsidy authorized by the Act forty-seventh Victoria, chapter eight, for a line of railway connecting Montreal with the said harbours of St. John and Halifax by the shortest and best practicable route, which the line above described is found to be, a subsidy not exceeding two hundred and fifty thousand dollars per annum, the whole of which shall be paid in aid of the construction of such line of railway for a period of twenty years, or a guarantee of a like sum for a like period as interest on the bonds of the company undertaking the work; the said subsidy to be so granted upon the terms and conditions of and payable out of the Consolidated Revenue Fund in the man-
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ner specified in the said last mentioned Act in respect to the subsidy thereby authorized in aid of the said line of railway."

An application having been made for the said subsidies by the International Railway Company, and they having agreed to conform to the necessary conditions and requirements, and having evidenced their ability to construct and operate the road, entry into contract with them was authorized by an Order in Council of the 19th of November, 1885, and such contract was executed on the 14th of December, 1885, they undertaking to complete a line from a point on the south bank of the St. Lawrence at or near Caughnawaga to connect with the Intercolonial Railway at Moncton by the 1st of July, 1889.

The International Railway Company subsequently disposed of their interest in this contract to the Atlantic and North-West Railway Company, and that company were accepted as contractors by an Order in Council dated the 13th of November, 1886, the agreement made thereunder being dated the 6th of December, 1886.

The Atlantic and North-West Railway Company, having powers under their charter to enter into arrangements for the crossing of the State of Maine, obtained, from the Maine Central Railway Company, the privilege of acquiring running powers over the portion of their road between Mattawamkeag and Vanceborough, on the boundary line. These arrangements were accepted by an Order in Council of the 30th December, 1886.

The total subsidies available under vote of Parliament for this work of railway construction, amounting, as above stated, to \$250,000 a year, for a term of twenty years, it became necessary so to apportion this amount as to secure the building of the links to connect with the roads already in existence in New Brunswick and Nova Scotia leading to the harbours named.

Accordingly, an estimate of the cost of the several sections of the surveyed line, as adopted, was made, and as a result an Order in Council was passed on the 14th of June, 1886, dividing the subsidy as follows:—For the portion from the River St. Lawrence to Lennoxville, 100 miles, \$71,100; the portion from Lennoxville to Moose River, a point about 8 miles east of the western boundary between the Province of Quebec and the State of Maine, 89 miles, is covered by the International Railway, already constructed. For the portion, 134 miles long, between Moose River and Mattawamkeag, a station on the Maine Central Railway, \$115,500. From Mattawamkeag to Harvey Station on the New Brunswick Railway, a distance of 81 miles, running arrangements have been made over existing roads. For the portion, 113 miles, between Harvey and a point on the Intercolonial Railway near Salisbury Station, \$63,400. The remaining distance is by the Intercolonial Railway to Moncton, 10 miles, the total distance between the River St. Lawrence and Moncton being 527 miles.

By Orders in Council of the 3rd of September, 1886, and 24th of May, 1887, approval was given to location plans for the distance between the River St. Lawrence (at Caughnawaga) and Lennoxville, passing through the town of St. Johns, P. Q., Farnham and South Stukely to Magog, thence passing to the north of Lake Magog; the Government location being thus modified, and the distance slightly increased, namely, from 100 miles to $101\frac{55}{100}$.

The work not being completed, no portion of these subsidies had been paid up to the 31st of December, 1887.

The Atlantic and North-West Railway Company having under their charter, 42 Vic., ch. 65, (1879) power to construct a bridge across the St. Lawrence, near Lachine, submitted for approval plans for such a bridge, to be situated about a mile below the entrance of the Lachine Canal, and about nine miles above Montreal. These plans, having been favourably considered from an engineering point of view, and also with regard to navigation, were approved of by an Order in Council dated the 1st of April, 1882, subsequently modified by an Order of the 14th of November, 1885. The plans so approved show a steel bridge, with stone piers, having two spans of 408 feet each, two of 269 feet each, and eight of 242 feet each. The central 216 feet of each of the two channel spans affords a height of 60 feet above ordinary summer water level; these two spans are on the cantilever principle. The bridge is now completed.

By an indenture dated the 6th of December, 1886, the Canadian Pacific Railway Company have obtained a lease in perpetuity of the line and interests of the Atlantic and North-West Railway Company.

Stewiacke Valley and Lansdowne Railway Company.

(See No. 87.)

By the Act 49 Vic, chap. 10 (1886), a subsidy was authorized for a railway from a point on the Intercolonial Railway through the Stewiacke Valley, affording communication with the Iron Mines, Spring Side, Upper Stewiacke and Musquodoboit settlements, 25 miles, the extent of aid not exceeding \$80,000. The Stewiacke Valley and Lansdowne Railway Company having applied for this subsidy, a contract was made with them on the 17th of December, 1886, the line to be completed by the 1st of December, 1889. Up to the 31st of December, 1888, no portion of the subsidy had been paid.

St. Lawrence, Lower Laurentian and Saguenay Railway Company.

(See No. 59, 117.)

By an Act 48.49 Vic, chap. 59 (1885), a subsidy of \$217,600 was granted for a line of railway from the Grand Piles, on the River St. Maurice, Que., to a point
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of junction with the Lake St. John Railway (being in lieu of a subsidy of the previous year).

By the Act 50-51 Vic., chap. 24, this subsidy was repeated in favour of the company named below.

The St. Lawrence, Lower Laurentian and Saguenay Railway Company having applied for this subsidy, and being approved, a contract was entered into with them on the 20th of February, 1886, under authority of an Order in Council of the 6th of that month, which also approved of the location plans, the said location being subsequently amended under an Order in Council of the 25th of August, 1887.

Up to the 30th of June, 1887, the end of the fiscal year, there had been paid to the Company the sum of \$64,430. Since that date the further sum of \$23,383 has been paid, making a total payment up to the 31st of December, 1887, of \$92,813, covering a distance of 22½ miles.

Témiscouata Railway Company—Rivière du Loup to Edmunston.

(See Nos. 3 and 62.)

Towards the construction of a line from Rivière du Loup or Rivière Ouelle, or from some point between them, to Edmunston, Parliament, in 1882, voted a subsidy of \$240,000, and by the Act 48-49 Vic., ch. 58, a further subsidy, not exceeding \$258,000, was voted for the same work, making a total subsidy of \$498,000.

Under express provisions of this Act a charter was granted by Orders in Council of the 3rd and 6th of October, 1885, to certain persons constituting "The Témiscouata Railway Company," their object being to build the said road, and such charter, being published in the *Canada Gazette* of the 10th of that month, has force and effect as if an Act of Parliament. This charter was subsequently confirmed and amended by the special Act 50-51, Vic., ch. 71, 1887. Under the said charter the company have power to construct a road from the Intercolonial Railway at Rivière du Loup to Edmunston. On the 21st of June, 1888, a contract was duly entered into with the company for the work subsidized, the whole to be completed by the 1st of August, 1889. The location of the road, 80½ miles, *vid* Lake Témiscouata and the River Madawaska has been approved of by an Order in Council of the 30th of September, 1886. No portion of the subsidy had been paid up to the end of the fiscal year, the 30th of June, 1887, but subsequent to that date payments have been made on Orders in Council, and after due inspection, aggregating up to the 31st of December, 1887, the sum of \$166,184, and covering a distance of 50 miles.

Toronto, Grey and Bruce Railway Company.

(See No. 75.)

By the Subsidy Act of 1886, 49 Vic., chap. 10, the grant of a subsidy not exceeding \$16,000 was authorized towards the construction of a railway from Glenannan to Wingham, Ont. Under date the 20th of January, 1887, a contract for the work was made with the Toronto, Grey and Bruce Railway Company, as authorized by an Order in Council of the 5th of December, 1886, and the location plans having been approved and the completed road having been inspected, payment of the full amount of the subsidy applicable to the work, namely, \$14,720, has been authorized by Orders in Council, the last dated the 31st of December, 1887. Of this amount the whole had been paid at that date, except the sum of \$320.

Western Counties Railway Company.

By the Act 50-51 Vic., ch. 25 (1887), assented to on the 23rd of June, 1887, confirmation was given to an agreement made by the Government with the Western Counties Railway Company, on the 31st of January, 1887, contingently on such confirmation, the agreement itself being thereby, in some respects, modified, as expressed in a subsidiary agreement. Under the provisions of the said Act and agreements, covenants have been entered into which may be summarized as follows:—

The company undertook to withdraw a suit pending against the Crown, in respect of the Windsor Branch Railway, releasing the Government from all claims and also releasing to the Government all right and title to the branch. They have undertaken to build and complete the railway between Annapolis and Digby, N.S., and to complete, equip and put in first-class order the whole of the line from Yarmouth to Annapolis, also to settle all liens on their property and their indebtedness. In order to the fulfilment of the above, they undertook to deposit with the Government the total proceeds of the sale of their debentures, &c., the issue of which was limited to \$4,200,000. The Government on its side, in consideration of these premises, undertaking to pay to the company the sum of \$500,000, this amount to be credited to the company and added to the proceeds of the sale of their debentures, which proceeds the Government agree to hold for the purpose, the whole to be applied under certificate of the Government Chief Engineer and Order in Council, to the payment of interest on the debentures, &c., to be issued, to the building and completion of the railway above mentioned, and to the satisfaction of the company's existing obligations; the balance, if any, to be paid to the company. The dates to which the company are bound, as modified by the terms of the Act, are as follows:—

Work to be commenced by the 13th of July, 1887, and the railway between Annapolis and Digby to be completed by the 12th of September, 1888, the com-
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pany to complete to the satisfaction of the Government by the 12th of September, 1887, all arrangements for the settlement of its indebtedness. Provision was made also for the completion of the line between Annapolis and Digby, by the Government, at its option, from the funds in its hands, in the event of failure on the part of the company to make commencement of work, to progress with the same, or to satisfy the Government as to the arrangement of the settlement of its indebtedness by the dates so fixed. The company had not made deposit of money up to the 31st December, 1887.

West Ontario Pacific Railway Company.

(See No. 66.)

By the Act 49 Vic., chap. 10, 1886, the grant of a subsidy not exceeding \$3,200 a mile, nor in the whole, \$256,000, was authorized in aid of the construction of a railway from Ingersoll, *via* London to Chatham, Ont., the estimated distance being 80 miles.

Application being made by the West Ontario Pacific Railway Company for the said subsidy, qualified by a request for permission to construct the road from Woodstock to London, in place of from Ingersoll, and it appearing that in view of the greater distance of the line proposed by them from any other existing railway, it would be of more service to the country than the route actually subsidized, they were permitted, by an Order in Council of the 8th of September, 1886, to enter into contract for the road suggested between Woodstock and London, 27 miles, subject, however, to approval by Parliament; this conditional contract was signed on the 2nd of November, 1886, the road to be completed by the 1st of November, 1887.

The company, however, have actually constructed a portion of their railway, the location of which has been duly approved, from London eastwards to a point near Ingersoll, 19 miles, from which connection may be made with both Ingersoll and Woodstock. After inspection they have been paid under an Order in Council of the 1st of September, 1887, the sum of \$60,000, this being the amount of the subsidy applicable to the length built, less the sum of \$300 withheld to cover work remaining to be done.

In the Session of 1887 an Act, 50-51 Vic., chap. 62, was passed, authorizing the lease to the Ontario and Quebec Railway Company of part of the line of the West Ontario Pacific Railway Company under construction, from the line of the Ontario and Quebec Railway near Woodstock, *via* London to the River St. Clair, and this lease has been approved by an Order in Council, dated the 15th of October, 1887.

 LAND SUBSIDIES.

The following companies have been aided by subsidies in land duly authorized by Parliament and granted by the Department of the Interior:—

They are enumerated here because the engineering details have been dealt with by this Department, the certificate of whose officer has been required prior to the handing over to the company concerned of any part of the subsidy.

Alberta and Athabasca Railway Company.

(See No. 142.)

By an Order in Council, dated the 21st of May, 1887, a grant of land was made, subject to the approval of Parliament, to the company above named for a railway from some point on the Bow River or Canadian Pacific Railway at or between Calgary and Crow Foot Creek, running northerly to a point on the River Athabasca, and crossing the North Saskatchewan at a point near the town plot of Edmonton, a distance of 300 miles, the subsidy being at the rate of 6,400 acres per mile. The first 50 miles, commencing at the southern terminus, to be completed by the 20th of July, 1888; 100 miles in each of the two years following, and the whole road by the 20th of July, 1891.

By the Act 50-51 Vic., ch. 23, the above grant was confirmed.

Great North-West Central Railway Company.

(See No. 140.)

The inception of the scheme for the construction of a line of railway to extend from Brandon on the Canadian Pacific Railway to Battleford in the Provisional District of Saskatchewan, a distance of about 450 miles, is due to the North West Central Railway Company (formerly the Souris and Rocky Mountain Railway Company), and under an Order in Council of the 29th of July, 1885, the privilege of purchasing land at the rate of \$1.05 per acre, to the extent of 6,400 acres per mile, previously accorded them, was converted into a free grant of such land (subject to a charge of 10 cents per acre for survey), the grant being contingent on the due completion of their work in stated sections.

This concession did not result in the construction of any section of the road, and difficulties arising, and other applications being put forward for the work, the Act 49 Vic., chap. 11 (1886), granting aid to the extent of 6,400 acres per mile for the same, was made applicable either to the company named or to such other company as might undertake the construction of the road. Subsequently, the Great North West Central Railway Company were accepted as contractors by an Order in Council of the 22nd of July, 1886, for the building of a railway from Brandon to Battleford under the subsidy named,—being incorporated by an Order in Council of the same date in conformity with the provisions of the Act. The

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contract itself was actually signed on the 12th of September, 1887. Under the agreement with the company they are bound to build, equip and have running by the 1st of January, 1888,	50 miles,
“ “ “	1889, 100 “
“ “ “	1890, 150 “
“ “ “	1891, 150 “
	450 miles.

The first 50 mile section is to be constructed and equipped before the granting of any portion of the subsidy.

Under date the 7th of November, 1887, an extension of time for the completion of the first 50 mile section was granted, namely, to the 1st of August, 1888.

Manitoba and North-Western Railway Company.

(See Nos. 137 and 139.)

By Act 48-49 Vic., ch. 60, authority was given for the grant of aid for a line from Portage la Prairie to the crossing of the south branch of the River Saskatchewan, 20 miles from Prince Albert, about 430 miles, 6,400 acres per mile.

A grant was made to the company by Order in Council of the 4th of October, 1884, cancelling previous Orders. The date for completion was fixed by Order in Council of 6th of May, 1835, as at the rate of 50 miles a year.

The location and grades having been duly approved, an inspection made of the Company's road showed that up to the 1st of December, 1885, they had built and equipped 131 miles of road. An Order in Council of the 2nd of April, 1886, authorized conveyance of the land grant for this distance. Further inspection shows that since that date and up to the end of December, 1886, a further distance of about 50 miles had been built, making a total of 180 miles on the company's main line.

By the Act 49 Vic., ch. 11, 1886, authority was given for the grant of aid for a branch of this railway, from a point on the main line at or near Todburn, to the River Assiniboine, near Shellmouth, about 26 miles, 6,400 acres per mile.

A grant was made to the company by Order in Council of the 24th of May, 1886, completion to be by the 31st of December, 1886. Under Orders in Council of the 10th and 21st of September, 1886, the line was permitted to start from Binscarth, the order first named approving the location, to Russell, up to which point the road has been built. This branch, 12 miles long, has been inspected and reported as completed.

At the present date, the 3rd of December, 1887, the main line is in operation from Portage la Prairie to Langenburg, 180 miles.

Manitoba South-Western Colonization Railway Company.

(See No. 136.)

By 48-49 Vic., cap. 60 (1885), authority was given for the grant of aid for a line from Winnipeg to Whitewater Lake, about 150 miles, 6,400 acres per mile.

The charter of the company, granted by Act 42 Vic., ch. 66 (1879), empowered them to build a line from Winnipeg to Rock Lake, near the west boundary of the Province, the line to be completed in five years, namely, by the 15th May, 1884.

By the Act 43 Vic., ch. 53, 1880, they were permitted to extend the line up to the Souris coal fields.

By the Act 47 Vic., ch. 73, 1884, the company were allowed to lease their line to the Canadian Pacific Railway, the time for the completion of the railway being extended three years beyond the period fixed by their charter, namely, to the 15th of May, 1887.

By an Order in Council of the 4th of October, 1884, the company was subdized to the extent of 6,400 acres per mile for the whole distance, about 152 miles, from Winnipeg to Whitewater Lake, equal to 972,800 acres; the line for this distance to be completed by the 1st of October, 1885. Location has been approved as follows:—

By an Order in Council of the 3rd November, 1881,—from Aikins Street, Winnipeg, to Section 18, Township 7, Range 4 W., about 52 miles. This is to a point about 4 miles south from what is now known as Elm Creek.

By an Order in Council of the 1st April, 1885,—from Section 29, Township 8, Range 4, the point now known as Elm Creek, running west on a tangent to Section 31, Township 7, Range 9. This is the northern branch to the westward.

By an Order in Council of the 10th September, 1885,—from Section 29, Township 8, Range 4, passing through Carman and Manitou and the south shore of White Lake, thence to the western boundary of Manitoba between Ranges 29 and 30. This is the southern branch.

An Order in Council of the 6th April, 1885, modified the grant of the Order in Council of the 4th October, 1884, so as to make it applicable to a change in the location of the road and to the following sections:—

	Miles.
1. From Township 7, Range 4 (the portion from Winnipeg) to Township 7, Range 6, about 50 miles, being already completed), to Manitou.....	110
2. From Manitou to Whitewater Lake.....	20
3. From Township 8, Range 4, to Township 8, Range 9.....	20
	130
	130

The Order also apportioned the 972,800 acres equally amongst these 130 miles = 7,483.84 acres per mile.

An Order in Council of the 11th September, 1885, extended the time for completion to the 6th April, 1886.

An Order in Council of the 5th April, 1886, after report by the Chief Engineer of Railways as to inspection, showing completion of 100 miles, authorized the conveyance of 748,384 acres to the Manitoba South-Western Company.

By an Order in Council of the 15th November, 1886, it was decided to apply to certain further extensions completed, namely, on the South Branch, from Boisevain west 21 miles; on the North Branch, from Holland west, 20 miles, the reserve for Section No. 1, made under the Order of the 6th April, 1885. The remainder was to be kept as subsidy for said Section No. 1, from Township 7, Range 4, to Manitou, the construction of which was deferred, the Canadian Pacific Railway Company, the lessees of the road, having already communication with Manitou from Winnipeg by their southern line.

By an Order in Council of the 6th of March, 1887, the location of the northern of the two limits has been approved for a total distance of 60 miles from Elm Creek to Section 10, Township 7, Range 14. Of this, the first 30 miles was for a location previously approved, but now amended.

After further inspection and report by the Government Chief Engineer, showing the railway fit for traffic for a further total distance of 60 miles, an Order in Council was passed on the 19th of March, 1887, authorizing conveyance of the subsidy for this distance. At the present date, the 31st December, 1887, the line is in operation from Winnipeg to Glenboro (northern limb) 105 miles; also on the southern limb as far as Deloraine, a point 101 miles west from Manitou, and 203 miles from Winnipeg.

Medicine Hat Railway and Coal Company.

(See No. 144.)

By the Act 50-51 Vic., ch. 23., authority was given for the grant to the above company of Dominion lands to the extent of 6,400 acres per mile for a railway from a point at or near Medicine Hat, on the line of the Canadian Pacific Railway to the coal field in, or near Townships Nos. 12 and 13, Range 6, west of the 4th principal meridian, a distance of about 8 miles.

By an Order in Council of the 6th of July, 1887, the grant was made to the company accordingly; it being provided that the road should be completed and in operation by the 31st of December, 1888.

North-Western Coal and Navigation Company.

(See No. 135.)

By 48-49 Vic., ch. 60 (1885), authority was given for the grant of aid for a line from Medicine Hat to the coal banks on the Belly River, about 110 miles, 3,800 acres per mile. This was amended by 50-51 Vic., ch. 22—the extent of land being increased to 3,840 acres per mile.

By an Order in Council of the 16th of March, 1885, approval was given to the location of the company's line, and on inspection, in October, 1885, of the road from Dunmore Station, on the Canadian Pacific Railway, to Lethbridge, 109 miles; an Order in Council of the 19th of October, accepted the road as completed.

Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company.

(See No. 143.)

By Act 48-49 Vic., ch. 60, authority was given for the grant of aid for a line from a point near Regina to the navigable waters of Long Lake, 6,400 acres per mile.

On the 30th of December, 1884, an Order in Council was passed granting to the company the above subsidy.

The location of the road from Regina to the navigable waters of Long Lake, a distance of about 23 miles, was approved by an Order in Council of the 25th of September, 1886.

On inspection of the road, made in May, 1886, it was found that it was completed and in running order for a distance of 20-10 miles, the works on the remaining distance to the lake, about two miles, being in progress.

By the Act 50-51 Vic., ch. 23, authority was given for the grant to this company of a subsidy of 6,400 acres per mile for an extension of their line from a point near the northern terminus of the completed portion of the line near Long Lake to a point near the elbow of the North Saskatchewan River, with branches to Prince Albert and Battleford, about 325 miles.

On the 20th of June, 1887, an Order in Council was passed granting this subsidy; the company to construct and have running the first fifty miles of the distance by the 20th of July, 1888, the portion up to the crossing of the South Saskatchewan within the following year, and the whole road by the 25th of May, 1891.

Winnipeg and Hudson's Bay Railway and Steamship Company.

(See No. 134.)

By 47 Vic., cap. 25, clause 7 (1884), authority was given for the grant of aid for a line from some point on the Canadian Pacific Railway to Hudson Bay, viz., for each mile in Manitoba, 6,400 acres and in the North-West Territories, 12,800 acres.

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In the year 1880, by Act 43 Vic., ch. 59, there was incorporated "the Winnipeg and Hudson's Bay Railway and Steamship Company," with powers for the construction of a line from Winnipeg to or near Port Nelson, Hudson Bay.

In 1884, this Act was amended (by chapter 70), and the company were authorized to commence their line either from Winnipeg or from some point between Selkirk and Portage la Prairie, extending to Port Nelson and Churchill or some other point on Hudson Bay; also to construct a branch from any point on its main line to the Canadian Pacific Railway, west of Lake Winnipegosis, construction to be carried on at the rate of at least 50 miles a year.

By the same Act a previous Act authorizing the amalgamation of this company with the Nelson Valley Railway and Transportation Company was repealed, and authorization was given for the winding up of the company last named and the transfer to the Winnipeg and Hudson's Bay Company of all its property and interests.

By an Act passed in 1886 (49 Vic., ch. 73) the date for completion was fixed as the 2nd of June, 1890.

By an Order in Council of the 11th of May, 1885, all previous orders in this connection were cancelled, and there was granted to the Winnipeg and Hudson's Bay Railway and Steamship Company a subsidy in land, as follows:—

Authorized by Act 47 Vic., c. 26, assented to 19th April, 1884.	}	Division A.—From the Canadian Pacific Railway to the northern boundary of Manitoba—estimated distance, 225 miles.....	Acres. 1,440,000
		Division B.—From the boundary to the terminus near the mouth of the Nelson River, Hudson Bay—estimated distance, 425 miles.....	5,440,000
		Division C.—The Branch, from a point on the main line, near the northern extremity of Lake Winnipeg, to intersection with the Manitoba and North-Western Railway—estimated distance not to exceed 250 miles (Grant to be subject to approval by Parliament).....	<u>1,600,000</u>

The time for completion was fixed by this Order as 50 miles on division A or B by the 19th of April, 1887, and 50 miles a year thereafter until completion of main line; but if the company do not complete their main line by 11th of May, 1890, they will forfeit their right to a grant for their branch line, which must itself be completed by the 11th May, 1893.

In February, 1887, the Chief Engineer of Government Railways reported showing the value of work done on 40 miles of the company's road, namely, \$220,000 out of a total cost of \$272,000.

Wood Mountain and Qu'Appelle Railway Company.

(See No. 141.)

By the Act 49 Vic., ch. 11, 1886, the grant of aid was authorized for a railway from a point in Township 4, Range 30, west of the 2nd meridian, passing through Fort Qu'Appelle to the Manitoba and North-Western Railway, about 240 miles, 6,400 acres per mile.

A grant was made to the company by Order in Council of the 24th May, 1886, the portion between Fort Qu'Appelle and the Canadian Pacific Railway to be completed by the 1st November, 1887, and 50 miles a year thereafter.

This Order was amended by an Order of the 7th of July, 1887, the company being allowed one year from the 1st of January, 1887, for the completion of the first 50 mile section (after completion by the 1st of November, 1887, of the portion between the Canadian Pacific Railway and Fort Qu'Appelle), the rate of completion to be 50 miles each year subsequently until completion of the road.

By a further amending Order in Council of the 22nd of November, 1887, the company have been granted an extension of time for the completion of the portion between Fort Qu'Appelle and the Canadian Pacific Railway, namely, up to the 31st of July, 1888; 100 miles of the road to be completed and in operation by the 31st of December, 1888, as required by the preceding Order.

NORTHUMBERLAND STRAITS TUNNEL SURVEY.

A scheme having been submitted to the Government for the construction of a subway under the Straits of Northumberland to connect the railway systems of New Brunswick and Prince Edward Island, it was considered advisable, before arriving at a decision on a matter of such importance, that the Government should obtain from its own engineers information as to the feasibility of the plan. An Order in Council was passed on the 24th of August, 1886, under which a limited expenditure was authorized in order that subaqueous borings might be taken, covering the distance between Cape Traverse, on the Island, and Cape Tormentine, on the mainland, a distance of eight miles.

The engineers employed succeeded in making borings at each quarter of a mile for the first three miles, starting from Cape Traverse, and at each half mile for the balance. On the first $5\frac{1}{2}$ miles the boring tool passed through sand and gravel until brick clay was reached. From the $5\frac{1}{2}$ mile to the $6\frac{1}{2}$, through sand and hard grey sand to brick clay. From the $6\frac{1}{2}$ to the 8th mile, namely, to the shore line of the main land, through mud, sand and red clay to rock. The deepest water is 96 feet at $4\frac{1}{2}$ miles from the Cape Traverse wharf, and at the $6\frac{1}{2}$ mile a rocky reef occurs, covered by 9 feet of water and about 10 feet of sand. With this exception the bottom is very uniform and satisfactory.

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ST. CLAIR RIVER TUNNEL

In the year 1884, a company, "the St. Clair Frontier Tunnel Company," was incorporated by the Dominion Act, 47 Vic., ch. 82, for the purpose of building a tunnel for railway passage under the River St. Clair, from a point in or near the town of Sarnia, Ontario, to the city of Port Huron, Michigan, U. S., the Act providing that the plans of the tunnel and its works should be approved by the Governor in Council prior to commencement.

Satisfactory plans having been submitted, they were approved by an Order in Council, dated the 24th of November, 1886.

The length of the actual tunnel will be 5,280 feet, or one mile, of which 2,310 feet will be under the river. For the centre portion of this distance, 1,500 feet will, practically, be on the level; the ascent from the centre on either side being 1 in 50. The total length of the tunnel and its approaches will be 15,150 feet, and it will make connection between the Grand Trunk Railway and the Chicago and Grand Trunk Railway. The tunnel, cylindrical in form, will have a diameter of 20 feet in the clear. The greatest depth of water over the top of the work will be 40½ feet, and the minimum, 15 feet.

ROYAL COMMISSION ON RAILWAYS.

As the issue of discussion in Parliament, last Session, upon the question of the expediency of constituting a Court of Railway Commissioners for Canada, and with the object of obtaining reliable information, which would serve as a guide to decision in the matter, a Royal Commission was appointed by an Order in Council of the 6th of July, 1886, and has since that time conducted enquiries in various localities interested. The Commissioners have lately prepared their report ready for submission.

CANALS.

The canal systems of the Dominion, under Government control, in connection with lakes and navigable rivers, 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, Bras d'Or Lake, Nova Scotia.

The collection of the revenue derivable from the canals of the Dominion being in the hands of the Department of Inland Revenue, reference must be had to the annual report of that Department for all information in relation to the subject. The report in question further deals with general matters relating to the movement of freight on these canals.

The following statement, showing the amount accrued on each canal, for canal revenue proper and hydraulic rents, etc., during the fiscal year ended the 30th of June, 1887, has been furnished by the Department of Inland Revenue :

Name of Canal.	Tolls.	Wharfage and Storage.	Fines and Damages.	Other Receipts.	Hydraulic Rents.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Welland.....	157,207 26	.....	5 00	.....	3,470 45	160,682 71
St. Lawrence.....	59,909 43	4,458 45	116 00	16,890 34	26,593 52	107,967 74
Chambly.....	17,323 50	2 00	.....	.....	45 00	17,370 50
Ottawa.....	57,693 83	.....	37 50	.....	31 00	57,762 33
Rideau.....	5,957 80	24 64	.....	211 60	1,346 75	7,540 79
Newcastle District.	359 98	.....	.....	.....	.....	359 98
St. Peter's.....	1,426 47	.....	.....	.....	.....	1,426 47
	299,878 27	4,485 09	158 50	17,101 94	31,486 72	353,110 52

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 Port Arthur, at the head of Lake Superior, a distance of 2,260 statute miles. The distance to Duluth is 2,384 miles—See Appendix No. 8, p. 135.

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 533½ feet; number of locks, 53.

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

The canal is a little over a mile in length, and has two parallel locks, the largest being 515 feet long, 80 feet wide, with 16 feet of water on the sills, and a lift of about 18 feet. *

In 1841, as was observed in the report presented last year, 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 9 feet, a depth seemingly, from the data then possessed, secured through the works proposed. The River St. Lawrence is, however, from various causes, subject to fluctuations, the extent of which it was impossible, at the time when these canals were originally constructed, to arrive at with precision, and the continued observations and experience of subsequent years have shown that while the intermediate river reaches, at all times, afford ample depth for vessels of 9 feet draught, in the canals themselves, at certain periods of low water, this depth cannot be maintained, the bottom not having been sunk to a sufficiently low level.

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

	Feet.	Inches.
Williamsburgh Canals—		
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
Corr wall, guard.....	8	3
“ lower entrance.....	9	0
Beauharnois.....	10	10
“ lower entrance.....	9	3

In the year 1871 it was decided to enlarge the canals on the St. Lawrence route so as to afford a navigable depth of 12 feet throughout. Subsequently, however, it

* From certain statements "showing the present condition, growth and requirements of the commerce from Lake Superior by the lower lakes," published in May, 1887, under the order of the Duluth Chamber of Commerce for the information of commercial organizations interested in the navigation of the great lakes, it appears that the construction of a new and still larger lock is in contemplation, taking the site occupied by the two old locks in 1855. The dimensions of the proposed work would be, length 800 feet, width 100 feet, with 21 feet of water on the sills, the estimated cost being set down as \$1,700,000. For this work an appropriation of \$250,000 was made by Congress in August, 1886.

From statistics furnished with the above, it appears that in 1886 7,424 vessels passed through the existing canal, an increase of 38 per cent. over 1885, and representing over 4,500,000 tons of freight; further, as showing the extent of the commerce of the great lakes, in the year 1884 38,742 United States and 6,021 Canadian vessels, representing a total of 46,939 vessels or 19,645,271 tons passed through the Detroit River.

was decided that the depth should ultimately be increased so as to accommodate vessels of 14 feet draught; and accordingly in the scheme of enlargement which has so far been carried out, while, at present, a channel-way in the canals is provided for vessels drawing 12 feet only, all permanent structures, locks, bridges, &c., are being built of such proportions as to accommodate vessels of 14 feet draught, the locks being 270 feet long between the gates, 45 feet in width, and with a clear depth of 14 feet of water on the sills.

In view of the interest now being taken in the question of the completion of the scheme of enlarging the St. Lawrence Canals, the following brief resumé of matters treated more at length further on, under their proper headings, may be of some use as indicating the works of canal enlargement for a fourteen feet navigation so far executed, and those remaining untouched:—

Lachine Canal.—This canal is completed for a twelve feet navigation, with locks, bridges and culverts adapted for a fourteen feet navigation. The untouched work consists of the excavation of the canal prism to a further depth of two feet for about six out of the eight and a half miles comprising the canal. About one half of this excavation would be rock.

Beauharnois Canal.—No enlargement works whatever have been commenced on this canal.

Cornwall Canal.—Here, two new locks have been built at the lower end, and are in use. One is under contract at the upper end, and three are untouched. Preparations are being made for the commencement of some of these other works. Out of the eleven and a half miles comprising this canal about ten and a half remain at the navigable depth of nine feet only.

Williamsburg Canals:—

Farran's Point.—No work has been done here. The canal is three quarters of a mile long, with one lock, the navigable depth being nine feet.

Rapide Plat.—One new lock is practically completed, leaving one yet to be dealt with. Of the prism of the canal, four miles long, about three quarters of a mile is well advanced towards completion to the requisite depth for a 14 feet navigation.

Galops Canal.—The approach to the upper entrance has been improved, the canal itself, with three locks and a total length of seven and five eighths miles, remains untouched. Full examinations have, however, been made with a view to connecting the upper entrance with the deep water channel below the rapid.

Welland Canal.—The whole of the works, including excavation throughout, are now completed, and the present depth of water on the canal will accommodate vessels drawing 14 feet.

Besides the above, the channel way of the River St. Lawrence, itself, offers, in parts, obstacles to a fourteen feet navigation which it would be necessary to remove. Of this work, progress has been made with a certain portion, and that the most difficult and in the shallowest section of the river, namely at the Galops Rapids, through which a channel giving safe passage to vessels drawing fourteen feet has been nearly completed. In the distance between Cornwall and Beauharnois, covering Lake St. Francis, improvement of the channel would be required in a few places, and also between Beauharnois and Lachine, while excavation and clearance of the channel would be necessary over a distance of about four miles.

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	45 "	45 "
Depth of water {	at two locks 16 "	18 "
	at three locks.... 9 "	14 "
Mean width of new canal.....	150 "	

Depth of prism of canal between locks is adapted to vessels of 12 feet draught. The canal now consists of one channel, with two distinct systems of locks, the old and the enlarged. There are two entrances at each end.

The new canal having been extended for some distance above the entrance of the old canal, the total rise has been increased from 44¼ to 45 feet.

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

The full scheme for the enlargement of this, in common with the other canals of the St. Lawrence, contemplated the affording a navigable depth of 14 feet throughout; the improvement immediately in view, however, was only intended to furnish a navigable depth of 12 feet in the canal proper, and accordingly, on the following reaches, namely, between Lachine and Côte St. Paul, Côte St. Paul and St. Gabriel, and between St. Gabriel and Wellington Basin, the channel has been adapted to navigation by vessels of 12 feet draught only. All permanent works on the canal, such as locks, bridges and side walls, have been built to afford a navigable depth of 14 feet.

The canal was closed on the 30th of November, 1886, and opened on the 5th May, 1887.

No detention to vessels occurred during the year, nor was any damage caused to the works. The water supply during the year has been ample, and the works have been maintained in a state of thorough efficiency, with the exception of two old wooden bridges which require renewal.

A portion of the canal and the basins in Montreal have been lighted by electricity.

The report of the Superintending Engineer gives details of the repairs executed, and shows generally the condition of the canal. The use of the basins by sea-going vessels appears to be very general and the traffic of the canal has been of considerable extent. (App. 7, p. 94.)

BEAUHARNOIS CANAL.

Length of canal.....	11 $\frac{1}{4}$ statute miles.
Number of locks.....	9
Dimensions of locks.....	200 feet by 45 feet.
Total rise or lockage.....	82 $\frac{1}{2}$ 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, 15 $\frac{1}{4}$ 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 on the 1st of December, 1886, and was reopened for traffic on the 3rd of May, 1887.

No accident or interruption to navigation occurred during the year. (See App. 7, p. 95.)

Nothing has been done towards the enlargement of this canal.

CORNWALL CANAL.

Length of canal.....	11 $\frac{1}{2}$ statute miles.
Number of locks.....	6
Dimensions of locks.....	200 feet by 55 feet.
" of two lower entrance locks.....	270 " by 45 "
Total rise or lockage.....	48 feet.
Depth of water on sills.....	9 "
" " at the two lower entrance locks.	14 "
Breadth of canal at bottom (except at two culverts).....	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 $32\frac{3}{4}$ miles.

The Cornwall Canal extends past the Long Sault Rapids.

This canal was closed on the 8th December, 1886, and re opened on the 4th of May, 1887. (See App. 9, p. 107)

NEW WORKS.

The two locks at the new lower entrance (taking the place of three on the old line), were in constant use during the season of navigation. 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.

Of the four locks still to be dealt with, one is already under contract; also a supply weir, together with works for the improvement of the upper entrance, and arrangements are being made for the commencement of further works either on the summit level or above the town of Cornwall.

The proposed channel will be sunk to such depth as to admit of the passage of vessels of 14 feet draught.

WILLIAMSBURGH CANALS.

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

These canals were closed on the 4th of December, 1886, and re-opened on the 31st of May, 1887.

From a statement furnished by the Superintendent and attached to his report (p. 109) it appears that the lowest point of water level reached during the season of navigation was in January, 1887, on the Farran's Point Canal, where it stood at 8 feet 6 inches on the lower sills of the locks at the foot of the canal. The waters of the St. Lawrence continued high during the season, giving a good depth of water on all these canals. In consequence of the formation of an ice bridge from Croils Island, in February, to both the Canadian and American shores, a serious jam of ice occurred, extending for some miles to the west, and causing much injury in the Spring to the ice breaker and pier of the Farran's Point Canal; the water rising to a height of 20 feet on the lock sill at the foot of the Rapide Plat Canal.

A statement showing the highest and lowest depth of water at the locks on these canals will be found in Appendix 10, p. 109.

Navigation was carried on throughout the season without interruption. (App. 10, p. 108.)

FARRAN'S POINT CANAL.

Length of canal.....	$\frac{3}{4}$ mile.
Number of locks.....	1
Dimensions of locks.....	200 feet by 45 feet
Total rise, or lockage.....	4 feet
Depth of water on sills at ordinary water level.	9 "
Breadth of canal at bottom.....	50 "
Breadth of canal on water surface.....	90 "

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. The latter canal enables vessels ascending the river to avoid the Farran's Point Rapid. Descending vessels run the rapids with ease and safety.

No steps have been taken for the enlargement of this canal.

RAPIDE PLAT CANAL.

Length of canal.....	4 miles
Number of locks.....	2
Dimensions of locks.....	200 feet by 45 feet,
Total rise, or lockage.....	11 $\frac{1}{2}$ 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 10 $\frac{1}{2}$ miles. This canal was formed to enable vessels ascending the river to pass the rapid at that place. Descending vessels run the rapid safely.

NEW WORKS.

Steps have been taken towards the enlargement of this canal in conformity with the proportions of the general scheme. These works consist of the enlargement of the channel way above and for some distance below the present guard lock at the head of the canal, and the construction of a new lock and a supply weir, in connection with the old lock. The bottom of the channel, for a distance of about 1,000 feet below, and out into deep water, above the lock, about 700 feet, will be excavated to an extent sufficient to afford a navigable depth of 14 feet. The works are progressing. The new lock and the works in that vicinity are nearly completed.

GALOPS CANAL,

Length of canal.....	7 $\frac{5}{8}$ miles.
Number of locks.....	3
Dimensions of locks.....	200 feet by 45 feet.
Total rise, or lockage.....	15 $\frac{1}{2}$ 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 4 $\frac{1}{2}$ miles. This canal enables vessels to overcome the rapids at Pointe aux Iroquois, Pointe Cardinal and the Galops.

NEW WORKS.

The work under contract is the excavation and deepening of a channel way at the upper end leading to deep water, so as to give a depth available for vessels of 14 feet draught. The work is practically completed, and consequently access to this canal is found to be greatly facilitated. Preparations are being made with a view to extend the 14 feet navigation down to deep water below the rapids, placing a guard lock at that point.

GALOPS RAPIDS IMPROVEMENT.

The Galops Rapids, about seven miles below Prescott, the most shallow of the three passed by the Galops Canal, are being improved, for purposes of navigation, by certain works of submarine blasting and dredging.

These works, commenced in 1880, consist of the excavation of a straight channel through the rapids, 3,300 feet long, 200 feet wide, and of such depth as to afford safe passage at low water to vessels of 14 feet draught. This implies affording a depth of 17 feet of water.

The whole of the work of drilling and blasting is completed, but the broken up rock consequent upon these operations has to be removed by the dredging machine, and this work is in progress. It is one of considerable difficulty, owing to the rapidity of the current and the necessity of avoiding interruption to navigation. (See Appendix 16, page 132.)

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 14 feet of water.

	Old line.	Enlarged or New Line.
Length of Canal.....	27 $\frac{1}{5}$ miles.	26 $\frac{3}{4}$ miles.
Pairs of guard gates (formerly 3).....		2
Number of locks { lift.....	26	{ lift 25
{ guard.....	1	{ guard 1
Dimensions.....	1 lock 270 x 45 1 " 200 x 45 1 (tidal) 230 x 45 24 150 x 26 $\frac{1}{2}$	270 feet x 45 feet.
Total rise or lockage.....	326 $\frac{3}{4}$ feet.	326 $\frac{3}{4}$ feet.
Depth of water on sills.....	10 $\frac{1}{2}$ "	14 "

WELLAND RIVER BRANCHES.

Length of Canal—Port Robinson Cut to River	
Welland.....	2,622 feet.
" From the Canal at Welland to the river <i>vid</i> lock at aque- duct	300 "
" Chippewa Cut to River Niagara	1,020 "
Number of locks—One at aqueduct and one at Port Robinson	2 "
Dimensions of locks.....	150 by 26 $\frac{1}{2}$ feet.
Total lockage from the Canal at Welland down to River Welland.....	10 feet.
Depth of water on sills.....	9 " 10 inches.

GRAND RIVER FEEDER.

Length of canal.....	21 miles.
Number of locks.....	2
Dimensions of locks.....	{ 1 of 150 by 26 $\frac{1}{2}$ feet. 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	1 $\frac{3}{4}$ miles.
Number of locks.....	1
Dimension of locks	185 by 45 feet.
Total rise, or lockage.....	7 $\frac{1}{2}$ feet.
Depth of water on sills	11 "

The Welland Canal has one entrance from Lake Ontario, at Port Dalhousie, serving for both the old and new canals, and two from Lake Erie, of which one is for the main line at Port Colborne, and one for the feeder route at Port Maitland ; it has also an entrance from the River Niagara, at the town of Chippewa. The enlarged route lies between Port Dalhousie and Port Colborne.

From Port Dalhousie to Allanburgh, 11 $\frac{3}{4}$ miles, there are now two distinct lines of canal in operation, the old line and the enlarged, or new line.

From Allanburgh to Port Colborne, a distance of 15 miles, there is only one channel, the old canal having been enlarged.

The canals were closed on the 4th December, 1886, and re opened, on the 4th May, 1887.

On pages 116 and 117 tables will be found giving the greatest and least depth of water on the mitre sills of both the new and old locks at Port Dalhousie and Port Colborne. Also, a comparative statement showing the average height of water at both places for the old locks, in the months of June, 1886 and 1887, and for the new lock in the month of June, 1887. From this it appears that the average height of water in June, 1887, on the new lock at Port Dalhousie, was 17 feet 10 inches, and for the new lock at Port Colborne 16 feet 6 inches.

NEW CANAL.

No serious accident has occurred during the year.

Full details of the various repairs, renewals, &c., executed during the year, will be found in the report of the Superintendent. (App. 11, p. 111.)

OLD CANAL AND FEEDER.

The necessary repairs and renewals of the year have been made, and the works have been maintained in good condition. (App. 11, p. 118.)

DEEPENING OF THE WELLAND CANAL.

Although the immediate object of the works for the enlarged Welland Canal now completed and in use, was the accommodation of vessels drawing 12
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feet of water, it became clear, after the commencement of the works, that a greater depth was desirable in the interests of trade, and the matter having been discussed in Parliament, and the necessary provision made, it was decided that the foundations of all permanent structures on which operations had not advanced too far to render alteration judicious should be built with a view to the ultimate adoption of a navigable depth of 14 feet throughout the canal. This course was adopted, and these locks and other permanent structures were so built. The rock excavation and the harbour works were also carried out to accord with the scheme. The work, therefore, remaining to be done at the beginning of the past fiscal year to afford the navigable depth of 14 feet throughout the new canal was the raising of the locks, weirs, and banks, and the works connected with them, from the second lock above Port Dalhousie up to the 24th lock at Thorold; also, the deepening of the summit level from Allanburgh upwards to Ramey's Bend, a distance of about $11\frac{1}{2}$ miles.

Provision having been made by appropriations granted by Parliament for the work, an Order in Council was passed on the 12th of April, 1886, awarding contracts for the several sections to be dealt with.

The works have been now completed, including those for the passage of the waters of the canal across the Welland or Chippewa River by a massive stone aqueduct, and the connection between the canal and the aqueduct being opened, vessels drawing 14 feet of water have passed through the canal without difficulty since the commencement of the season.

The following details respecting the aqueduct, though given in last year's report should find place in the present:—

This work consists of a channel way built on arches through which the river waters pass. These arches were built without accident or interruption to the course of the river, one half of the stream being dealt with at a time.

The length of the aqueduct, including the wing at either end, is about 422 feet, and the breadth, over all, $120\frac{1}{2}$ feet. The mean width of the channel way or prism is 86 feet, the bottom being 5 feet below the low water line of the river, and $11\frac{1}{2}$ feet below the high water level. The height from the bottom of the prism to the top of the coping is 26 feet; the height of the whole work from the foundations is $45\frac{1}{2}$ feet, and the segmental arches through which the waters of the river are passed under the canal waters are six in number, each of 40 feet span.

MONTREAL, OTTAWA AND KINGSTON.

This route extends from the Harbour of Montreal to the Port of Kingston passing through the Lachine Canal, the navigation sections of the lower River

Ottawa, and the Ottawa River Canals, to the City of Ottawa, thence by the River Rideau and the Rideau Canal to Kingston, on Lake Ontario—a total distance of $245\frac{5}{8}$ miles.

After leaving the Lachine Canal, the works constructed to overcome the difficulties of navigation are :—

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

The total lockage (not including that of the Lachine Canal), is 509 feet—(345 rise, 164 fall)—and the number of locks is 55.

The following table exhibits the intermediate distances from Montreal Harbour :—

Sections of Navigation.	Intermediate distance.	Total distance from Montreal.
	Miles.	Miles.
The Lachine Canal.....	$\frac{1}{2}$	
From Lachine to Ste. Anne's Lock.....	15	$23\frac{1}{2}$
Ste. Anne's Lock and Piers.....	$\frac{1}{8}$	$23\frac{5}{8}$
From Ste. Anne's Lock to Carillon Canal.....	27	$50\frac{5}{8}$
The Carillon Canal.....	$\frac{3}{4}$	$51\frac{3}{8}$
From Carillon Canal to Grenville Canal.....	$6\frac{1}{2}$	$57\frac{5}{8}$
The Grenville Canal.....	$\frac{3}{4}$	$63\frac{3}{8}$
From the Grenville Canal to entrance Rideau Navigation.	56	$119\frac{3}{8}$
Rideau Navigation, ending at Kingston.....	$126\frac{1}{4}$	$245\frac{5}{8}$

STE. ANNE'S LOCK.

	Old Lock.	New Lock.
Length of canal.....	$\frac{1}{8}$ mile.	$\frac{1}{8}$ mille.
Number of locks.....	1	1
Dimensions of lock.....	190 by 45 feet.	200 by 45 feet.
Total rise, or lockage	3 feet.	3 feet.
Depth of water on sills.....	6 "	9 "

This work, with guide piers above and below, surmounts the Ste. Anne's Rapids between Ile Perrot and the head of the Island of Montreal, at the outlet of that portion of the Ottawa River which forms the Lake of Two Mountains, 23½ miles from Montreal Harbour.

This lock was closed to navigation on the 27th November, 1886, and re-opened on the 4th of May, 1887.

Navigation has been conducted without interruption or accident during the year.

Both the old and the new locks are available.

NEW WORKS.

The work of straightening and deepening the channel above the new lock was practically completed before the close of the fiscal year. The length of the improved channel is 4,700 feet, the breadth at bottom 100 feet, and the depth, at lowest water, 10 feet. (App. 8, p. 105.)

THE CARILLON CANAL.

Length of canal.....	¾ mile.
Number of locks.....	2
Dimensions of locks.....	200 by 45 feet.
Total rise, or lockage.....	16 feet.
Depth of water on sills.....	9 "
Breadth of canal at bottom	100 "
Breadth of canal at water surface.....	110 "

This canal overcomes the Carillon Rapids.

From Ste. Anne's Lock to the foot of the Carillon Canal there is a navigable stretch of 27 miles, through the Lake of Two Mountains and the River Ottawa.

The canal was closed on the 30th of November, 1886, and reopened on the 2nd of May, 1887.

No interruption to traffic has taken place. (App. 8, p. 105.)

By the construction of the Carillon dam, the water at that point has been raised 9 feet. Above this point, for a distance of nearly 7 miles, as far as the foot of Grenville Canal, the level of the river has been raised, and, consequently, the depth of water on the lower sill of the entrance lock of that canal has been increased, and the necessity of using the Chute à Blondeau Canal, situated between these points, is obviated.

 GRENVILLE CANAL.

Length of canal.....	5 $\frac{3}{4}$ miles
Number of locks.....	5
Dimensions of locks.....	200 feet by 45 feet.
Total rise or lockage.....	43 $\frac{3}{4}$ "
Depth of water on sills.....	9 "
Breadth of canal at bottom.....	40 to 50 feet.
Breadth of canal at surface of water.....	50 to 80 feet.

From the head of the Carillon Canal to the foot of the Grenville Canal, there is a navigable stretch of 5 $\frac{1}{2}$ miles.

This canal, by which the Long Sault Rapids are avoided, is about 56 miles below the city of Ottawa.

The canal was closed on the 30th of November, 1886, and reopened on the 2nd of May, 1887.

(See App. 8, p. 106.)

 UPPER OTTAWA RIVER.

 CULBUTE LOCKS AND DAMS.

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

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 Deschenes, 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.

There is a navigable route of 80 miles with a minimum depth of 7 feet at extreme low water, between Des Joachims and Bryson; making a total above and below Culbute of 117 miles.

The canal was closed at the end of November, 1886, and re-opened on the 1st May, 1887. (App 8, p. 106.)

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 navigation waters	126 $\frac{1}{4}$ miles.
Number of locks going from Ottawa to Kingston. {	33 ascending.
	14 descending.
Total lockage 446 $\frac{1}{4}$ {	282 $\frac{1}{2}$ rise and } at high water.
	164 fall. }
Dimensions of locks	134 by 33 feet.
Depth of water on sills, 5 feet; navigable depth through the several reaches.....	4 $\frac{1}{2}$ feet.
Breadth of canal reaches at bottom	{ 60 " in earth.
	54 " in rock.
Breadth at surface of water.....	80 " in earth

The summit level of this system is at 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 Catarqui. The whole duty of keeping up the water to its proper level is effected by the reserves, given in detail below.

These may be divided into three systems, viz :—

1. The summit level, supplied by the Wolf Lake system. 2. The eastern descending level to Ottawa, supplied by the River Tay system, discharging into 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, discharging through Round Tail

For table of distances of stations between Ottawa and Kingston, see Appendix 19, p. 136.

outlet, forms the River Cataraqui. This river, rendered navigable by dams at various points, affords a line of navigation to Kingston.

The navigation stopped at Kingston Mills on the 30th November, 1886, and recommenced on the 2nd of May, 1887.

At Ottawa, navigation stopped on the 29th of November, 1886, and recommenced on the 3rd May, 1887.

Navigation throughout the year was uninterrupted.

The level of the water in the descending reaches from the summit level to Ottawa, was maintained up to the close of navigation, at the full height required. On the descending reaches, however, from the summit level towards Kingston, the water fell below navigation height, namely, at Newboro, the first descending lock, by the middle of September, and on the Kingston Mills reach by the 30th of July. The spring freshets on the Rideau were higher than usual, and the road bridges between the Hog's Back and the Ottawa (with the exception of the new iron bridges at New Edinburgh) were all damaged.

In 1885 Parliament voted the sum of \$20,000 "for works necessary to increase the supply of water to the canal and the Gananoque River." In pursuance of the objects of this vote, arrangements were authorized by an Order in Council of the 16th of November, 1885, by which the Gananoque Water power Company undertook the execution of works raising the water-level of that river, receiving from the Government the sum of \$8,000 towards the cost to be incurred. The greater portion of the work has been executed. (App. 12 p. 125.)

TAY CANAL.

This canal, when completed, will be a branch of the Rideau Canal, affording communication between Beveridge's Bay, on Lake Rideau, and the town of Perth, a distance of about 6 miles.

The works, embracing the construction of a dam and two locks, 134 feet by 32 feet, with a depth, at the lowest stage of water, of 5 feet 6 inches, also the deepening of the channel of the River Tay, where required, were carried on during the fiscal year. Both locks and the dam are completed, and the canal from the Lake Rideau to the River Tay, a distance of about $1\frac{1}{4}$ miles, is practically complete, giving communication to the town of Perth by way of the river. (App. 13, p. 127.)

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
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Richelieu through the St. Ours Lock to the Basin of Chambly, thence by the Chambly Canal to St. Johns 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 is 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	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.....	$\frac{1}{2}$ mile
Number of locks.....	1
Dimensions of lock.....	200 feet by 45 feet.
Total rise, or lockage.....	5 "
Depth of water on sills.....	7 " at low water.
Length of dam in eastern channel.....	300 "
" " western channel	690 "

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 thirty-two miles.

Navigation closed on the 30th of November, 1886, and re-opened on the 2nd of May, 1887.

It should be observed that this lock, which was constructed in 1849, stands in need of extensive repair.

CHAMBLY CANAL.

Length of canal.....	12 miles
Number of locks.....	9 "

Dimensions of locks :—

Guard Lock, No. 1, at St. Johns.....	122 feet	} From 22½ to 24 feet wide.
Lift " " 2.....	124 "	
" " " 3, 4, 5, 6.....	118 "	
" " " 7, 8, 9 combined.....	125 "	
Total rise, or lockage.....	74 "	
Depth of water on sills.....	7 "	
Breadth of canal at bottom.....	36 "	
" " surface of water.....	60 "	

¶ Succeeding the 32 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. Johns, a distance of 12 miles.

This canal was closed to navigation on the 1st of December, 1886, and was re-opened on the 5th of May, 1887.

Both at Chambly and at St. Johns the entrance piers were extensively damaged by ice. The latter so seriously as to require rebuilding.

Owing to the unprecedentedly high water in the Spring on the River Richelieu, the canal built between St. Johns and Ile Ste. Thérèse was partly washed away, the damage extending over a distance of three miles. Measures have been taken for the repair of the work.

¶ During the winter, a railway swing bridge across the canal at St. Johns was built without interruption to navigation by the Atlantic and North Western Railway Company.

The traffic on this canal has shown great increase during this year. No accident or interruption to navigation occurred. (See App. 7, p. 96.)

RIVER RICHELIEU.

The work of surveying the River Richelieu between St. Johns and Rouse's Point was continued during the year. The whole of the hydrographic surveys of
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the River between the points named has now been completed, and maps and a chart of the River are being made. (See page 104.)

ST. PETER'S CANAL, CAPE BRETON.

Length of canal.....	about 2,400 feet.
Breadth at water line.....	55 feet.
Lock.....	one tidal lock, 4 pairs of gates.
Dimensions.....	200 feet by 58 feet.
Depth of water on sills.....	18 feet at lowest water.
Depth through canal.....	19 “
Extreme rise and fall of tide in St. Peter's Bay.....	4 “

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 4th of January 1887, and re-opened on the 20th of April, 1887.

The works of the canal are in good order, with the exception of the old retaining wall at the sea entrance, destroyed by the sea-worm. A special appropriation for the repair of this work was voted last year, and arrangements were made to assure the completion of the repairs in the fall of 1887. The traffic returns show the passage of 794 vessels bound north, and 655 vessels bound south. (Ap. 15, p. 130.)

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, Lake Ontario, to Lake Huron.

Many years ago the utilizing of these waters for the purpose of through water communication between Lake Huron and Lake 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 Lake Balsam, the summit water, about 166 miles from Trenton; from 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.

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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 distances of navigable and unnavigable reaches :

	Navigable Miles.	Unnavigable Miles.
From Trenton, Bay of Quinté, to Nine Mile Rapids...		9
“ Nine Mile Rapids to Percy Landing.....	19½	
“ Percy Landing to Heely’s Fall Dam.....		14½
“ Heeley’s Fall Dam to Peterboro’.....	51½	
“ Peterboro’ to Lakefield.....		9½
“ Lakefield to Burleigh.....	12	
“ Burleigh Rapids.....		1
“ Burleigh Rapids to Buckhorn Rapids.....	7	
	Navigable. Miles.	Unnavigable. Miles.
From Buckhorn Rapids.....		1
“ Buckhorn Dam to Lindsay.....	36½	
	126½	34½
“ Lindsay to Port Perry at the head of Lake Scugog	28½	
	155½	34½
Total distance, Bay of Quinté to Port Perry.....		190
Passing to Fenelon Falls the distance from Buckhorn Dam to Fenelon is.....		31½

The following is a list of the works :—

Chisholm’s Rapids.

	Distance from Trenton in miles.
The work here consists of a canal and lock, a dam and slide	15½

Percy Landing.

A retaining boom for saw logs.....	28½
------------------------------------	-----

Campbellford.

Guide booms.....	34½
------------------	-----

<i>Middle Falls.</i>	
The work consists of 4 dams and 2 slides.....	37½
<i>Crow Bay.</i>	
A retaining boom.....	28
<i>Heeley's Falls.</i>	
A dam and slide.....	42½
<i>Crook's Rapids, Hastings.</i>	
The works consist of 1 lock, 1 dam and slide for timber.....	34½
<i>Whitlas' Rapids.</i>	
The works, situated below Peterboro', consist of a lock, dam and canal.....	92½
<i>Little Lake.</i>	
The works consist 3 piers and 1 boom.....	94
<i>Burleigh.</i>	
Timber slides, 2 dams, 3 locks (new).....	101
<i>Buckhorn Rapids.</i>	
There is a dam at this point, which is important as keeping up the level of the water of the lakes west of it, as far as Bobcaygeon, including Lakes Pigeon, Ball, Buckhorn and Chemong. 1 lock, 1 slide (new works).....	125
<i>Bobcaygeon.</i>	
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.....	140½
<i>Fenelon Falls.</i>	
A large slide and ½ booms, 2 combined locks (new).....	155½
<i>Lindsay.</i>	
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 of water on the sills.....	161½
The navigation is, by this work, extended to Port Perry, Lake Scugog.....	190

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

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

The water on the several reaches was maintained at the standard level, namely 5 feet on the lock sills.

The number of lockages on the several canals was 1,574, as against 2,193 vessels passed during the season of 1885-86.

Repairs of somewhat extensive character was made to the Lindsay dam.

There was no interruption to navigation during the season.

Navigation ceased on the 23rd of November 1886, and re-opened on the 27th March 1887. (App. 14, p. 128.)

NEW WORKS.

The new works for the improvement of the Trent Valley navigation, for the construction of which appropriations have been voted by Parliament, are at the following places:—Canals, with locks and bridges, at Burleigh Rapids, Buckhorn Rapids and Fenelon Falls; also dams at Lakefield and Young's Point. Their completion will give communication between Lakefield, $9\frac{1}{2}$ miles from Peterboro', and Balsam Lake, the headwaters of the system, opening up a total of about 150 miles of direct and lateral navigation.

At Lakefield, $9\frac{1}{2}$ miles from Peterboro', the new dam, at the head of the Nine Mile Rapids of the River Otonabee, which maintains navigation on Lake Katchewanoe up to Young's Point, was completed during the fiscal year, and was found to be effective in maintaining the water level above it.

At Young's Point, 5 miles from Lakefield, the new dam between Lake Katchewanoe and Clear Lake, controls the water level through Clear and Stony Lakes up to the foot of the Burleigh Canal. The lock here, it should be observed, is controlled by the Provincial Government.

At Burleigh Rapids, 10 miles from Young's Point, a canal is being constructed about $2\frac{1}{4}$ miles in length, passing the Burleigh and Lovesick Rapids, and giving communication between Stony Lake and Deer Bay. The work, comprising the construction of three lift locks and certain dams, is in progress, and its completion in readiness for navigation next season is expected.

At Buckhorn Rapids, 7 miles from Burleigh Rapids, a canal of about one-fourth of a mile long has been constructed, having one lift-lock. The work will be completed in readiness for navigation next season.

At Fenelon Falls, 32 miles from Buckhorn Rapids, a canal about one-third of a mile in length, with two lift locks was constructed in 1885 connecting Sturgeon Lake with Cameron Lake.

In all the above named works the locks are of the following dimensions:—

Length.....	134 feet.
Breadth.....	33 "
Depth of water on the mitre sills.....	5 "

(App. 14, p. 128.)

MURRAY CANAL.

This canal extends through the Isthmus of Murray, giving connection westward between the headwaters of the Bay of Quinté and Lake Ontario.

The works on this canal, commenced under a contract given out in August, 1882, comprise a cut through the isthmus $4\frac{1}{4}$ miles long, and improvements in the way of dredging and other work to the entrance channels at either end covering a total distance $9\frac{1}{2}$ miles in all.

The canal has a depth of 11 feet below the lowest known water level of the lake, or of 12 feet 6 inches below ordinary lake level, and a width at the bottom of 80 feet. There are no locks.

Its western terminus is near the village of Brighton in the harbour of Presqu'Île, from which point to Port Dalhousie, the entrance of the Welland Canal, the distance is about 120 miles.

A certain amount of excavation remains to be done to obtain the full contemplated width, and some bottom rock has to be removed near the Brighton end; also, a channel way must be dredged through a part of the harbour. The piers at both the eastern and western entrances of the canal are well advanced. The new entrance from the Lake to Presqu'Île harbour, has a width varying from 1000 feet outside the main light, to 200 feet at the entrance to the channel. The maximum depth is 16 feet. (App. 16, p. 131.)

SAULT STE. MARIE CANAL.

Surveys have been carried on with a view to the construction of a canal on the Canadian side of the River Ste. Marie. A thorough examination of the locality has

[1887]

or

been made, and such information has been gathered as will pave the way for canal construction and the utilization of an extensive system of water power at this point.

ROYAL COMMISSION ON LACHINE CANAL LEASES.

If being desirable, in view of the changed conditions consequent on the enlargement of the Lachine Canal, that an understanding should be had of the position of the several hydraulic leases on the work, a Royal Commission was appointed by an Order in Council dated the 17th of July, 1886, for the purpose of investigating the matter and reporting as to the conclusions arrived at.

The Commissioners conducted their inquiries accordingly, and have reported with respect to certain matters in this connection.

COMMISSION ON THE TRENT NAVIGATION

In view of the interest taken in the scheme for connecting the waters of the Bay of Quinté, Lake Ontario, with those of Georgian Bay, Lake Huron, it was thought advisable that the matter should receive investigation at the present time, and accordingly an Order in Council was passed on the 8th of October, 1887; authorizing the appointment of a Commission of enquiry to examine and report on the question of the expediency of extending the Trent Valley navigation. The Commission was constituted accordingly, but had not reported at the date of the present report, 31st Dec. 1887.

I have the honour to be,

Your Excellency's most obedient servant,

J. H. POPE,

Minister of Railways and Canals.

31st December, 1887.

APPENDICES.

APPENDIX No. I.

STATEMENT showing the amount expended by the Department of Railways and Canals,
Dominion of Canada, during the Fiscal Year ended 30th June, 1887.

Name of Work.	Construction.		Repairs.		Staff and Maintenance.	
	\$	cts.	\$	cts.	\$	cts.
CANALS.						
Lachine	28,772	52	22,567	81	53,113	97
do —Income.....	12,981	59				
do damages to vessels—Income	2,633	79				
Cornwall	46,966	43	12,100	29	17,520	54
Williamsburg	115,853	00	7,904	78	7,635	54
Beauharnois—Income	3,633	57	14,999	88	18,867	45
St. Lawrence.....	74,465	50				
Welland	200,559	69	76,365	80	109,371	69
do deepening to 14 ft.....	861,741	07				
do damages	8,770	11				
do back ditches—income.....	3,828	67				
do Ports Maitland and Colborne			1,075	00		
St. Anne's.....	45,276	08	1,499	96	2,537	41
do —Income.....	6,054	10				
Carillon	869	14				
Granville.....	19,877	97	10,554	41	20,011	36
Culbute	7,760	88	967	33	730	00
Rideau—Income	20,823	96	18,565	34	29,440	46
Trent	179,541	63	6,008	88	1,938	08
Murray	142,535	47				
St. Ours			5,864	78	2,175	37
Chambly—Income	17,911	17	20,071	37	19,063	62
St. Peter's	1,087	75	343	23	2,777	13
do —Income.....	750	00				
Surveys do	7,901	01				
Arbitrations do	6,192	53				
Tax	49,617	92				
Dredge vessels.....	4,315	91	649	04		
Royal Commission—Income.....	2,431	76				
Total on Canals.....	1,873,193	23	199,537	88	285,172	62
RAILWAYS.						
Pacific	471,794	81				
do subsidy.....	460,087	13				
Surveys generally.....	8,514	30				
do Cape Breton and other railways.....	8,588	73				
Statistics	1,200	00				
Intercolonial	697,302	51			2,828,115	58
do Eastern Extension.....					94,254	04
do Windsor Branch					26,042	33
Prince Edward Island	5,800	00			204,237	45
Subsidies general	1,406,533	00				
Short Line Railway claims.....	24,157	32				
Carleton Branch	2,299	62				
Cape Breton	76,501	89				
Windsor and Annapolis	125,936	75				
Royal Commission.....	13,831	04				
Albert Railway.....	11,436	81				
Total on Railways	3,313,983	91			3,152,649	40
Total on Railways and Canals.....	5,187,177	13	199,537	88	3,437,822	02

Total amount expended..... \$8,824,537 03
 Payment to Grand Trunk Railway Co. on account of fuel 35,373 04

J. BAINE,
 Accountant.

APPENDIX

STATEMENT showing the amount expended on the construction and the

(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		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	178,618 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	.....
do	1883	396,496 96	.....
do	1884	189,034 41	.....
do	1885	111,215 23	.....
do	1886	210,509 42	.....
do	1887	28,772 52	.....
Total .....	.....	9,099,746 63	1,624,632 01

No. 2.

enlargement of Canals of the Dominion of Canada, up to 30th June, 1887.

(included)

Cornwall Canal.	St Lawrence Canals. — Not Apportioned	Williamsburg Canals.	St. Lawrence. — Chain Vessel and Improvement of Navigation. ¹	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	2,199,982 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
21,728 93			44,874 31		550,240 36
23,018 13		2,473 44	89,846 03		432,952 88
62,034 90		103,237 12	115,110 17		463,505 38
57,820 83		149,835 71	116,051 73		215,477 75
46,966 43		115,853 00	74,437 31		1,091,073 87
2,734,069 03	116,821 31	1,697,711 81	534,992 91	142,730 72	23,062,615 33

APPENDIX

STATEMENT showing the amount expended on the construction and the
(Repairs not

By whom Expenditure incurred.	Year ending 30th June.	Ste. Anne's Lock.	Carillon and Grenville Canals.	Culbute Lock.	Rideau Canal.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.
Imperial Government	Up to June 30, 1867 }	.....	(*)	.....	3,911,701 47
Provincial Government		134,456 51	63,053 64	.....	153,062 60
Dominion Government.....	1868	.....	19,817 22	.....	7,593 67
do	1869	.....	.....	.....	.....
do	1870	.....	4,167 96	.....	.....
do	1871	.....	23,119 37	.....	11,732 88
do	1872	1,939 46	165,257 28	.....	4,967 50
do	1873	540 11	136,250 48	.....	18,070 97
do	1874	12,753 27	245,258 38	38,388 99	5,793 16
do	1875	32,627 71	339,864 76	63,659 29	9,310 85
do	1876	24,935 85	326,203 16	76,842 44	2,163 96
do	1877	30,003 48	245,738 04	56,081 87	214 11
do	1878	14,618 85	22,676 20	5,933 53	.....
do	1879	22,113 02	243,141 24	20,694 19	7,703 88
do	1880	3,054 68	281,514 27	16,688 20	355 05
do	1881	69,042 76	336,707 53	4,721 62	.....
do	1882	193,158 36	433,084 39	29,567 15	.....
do	1883	172,959 95	416,826 10	14,249 60	.....
do	1884	142,006 25	399,267 16	8,151 16	.....
do	1885	93,679 57	157,187 72	19,071 76	2,088 76
do	1886	129,681 67	104,973 24	26,385 27	.....
do	1887	45,276 08	20,747 11	7,760 88	.....
Total.....	.....	1,123,847 18	3,984,855 25	388,195 95	4,134,768 86

* Expenditure not given.

No. 2—*Concluded.*enlargement of the Canals of the Dominion of Canada, &c.—*Concluded.*
included).

Chambly Canal.	St. Peter's Canal.	Survey Baie Verte Canal.	Murray Canal.	Trent Canal.	Tay Canal.	Total.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
						4,173,921 47
643,711 76	88,9 9 39					16,028,840 23
	21,519 72					72,675 15
	70,719 80					126,953 20
	46,193 57					92,902 80
2,872 85						93,020 10
1,906 40						281,586 28
759 00		4,877 83				375,258 44
		4,018 90				1,237,818 96
2,415 00	20 97	443 00				1,716,904 37
	11,125 00	110 75				2,389,544 21
80 00	63,330 18	22 30				4,131,396 60
	26,511 51					3,843,338 62
	107,337 75					3,064,098 61
	80,120 54					2,122,893 74
	69,434 76	520 00				2,076,411 65
	484 00		7,135 63			1,593,174 09
			84,071 68	40,767 16	4,831 80	1,747,046 85
	2,471 40		118,187 43	120,643 91	50,878 12	1,578,930 32
	16,820 15		143,902 66	121,382 84	93,473 97	1,506,720 23
	2,316 85		179,704 52	75,103 30	65,561 51	1,333,421 80
	1,087 75		142,563 66	179,541 63	49,617 92	1,803,698 16
651,745 01	608,443 34	9,982 78	680,565 58	537,438 81	263,363 32	51,395,555 86

APPENDIX NO. 3.—STATEMENT showing Subsidies voted for Railways as to which contracts have been entered into and payments made, up to 30th June, 1887.

Subsidies Voted.		Amount.	Railways.				Payments.				Total to 30th June, 1887.
Authority.			1883-84.	1884-85.	1885-86.	1886-87.	1884-85.	1885-86.	1886-87.		
46	Vic., cap. 25	\$ 156,800	\$ 144,000							\$ 144,000	
45	do 14	384,000								457,991	
46	do 25	80,000	32,000			37,027	186,745	202,219			
48-9	do 25	96,000								89,600	
46	do 25	89,876				57,600				150,670	
47	do 8	272,000				49,090	41,000	60,580			
46	do 25	115,200								170,900	
47	do 8	76,800				32,000	76,800	61,200			
47	do 8	32,000								25,088	
47	do 8	48,000				48,000				48,000	
45	do 14	660,000								1,284,400	
46	do 25	660,000				154,440	1,051,590	78,370			
47	do 8	125,000								146,200	
48-9	do 59	19,200					128,000	18,200			
48-9	do 10	32,000								60,342	
47	do 19	140,800								69,922	
47	do 8	211,200								30,000	
48-9	do 59	72,000					60,342	4,950		38,400	
48-9	do 59	30,000					36,400			22,400	
46	do 25	38,400								92,864	
47	do 8	22,400								750,000	
48-9	do 59	96,000						44,384		96,000	
47	do 6	760,000						327,480			
47	do 8	96,000						96,000			
46	do 25	320,000						350,000		250,000	
47	do 8	300,000								97,440	
48-9	do 59	118,400								64,430	
48-9	do 59	317,600								11,200	
49	do 10	11,200								19,200	
49	do 10	32,000								15,000	
47	do 8	160,000								40,800	
49	do 10	94,000								1,000	
47	do 8	51,200								1,000	
48-9	do 59	25,600								4,89,027	
			208,000	463,245	2,171,439	1,406,533					

J. B. AINE,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
December 31st, 1887.

APPENDIX No. 4.

CANADIAN PACIFIC RAILWAY.

OFFICE OF THE ENGINEER IN CHIEF,

OTTAWA, 10th November, 1887.

SIR,—On the 12th October, 1886, I reported the progress made with the works of construction of the Canadian Pacific Railway up to that date, and now it again becomes my duty to report progress.

THE LAKE SUPERIOR AND WESTERN SECTIONS.

The only work done upon these sections since my report of 12th October, 1886, is the renewal of the Port Moody wharf with iron piles; this work was completed in November last, and appears to be a good, sound and solid piece of work. In my report above referred to, I gave my opinion that the slopes of some of the cuttings in the valleys of the Fraser and Thompson Rivers should be flattened, and exposed stones and loose rocks removed; but nothing definite in this connection has yet been decided on, but I have had engineers upon the ground, watching the action of the weather and the freshets in the rivers upon the work generally, from the Kicking Horse Pass to Port Moody, and otherwise engaged in connection with these works. The Canadian Pacific Railway Company have taken exception to the section of the road between Savona's and Emory's Bar, alleging that the road has not been built of as high a standard as they expected it to be, or as called for by their contract, and this is, I understand, to be a subject of arbitration. I passed over these sections of road in October last, when they were certainly in excellent running condition.

THE EASTERN AND CENTRAL SECTIONS.

These sections extending from Callander to Port Arthur and Red River to Kamloops were accepted by the Government in November last as completed under the contract, with the reservation that when it should be found expedient to improve the gradients near Mount Stephen, it should be in the power of the Government to cause such improvement to be made without further expense to the public, and since that time the road through from Montreal to Vancouver has been in successful operation, except in so far as the traffic was impeded for a short time during last winter by the heavy snows in the mountains.

To guard against a repetition of this, the snow shed system has been extended during the past summer at a heavy cost, and it is now confidently expected that no serious delays will in future be caused by the snow slides in the mountains.

I have the honor to be, Sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,

Chief Engineer, Canadian Pacific Railway.

A. P. BRADLEY, Esq.,

Secretary, Department of Railways and Canals.

APPENDIX No. 5.

CANADIAN GOVERNMENT RAILWAYS.

OFFICE OF THE CHIEF ENGINEER AND
GENERAL MANAGER, GOVERNMENT RAILWAYS,

OTTAWA, 7th November, 1887.

Mileage Table of the Canadian Government Railways system in operation.

	Miles.
Intercolonial Railway	880
Eastern Extension Railway.....	80
Windsor Branch Railway.....	32
Prince Edward Island Railway	212
	<u>1,204</u>

SIR,—I have the honor to submit herewith the reports and accounts of the working of the railways in operation under my charge, during the year ended the 30th June, 1887.

The Indiantown Branch of the Intercolonial Railway, 14 miles in length, was opened for traffic on the 1st December last, making the aggregate length of the Government Railways in operation at the close of the year 1886-87, 1,204 miles, the average over the whole year being 1,191 miles.

The result of the year's business of these railways may be stated as follows :—

Name of Railway.	Average Mileage for Year.	—	Amount.		Profit.		Loss.		
			\$	cts.	\$	cts.	\$	cts.	
Intercolonial	1,191	Earnings	2,596,009	83	.....			232,105	75
		Working expenses....	2,828,115	58					
Eastern Extension.....	80	Earnings	64,107	10	.....			30,146	91
		Working expenses....	94,254	04					
Windsor Branch	32	One-third earnings...	25,327	58	.....			714	75
		Working expenses....	26,042	33					
Prince Edward Island.....	212	Earnings	155,303	37	.....			48,934	08
		Working expenses ...	204,237	45					
Total.....								311,901	52

INTERCOLONIAL RAILWAY.

The earnings of this railway for the year under consideration fell short of the working expenses by \$232,105.75 (*vide ante*).

The causes of this were, the unusually heavy expense of keeping the track open for traffic during the winter owing to the almost unprecedentedly severe storms of snow and wind; and the cost of the numerous additions and improvements, such as are usually charged to capital account by railway companies, but which have been treated as forming part of the working expenses of the Intercolonial.

The following statement shows the gross earnings, the tonnage of freight and the number of passengers carried in each year since the 1st July, 1876, when the railway was opened as a through trunk line:—

Years.	Average Miles in Operation.	Earnings.	Tons of Freight Carried.	Number of Passengers Carried.
		\$ cts.		
1876-77.....	714	1,154,445 35	421,327	613,428
1877-78.....	714	1,378,946 78	522,710	618,957
1878-79.....	714	1,292,099 69	510,861	640,101
1879-80.....	825	1,506,298 48	561,924	581,483
1880-81.....	840	1,760,393 92	725,577	631,245
1881-82.....	840	2,079,262 66	838,956	779,994
1882-83.....	840	2,370,921 10	970,961	873,600
1883-84.....	847	2,353,647 26	1,001,163	920,370
1884-85.....	861	2,368,153 65	970,069	914,785
1885-86.....	866	2,383,200 77	1,008,545	889,864
1886-87.....	867	2,596,009 83	1,131,334	940,144

It thus appears that the gross earnings, the weight of freight, and the number of passengers carried, continue to increase. The increase in both freight and passenger traffic is about equally divided between local and through business, the net results are, nevertheless, unsatisfactory, and, I fear, will not improve so long as a large quantity of coal continues to be carried to Quebec and Ontario at the present low rates, and the cost of additions and improvements to the property charged against working expenses. Of the 753,480 barrels of flour carried, 711,528 passed down from Ontario by way of Chaudière Junction.

Although the statement I am about to make does not apply to the fiscal year under consideration, it may be interesting to the Minister to know that a very considerable trade in oysters is being developed. From the 16th September to the 8th October, 1887, the shipments over the Intercolonial from Pointe du Chêne were:—

	Barrels.
To Montreal.....	3,143
Other stations on the G. T. R.....	33
Quebec.....	3,081
St. John, N. B.....	981
Halifax.....	89
Moncton.....	221
Amherst.....	103
Other stations on the I. C. R.....	213
Total.....	<u>7,864</u>

The sugar refining interests of the Maritime Provinces appear to be in a prosperous condition, judging by the shipments for the year, which were:—

	Barrels.
From Halifax.....	88,996
Moncton.....	56,992
Total	<u>143,988</u>

Considering the fact that these refineries have only been in operation for a few years, the output is certainly very encouraging.

The shipments of coal from the Maritime to the Western Provinces indicate a rapidly growing trade, having increased from 570 tons in 1879-80 to 175,512 in 1886-87.

The quantity of grain passing through the elevator at Halifax from the time when it was put in operation until the close of the last fiscal year has been:—

	Bushels.
In 1882-83	31,011
1883-84	73,387
1884-85	244,933
1885-86	378,739
1886-87	575,880
Total.....	<u>1,303,950</u>

These figures will suffice to show that the grain traffic *via* Halifax continues to expand year by year.

The bridge over the St. John River at the city of St. John, affording an outlet by rail to the traffic of the Intercolonial, by means of the New Brunswick Railway, to the western portion of New Brunswick to the cities of Portland, Boston and New York, and to the United States generally, has now been open for traffic for over a year; but owing to the operation of the Inter-State Commerce Law, the traffic in that direction has not increased as it was expected to do; that of the Intercolonial seeming still to follow mainly the old water route from St. John to Eastport, Portland and Boston; so that the measure of advantage derived by the Intercolonial Railway from the construction of this bridge is but small at present. The volume of trade in this direction would, no doubt, be much greater were it untrammelled by this law which handicaps the New Brunswick Railway so heavily.

The following statement shows the quantity and classes of rolling stock purchased on capital account up to 30th June, 1886, and the additions made during the last fiscal year:—

	Engines.	Passenger Car Stock.					Conductors' vans.	Box cars.	Platform cars.	Coal cars of three several kinds.	Snow ploughs.	Wing ploughs.	Flangers.
		1st class sleepers and parlors.	1st class.	2nd class sleepers.	2nd class.	Baggage, mail, &c.							
Total to 30th June, 1886.....	164	11	69	6	76	46	79	1529	1442	1828	31	10	20
Additions in 1886-87.....	.....	1	.....	.....	.....	1	.....	.....	.....	210	.....	.....	.....
	164	12	69	6	76	47	79	1529	1442	2038	31	10	20

The following rolling stock has been rebuilt during the year 1886-87 to maintain the stock, at the charge of working expenses.

	Engines.	Passenger Car Stock.					Conductors' vans.	Box cars.	Platform cars.	Coal cars.	Snow ploughs.	Wing ploughs.	Flangers.
		1st class sleepers and parlors.	1st class.	2nd class sleepers.	2nd class.	Baggage, mail, &c.							
1886-87.....	1	.....	10	167	107	.....	.....	.....

In September, 1886, the sleeping car "Miramichi," was burned while attached to the Quebec express train. The origin of the fire is unknown. The cost of renewing this car has not entered into the working expenses of the year 1886-87.

This is the first full year in which the sleeping car service has been conducted by the Railway Department, and this has been done, so far as I can learn, fairly to the satisfaction of the travelling public. The results of this service are not so favorable as could be wished. The cost of maintaining and operating these cars was some \$24,017, and the gross receipts \$31,864, leaving a profit of \$7,847. An additional parlor car has been put on the road between Halifax and St. John, making two in all, but so far they do not appear to be appreciated by the travelling public, being very poorly patronized. The second class sleepers continue to be well patronized, and are, no doubt, a great comfort to passengers making long journeys.

The European mails have continued to be landed at Halifax in winter, but owing to a succession of heavy snow storms accompanied by gales of wind, they did not during the last winter season make their trips with their usual regularity and speed. During the summer they were landed at Rimouski, and made good time over the railway. Sleeping cars are being provided for the comfort of passengers landed from the mail steamers at Halifax and Rimouski.

Seventy eight miles of 67 lbs. steel rails have been substituted for the 56 lbs rails, to meet the wear caused by the heavy traffic and the increased weight of the loads carried.

The engines and snow ploughs received a severe shaking up in combatting the snow last winter, which has largely increased the working expenses. Nevertheless both road and rolling stock are in good serviceable condition, and the force in the workshop has been increased to insure their being maintained in a high state of efficiency.

Capital Account.

The expenditure on works under this heading during the year may be stated as follows :—

Construction of branch lines.....	\$501,735 01
Increased accommodation at St. John and Halifax.....	31,160 73
Old claims in connection with original construction..	4,146 35
Rolling stock.....	160,260 42
Judgment in case of Windsor and Annapolis Railway via Western Counties Railway and the Queen ...	125,936 75

Total..... \$823,239 26

The last named item of the above expenditure, having been voted by Parliament under this heading, had, I understand, to be so charged, but it does not appear to be a proper charge against the Intercolonial Railway.

The total cost of the road and rolling stock up to the 30th June, 1887, is as follows:—

Road.....	\$38,696,663 08
Rolling stock.....	6,299,319 34
Total.....	\$44,995,982 42

The Pictou Town Branch, fourteen miles in length, was not fully completed at the close of the year, and the work of filling in, &c., at the Pictou terminus, not included in the contract with Mr. M. J. Hogan, will not be finished for some little time to come. It is the intention, however, to put the branch under traffic, some time during November instant, when the ferry between Pictou Landing and the town will be discontinued, as arranged at the time when the construction of the branch was undertaken, this being one of the conditions attaching thereto. Rolling stock for the several branches has not yet been provided, and it will be necessary to make provision in the estimates for their service during the current year.

EASTERN EXTENSION RAILWAY.

This road continues to be worked by the officers of the Intercolonial Railway, the accounts being kept distinct. It is eighty miles in length, as last reported.

Capital Account.

Cost of road.....	\$1,088,311 97
Cost of rolling stock.....	196,183 79
Total.....	\$1,284,495 76

No expenditure was made on capital account during the year, but it will be necessary to give additional wharf and siding accommodation at Mulgrave, and to lay in a proper water service throughout the line during the present fiscal year. The company originally, as an experiment, laid in the Haggas' water system, which has been found quite unsuited to the traffic, and hence the necessity for one more permanent and efficient. These works should form charges against capital, and I purpose to submit an estimate of cost for the Minister's consideration.

Operating Account.

I stated in my last annual report that the renewals of bridges, must be numerous and costly for the next few years. Such has proved to be the case during the year under consideration the cost of renewals of bridges, ties and fences having been very heavy.

The results of the year's operations, as already stated, were:—

Working expenses.....	\$94,254 04
Earnings.....	64,107 10
Loss.....	\$30,146 94

As I have also pointed out the expenses were very heavy by reason of the extensive renewals of works and were about the same as in the previous year. The earnings have fallen off by several thousand dollars, owing largely to the loss of the transport of fish, of which, in the year 1884-85, over 20,000 barrels passed over the Eastern Extension, while, during the last fiscal year, there were none whatever.

The train service has been very much improved, the train leaving Halifax for Port Mulgrave, in the morning and returning in the evening, being run as a through train, thus avoiding the necessity of changing cars at New Glasgow, which existed previously. It was also put on sharper time, to accommodate the travel through Cape Breton and the Bras d'Or Lakes. The result here has been somewhat disappoint-

ing, the travel having fallen off from some unexplained cause, instead of increasing as was expected.

The road and rolling stock have been well maintained, and are in a good state of efficiency, considering the age of the structures.

WINDSOR BRANCH.

This railway is still operated by the Windsor and Annapolis Railway Company, as in former years, the Government maintaining the way and works, and receiving one-third of the gross earnings. The result of the year's operations may be summed up as follows:—

One-third gross earnings paid over by the company....	\$25,327 58
Cost of maintenance of way and works.....	26,042 33
Loss.....	\$ 714 75

The excess of the cost of maintenance over the one-third earnings is more than accounted for by the expenditure upon additional sidings, hay shed, and the substitution of steel for iron rails. The road is in fine running order.

PRINCE EDWARD ISLAND RAILWAY.

An increase in the earnings of this railway had been confidently looked for, but the expectations in this respect have not been realized, the earnings being about equal to those of the preceding year, which were not considered satisfactory. The passenger traffic has, as was expected, increased both in the number carried and the amount earned; but there is a falling off in the freight business, both in tonnage and earnings. This is very disappointing and quite unexpected, and I can assign no cause for it. The earnings during the last two years were:

1885-86	\$155,584 36
1886-87	155,303 37
Decrease.....	\$ 280 99

It is gratifying to observe that the working expenses of 1886 7, notwithstanding the cost of additions and improvements to the property charged to this account, are less by several thousand dollars than during the preceding year, as will appear from the following figures:—

1885-6.....	\$216,744 34
1886-7.....	204,237 45
Decrease.....	\$ 12,506 89

The net results for the last two years compare as follows:—

	1885-86.	1886-87.
Working expenses.....	\$216,744 34	\$204,237 45
Earnings.....	155,584 36	155,303 37
Loss.....	\$ 61,159 98	\$ 48,934 08

The winter mail service between the mainland and Charlottetown, *via* Cape Traverse by ice boats across the Straits of Northumberland in connection with the Prince Edward Island Railway, was well maintained, and in addition to the special mail trains, a daily train service has been put on the Cape Traverse Branch. The business done on this train is very light, but the daily service was granted by the

Minister to meet the wishes of farmers, merchants and others residing in that district, who urged upon him the necessity for such accommodation.

The road and rolling stock are in first class condition, and it can only be regretted that a road with such a carrying capacity should have so light a traffic.

The rolling stock provided on capital account consists of:—

Engines	21
First class cars.....	17
Second class and baggage cars.....	15
Postal and smoking cars.....	3
Box and cattle cars.....	175
Platform cars.....	125
Conductors' vans	3
Pay car.....	1
Snow ploughs.....	8
Flangers.....	7

It will, therefore, be seen that no addition has been made to the rolling stock during the year.

Capital Account.

Cost of road up to 30th June, 1887.....	\$3,283,051 89
do rolling stock up to 30th June, 1887.....	458,729 00
Total.....	<u>\$3,741,780 89</u>

The expenditure charged to capital account during the year was \$5,800, which covered the cost of the extension of the Charlottetown Station yard and the construction of an additional coal shed at the same point.

GENERAL REMARKS.

The accounts of the Government Railways are submitted herewith and also the very interesting reports of the Chief Superintendent, the Superintendents, Chief Engineer and Mechanical Superintendents.

No effort has been spared by the officers to attract business to the several Government Railways on which they are employed.

I have the honor to be, Sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,

Chief Engineer and General Manager.

A. P. BRADLEY, Esq.,

Secretary, Department of Railways and Canals.

APPENDIX No. 5a.

INTERCOLONIAL RAILWAY.

OFFICE OF THE CHIEF SUPERINTENDENT,

MONCTON, N.B., 29th October, 1887.

SIR,—I have the honor to submit the following report on the working of the Intercolonial Railway, for the fiscal year which ended 30th June, 1887.

I enclose the reports of the Chief Engineer and the Mechanical Superintendent, and 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. | (do 2.) |
| 5. Maintenance of way and works. | (do 3.) |
| 6. Station expenses. | (do 4.) |
| 7. General charges. | (do 5.) |
| 8. General stores account. | |
| 9. General balance. | |
| 10. Comparative statement of averages. | |

The length of railway in operation during the whole year was 866 miles.

On the 1st December, 1886, the Indian Town Branch, 14 miles in length, was opened for traffic.

CAPITAL ACCOUNT.

The total cost of road and equipment on 30th June,

1886, was.....\$41,172,743 16

The additions during the year were as follows:—

For Halifax Extension.....	\$ 12,613 07
Increased accommodation, St. John.....	18 547 66
Completion of the Intercolonial Railway	4,146 35
Rolling stock	67,516 37
Sleeping cars	14,237 11
Applying air brakes to locomotives.....	78,506 94
St. Charles Branch	230,103 79
Dartmouth Branch.....	5,334 92
Dalhousie Branch	2,082 50
Rivière du Loup Town Branch.....	6,938 87
Indian Town Branch	9,141 45
Pictou Town Branch	248,133 48
Windsor and Annapolis Railway vs. Western Counties Railway and the Queen	125,936 75

823,239 26

Making the total cost to the 30th June, 1887 \$44,995,982 42

The work of constructing the Indian Town Branch was nearly completed at the close of the year.

In the spring of 1886 the construction of the Pictou Town Branch was commenced. Its total length is 14 miles, composed partly of existing railways and partly of new railway. Three miles from Stellarton to Westville were purchased from the Acadia Coal Company, two miles from Westville to Middle River were purchased from the Nova Scotia Coal Company, the balance 9 miles from Middle River to Pictou being new.

The construction of the new part and the repair of the part purchased are being done by contract.

The expenditure on the St. Charles Branch was chiefly for the settlement of claims for land damages.

REVENUE ACCOUNT.

The gross earnings for the year were \$2,596,009.83, being a considerable increase over last year.

Earnings in 1886-87.....	\$2,596,009 83
do 1885-86.....	2,383,200 77
Increase.....	<u>\$ 212,809 06</u>

This increase was in both passenger and freight traffic, the increase of passenger traffic being about \$60,000 and of freight traffic about \$150,000. There was an increase over the previous year in the quantity of freight carried of 122,000 tons.

	Tons.
Weight of freight carried in 1886-87.....	1,131,334
do do 1885-86.....	1,008,545
Increase.....	<u>122,789</u>

The increase of tonnage has been in both through and local freight and in about equal proportions in each.

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

	1885-86	1886-87	Increase.	Decrease.
Barrels flour.....	739,091	753,480	14,389	
Bushels grain.....	843,949	1,016,334	172,385	
Lumber in feet.....	116,253,382	161,168,003	44,914,621	
Head of live stock.....	70,246	80,782	10,536	
Other goods in tons.....	759,320	820,300	60,980	

It is gratifying to observe an increase in all the articles of freight mentioned above.

The business of shipping grain at Halifax, although from various causes necessarily slow of growth, is steadily increasing.

The transport of lumber, which is a local business, shows a large increase.

The live stock business shows a large increase. This increase is entirely in the local business and not in the carriage of cattle from the west for export.

The traffic in fresh fish to the Upper Provinces has largely increased.

The coal traffic from the mines in Nova Scotia to the Upper Provinces has increased, as will be seen by the following comparative statement for the year ended the 31st December :—

	Tons.
1879.....	570
1880.....	10,246
1881.....	30,629
1882.....	35,089
1883.....	54,891
1884.....	112,898
1885.....	165,791
1886... ..	<u>175,512</u>

The rate at which this coal is carried is extremely low, and in addition to this the cars are hauled back to the mines empty, a distance of six hundred miles, so that this business increases the expense without an equivalent increase of earnings.

In passenger traffic there was an increase of 50,000 in the number carried.

Total number carried, 1886-87.....	940,144
do do 1885-86.....	889,864
	<u>50,280</u>

EXPENDITURE.

The working expenses for the year were \$2,828,115.58.

They compare as follows with last year per mile run by engines and by trains, and per mile of railway :—

Per mile run by engines :—

	Cents.
1886-87.....	51.74
1885-86.....	<u>51.61</u>

Per mile run by trains :—

1886-87.....	62.67
1885-86.....	<u>61.61</u>

Per mile of railway :—

1886-87.....	\$3,265 72
1885-86.....	<u>2,891 10</u>

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

The work of replacing the 56-pound steel rails in the main track with heavier rails was continued, and more than 8,000 tons of steel rails, weighing 67 pounds to the yard, were laid. This is a costly improvement, but it is considered to be desirable in consequence of the heavier locomotives and cars now used.

For the same purpose of increasing the stability of the permanent way the cross ties were placed two feet apart from centre to centre, instead of two and a half feet as originally laid.

This improvement also considerably increased the cost of maintenance.

The total number of new ties put into the track was 227,441.

Seventy-seven miles of track were re-ballasted.

Forty sidings were put in at various places, at a cost of \$32,500.

The fences received necessary repairs, and 143 miles of new fences were built.

This new fence was of a much better design than that which it replaced and was more costly.

A considerable portion of the new fence was erected at places which had not previously been fenced.

Extensive repairs were made to snow sheds and snow fences, and many were rebuilt.

A considerable sum was also expended in erecting sheds and fences where there had been no such protection before.

The buildings on all parts of the line received necessary repairs and several new buildings were erected. Five station houses which had been destroyed by fire were rebuilt on improved plans, and therefore at a cost greatly exceeding that of the original buildings.

Eighteen semaphore signals were put up at places where there were none before.

The work of strengthening the iron lattice girder bridges by means of lateral bracing was continued and completed.

Five pairs of iron bridge girders were substituted for wood, and one new overhead bridge of iron was built.

New floors of an improved design, which greatly increases the safety of trains, were provided in a number of bridges.

In order to improve the drainage of adjacent lands a large number of culverts were built, where none had been before.

The work of improving the water supply was continued during the year.

The rolling stock received necessary repairs and is in good order, one passenger car and two hundred and eighty-four freight cars were rebuilt at the cost of working expenses.

These new cars were all larger and stronger, and therefore capable of carrying greater loads than the original cars they replaced.

The greater number of these cars will carry double the load that the original cars were designed to carry; for instance, the original car was designed to carry ten tons of freight, the new car which replaced it will carry twenty tons of freight.

These twenty-ton cars cost, of course, much more than ten-ton cars would have cost.

The whole of the above improvements, which cost in the aggregate about \$200,000, were made in addition to the maintenance and renewal of existing works, and the cost is charged to working expenses and against the earnings for the year.

STORES.

The value of stores purchased was.....	\$1,080,245 38
The value of stores used was.....	1,184,380 45
The value of old materials sold was.....	136,734 84

The value of stores on hand at the end of the year was:—

Ordinary stores, including fuel.....	\$255,959 29
Iron and steel rails.....	185,013 65
Second hand materials serviceable.....	45,557 36
Old material for sale.....	191,579 67
	<u>\$678,109 97</u>

The old material for sale consists of scrap metals which are sold from time to time when prices are favorable. The quantity on hand is somewhat less than last year, and it is expected that it will be still further reduced before long.

In the month of May, 1887, a heavy freshet occurred over a considerable extent of country along the St. John and Kennebecasis Rivers. The flood lasted about ten days and damaged the embankments of the railway for some distance near Rothesay to a considerable extent, but in consequence of the care exercised there was but little interruption to traffic.

The winter of 1886-87 was unusually severe over the whole country, and the Intercolonial, in common with many other railways, experienced, in consequence, a good deal of difficulty in moving trains. With the exception perhaps of the railways crossing the mountains to the Pacific coast, the Intercolonial is better provided with sheds and fences for protection from snow and with equipment for its removal from the track, than any railway on the continent.

Its employés also, who are charged with the duty of clearing snow from the track, have, from long experience, acquired great skill in this arduous and dangerous work.

The storms, however, were so heavy, and followed each other so rapidly that notwithstanding the utmost exertions of the employés, aided by large gangs of men, the passenger trains were considerably delayed on several occasions, and the freight traffic was seriously interfered with.

The greatest obstruction was experienced at points where serious difficulty of this kind had not been encountered before, and extensive works are now in progress to protect the worst of these places with sheds and fences.

The cost of clearing snow from the track was much greater than in any previous winter, the direct expenditure amounting to \$92,000. In the winter of 1885-86 it was \$40,000, and the average expenditure for this service for the six years, 1880-81 to 1885-86, both inclusive, was \$40,000; so that the expenditure for last year exceeded the average by \$52,000.

The \$92,000 above mentioned is, however, less than one-half of the actual cost to the railway of these snow blockades; in addition, there is the damage done to rolling stock and to the track, besides large extra expenditure in other branches of the service, and not counting the loss of traffic.

The cost even extends into the current year, as it was found impossible to get all the rolling stock repaired and ploughs rebuilt before the 30th June.

It gives me pleasure to state, that the employés generally, performed their duties faithfully and cheerfully.

I have the honor to be Sir,

Your obedient servant,

D. POTTINGER,

Chief Superintendent.

COLLINGWOOD SCHREIBER, Esq.,

Chief Engineer and General Manager Government Railways,
Ottawa.

No. 1.—INTERCOLONIAL RAILWAY.

DR. CAPITAL ACCOUNT, Year ending 30th June, 1887. CR.

1886.	1887.	To Cost of road and equipment.....	\$ cts.	\$ cts.	1886.	By Dominion of Canada..	\$ cts.
June 30.....	June 30.....			44,172,743 16	June 30.....		44,172,743 16
		Outlay on Halifax Extension.....	12,613 07				
		do Increased accommodation, St. John....	19,547 68				
		do St. Charles Branch.....	31,160 73				
		do Dartmouth do.....	230,103 79				
		do Dalhousie do.....	6,334 92				
		do Rivière du Loup Town Branch.....	2,082 50				
		do Indian Town Branch.....	6,938 87				
		do Pictou Town Branch.....	8,141 45				
		do Rolling stock.....	248,133 48				
		do Sleeping cars.....	67,516 37				
		do Applying air brakes to 100 locomotives	14,237 11				
		do Expenditure on completion of I. C. R.	78,506 94				
		do between Rivière du Loup and Truro					
		do (work, permanent way, buildings,					
		do right of way, &c.).....	4,146 35				
		do W. and A. Ry. et. Western Counties					
		do Ry. and the Queen.....	125,936 75				
				823,239 26	1887.	By Dominion of Canada..	823,239 26
				44,995,982 42	June 30.....		44,995,982 42

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

**NO. 2.—INTERCOLONIAL RAILWAY.
REVENUE ACCOUNT, Year ending 30th June, 1887.**

CR.

DR.

Previous Year.	Expenditure.	Year ending 30th June, 1887.	Previous Year.	Earnings.	Year ending 30th June, 1887.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
819,604 39 594,297 62 605,102 58 316,261 42 162,311 18 <hr/> 2,498,577 19 7,333 58 <hr/> 2,489,243 61	Locomotive power Car expenses Maintenance of way and works do Station expenses do General charges do Car mileage <hr/> 887,636 41 668,027 57 782,052 79 333,576 22 162,689 65 <hr/> 2,833,972 64 5,867 06 <hr/> 2,828,115 58	Abstract No. 1... do 2... do 3... do 4... do 5... <hr/> 728,947 85 1,501,250 17 163,003 05 <hr/> 2,383,200 77 106,042 84 <hr/> 2,489,243 61	Passenger traffic..... Freight do Mails and sundries..... Balance <hr/> 792,878 56 1,657,695 76 146,635 51 <hr/> 2,596,009 83 232,106 76 <hr/> 2,828,115 58		

[1887]

**THOMAS WILLIAMS,
Chief Accountant and Treasurer.**

MONCTON, N.B., 30th June, 1887.

No. 3.—INTERCOLONIAL RAILWAY.

LOCOMOTIVE POWER—(Abstract No. 1).

Previous Year.	—	Year ending 30th June, 1887.
\$ cts.		\$ cts.
8,315 85	Mechanical Superintendent's salary, clerks office and travelling expenses.....	8,727 69
186,767 09	Wages, drivers, firemen and cleaners.....	212,296 96
399,181 82	Fuel.....	357,564 55
51,318 45	Oil, tallow, waste and small stores.....	41,464 49
193,200 97	Repairs to engines, tenders and engine tools.....	202,384 32
47,235 46	Water, including pump and tank repairs.....	29,340 09
33,594 75	Miscellaneous.....	35,848 31
819,604 39		887,626 41

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 4.—INTERCOLONIAL RAILWAY.

CAR EXPENSES—(Abstract No. 2).

Previous Year.	—	Year ending 30th June, 1887.
\$ cts.		\$ cts.
65,628 55	Repairs to passenger cars.....	54,810 70
17,878 82	do postal, express and baggage cars.....	17,480 22
215,118 38	do Freight cars and vans.....	262,456 93
196,275 29	Wages of Conductors, train baggage masters and brakemen.....	225,676 96
33,192 13	Oil and waste for packing.....	39,263 10
47,283 60	Small stores and fuel.....	48,823 64
19,920 85	Miscellaneous.....	19,516 02
694,297 62		668,027 57

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 5.—INTERCOLONIAL RAILWAY.
MAINTENANCE OF WAY AND WORKS—(Abstract No. 3).

Previous Year.	—	Year ending 30th June, 1887.
\$ cts.		\$ cts.
5,219 15	Chief and Assistant Engineers, Salaries, Clerks, office and travelling expenses.....	6,714 61
278,333 72	Wages in repairing roadway, fences and semaphores, including new sidings laid in	279,456 96
25,917 59	Rails and fastenings, including new sidings laid in	166,531 72
105,223 19	Ties	55,480 89
78,208 32	Timber, lumber, etc., for repairs to bridges, cattle guards, crossings, snow-sheds, fences, etc.....	84,611 47
13,357 60	Repairs to wharves.....	6,824 51
39,200 59	Repairs to buildings and platforms, including extensions of and additions to same.....	69,730 55
20,440 20	Repairs to snow ploughs, flangers and tools	17,162 12
39,777 65	Clearing ice and snow.....	92,212 40
Or. 575 43	Miscellaneous	3,327 56
605,102 58		782,052 79

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 6.—INTERCOLONIAL RAILWAY.
STATION EXPENSES—(Abstract No. 4).

Previous Year.	—	Year ending 30th June, 1887.
\$ cts.		\$ cts.
249,521 95	Salaries and Wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggage Masters, Yard Masters, Switchmen, Watchmen and Laborers.....	260,701 11
65,739 47	Fuel, oil, light, stationery, tickets and other incidental expenses	72,875 11
315,261 42	Miscellaneous	333,576 22

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

[1887]

No. 7.—INTERCOLONIAL RAILWAY.

GENERAL CHARGES—(Abstract No. 5.)

Previous Year.	—	Year ending 30th June, 1887.
\$ cts. 65,534 06	Chief Superintendent, District Superintendents, Train Despatchers, General Freight Agent, General Passenger Agent, Clerks, office and travelling expenses.....	\$ cts. 64,224 16
19,998 41	Accounting Department—Salaries of the Chief Accountant and Treas- urer, Traffic Auditor, Paymaster, Cashier, Clerks, office and travelling expenses.....	20,884 38
9,879 54	Damages to men, animals and goods	18,930 57
17,676 11	Ferry service.....	19 125 93
1,271 38	Telegraph expenses (not including pay to operators).....	1,243 75
30,221 76	Miscellaneous—Printing, advertising, &c.....	24,167 07
17,729 92	Agency expenses	14,113 79
162,311 18		162,689 65

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 8.—INTERCOLONIAL RAILWAY.

Dr. GENERAL STORES ACCOUNT, Year ending 30th June, 1887. Cr.

1886	\$ cts.	1887.	\$ cts.	\$ cts.	\$ cts.
June 30....	To Balance	June 30....	719,660 88	By Issues during year	1,184,880 45
1887.				Sales of material, fuel, &c., to other Railways, &c.	47,480 30
June 30 ...	Purchases during year			Sales of old material.....	136,724 84
	Charges from other Departments..			Balance—	1,362,595 59
	Labor.....		1,321,044 68	Ordinary stores, including fuel	255,959 29
	Staff pay-rolls.....			Iron and steel rails and fastenings.....	185,013 65
				Second-hand material, serviceable	45,557 36
				Old material for sale.....	191,579 67
			2,040,705 56		678,109 87
					2,040,705 56

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

	15,893 35	1,687 42
Western Counties Railway, general account.....		
do traffic account.....		
Spring Hill and Parrsboro' Railway	17,650 77	
St. Martin's and Upsam Railway	3,181 99	
Halifax and Cape Breton Railway.....	4,107 39	
Cumberland Railway and Coal Co.	1,546 82	
Pullman Car Co.	5 02	
National Despatch Line	1,236 34	
St. Thomas Car and Wheel Co.	10 00	
Ontario Car Co.	1,180 00	
Intercolonial Express Co.	635 50	
Prince Edward Island Steam Navigation Co.	2,577 08	
Allan Steamship Line	33 65	
Steamer "Admiral"	1,947 75	
Steamer "Contest"	3,190 40	
Acadia Coal Co.	195 00	
Intercolonial Coal Co.	4,234 01	
Steel Co. of Canada.....	701 20	
Halifax and Cotton Co. Siding	1,692 77	
Moncton Cotton Co. Siding	11,614 24	
Halifax Rolling Mills	790 53	
Coldbrook Rolling Mills	105 50	
Nova Scotia Steel Co.	1,967 41	
Schooner "Mary Jane"	345 02	
Glengarry Station	71 30	
Bloomfield do	5 00	
Coal Branch do	25 21	
Weidford do	65 84	
Ste. Luce do	55 00	
Bic do	80 00	
St. Arsène do	22 00	
Individual accounts	6 11	
	18,441 13	
	1,019,886 11	

1,019,886 11

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 10.—INTERCOLONIAL RAILWAY.

COMPARATIVE STATEMENT of Averages, Year ending 30th June, 1886.

	1887.	1886.
Mileage of railway.....	866	861
Engine mileage.....	5,466,488	4,523,353
Train do	4,512,599	4,039,877
Car do	52,001,928	47,211,083
Receipts per engine mile	Cents 47·49	49·41
do mile of railway.....	Dollars 2,997·70	2,767·94
Percentage of passenger earnings to gross earnings	Per cent. 30·53	Per cent. 30·58
do freight do	63·86	63·00
do other do	5·61	6·42
Expenses per engine mile—		
Drivers, Firemen and Cleaners' wages.....	Cents 3·88	3·87
Fuel.....	6·54	6·20
Oil, tallow, waste and small stores.....	·76	1·06
Repairs to engines.....	3·70	4·01
Water and tank repairs.....	·54	·98
Miscellaneous.....	·65	·70
Total.....	16·07	16·82
Mechanical Superintendent's salary, office and travelling expenses.....	·16	·17
Total.....	16·23	16·99
Locomotive power per engine mile.....	16·23	16·99
Car expenses do	12·22	12·32
Maintenance of way and works do	14·31	12·55
Station expenses do	6·10	6·54
General charges do	2·98	3·56
Car mileage.....	Deduct 51·84	51·76
	·10	·15
Total per engine mile.....	51·74	51·61
Locomotive power per train mile.....	19·67	20·29
Car expenses do	14·80	14·71
Maintenance of way and works do	17·33	14·98
Station expenses do	7·39	7·80
General charges do	3·61	4·01
Car mileage.....	Deduct 62·80	61·79
	·13	·18
Total per mile train.....	62·67	61·61
Working expenses per mile of railway.....	3,265 72	2,891 10

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

[1877]

INTERCOLONIAL RAILWAY

CHIEF ENGINEER'S OFFICE,

MONCTON, N.B., 24th October, 1887.

SIR,—I have the honor to submit my report of the working of the engineering department for the year ending 30th June, 1887.

TRACK.

The mileage of the main line and branches has been increased from 866 to 880 miles.

	Miles.
Previously reported.....	866
Indian Town Branch.....	14
Total.....	<u>880</u>

During the year 78 miles of rails, weighing fifty-six pounds to the yard, have been taken up and replaced with steel rails weighing sixty-seven pounds to the yard.

TIES.

During the year 227,441 ties have been renewed in the main line, sidings and branches.

BALLASTING.

Ballasting was done on all divisions of the road. Seventy-seven miles were reballasted.

SEMAPHORE SIGNALS.

Eighteen new semaphore signals were put up during the year.

SIDINGS.

Forty sidings have been put in at various points along the line, making additional accommodation to the extent of $6\frac{1}{2}$ miles. This is nearly three times the accommodation provided last year.

FENCING.

One hundred and forty-three miles of barbed wire and Everett lath wire fencing have been erected in place of old pole fences and at points where fencing was not required before. The first barbed wire used on the road some years ago was erected on posts placed 16 feet apart. It was found unsatisfactory, cattle and sheep being able to pass through the wires. During the past year about 20 miles of it have been overhauled and intermediate posts put in and in many places an additional wire put on.

\$71,932 has been expended on fencing the past year as against \$48,236 the year previous.

SNOW SHEDS AND SNOW FENCES.

43,560 lineal feet of snow sheds were rebuilt on Northern Division, No. 2, and 13,134 lineal feet of new shed were erected on Northern Division, No. 3. Extensive repairs were made to thirteen (13) other sheds, aggregating in length 14,355 lineal feet.

27,918 lineal feet of new snow fence were erected and repairs made to about 24,750 lineal feet more of the latter. About 9,900 lineal feet which had been erected on posts sunk in the ground were taken down and rebuilt with posts framed into sills lying on the surface of the ground. It has been found that where the soil is clayey

the posts heave out, and in the course of three or four years are apt to blow down. All new fences are erected on posts framed into sills lying on the surface of the ground.

WHARVES AND COAL TRESTLES.

At the DEEP WATER TERMINUS, HALIFAX—the wharf under freight shed and approach to shed was overhauled and repaired. Four additional aprons for coal drop were provided at the deep water shutes.

At YOUNG STREET, HALIFAX—the coal trestle was rebuilt at a cost of \$2,000.

At RICHMOND—a portion of wharf No. 2 was rebuilt, and necessary repairs made to other wharves and coal trestles.

At STEWIACKE—the pile wharf at terminus of Maitland siding was thoroughly overhauled and repaired. Twenty-five new piles were put in and the whole top of the wharf was raised.

At TRURO—the coal shed and trestle was thoroughly overhauled and repaired. New track stringers were provided throughout the whole length of the shed and trestle.

At PICTOU and PICTOU LANDING—necessary repairs were made to the wharves. At the latter place a large portion of the top was replanked.

At POINT DU CHENE—large repairs were made to the outside wharf. The outer end was close piled throughout its length and the top raised some three feet and recovered. Additional fenders and mooring posts were also provided.

At DORCHESTER—necessary repairs were made to the wharf.

At DORCHESTER, SHEDIAC and SUSSEX—necessary repairs were made to coal trestles.

At MONCTON—the railway coal shed and trestle was overhauled and repaired, and a new coal trestle for local purposes was erected. It is much larger than the old one and more conveniently located for the business.

At DALHOUSIE—large repairs were made to the wharf which was seriously damaged by the run of ice in the spring of 1886.

At RIVIÈRE DU LOUP—necessary repairs were made to the coal sheds and trestles.

At ST. CHARLES—A portion of the trestle approaching the coal shed was rebuilt.

At LÉVIS—necessary repairs were made to the wharf and crib work on both sides of the station.

TURNTABLES.

At MONCTON—the turntable in round house was repaired and provided with a new wrought iron end girder.

At ST. JOHN—the three iron tables on the deep water wharf were lengthened to admit of turning 33 instead of 30 feet cars for which they were designed.

At NEWCASTLE, CAMPBELLTON, ST. FLAVIE, RIVIÈRE DU LOUP and HADLOW—necessary repairs were made to turntables.

BUILDINGS AND PLATFORMS.

At HALIFAX—a double floor was laid in the south freight shed on the Deep Water wharf through its whole length. Necessary repairs were made to bins and machinery of grain elevator.

At NORTH STREET STATION—new water-closets were fitted up with all modern improvements.

Offices were fitted up in the head house for the sleeping and parlor car service.

A shed 170 feet long by 10 feet wide, and three platforms of the same length were also provided with this service for the purpose of washing the cars and airing and cleaning the bedding.

A building with the necessary arrangements for hot and cold water for the car cleaners was also provided.

Twenty-four skylights of three-eighth inch corrugated glass, forty-five feet long by nine feet wide, were provided for the roof of train shed, at a cost of \$6,840.

At RICHMOND—one half of the car shed floor was renewed, and the roof of this shed made water-tight. Large repairs were made on the roofs of sheds on Richmond wharf. The floors and ash pits in round house were overhauled and repaired.

At DARTMOUTH—a coal shed was erected.

At FAIRVIEW (Three Mile House)—a passenger platform 80 feet long by 6 feet wide was erected.

At ROCKINGHAM—the station was overhauled and painted, and a portion of the platform renewed.

At ROCKY LAKE—the flag station was rebuilt and a new tool house provided for the section foreman.

At SANDY COVE SIDING—a loading platform was provided, 140 long by 8 feet wide.

At BEDFORD—the station freight house and agent's dwelling were thoroughly overhauled and repaired. The station and freight house were painted inside and out.

At GRAND LAKE—a new flag station was erected.

At WINDSOR JUNCTION—the old freight shed was taken down and a new cattle pen built.

At WELLINGTON—the roof of station was shingled and a new floor laid in waiting-room, office and living apartments.

At ELMSDALE—the roof of station was shingled and the building overhauled, repaired and painted inside and out. A new loading platform 196 feet long was provided.

At SHUBENACADIE—the freight house was moved to a more convenient location, and thoroughly overhauled and repaired. One side of the station was re-shingled.

At McKAY'S SIDING—between Stewiacke and Brookfield, a loading platform 130 feet by 10 was provided.

At ALTON—the station platform was renewed.

At BROOKFIELD—a portion of the freight shed roof was re-shingled, and necessary repairs made to the station.

At JOHNSON'S CROSSING—a loading platform 50 feet by 12 feet was provided.

At TRURO—a loading platform 175 feet by 5 feet, with approaches thereto, was provided.

The roof of the station was overhauled and a portion of it re-shingled. The old bark shed on Tannery property, purchased about three years ago, was moved south about 40 feet, raised up about 5 feet and fitted up for a car shed. The first and second floors in the tannery were cut out, necessary bracing put in and it is now used for the storage of passenger cars. Necessary repairs were made to the car shop and snow plough sheds.

At GLENGARRY—a new combined passenger and freight station was erected at cost of \$1,800, in place of the one-storey building destroyed by fire. Dwelling apartments were provided in this station for the stationmaster.

At LONDONDERRY—the roofs of station building and tank house were re-shingled; the walls of station were overhauled, repaired and painted two coats. A new trestle was put under the tank.

At THOMSON—the station building and freight house were raised and new sills put under the whole building. The roof was re-shingled and other necessary repairs were made. A tool house was provided for the section foreman.

At OXFORD and SALT SPRINGS—necessary repairs were made to the station building and platform.

At ATHOL—a tool house was provided for the section foreman.

At MACCAN—the passenger platform was renewed, and the loading platform repaired.

At NAPPAN—the loading platform was repaired.

At AULAC—necessary repairs were made to the station and freight house, and an additional loading platform for hay provided.

At SACKVILLE—the station was re-shingled, and shingles covered with a coat of sparham roofing.

At DORCHESTER—a new brick station and a new wooden freight house were erected, to replace those destroyed by fire.

A station was built at College Bridge, and a loading platform provided.

At MEMRAMCOOK—the station and freight house were overhauled and painted, and a new loading platform provided.

A new tank house was built at Calhoun's.

At MONCTON—an addition was made to the car repairer's shop of 260 feet by 20 feet, and the floor of this shop was renewed. The roof of the paint shop was re-shingled and covered with a coat of sparham roofing.

A portion of the floor in the machine shop was renewed.

Necessary repairs were made to twelve tenement houses on Bridge Street. No. 2 cottage, which was nearly destroyed by fire last winter, was rebuilt.

A sewer was built on Bridge Street for the accommodation of these houses, one-half of the cost was borne by the Department and the other half by the town. Since the sewer was built, the water has been supplied to these houses.

At SALISBURY—the freight house was re-shingled, and passenger platform renewed.

At PETITCODIAC—the station was overhauled and painted.

Necessary repairs were made to stations at Anagance, Sussex, Apohaqui, and a milk platform provided at the latter place.

At NAUWIGEWAWUK—the station was re-shingled and platform rebuilt.

At ST. JOHN—a portion of the freight house was fitted up for bonded goods. A shed, wash house, platform, &c., were provided here for the sleeping and parlor car service, the same as at Halifax. A large portion of the roof of the round house was re-shingled, an oil house was provided and a new platform was built.

At WELDFORD—a loading platform was provided at Trout Brook, about two miles south of the station.

At CHATHAM JUNCTION—an additional freight house 30 feet by 25 feet was provided, also a high platform.

A combined passenger station and freight house was built at Derby Junction.

At BARNABY RIVER—the passenger platform was renewed.

Small coal sheds were erected at Chatham Junction and Derby Junction.

At BEAVER BROOK—Bartibogue, Red Pine, Bathurst, Charlo and Eel River, necessary repairs were made to stations and platforms.

At BELLEDUNE—a new station and freight house were erected to replace the combined passenger station and freight house destroyed by fire.

An addition of 70 feet long by 12 feet wide was made to the platform at Belledune.

At DALHOUSIE—a new station and freight house, and a new passenger and loading platform were erected in place of those destroyed by fire.

At DALHOUSIE JUNCTION—a passenger platform 420 feet long by 12 feet wide was provided.

At CAMPBELLTON—a hardwood floor was put in hall of train despatcher's office and the necessary repairs to coal shed, freight shed and ice house was made.

At MILLSTREAM—a dwelling house was built for the section foreman.

At CEDAR HALL—necessary repairs were made to the station.

At LITTLE METIS—a new tank house was built to replace the old one destroyed by fire.

At **ST. FLAVIE**—a new foundation was put under the station and the platform repaired.

A freight platform 400 feet long was also provided.

At **ST. LUCE STATION**—a portion of the roof was reshingled.

Necessary repairs were made at St. Anaclet Station.

At **RIVIÈRE DU LOUP**—a freight house 30 feet by 125 feet was provided.

A freight house was provided at old Lake Road.

Coal houses were also provided at St. Eloi, St. André, Cacouna, St. Arsène and St. Simon.

Doors of engine house at Rivière du Loup were renewed.

A new roof was put on coal shed at St. Arsène to replace roof destroyed by fire.

Necessary repairs were made at St. Roch, St. Paschal, Rivière Ouelle and St. Charles, outside porches were provided at the latter station.

Double windows were provided for a portion of the station at Chaudière.

A station was erected at St. Joseph on the St. Charles Branch.

A baggage room was erected at Quebec.

BRIDGES AND CULVERTS.

Overhead bridge, Water Street, Halifax was replanked.

Piers of Rawdon River Bridge were overhauled and pointed.

A new standard top was put on Canal Bridge near Wellington and masonry overhauled and pointed.

Large repairs were made to one of the piers at Shubenacadie Bridge.

A box culvert 4 feet by 6 feet and 42 feet long was put in at Blackburn's Intervale, two miles west of Milford.

Box culverts at Millar's brick yard and at McKay's siding were rebuilt.

Five pairs of old rail girders, 16 feet span, were put in between Halifax and Truro.

A cedar box culvert was put in near Hopewell.

The centre pier of New Glasgow Bridge was repaired and pointed, a large quantity of riprap was put in round base of pier.

A system of lateral bracing was provided for the following bridges:—Little Forks, River Philip, Barnaby River, Second Crossing, Barnaby River, Third Crossing, Kouchibouquais and Bartibogue.

A new iron overhead bridge was built at Palmer's Pond near Dorchester, in place of old wooden bridge.

An overhead foot bridge 100 feet span was built to carry the traffic of Dorchester Street over the railway at St. John.

Wall Street overhead bridge at St. John was widened 10 feet by the addition of another bow string truss.

McGinley's wooden bridge near Quispamsis, four spans of 30 feet each, was rebuilt.

A standard top was put on McCully's Bridge near Torryburn and at Scurr's Bridge near Dorchester.

Five cedar culverts were put in at different points between Dorchester and St. John to improve the drainage of adjoining lands.

Standard tops were put on Milner's Bridge near Moncton, North Coal Branch, South Coal Branch, Buctouche, Upper Nelson Road, Bartibogue, Nash's Creek, Eel River, Gordon's, Otter Brook, Amqui River and Sayabec.

The floors of the following bridges were partially renewed: Richibucto, First Crossing of Barnaby River, Second Crossing of Barnaby River, North-West Miramichi, South-West Miramichi, Nepisiguit, Millstream, Nigadoo, North Branch of Charlo, South Branch of Charlo, Trois Pistoles, Isle Verte, Rivière du Loup and St. Thomas.

At **TROIS PISTOLES**—the crib protection along the base of embankment on west side was thoroughly overhauled and repaired.

At ST. THOMAS—three ice-breakers badly damaged in the spring of 1886, were rebuilt and faced with old rails. The cut waters of this bridge were also overhauled and repointed.

The hardwood facing and iron sheathing of the cut-water of St. Henri Bridge was thoroughly repaired.

A gang of painters and rivetters were engaged throughout the working season in scraping, painting and overhauling and making general repairs to iron bridges.

A cedar box culvert, 30 feet long, was put in near Newcastle, and five others, varying from 20 to 70 feet in length, were put in between Newcastle and Campbelltown, and on the Dalhousie Branch. Two stone culverts were rebuilt near St. Henri.

A cedar box culvert was put in near Old Lake Road, 48 feet long, 3 by 3, and another of the same dimensions was built at St. Paschal.

Two stone culverts were built on the St. Charles Branch.

Three stone culverts were rebuilt between St. Valier and St. Charles.

About one hundred pairs of cattle guards were wholly renewed throughout the line.

GENERAL.

About 300 tons of stone were put in round the piles at the Narrow's bridge at Richmond, and 200 tons on an embankment at Grand Lake, to protect the embankment.

Necessary repairs were made to track scales at Truro, Spring Hill, Moncton and Chaudière Junction.

New sign posts for sixty public crossings were provided throughout the line.

A stone ashpit, 140 feet long, was built at Moncton. It was fitted with cesspit and necessary connecting drains, to prevent the ashes lodging in main sewer.

SNOW PLOUGHS AND FLANGERS.

No. 23 snow plough was rebuilt. Nos. 2, 6, 7, 8, 9, 10, 15 and 22 were overhauled and put in first-class order.

About the 1st of May last, the embankments between Rothesay and Riverside were badly damaged by an unusual freshet in the St. John River.

On the divisions north of Moncton, more trouble was experienced on account of snow last winter than for many years.

Large extra gangs of men were employed almost continuously for three months in clearing the track and widening out the worst cuttings after the track was cleared.

An expenditure of \$92,212.40 was made for shovelling snow.

Contracts have recently been let to provide a large quantity of snow sheds and snow fences at points where the most trouble was experienced last winter.

BRANCH LINES.

Pictou Town Branch.

This branch is fourteen miles in length, nine miles of it is newly constructed road, and five miles were acquired from the Acadia and Nova Scotia Coal Companies, three from the former, and two from the latter.

A contract was let from the junction of the Nova Scotia Coal Company to Pictou Town. Station buildings have been erected at Stellarton, Westville, Sylvesters, Loch Broom and Pictou.

Engine houses and turntables have been erected at Stellarton and Pictou.

A 15,000 gallon water tank has also been erected at the latter place.

Additional sidings have been provided for the coal traffic at Stellarton, Westville and Pictou.

The Nova Scotia Coal Company's line was laid with old iron rails; these have been taken up and replaced with steel rails.

A number of wooden culverts have been replaced with masonry structures.

The old wooden viaduct at Horn's Brook has been replaced with a steel one, at a cost of \$18,000.

The sharp curves have been flattened and a new fence erected on both sides of the road.

The Acadia Coal Company's road has also been fenced, new ties put in and the track put in first-class order.

Two hundred and sixty thousand one hundred and thirty-eight dollars had been expended on account of this branch up to the end of the fiscal year ending 30th day of June last.

I am, Sir,

Your obedient servant,

P. S. ARCHIBALD,

Chief Engineer.

D. POTTINGER, Esq.,
Chief Superintendent,
Moncton, N.B.

 INTERCOLONIAL RAILWAY.

MECHANICAL SUPERINTENDENT'S OFFICE,

MONCTON, 29th August, 1887.

DEAR SIR,—I beg to submit for your information the following statements of the operations of the Mechanical Department for the year ending 30th June, 1887:—

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

B.—Statement showing the locomotive and car mileages 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, one parlor, one hundred 6-ton hopper, and one hundred and ten large coal, and one milk car were purchased at cost of capital and added to the rolling stock of the road.

One hundred of the old 5-ton hoppers were condemned and replaced by the same number of larger capacity and more improved style. There were also one postal and smoking, ten 20-ton box, one hundred and sixty-seven 20-ton platform to take the place of the same number of the old 10-ton cars condemned, and seven gondolas were also rebuilt at the cost of working expenses during the year.

In addition to the ordinary repairs, thirty-nine box and seventy-five platform cars were taken into the shops at Moncton and underwent general repairs; their carrying capacity increased from ten to twenty tons.

Forty-five passenger and fourteen express, postal and baggage cars were also taken into the shop, remodeled, painted and fitted up in a more modern style.

The replacing of 285 small cars by others of a more improved style as well as double the capacity, as well as the improvements above named, has increased the cost of car repairs more than would have been if the condemned rolling stock was replaced by others of the same style and capacity.

WATER SERVICE.

During the year a reservoir was built, 4,000 feet of pipe laid down and a 50,000 gallon tank put up at Thomson. This service has been maintained during the year. The rolling stock generally is in good condition.

I am, Sir,

Your obedient servant,

H. A. WHITNEY,

Mechanical Superintendent.

D. POTTINGER, Esq.,
 Chief Superintendent,
 Moncton, N. B.

A.—INTERCOLONIAL RAILWAY.

STATEMENT showing the number of Locomotives and the various classes of Cars on the 1st July, 1886, and on the 30th July, 1887.

	The Various Classes of Cars.														Total.						
	Locomotives.	First Class Sleepers.	Second Class Sleepers.	Parlor.	First Class Passenger.	Second Class Passenger.	Postal and Smoking.	Baggage & Express.	Vans.	Box.	Cattle.	Platform, 10, 15 and 20 tons.	Hoppers, 5 & 6 tons.	Gondolas, 20 tons.		Coal Cars, 20 tons.	Total.	Snow Plough.	Wing Plough.	Flangers.	Total.
On hand, 1st July, 1886, serviceable.....	164	10	6	1	68	75	16	25	81	1,449	68	1,328	595	780	450	4,952	31	10	20	61	4,952
do do condemned.....					1	1	1		2	8	4	114		3		134					134
Total.....	164	10	6	1	69	76	17	25	83	1,457	72	1,442	595	783	450	5,086	31	10	20	61	5,086
Purchased on capital account.....								1					100	7	7	212					212
Changed from gondolas to coal cars.....																					
On hand, 30th July, 1887.....	164	10	6	2	69	76	17	26	83	1,457	72	1,442	695	776	567	5,398	31	10	20	61	5,398
do do condemned.....					1	1	1		2	8	4	114		3		134					134
Total.....					1	1	1		2	7		63	100	4	1	177					177
Condemned, 1st July, 1886.....																					
Condemned during year.....					1	2	1		2	15	4	177	100	7	1	311					311
Total condemned.....					1	2	1		2	10		167	100	7	1	285					285
Less—Rebuilt.....																					
Add—Serviceable and repairing.....	164	9	6	2	68	74	17	26	81	1,452	68	1,432	695	776	566	5,272					5,272
Total on record.....	164	10	6	2	69	76	17	26	83	1,457	72	1,442	695	776	567	5,398	31	10	20	61	5,398

J. SUTTON,
Mechanical Accountant.

B.—INTERCOLONIAL RAILWAY.

STATEMENT of Locomotive and Car Mileage for Year ending 30th June, 1887.

Months.	Locomotive Mileage.		Car Mileage.						Average Passenger
	Passenger.	Freight.	Passenger.	Express Postal and Baggage.	Freight.	Total.	Snow Plough Mileage.	Average Freight.	
1886—July	90,803	281,520	398,299	164,875	3,905,502	4,469,467	.....	13 89	6 16
August	88,117	276,256	389,755	152,078	3,884,305	4,426,138	.....	14 06	6 14
September	83,601	271,865	354,991	148,332	3,833,031	4,335,354	.....	14 09	6 01
October	79,138	273,855	318,453	145,021	4,142,072	4,605,546	.....	14 09	5 85
November	76,009	310,703	3 0,434	152,711	4,366,652	4,829,797	1,221	14 05	6 08
December	70,465	333,010	316,515	162 193	4,363,893	4,846,601	6,187	13 12	6 78
1887—January	79,063	292,755	292,776	144,398	3,111,736	3,548,910	30,596	10 63	6 24
February	66,435	243,860	278,625	138 982	2,613,762	3,029,369	29,809	10 72	6 15
March	74,271	301,664	323,028	151,573	3,532,039	4,006,640	21,211	11 70	6 38
April	78,080	384,930	401,855	157,886	4,595,365	5,155,106	6,921	11 93	7 16
May	69,462	294,487	307,864	146,138	3,822,141	4,278,143	1,141	12 97	6 56
June	78,375	302,575	351,713	160,554	3,961,580	4,473,857	.....	13 09	6 52
Total	924,919	3,567,680	4,041,299	1,824,551	46,136,078	52,001,928	97,086	12 93	6 34

[1887]

J. SUTTON,
Mechanical Accountant.

C.—INTERCOLONIAL RAILWAY.

ABSTRACT of Locomotive Returns for the Year ending 30th June, 1887.

Months.	Hours in Steam.	Locomotive Mileage.	Consumption.				Average Consumption per 100 Miles.				
			Tons of Coal.	Pints of Oils.	Pounds Tallow.	Pounds Waste.	Miles Run to hour in Steam.	Pounds Coal.	Pints Oil.	Pounds Tallow.	Pounds Waste.
1886—July	40,646	438,205	11,749	30,924	11,625	7,550	10.73	60.33	7.08	2.66	1.73
August.....	39,925	427,311	12,038	26,880	14,878	7,497	10.70	63.05	6.29	3.48	1.75
September	38,855	415,870	12,513	24,817	14,938	7,417	10.70	67.39	5.98	3.59	1.78
October	42,605	438,952	13,337	25,587	15,108	7,355	10.30	68.05	5.82	3.44	1.66
November.....	44,830	457,004	14,854	27,078	15,457	7,351	10.19	74.89	5.92	3.38	1.73
December	49,106	481,758	16,172	28,834	15,172	7,506	9.81	75.21	5.98	3.15	1.55
1837—January	51,132	461,116	15,653	29,337	12,803	7,213	9.01	76.03	6.34	2.77	1.56
February	48,674	417,196	13,956	26,137	13,487	6,753	8.57	74.93	6.26	3.23	1.61
March	55,287	487,684	16,274	30,140	15,840	8,151	8.82	74.74	6.18	3.25	1.67
April	59,244	561,056	17,209	30,851	16,808	8,316	9.47	68.70	5.49	2.98	1.48
May	43,724	435,275	11,943	26,732	15,203	7,711	9.95	61.17	6.14	3.49	1.77
June.....	32,841	447,061	12,288	29,910	16,420	8,256	10.43	61.56	6.69	3.67	.85
Total.....	546,859	5,466,488	167,966	337,127	177,730	91,675	9.99	68.72	6.17	3.25	1.68

J. SUTTON,
Mechanical Accountant.

D.—INTERCOLONIAL RAILWAY.

STATEMENT of the cost of Locomotive Power for each month, from 1st July, 1885, to 30th June, 1887.

Months.	Miles run by Engines.	Engine-men's wages	Fuel.	Oil, Tallow and Waste.	Repairs to Engines, Tenders and Tools.	Water.	Miscellaneous, including Engine-houses and Mechanical Staff.	Total.	Average per 100 Miles.						
									Wages.	Fuel.	Oil, Tallow and Waste.	Repairs.	Water.	Miscellaneous.	Total.
1886—July.....	436,205	17,176 97	32,249 42	3,621 36	19,601 61	1,674 04	3,172 86	77,486 25	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
August.....	427,311	15,804 98	31,255 85	3,277 40	17,537 55	1,379 80	3,478 59	72,734 17	3 94	7 39	0 83	4 49	0 38	0 73	17 76
September.....	415,810	15,691 73	32,943 33	3,091 96	18,850 89	4,417 17	3,334 06	77,849 14	3 70	7 31	0 76	4 12	0 32	0 81	17 02
October.....	438,952	16,533 70	36,217 09	3,377 96	21,625 55	2,264 09	3,978 21	83,986 60	3 77	7 92	0 74	4 42	1 06	0 80	18 71
November.....	457,004	18,014 18	41,963 96	3,269 32	17,680 96	3,414 30	3,852 40	87,685 12	3 76	8 26	0 77	4 92	0 51	0 91	19 13
December.....	481,758	18,145 32	29,084 87	2,847 55	12,062 32	3,690 32	3,690 24	69,520 62	3 94	9 18	0 71	3 87	0 75	0 74	19 19
1887—January.....	461,116	17,538 06	27,580 89	3,201 19	13,516 63	2,647 71	4,211 01	68,695 49	3 76	6 03	0 59	2 50	0 77	0 76	14 41
February.....	417,196	16,266 86	24,263 24	3,041 16	13,759 97	2,629 00	3,951 25	63,906 48	3 77	5 98	0 70	2 94	0 58	0 92	14 89
March.....	487,684	19,836 89	28,552 07	4,138 80	14,095 67	1,748 89	4,396 02	72,677 84	3 90	5 82	0 73	3 29	0 63	0 95	15 32
April.....	561,056	21,639 74	30,886 37	4,051 36	16,559 68	2,675 26	4,169 03	79,981 43	4 07	5 85	0 85	2 89	0 36	0 88	14 90
May.....	435,275	18,232 30	21,874 77	3,802 29	16,321 08	1,443 83	3,529 78	65,204 05	3 85	5 50	0 72	2 95	0 45	0 78	14 25
June.....	447,061	17,426 23	21,187 69	3,744 14	20,742 43	1,368 19	3,412 55	67,879 22	4 19	4 91	0 87	3 86	0 33	0 82	14 98
Total.....	5,446,488	212,296 96	387,564 55	41,464 49	202,384 32	29,340 09	44,576 00	887,626 41	3 88	6 54	0 76	3 70	0 54	0 81	16 23

J. SUTTON,
Mechanical Accountant.

E.—INTERCOLONIAL RAILWAY.

GENERAL STATEMENT of the Expenses of the Mechanical Department, for the Year ending 30th June, 1887.

	\$	cts
The miles run by trains	4,492,599	
do engines	5,466,488	
do cars	52,001,928	
do snow ploughs	97,086	
The cost of locomotive power	887,626	41
The cost of car repairs :		
Repairs to passenger cars	54,810	70
do postal, express and baggage cars	17,480	22
do freight cars and vans	262,456	93
Oil and waste for packing	39,263	10
Miscellaneous.....	340	19
Total cost of car expenses	374,351	14
The cost of locomotive power per 100 miles run by trains	19	75
do do do engines	16	23
do do do cars	1	71
The cost of repairs to cars per 100 miles run by train	7	45
do do engines	6	12
do do cars	0	64
The cost of oil and waste for packing per 100 miles run by trains	0	86
do do do engines	0	70
do do do cars	0	07
The cost of repairs to passenger cars per 100 miles run by them.....	1	35
do postal, express and baggage do	0	95
do freight cars and vans do	0	57

J. SUTTON,
Mechanical Accountant.

[1887]

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INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred on the Line

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1888.						
July 3...	7.15	.....	.....	.....	.....	.....
do 10...	14.30	Special.	Freight.....	A. Grant.....	Jas. Sproule.....	170
do 31...	16.05	Express.	Express.....	D. Rutherford.....	Wm. Wall.....	57
Aug. 5...	15.00	Special.	Freight.....	J. Swetnam.....	John Stewart, jun.....	103
do 8..	4.40	15	do	John Casey.....	J. J. Smith.....	26
do 10..	20.30	.....	.....	.....	.....	.....
do 10...	11.50	Special.	Freight	J. A. Bernier.....	J. Gorham	40
do 14...	16.45	48	do	J. Huppe	George Montgomery...	31
do 25...	8.35	.....	Shunting	M. Kenny.....	J. McLellan.....	93
Sept. 13...	7.30	14	Accommodation	W. H. Donkin	E. Blair.....	66
do 15...	10.54	42	do	L. N. Letarte.....	J. Miller.....	1
do 16...	5.05	37	Freight	J. T. McGinn.....	C. Atkinson.....	144
do 17...	19.00	Special.	do	A. Bernier.....	J. Joliette.....	131
do 22...	22.00	do	Shunting.....	P. Elliott.....	M. O'Brien.....	99
do 23...	10.05	42	Accommodation	D. Morin.....	O. Jollivett.....	38
do 29...	8.15	.....	Shunting.....	.....	R. James.....	100
Oct. 7...	2.45	Special.	Freight	Wm. Morgan	C. McCarthy.....	123
do 8...	19.30	12	do	R. A. Rannie.....	J. I. Smith	50
do 9...	9.10	Special.	Working.....	A. Begin.....	J. Devereaux.....	108
do 17...	2.00	do	Freight	M. Audet.....	{ L. Duncan	142
					{ A. Connell	110
do 21...	3.00	10	Express	J. Millican	R. Carr.....	63
do 26...	12.00	Special.	Freight	D. Brownell	D. Taylor	145
do 27...	2.20	do	do	do	F. Probert.....	148

RAILWAY.

of the Intercolonial Railway, during the Year ending 30th June, 1887.

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Pictou Landing.	D. Bain	Employé..	Piece of machinery fell on foot.	Crushed toe.....	
New Glasgow ...	John Aikens ...	do ...	While shunting	Leg injured.....	
Truro	John Fraser...	Neither...	Attempting to board train while moving.	Slightly injured..	
1 mile west of Belledune.	John Stewart, jun.	Employé .	Valve of blow-off cock blew off.	Scalded leg.....	
Painsec Junction	Edward Casey.	Neither ...	While stealing a ride was run over.	Arm and leg taken off.	
St. John.....	— Ingalls.....	do ...	Jumping off train while in motion.	Spine injured.....	
Sayabec	H. Derosiers...	Employé..	Fell off car.....	Injured leg.....	
Pointe Lévis.....	Alex. Moren ...	do ...	While coupling.....	Hand injured.....	
Richmond	Steph. Pollock.	do ...	Struck by shunting engine and run over.	Fatal.....	Accidental.
Windsor Junct'n	Thos. Johnston	do ...	While handling baggage	Hand injured.....	
Ste. Luce.....	Auguste Rioux	do ...	Tub of butter fell.....	Injured foot.....	
Moncton.....	C. Dickson.....	do ...	While coupling.....	Ribs crushed	
Ste. Flavie.....	B. Orchard.....	do ...	While shunting.....	Fingers crushed..	
Moncton.....	P. Elliott.....	do ...	While coupling.....	Breast injured...	
Sacré Cœur.....	O. LeBel	do ...	do	Leg do ...	
St. John	James Bond....	Neither ...	Struck by tender and knocked down.	Slightly do ...	
Sackville.....	B. Thompson...	Employé .	Brake slipped throwing him against end of car.	Injured back	
Darling's Tank .	F. Millican.....	do ...	Tank pipe rope broke letting him fall.	do hip	
Amqui	A. Desjardins .	do ...	While turning switch....	Sprained ankle...	
} Sayabec	O. Roussell. ...	do ...	Link fell on foot.....	Injured foot.....	
West of Moncton	E. R. White....	Passenger	Jumped or fell from train in motion.	Slightly injured..	
Kent Junction...	J. Trites	Employé .	While stepping on engine slipped, wheel passed over foot.	Injured foot.....	
Newcastle	C. Dickson.....	do ...	While coupling.....	Thumb crushed...	

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1886.						
Oct. 29...	6.35	47	Freight	L. Proulx	J. Collett	142
Nov. 2...	.....	Special.	do	W. McClafferty.....	.....	.....
do 8...	7.00	do ...	do	Wm. Morgan.....	C. McCarthy	148
do 9...	16.40	38	do	J. T. McGinn	W. D. Martin	25
do 12...	6.00	.....	.....	.....	.....	.....
do 13...	17.30	.....	Shunting.....	.....	M. Norman.....	96
do 18...	16.00	15	Freight	J. McDowell.....	H. McAuley.....	35
do 27...	14.00	Special.	do	P. McGee.....	Wm. Murphy.....	40
do 27...	11.00	do ...	do	T. McDermott	E. B. Price	54
do 28...	18.20	.....	Shunting.....	.....	O. Brock.....	14
do 28...	3.50	34	Express.....	T. Corbett	R. Bulmer.....	164
Dec. 3...	16.00	.....	Shunting.....	.....	J. Cole.....	18
do 5...	8.00	34	Express	M. Letarte.....	O. Jolivette.....	158
do 7...	10.00	.....	.....	.....	.....	.....
do 7...	11.00	Special.	Freight	E. S. Vye.....	M. Fuller.....	103
do 9...	3.30	do ...	do	N. Merrill.....	{ S. Wilson..... W. G. Bell.....	{ 165 } { 51 }
do 17...	4.00	do ...	do	H. D. Archibald.....	W. Lovett.....	39
do 30...	12.30	do ...	do	R. W. Vye.....	F. Probert.....	148
do 20...	23.35	do ...	Plow train.....	J. E. Evans.....	C. McCarthy.....	155
do 20...	21.30	.....	Shunting .....	.....	A. Jolivet.....	116
do 25...	20.30	.....	do .....	.....	D. Mains	97
do 27...	8.20	Special.	Freight	J. Swetnam	S. Wilson	143
do 28...	10.45	do ...	Working train...	H. Barreau	do	143

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.
Chaudière	N. Boisvert.....	Employé..	While coupling	Finger crushed...	
Richmond	Jas. Sutton.....	do ...	Fell while pulling bell cord.	Leg injured	
Spring Hill Junc	Jas. Gibson ...	do ...	While shunting.....	Body crushed.....	
Newcastle.....	P. McAlister ...	do ...	While coupling.....	Side injured	
St. John.....	M. Sheppard....	do ...	Fell from ladder	Injured ribs	
Chaudière	A. Lemieux.....	do ...	While coupling.....	Leg injured	
Oakfield.....	Son of Jos. Day (boy).	Neither ...	Attempting to get on train in motion, was run over.	Fatal.....	Accidental.
Saybec	— Dubé.....	Employé..	While coupling.....	Leg broken	
Newcastle.....	A. Gôuld.....	do ...	do	Finger crushed...	
Chaudière	P. Couture.....	do ...	do	do ...	
Near Moncton....	A. Ferguson....	do ...	Walked or jumped off train in motion.	Slightly injured..	
Moncton.....	J. Fenton	do ...	While coupling.. ..	Side injured.	
Point Lévis.....	Geo. Bégin.....	do ...	do	Hand crushed....	
.....	J. Montgomery	do ...	While checking cars, cinder from engine entered eye.	Injured eye.....	
Newcastle	John Doyle.....	do ...	While coupling.....	Thumb crushed...	
Bartabogue	T. Anderson ...	do ...	While jumping on engine fell.	Injured knee	
Belmont	John Kelly, W. Lovett and H. McDormand.	do ...	Collision with car that had blown out of siding.	Slightly injured..	
N'r Berry's Mills	Jos. Holland ...	do ...	Fell off van of train in motion.	Face cut	
N'r Campbellton.	H. Hachey.....	Neither....	Struck by wing of plow.	Slightly injured..	
Chaudière	F. Moriset.	Employé..	While coupling.....	Hand crushed....	
Rivière du Loup	R. Emond.....	do ...	do	Arm broken.	
Canaan.....	D. Oulton	do ...	Fell off tender.....	Injured eye and hip.	
Near Gloucester Junction.	W. H. Bell	do ...	Caught finger in sheave of tackle block.	Injured finger	

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred

Date.	Time of Day.	Number of Train	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1886.						
Dec. 29...	18.00	10	Express	Wm. Kelly	R. Carr.....	63
do 29...	.....	36	Freight	J. S. Evans.....	S. Ross.....	.....
do 30...	6.30	Special..	do	Jas. Daley.....	R. Smith	92
1887.						
Jan. 5...	7.45	34	Express	M. Letarte.....	O. Jolivet.....	158
do 7...	6.30	5	Freight	G. A. Chesley....	G. C. Palmer.....	52
do 10...	18.30	.....	Shunting .....	.....	James Lawlor.....	55
do 18...	11.00	46	Freight.....	John Barry.....	Geo. Montgomery.....	31
do 18...	11.00	46	do	do	do	31
do 21...	11.30	Special..	do	J. Paradis	H. Gorham.....	139
do 24...	17.20	do ...	do	C. B. Humphrey....	R. H. Coggin.....	103
do 25...	12.30	.....	.....	.....	.....	.....
do 26...	15.00	42	Accommodation.	F. Dumond.....	{ P. McKenna. ... { H. S. Whitney	30 69
do 30...	4.00	Special.	Freight.....	H. Barreau	J. Smith	144
Feb. 7...	24.10	11	do	A. W. Melick	S. Watson	59
do 7...	11.20	35	Accommodation.	Z. Lockhart	J. McKay	72
do 7...	14.50	Special.	Freight.....	Jas Sproull	John McDonald	143
do 12...	.....	.....	Shunting.....	.....	J. McLellan.....	93
do 14...	18.40	.....	do	H. Garrett .....	.....	93
do 18...	4.30	Special.	Freight	A. Grant.....	Jas. Sproull.....	129
do 28...	23.00	do ...	do	J. Paradis.....	F. Probert	75
do 28...	18.45	13	Accommodation	W. H. Donkin	R. McDonald.....	55
Mar. 3...	12.05	37	Freight.....	J. T. McGinn	A. White.....	47
do 2...	15.00	Special.	Working	H. Barreau	R. Wilson	54

RAILWAY.

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

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accidents.	Extent of Injury.	Verdict of Coroner's Jury.
St. John.....	Jno. Henderson	Employé..	While coupling.....	Fingers crushed.	
Near Canaan ...	J. E. Evans....	do ...	Slipped at van door.	Injured leg.....	
Spring Hill Junction.	A. W. Murray .	do ...	While shunting.....	Sprained leg	
Point Lévis.....	Geo. Begin.....	Neither...	While attempting to couple tender to cars.	Hand crushed... ..	
St. John	Jno. Nickerson	Employé..	While coupling.....	Fingers crushed..	
Ohandière	Nap. Camire...	do ...	do	Thumb do ...	
Notre Dame du Portage.	Jas. Langlais...	do ...	Side rod of engine broke and Langlais jumped from engine.	Fatal	Accidental.
do ...	G. Montgomery	do ...	Side rod broke.....	Slightly injured.	
Oedar Hall	J. Paradis	do ...	While opening a window	Cut wrist	
Dalhousie Junc.	I. Mabey	do ...	While coupling	Thumb crushed...	
Truro	Walter Miller..	do ...	Piece of casting fell on foot.	Foot do ...	
} Little Metis ...	B. Belanger.....	do	{ While repairing cars got caught between drawers	Considerably injured.	
Sayabec	F. Morton	do ...	Fell between cars.	Injured back	
Sussex	F. Estabrooks..	do ...	Caught foot in frog.....	do foot.....	
Moncton	Z. Lockhart....	do ...	Slipped while stepping on car.	Sprained leg	
Glengarry.....	D. Fraser	do ...	Fell off car	It injured foot	
Richmond	Jos. McLellan..	do ...	While stepping on engine slipped, and point of oil can entered neck.	Fatal.....	do
do	Lewis Caun....	do ...	While coupling.....	Hand crushed...	
Hopewell.....	W. E. McLean	do ...	do	do	
Near Metapedia.	A. Desjardins.	do ...	While working in snow..	Foot frozen.....	
Truro	Miss Ferguson.	Neither...	Horse ran away and collided with train or switch rail.	Considerably injured.	
Derby Junction.	B. Sheppard....	Employé .	Jumped off train in motion and slipped under cars.	Fatal	do
Rogerville.....	C. Herbert.....	do ...	While shunting.....	Hand injured	

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred:

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1887.						
Mar. 17...	15.30	Special.	Freight	H. Barreau.....	J. McGowan	135
do 17...	17.30	38	do	P. E. Heine .....	.....	.....
do 28...	7.00	3	Accommodation.	W. Kelly	A. Davey	49
do 28...	16.00	.....	Shunting	C. Upham.....	J. Stockall.....	83
April 2...	12.00	Special.	Freight	C. Ayers	Jas. Cooke	72
do 2...	.....	38	do	A. Hunter.....	W. Buck	125
do 7...	16.00	.....	Shunting	C. Smith	Wm. Russell	165
do 12...	14.50	Special.	Passenger	A. B. Vance	J. Wall	62
do 13...	10.00	do	Working	S. C. Keith	F. Whitney	68
do 14...	8.05	2	Express .....	.....	W. Lovitt	82
do 17...	23.30	Special.	Freight	G. Margeson	{ J. G. McDonald	{ 7
					{ D. S. Yould.....	{ 8
do 18...	.....	do	English mail.....	J. B. Paulet	J. Gorham	2
do 22...	12.15	do	Freight	A. Therriault	H. A. Turner.....	75
do 23...	15.15	do	do	A. Begin	W. F. Smallwood	135
do 25...	21.50	do	do	J. McDonald.....	Geo. Currie	163
do 25...	22.30	do	do	W. L. Broad.....	C. McCarthy.....	119
do 25...	16.25	37	do	J. T. McGinn	W. Russell.....	25
do 29...	10.00	Special.	do	S. G. Nickerson	{ Jas. Howie	{ 126
					{ J. Steadman	{ 113
May 2...	15.00	.....	.....	.....	.....	.....
do 2...	19.30	.....	Shunting .....	.....	M. O'Brien	99
do 3...	21.30	37	Freight	D. Hunter	J. Stratton	144
do 17...	.....	9	Express .....	.....	.....	.....
do 20...	20.45	42	Accommodation.	L. N. Letarte	Jno. Oakleaf	140
do 26...	17.00	.....	.....	.....	.....	.....

RAILWAY.

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

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Campbelton	F. Anderson ...	Employé..	While coupling	Badly crushed....	
Newcastle	H. Atkinson ...	do ...	While unloading freight.	Injured foot,.....	
Shediac	H. Gordon	do ...	While coupling	Finger crushed...	
Dartmouth	John Spain.....	do ...	Fell off car	Injured leg..	
Sackville.....	M. Connolly ...	do ...	While coupling	Fingers crushed ..	
Bathurst	Jno. Harris	do ...	Fell from car	Injured side ,.....	
Newcastle	Chas. Smith ...	do ...	While coupling	Hand injured	
Near Hopewell...	Sister of Charity and Capt. Lemaistre.	Passengers	Oars derailed and ditched	Considerably injured,	
St. John.....	T. Manning.....	Employé ..	While getting on train jammed leg.	Leg broken	
Halifax	E. M. Power ...	do ...	While coupling	Finger crushed...	
Between Oxford and Thompson	John Fisher ...	do ...	Train broken apart; afterward collided.	Head and hand injured.	
Campbelton	Jos. Dionne	do ...	While coupling	Seriously injured.	
Near Mill Stream	J. G. Thompson	do ...	Tube in boiler burst, throwing him off engine	Fatal	Accidental.
Little Metis.....	P. Dionne.....	do ...	Jumping from tender.....	Sprained foot.....	
Londonderry	C. McKinnon...	do ...	While coupling	Finger crushed...	
Dorchester	D. Johnston ...	Neither ...	Fell under car while attempting to get on train in motion.	Leg cut off	
Near Belledune ..	Jno. Chalmers.	do ...	While kneeling or lying on track was struck by engine.	Fatal	do
Newcastle	T. Robichau ...	Employé..	While coupling	Slightly injured ..	
New Glasgow ...	J. Kitchen	do ...	While unloading wire ...	Injured knee	
Moncton	A. H. Lutes	do ...	While coupling	Finger crushed...	
Dalhousie Junct	Bliss Sears	do ...	do	do ...	
Truro	Kate McDonald	Passenger	Jumped off train while in motion.	Injured head and face.	
Campbelton	O. Gilker.....	Employé..	Fell off tender	Injured leg & arm.	
St. John.....	O. Godsoe	do ...	While shutting car door.	Injured thumb...	

INTERCOLONIAL
RETURN of Accidents and Casualties which have occurred

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1887.						
June 11...	18.45	Special.	Freight	W. M. Thompson	Geo. Morrison	89
do 13...	20.30	44	do	H. Aubin	C. Saindon	1
do 22...	7.15	Special.	Ballast	J. A. Hughes	W. E. Hunter	118
do 27...	12.30	17	Accommodation	C. J. Rhodes	H. Smith	15
do 27...	18.25	5	Freight	G. A. Chesley	C. McCarthy	48
do 29...	11.30	37	do	J. T. McGinn	W. Russell	107

RAILWAY.on the Line of the Intercolonial Railway, &c.—*Concluded.*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Charlo	D. Oulton	Employé..	While coupling	Injured leg	
St. Eloi	H. Aubin	do ...	While getting out of van.	Sprained ankle...	
Rothesay	Jno. C. Gunn	do ...	While coupling	Seriously injured.	
Richmond	Geo. Lomas	do ...	do	Finger crushed ..	
Pt. du Chêne	W. McManus	do ...	do	Hand crushed. ...	
Newcastle	A. Lockhart	do ...	While unloading freight.	Back injured	

APPENDIX No. 5b.

EASTERN EXTENSION RAILWAY.

OFFICE OF THE CHIEF SUPERINTENDENT,
MONCTON, N.B., 29th October, 1887.

SIR,—I have the honor to submit the following report on the working of the Eastern Extension Railway for the fiscal year which ended on the 30th June, 1887.

I inclose the report of the Chief Engineer of the Intercolonial Railway on the permanent way and works, the report of the Mechanical Superintendent of the Intercolonial Railway on the rolling stock, and 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	(do 2.)
5. Maintenance of way and works	(do 3.)
6. Station expenses	(do 4.)
7. General charges	(do 5.)
8. General balance.	

The length of railway operated was the same as last year—80 miles.

The capital account remains the same as last year, \$1,284,495.76.

There is a slight decrease in the gross earnings, as follows:—

1885-86.....	\$66,893 11
1886-87.....	64,107 10
	<u>\$ 2,786 01</u>

This decrease was in both passenger and freight traffic.

The gross expenditure was about the same as last year, \$94,254.04.

The expenditure for ties and fencing was very heavy, amounting to \$28,980.65.

Extensive repairs were made to the wharf at Port Hastings, at a cost of \$2,760.

For the reasons above stated the gross expenditure exceeded the gross earnings \$30,146.94.

The Haggas' system in use for supplying the locomotives with water is not adapted to the present requirements of the road, as it is too slow in its operation and causes detention of trains. It is important that elevated tanks or reservoirs should be substituted without delay.

The permanent way and works, and also the rolling stock received necessary repairs and are in good order.

I have the honor to be, Sir,

Your obedient servant,

D. POTTINGER,

Chief Superintendent.

COLLINGWOOD SCHREIBER, Esq.,

Chief Engineer and General Manager Government Railways,

Ottawa.

No. 1.—EASTERN EXTENSION RAILWAY.

CR.

CAPITAL ACCOUNT, Year ending 30th June, 1887.

DR.

1887. June 30 th		\$ cts.	1887. June 30.....	By Dominion of Canada.....	\$ cts.
	To cost of road and equipment	1,284,495 76			1,284,495 76
		1,284,495 76			1,284,495 76

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

**No. 2.—EASTERN EXTENSION RAILWAY.
REVENUE ACCOUNT, Year ending 30th June, 1887.**

CR.

DR.

Year ending 30th June, 1886.	Expenditure.	Year ending 30th June, 1887.	Year ending 30th June, 1886.	Earnings.	Year ending 30th June, 1887.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
16,756 20	Locomotive power	14,933 56	36,952 48	Passenger traffic	35,649 72
10,187 05	Car expenses	9,336 87	22,237 55	Freight traffic	20,276 83
48,311 86	Maintenance of way works	51,311 64	7,703 08	Mails and sundries	8,181 56
8,538 13	Station expenses	7,484 87		Balance	64,107 10
10,923 52	General charges	11,187 10	66,883 11		30,146 94
			27,863 95		94,254 04
		94,254 04	94,756 06		

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 3.—EASTERN EXTENSION RAILWAY.

LOCOMOTIVE POWER—(Abstract No. 1.)

Year ending 30th June, 1886.		Year ending 30th June, 1887.
\$ cts.		\$ cts.
700 00	Mechanical Superintendent's salary, Clerk's, office and travelling expenses.....	3,373 47
4,228 28	Wages, Drivers, Firemen and Cleaners.....	5,811 13
4,333 73	Fuel	655 96
916 60	Oil, tallow, waste and small stores.....	3,805 89
6,285 73	Repairs to engines, tenders and engine tools.....	517 10
46 79	Water, including pump and tank repairs.....	770 01
284 07	Miscellaneous.....	
16,795 20		14,933 56

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 4.—EASTERN EXTENSION RAILWAY.

CAR EXPENSES—(Abstract No. 2).

Year ending 30th June, 1886.		Year ending 30th June, 1887.
\$ cts.		\$ cts.
2,180 41	Repairs to passenger cars.....	1,794 78
200 41	do postal, express and baggage cars	928 52
1,069 13	do freight cars and vans	1,601 92
5,489 88	Wages of conductors, train baggage masters and brakemen.....	4,367 80
424 72	Oil and waste for packing.....	368 65
419 62	Small stores and fuel.....	196 12
362 88	Miscellaneous.....	81 08
10,187 05		9,336 87

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 5.—EASTERN EXTENSION RAILWAY.

MAINTENANCE OF WAY AND WORKS—(Abstract No. 3).

Year ending 30th June, 1886.	—	Year ending 30th June, 1887.
\$ cts.		\$ cts.
17,373 06	Wages repairing roadway, fences, semaphores	21,475 18
1,197 50	Rails and fastenings	1,093 00
19,785 86	Ties	13,518 68
7,831 08	Timber, lumber, &c., for repairs to bridges, fences, &c.	9,703 71
2 90	Repairs to wharves	2,745 23
537 42	do buildings and platforms	1,009 56
504 89	do snow ploughs, flangers and tools	702 30
971 15	Clearing ice and snow	1,023 40
108 00	Miscellaneous.....	40 58
48,311 86		51,311 64

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 6.—EASTERN EXTENSION RAILWAY.

STATION EXPENSES—(Abstract No. 4).

Year ending 30th June, 1886.	—	Year ending 30th June, 1887.
\$ cts		\$ cts.
6,908 43	Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Baggage Masters, Yard Masters, Switchmen, Watchmen and Laborers....	6,266 82
1,049 59	Fuel, oil, light, stationery, tickets and other incidental expenses	1,184 63
580 11	Miscellaneous	33 42
8,538 13		7,484 87

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 7.—EASTERN EXTENSION RAILWAY.

GENERAL CHARGES—(Abstract No. 5).

Year ending 30th June, 1886.		Year ending 30th June, 1887.
\$ cts.		\$ cts.
2,188 87	Superintendent, Train Despatchers, Clerks, office and travelling expenses...	1,204 83
1,197 63	Accounting Department, salary of the Accountant and Auditor, Clerks, office and travelling expenses.....	519 62
62 25	Advertising.....	6 01
52 08	Damages to men, animals and goods.....	1,386 05
6,763 43	Ferry.....	7,939 05
69 91	Telegraph expenses (not including pay to Operators).....	6 52
569 65	Miscellaneous.....	125 02
10,923 82		11,187 10

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

No. 8.—EASTERN EXTENSION RAILWAY.

DR. GENERAL BALANCE, Year ending 30th June, 1887. CR.

	\$ cts.		\$ cts.
General stores	6,599 73	Dominion of Canada.....	6,270 22
Cash	1,633 94	Stations	2,247 31
Rents	24 50	Maine Central Railway.....	559 48
Fines and rewards	9 30	International S. S. Company ..	847 25
Canada Atlantic Railway	5 25	Boston and Maine Railway.....	245 66
Ooke & Co	19 80	Bras d'Or Steamship Co.....	55 50
Cape Breton Railway.....	92 26		
Grand Trunk Railway.....	9 30		
Western Union Telegraph Co ...	265 67		
Departmental Accounts—			
Post Office.....	\$1,448 40		
Militia Department ..	100 07		
	1,548 47		
Individual accounts	17 20		
	10,225 42		10,225 42

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1887.

 EASTERN EXTENSION RAILWAY.

MECHANICAL SUPERINTENDENT'S OFFICE,

MONCTON, N.B., 28th October, 1887.

SIR,—I beg to submit the following statements concerning the rolling stock of the Eastern Extension Railway. It consists of:—

- 9 engines.
- 6 first class passenger cars.
- 4 second class do
- 4 postal, baggage and express cars.
- 2 conductor's vans.
- 25 box cars.
- 5 cattle cars.
- 70 platform cars.
- 150 5-ton hopper coal cars.

The work of repairing rolling stock is still done at Richmond and Moncton.

All the engines, passenger and baggage cars have been kept in good condition; twenty-nine hoppers and two platform cars were broken up and are being rebuilt.

Nothing has been done to improve the water service, although it is much required.

I am, Sir,

Your obedient servant,

H. A. WHITNEY,

Mechanical Superintendent.

D. POTTINGER, Esq.,
 Chief Superintendent,
 Intercolonial Railway,
 Moncton, N.B.

 EASTERN EXTENSION RAILWAY.

CHIEF ENGINEER'S OFFICE,

MONCTON, N.B., 24th October, 1887.

SIR,—I have the honor to submit the following report on the maintenance of the Eastern Extension Railway, for the year ending 30th June, 1887.

The mileage remains the same as last year.

TIES.

During the year, 55,703 ties were renewed, at a cost of \$13,518. The bulk of these were cedar and Prince's pine, obtained in New Brunswick.

FENCING.

Forty-one miles of barbed and lath wire fencing were erected, in place of decayed board and pole fencing, removed or burned.

The cost of this fencing was \$15,461.97, as against \$9,000 last year.

Large repairs were made to snow fences and the remaining old pole fence.

TURNTABLES.

A new top was put on the turntable at Mulgrave, and the table was overhauled and repaired.

WHARVES AND TRESTLES.

At Mulgrave, 60 feet of the wharf was replanked with 4-inch pine; fifty new guards and braces were put in.

At Port Hastings, on the Cape Breton side of the Gut, a new block 55 by 25, and 25 feet in height, was built on the end of the old wharf.

It was sheathed with hardwood, to resist the pressure of the ice.

The old wharf was also repaired and put in good order.

The new block costs \$2,400, and the repairs to the old wharf \$360.

BUILDINGS AND PLATFORMS.

A large portion of the roof of the engine house at Port Mulgrave was renewed. The interior of the station was re-arranged, a new partition put up and walls painted.

The flag station at Gerrior's was painted, and seats provided.

Necessary repairs were made to stations at Harbor au Bouche, Avondale, Tracadie, Heartherton, Antigonish, James' River and Barney's River.

Wells were provided for the station masters at Piedmont and Merigonish.

A passenger platform was put up at Cape Porcupine.

BRIDGES AND CULVERTS.

A trestle bridge, 12 feet span near New Glasgow was replaced with a solid embankment made up with material taken from cliff near Murphy's Mill road crossing.

At Pine tree two new trestle bents were put in.

The 160-foot Howe truss bridge at Sutherland's River was painted two coats of ironclad paint.

Thirty-two floor beams and 27 main and counter braces were renewed in Howe truss at French River.

Howe truss at Dewar's received coats of ironclad paint. Twenty-seven floor beams and 6 lateral braces were renewed.

The trestle bridge at Dewar's Mill was thoroughly overhauled. Seven new bents were put in, 15 stringers, and 6 corbels.

At Barney's River (Howe truss) 22 floor beams, 35 braces and 60 cross ties were renewed.

At James' River the up-stream side of abutment, which was partially washed out last year, was rebuilt and both abutments pointed with cement. Twelve floor beams and 8 braces of this bridge were renewed.

Twenty floor beams and 47 braces were renewed in small Howe truss bridge at Murphy's Mill and 5 braces in the large span at the same place.

Twenty-three bents were renewed in West River bridge, near Antigonish.

Large repairs were made at trestle pile bridges at Gillis's Cave, McKinnon's and Pomquet.

The Howe truss bridge at Pomquet was overhauled and repaired.

Six floor beams, 3 braces, one 30-foot stringer and 14 pairs of washer plates were put in.

At the tenth mile post a pair of wood stringers of a 12-foot beam culvert was replaced by a pair of iron rail girders.

A 2 by 3 cedar box culvert was put in the original watercourse at McLean's, near thirty-mile post.

Twenty-eight pairs of stringers were renewed on beam culverts and cattle-guards during the year.

About 20 feet were excavated off the face of the cliff near Murphy's road crossing, to enable persons using the road to have a better view of approaching trains.

Sixty new farm gates were put in and about 30 farm crossings renewed.

The total expenditure for the maintenance of this 80 miles of road for the year was \$51,311.64. Of this amount \$28,980.65 has been for the renewals of ties and fencing.

After this current year, the expenditure under these heads will be considerably reduced.

The track has been well maintained, and is in good running order.

I am Sir,

Your obedient servant,

P. S. ARCHIBALD.

Chief Engineer.

D. POTTINGER, Esq.,
Chief Superintendent,
Moncton, N.B.

EASTERN EXTENSION RAILWAY.

Return of Accidents and Casualties which have occurred during the year ending 30th June, 1887,—

Nil.

APPENDIX No. 5c.

WINDSOR BRANCH RAILWAY.

OFFICE OF THE CHIEF SUPERINTENDENT,

MONCTON, N.B., 28th October, 1887.

SIR,—I have the honor to submit the following statements, showing the results of the working of the Windsor Branch Railway for the year which ended 30th June, 1887:—

- No. 1.—Revenue account.
- 2.—Maintenance of way and works.
- 3.—General balance.
- 4.—Statement of earnings.

I also send you the report of the Chief Engineer on the condition of the permanent way and works.

This line, 32 miles in length, was operated during the year by the Windsor 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.

There is an increase in the gross earnings accruing to the Government, when compared with last year, as follows:—

1886-87	\$25,327 58
1885-86	23,658 11
	\$ 1,669 47
The expenditure for maintenance of way and works	
was	\$26,042 33
The gross earnings for the year amounted to.....	25,327 58
	\$ 715 75

The increased expenditure for maintenance of way was caused by the substitution of steel rails for iron rails in a portion of the track to improve it, and in erecting a new and commodious station and freight house at Beaver Bank and a storehouse for hay at Newport Station.

The usual and necessary repairs were made to the permanent way and works, and they are all in good working order.

I have the honor to be, Sir,

Your obedient servant,

D. POTTINGER,

Chief Superintendent.

[1887]

No. 1.—WINDSOR BRANCH RAILWAY.

REVENUE ACCOUNT, Year ending 30th June, 1887.

CR.

DR.

Previous Year.	Expenditure.	Year ending 30th June, 1887.	Previous Year.	Receipts and Earnings.	Amount, Year ending 30th June, 1887.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
19,229 49	Maintenance of way and works..... (Abstract No. 1.)	26,042 33	8,105 09	Passenger traffic.....	7,968 42
			14,401 18	Freight traffic.....	16,209 33
			1,151 84	Mails.....	1,151 84
4,428 62	Balance	26,042 33		Balance.....	714 75
23,658 11			23,658 11		26,042 33

[1887]

R. B. BOGGS,
Acct., W. B. Ry.

MONCTON, N.B., 30th June, 1887.

Examined,

THOMAS WILLIAMS,
Chief Accountant and Treasurer.

No. 2.—WINDSOR BRANCH RAILWAY.

MAINTENANCE of Way and Works.

Previous Years.	Particulars.	Amount.
\$ cts.		\$ cts
5,479 23	Repairs to track	7,759 53
1,721 78	Rails and fastenings	4,943 96
5,752 92	Ties	2,874 50
269 07	Bridges	899 79
38 01	Signals	65 33
38 25	Culverts and cattle guards	18 80
696 03	Buildings and platforms	2,931 55
20 70	Switch locks	24 15
3,439 45	Fencing	4,545 34
26 30	Hand cars and trollies	18 28
202 14	Tools and repairs	173 06
408 20	Snow ploughs and flangers	578 43
1,127 91	Accountant's office and expenses	1,122 61
9 50	Miscellaneous	88 00
19,229 49		26,042 33

R. B. BOGGS,
Acct., W. B. Ry.

MONCTON, N.B., 30th June, 1887.

Examined,
THOMAS WILLIAMS,
Chief Accountant and Treasurer.

No. 3.—WINDSOR BRANCH RAILWAY.

MONTHLY STATEMENT of Receipts—One-third Earnings.

Month.	Passengers.	Freight.	Mails.	Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1886—July.....	919 72	1,016 31	96 91	2,032 94
August.....	1,052 96	1,016 95	96 91	2,165 92
September.....	809 97	1,841 05	96 90	2,747 92
October.....	677 38	1,842 09	96 91	2,616 38
November.....	574 14	2,108 93	96 90	2,779 97
December.....	631 74	1,377 84	96 91	2,106 49
1887—January.....	421 52	939 21	94 45	1,455 18
February.....	355 03	924 36	94 45	1,373 84
March.....	431 08	1,424 52	94 46	1,950 06
April.....	539 87	1,420 61	95 68	2,056 16
May.....	608 18	1,197 61	95 68	1,901 47
June.....	945 73	1,089 84	95 68	2,141 25
	7,966 42	16,209 32	1,151 84	25,327 58

R. B. BOGGS,

Acct., W. B. Ry.

MONCTON, N.B., 30th June, 1887.

Examined,

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

No. 4.—WINDSOR BRANCH RAILWAY.

DR.

GENERAL BALANCE.

CR.

1887.		\$ cts.	1887.		\$ cts.
June 30	Windsor and Annapolis Railway..	2,595 94	June 30.	Intercolonial Railway	2,382 00
	Stores account	6,278 18		Dominion account	6,492 12
		8,874 12			8,874 12

R. B. BOGGS,

Acct., W. B. Ry.

MONCTON, N.B., 30th June, 1887.

Examined,

THOMAS WILLIAMS,

Chief Accountant and Treasurer.

WINDSOR BRANCH RAILWAY.

CHIEF ENGINEER'S OFFICE,

MONCTON, N. B., 24th October, 1887.

Sir,—I have the honor to submit the following report on the maintenance of the Windsor Branch for the year ending 30th June, 1887.

The length of the branch is thirty-two miles.

TRACK.

Three miles of old iron rails were taken up and replaced with steel rails weighing 56 pounds to the yard.

SIDINGS.

A siding was put in at Mount Uniacke and another at the ballast pit near Windsor.

TIES.

Eleven thousand two hundred and thirty-seven ordinary ties and thirteen sets of switch ties were renewed.

BALLASTING.

Seven thousand yards of ballast were put on the main line and siding.

SIGNALS.

All signals were put in good repair and painted

FENCING

Eight miles of barbed and lath wire fencing have been erected in place of old decayed pole fencing. The remainder of the old fence was repaired.

BUILDINGS AND PLATFORMS.

A new station building was erected at Beaver Bank.

A hay shed was erected at Newport.

A new loading platform was erected at Grove's Road.

The freight and passenger platform at Ellershoush was renewed.

Necessary repairs were made to the stations at Windsor Junction, Newport and Windsor.

BRIDGES, CULVERTS, &C.

The masonry of St. Croix, Big Bog and Jordan's Bridges were overhauled and painted.

Weigh scales at Ellershoush and Mount Uniacke were thoroughly overhauled and repaired, new timber being provided for each scale.

The cattle pen at Windsor and the planking of tracks in streets were renewed.

The track is in good order.

I am, Sir,

Your obedient servant,

P. S. ARCHIBALD,

Chief Engineer.

D. POTTINGER, Esq.,
Chief Superintendent,
Moncton.

[1887]

APPENDIX No. 5*d*.

PRINCE EDWARD ISLAND RAILWAY.

SUPERINTENDENT'S OFFICE,

CHARLOTTETOWN 1st September, 1887.

SIR,—I have the honor to submit the following report on the working of the Prince Edward Island Railway for the fiscal year ending 30th June, 1887.

I enclose the following statements prepared by the Accountant and Auditor :

- No. 1. Capital account.
- 2. Revenue account.
- 3. Locomotive power (Abstract No. 1.)
- 4. Car expenses (do 2.)
- 5. Maintenance of way and works (do 3.)
- 6. Station expenses (do 4.)
- 7. General charges (do 5.)
- 8. Statement of general stores account.
- 9. General balance.
- 10. Comparative statement of averages.

CAPITAL ACCOUNT.

The total expenditure on capital account to 30th June, 1886, was.....	\$3,735,980 89
Add to which expenditure on new coal shed and extension of yard at Charlottetown.....	5,800 00
Making the total expenditure to 30th June, 1887...	<u>\$3,741,780 89</u>

The new coal shed is 60 feet long by 30 feet wide, with 24 feet posts. It is situated north of the old coal shed in Charlottetown yard. It is a very serviceable building. A track has been laid into it from which to discharge coal from the cars.

Thousands of loads of brush and 4,000 cubic yards of earth were used in filling up the space inside of the breastwork. Several sidings have been laid on the ground thus made, which are of great service, as additional track room was much needed.

REVENUE ACCOUNT.

The gross earnings for the year amounted to.....	\$155,303 37
Previous year.....	155,584 36

Decrease \$ 280 99

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

1885-86	\$740 87
1886-87	739 53

A decrease per mile of..... \$ 1 34

The length of road operated in each year was the same, namely, 210 miles.

[1867]

STATEMENT.

	Passengers Carried.	Earnings.
1885-86	120,374	\$62,079 81
1886-87	130,067	66,334 95
	<u>9,693</u>	<u>\$ 4,255 14</u>

	Tons of freight Carried.	Earnings.
1885-86	57,913	\$76,281 20
1886-87	53,587	71,152 52
	<u>4,326</u>	<u>\$ 5,128 68</u>

The engine mileage compared with last year was :—

1885-86	310,434
1886-87	316,763
Increase	<u>6,329</u>

The trains mileage compared with last year was :—

1885-86	249,848
1886-87	248,864
Decrease	<u>984</u>

The car mileage compared with last year was :—

1885-86	1,235,647
1886-87	1,249,892
Increase	<u>14,245</u>

EXPENDITURE.

The working expenses as compared with the previous year was as follows :—

1885-86	\$216,744 34
1886-87	204,237 45
Decrease	<u>\$ 12,506 89</u>

Included in the above, expended on new work, is the amount of \$806.37 for a station masters' dwelling at Hunter River.

TRACK.

One thousand three hundred and seventy-two iron rails have been renewed.
Six thousand one hundred and seventy-four steel fish-plates have been put in track to replace broken iron ones.
Eight hundred and fifty-four iron fish-plates and six steel rail frogs have been put in.
The necessary surface ditching, and considerable brush cutting has been done.

SIDINGS.

New additional sidings have been laid at the undermentioned places :—

At Arthur's Mills, west of Portage, length.....	276 feet.
Larkin's do Conway, do	410 do
McNeil's do Ellerslie, do	335 do
Hughes' Crossing, on Cape Traverse Branch, length...	221 do
Coleman, McKinnon's siding was extended.....	100 do
Colville the siding was extended.....	50 do

At Charlottetown yard the siding room was increased by the addition of 1,000 feet.

At Midgell a spur siding, 200 feet long, with a capacity for these cars, was put in, increasing the siding accommodation on the aggregate by 2,412 feet.

SLEEPERS.

During the year 34,824 sleepers have been put in the track. Twenty-three sets of switch sleepers, and 36 head-blocks, with switch frames, have been renewed.

BALLASTING.

One thousand five hundred and twenty-six cubic yards of stone ballast, and 2,868 cubic yards of gravel ballast have been distributed where most needed to maintain the road in its present high state of efficiency

BRIDGES, CATTLE GUARDS, ETC.

Big Brook Bridge was repaired, and the abutments were pointed with cement. West from Portage, a small bridge of 12 feet span received new stringers and new floor timbers.

The abutments of Pawe's Bridge were rebuilt with stone and the old wooden structure was replaced by an iron girder bridge.

The abutments of Hantley River, Wellington, and Saint Nicholas Bridge were pointed with cement.

Blueshawk Bridge received a new end abutment of hemlock timber.

Mount Stewart Bridge received a new set of stringers. The mason work was pointed with cement, and 75 tons of hard stone were used at ends of bridge.

At Morell Bridge 25 tons of hemlock timber were used to strengthen east side.

At Marie, Midgell, Pine Brook and St. Peter's Bridges, the mason work was pointed with cement.

Baldwin's Brook Bridge received new stringers and long sleepers.

Scrimgeour's Bridge received a new top.

Four timber culverts were built.

Four cattle guards were built, and 11 were repaired. Twelve rubble stone drains were replaced by hemlock timber culverts.

BUILDINGS AND PLATFORMS.

At Tignish the engine house was re-shingled.

At De Blois and Harper's the station platform were rebuilt.

At Alberton, the station building was shingled.

At O'Leary repairs were made to the station and a new floor was laid in the dwelling.

At Port Hill the office received a new floor.

At Bloomfield a new water closet was provided.

At Summerside the freight shed on wharf received a thorough repair. The building was raised two feet, and the water side boarded up. The place was painted,

doors fixed, and everything put in good condition. A new platform 12 by 14 feet, was laid on the east side of this building. Four tons of hemlock timber were put at the end of the wharf to break the force of the waves against the freight shed. The ticket office was altered and is now made more convenient. The station platform was repaired. New sills were put under the baggage room. A section of the engine house was reshingled.

At Kensington a new scale was put in, and a new water closet provided.

At Blueshawk the platform was rebuilt.

At Freetown a new water closet was provided.

At County Line a new cattle pen was built.

At Cape Traverse a crib of hemlock was built on to the corner of the engine house to prevent the sea washing away the foundations.

At Hunter River a station masters dwelling was erected. The coal shed was reshingled, and other necessary repairs made.

At Charlottetown such of the buildings as required it were reshingled. The tar and gravel roof of the station was renewed with "Sparham" roofing. The building was thoroughly repaired, and received two coats of paint outside and the inside was painted, and whitewashed. A new ceiling was put in the ladies' waiting room, and the walls of both waiting rooms were painted. The walls and ceilings of all the offices connected with the station were whitewashed and renovated.

A large sky light was put in the roof of round house. The gravel roof of round house was overhauled and repaired and six iron smoke stacks were renewed. Five thousand five hundred and ninety-eight feet of flooring were laid in round house, and 4,800 feet in carpenter's shop, and new sleepers were laid for the flooring to rest upon. A new engine pit was built, one pit was rebuilt with brick, and Portland cement. A plank sewer 250 feet long, 2 feet 6 inches by 2 feet was put down to carry water from the turntable and engine pits to the shore, and the walls were sheathed up from four feet and painted.

The floor of the machine shop was partly renewed with three inch plank. Seven windows on the south side of the round house were covered with wire netting. The coal shed received eight new tie beams, and ten cross sills, and the building was otherwise strengthened.

Mount Stewart Engine House was repaired. The roof of the Coal Shed was reshingled, and the building otherwise repaired.

The cattle pen was repaired also. A new door and rollers were placed in the freight house.

Morell and St. Peters' Stations were re-shingled. Morell office received a new floor.

St. Peter's Station was whitewashed and painted, and the waiting room floor was repaired.

At Souris the engine house roof was partly re-shingled and other repairs were made to the building. A new three-inch plank platform was laid at the station. New rollers and rods were placed on all doors in the freight house on wharf. A well was sunk at the station. At 48 siding a platform was placed.

At Baldwin's a new flag station was erected.

At Georgetown about half of the coal shed was renewed. Repairs were made to the engine house which was damaged by fire on the night of 26th January last. A new pit was placed in the engine house.

Royalty Junction, Mount Stewart, Cardigan, Georgetown, Morell and Bear River Stations were whitewashed inside.

WHARVES.

Summerside wharf received needed repairs. Ten car loads of stone were used to repair a washout which took place in November.

At Charlottetown 30 tons of hemlock timber, 30 tons of stone ballast and 2 car loads of brush were used to repair west side of wharf. 2,000 feet of 3-inch plank were used in repairing road approach to wharf.

At St. Peter's Bay 400 yards of stone, 17 cars of brush and 40 cars of earth were used to repair the breastwork.

Souris wharf was repaired. Twelve fenders were renewed, and 3,000 feet of 3-inch plank were used to repair top covering and approach. Four cars of brush and 100 tons of stone were used to repair washout at the approach to wharf.

At Georgetown 75 tons of stone and 3 cars of brush were used to repair washout caused by high tides.

FENCING.

About $38\frac{1}{10}$ miles of new barbed wire fence have been erected.

One thousand nine hundred and fifty feet of board fence, 148 feet of pole fence, 500 feet of hurdle fence and 2,300 feet of snow fence were rebuilt.

One and one-half miles of board fence and $2\frac{1}{2}$ miles of snow fence (burnt and blown down) were repaired. One hundred and twenty-two gates and 216 gate posts have been renewed.

SEMAPAORE, SIGNALS, ETC.

All semaphores, switch frames, targets, telegraph signals and outside lamps have received attention when necessary, and are in good condition.

STORES.

The purchase of stores during the year amounted to \$59,403.38.

The value of stores on hand to 30th June, 1887, was :—

General stores	\$ 66,410 33
Coal.....	5,070 89
Rails and fastenings	34,741 79
Old material, serviceable.....	7,932 00
Total	<u>\$114,155 01</u>

These stores have, for the most part, been purchased by tender and contracts, which follows out the practice of previous years.

I enclose a return of accidents and casualties which have occurred on the railway during the year.

I am pleased to say that the roadbed, buildings and rolling stock are in good condition.

I have the honor to be,

Your obedient servant,

J. UNSWORTH,

Acting-Superintendent.

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

No. 1.—PRINCE EDWARD ISLAND RAILWAY.

CAPITAL ACCOUNT.

CR.

DR.

		\$	cts.			\$	cts.	
1886.	June 30....	To cost of road and equipment to date.....	3,735,980	89	By Dominion of Canada	3,735,980	89	
1887.	June 30....	To expenditure, year ended 30th June, 1887— On new coal shed and extension of yard at Charlottetown	5,800	00	By Dominion of Canada	5,800	00	
			3,741,780	89			3,741,780	89

[1887]

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 2.—PRINCE EDWARD ISLAND RAILWAY.
REVENUE ACCOUNT for the Year ended 30th June, 1887.

Previous Year.	Expenditure.	Year ended 30th June, 1887.	Previous Year.	Receipts.	Year ended 30th June, 1887.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
51,326 31	Locomotive power	56,534 30	62,079 81	Passenger traffic.....	66,334 95
54,991 07	Car expenses	33,324 96	76,281 20	Freight do.....	71,162 52
73,006 22	Maintenance of way and works	76,309 25	17,233 35	Mails and sundries.....	17,815 90
25,239 70	Station expenses	25,311 38		Total Receipts.....	155,303 37
12,188 04	General charges	12,147 56	155,584 36	Balance.....	48,934 08
	Totals.....	204,237 45	61,169 98	Totals.....	204,237 45

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 3.—PRINCE EDWARD ISLAND RAILWAY.

LOCOMOTIVE POWER (Abstract No. 1).

Previous Year.	Details.	Year ended 30th June, 1887.
\$ cts.		\$ cts.
1,248 83	Mechanical Superintendent's salary, clerks, office and travelling expenses.....	1,240 41
14,165 59	Wages of drivers, firemen and cleaners.....	15,335 85
11,799 68	Fuel.....	11,625 67
2,857 12	Oil, tallow, waste and small stores.....	2,276 46
19,353 84	Repairs to engines, tenders and engine tools.....	24,286 24
300 96	Water, including pump and tank repairs.....	547 85
1,600 29	Miscellaneous.....	1,221 82
51,326 31		56,534 30

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 4.—PRINCE EDWARD ISLAND RAILWAY.

CAR EXPENSES (Abstract No. 2).

Previous Year.	Details.	Year ended 30th June, 1887.
\$ cts.		\$ cts.
9,855 46	Repairs to passenger cars.....	9,262 08
1,109 06	do postal and baggage cars.....	1,219 24
27,914 09	do freight cars and vans.....	7,036 53
12,365 23	Wages of conductors, train baggage masters and brakemen.....	12,777 75
578 41	Oil and waste for packing.....	540 19
2,466 14	Small stores and fuel.....	2,353 95
675 68	Miscellaneous.....	755 22
51,994 07		33,924 96

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 5.—PRINCE EDWARD ISLAND RAILWAY.
MAINTENANCE OF WAY AND WORKS—(Abstract No. 3).

Previous Year.	Details.	Year ended 30th June, 1887.
\$ cts.		\$ cts.
404 96	Engineers' salary, clerks, office and travelling expenses.....	419 96
40,074 37	Wages in repairing roadway, fences and semaphores.....	41,479 07
10,348 28	Rails, chains and spikes.....	3,448 65
8,789 78	Ties.....	6,773 18
4,823 03	Timber and lumber for repairs to bridges, cattle guards, fences, &c.....	8,572 59
1,153 17	Repairs to wharves.....	1,897 96
4,812 36	do buildings and platforms.....	6,525 39
1,714 55	do snow ploughs, flangers and tools.....	2,689 00
885 72	Clearing ice and snow.....	4,503 45
73,006 22	Totals.....	76,309 25

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 6.—PRINCE EDWARD ISLAND RAILWAY.
STATION EXPENSES—(Abstract No. 4).

Previous Year.	Details.	Year ended 30th June, 1887.
\$ cts.		\$ cts.
18,982 39	Salaries and wages of station masters, agents, clerks, telegraph operators, station baggagemen, yardmasters, switchmen, watchmen and laborers...	19,099 88
6,247 31	Fuel, oil, light, stationery, tickets and other incidental expenses.....	6,221 50
.....	Miscellaneous.....	.....
25,229 70	Totals.....	25,321 38

W. T. HUGGAN,

Accountant and Auditor

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 7.—PRINCE EDWARD ISLAND RAILWAY.

GENERAL CHARGES—(Abstract No. 5).

Previous Year.	Details.	Year ended 30th June, 1887.
\$ cts.		\$ cts.
5,466 83	Superintendent's and Train Despatcher's salaries, Clerks, office and travelling expenses	5,273 94
5,236 78	Accountant and Auditor's, Paymaster's and Cashier's salaries, Clerks, office and travelling expenses.....	5,228 69
519 08	Advertising.....	514 17
164 07	Damages to men, animals and goods.....	362 54
491 80	Telegraph expenses (not including pay to Operators).....	540 09
309 48	Miscellaneous	228 13
12,188 04	Totals	12,147 56

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 8.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT of General Stores Account, Year ended 30th June, 1887.

		DR.		CR.	
		\$	cts.	\$	cts.
1886.					
June 30...	To Balance brought forward.....			103,333	77
1887.					
June 30...	To Purchase during the year.....	59,403	38		
	Charges from other Departments.....		9,665	74	
	Pay-rolls.....		2,578	17	
				71,647	29
1887.					
June 30...	By Issues during the year.....			60,826	05
	Balance.	(
		Ordinary stores.....	\$66,410	33	
		Fuel.....	5,070	89	
		Rails and fastenings on hand.....	34,741	79	
		(Old material, serviceable.....	7,932	00	
				114,155	01

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 9.—PRINCE EDWARD ISLAND RAILWAY.

DR.

GENERAL BALANCE.

CR.

	\$	cts.		\$	cts.
General Stores.....	114,155	01	Dominion account.....	118,416	73
Cash.....	2,592	20	Accident Insurance.....	4,247	04
Stations.....	1,019	00			
Militia Department.....	192	13			
Anglo-American Telegraph Co.....	46	43			
Judge Weatherbee.....	30	00			
Sidney Grey.....	25	00			
Post Office Department.....	4,604	00			
Total.....	122,663	77	Total.....	122,663	77

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

No. 10.—PRINCE EDWARD ISLAND RAILWAY.

COMPARATIVE STATEMENT of Averages for Year ended 30th June, 1887.

Details.	1887.	1886.
Mileage of railway open	210	210
Engine mileage	316,763	310,434
Train do	258,457	249,848
Car do	1,249,892	1,235,647
Receipts per engine mile	Cents 49·02	50·11
do do mile of railway	\$ 739·63	740·87
Percentage of passenger earnings to gross receipts	42·71	39·90
do freight do do	45·82	49·03
do other do do	11·47	11·07
Expenses per engine mile :—		
Drivers', Firemen's and Cleaners' wages	4·84	4·56
Fuel	3·67	3·80
Oil, tallow, waste and small stores	·72	·92
Repairs to engines	7·67	6·24
Water and tank repairs	·17	·10
Miscellaneous	·38	·51
Mechanical Superintendent's salary, office and travelling expenses	17·45	16·13
	·39	·40
Total	Cents 17·84	16·53
Locomotive power per engine mile	17·84	16·53
Car expenses do	10·71	17·71
Maintenance of way and works do	24·09	23·52
Station expenses do	7·99	8·13
General charges do	3·84	3·92
Total per engine mile	Cents 64·47	69·81
Locomotive power per train mile	21·87	20·54
Car expenses do	13·13	22·01
Maintenance of way and works do	29·52	29·22
Station expenses do	9·80	10·10
General charges do	4·70	4·88
Total per train mile	79·02	86·75
Working expenses per mile of railway	\$ 972·56	1,032·11

W. T. HUGGAN,

Accountant and Auditor.

CHARLOTTETOWN, P.E.I., 30th June, 1887.

PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL SUPERINTENDENT'S OFFICE,

CHARLOTTETOWN, P.E.I., 26th August, 1887.

SIR,—I beg to submit, for your information, the following statements, showing the operations of the Mechanical Department of this railway, for the fiscal year ending 30th June, 1887.

A.—Monthly statement of the cost of locomotive power.

B.—Statement of the performance and consumption of locomotives.

C.—Monthly statement of car mileage.

D.—Statement showing the number of locomotives, cars and snow ploughs.

E.—Comparative statement of the expenses of the Mechanical Department for the years 1885-6 and 1886-7.

By reference to Statement D. it will be seen that the stock of locomotives, cars and snow ploughs, provided on capital account, consists of:—

21 locomotives.

17 first-class passenger cars.

15 second-class passenger and baggage cars.

3 postal and smoking cars.

175 box cars.

125 platform cars.

3 conductors' vans.

1 pay car.

8 snow ploughs.

7 flangers.

I am pleased to be able to report that the efficiency of the rolling stock has been well maintained during the year, and is in good condition.

I have the honor to be, Sir,

Your obedient servant,

J. UNSWORTH,

Mechanical Engineer and Storekeeper.

COLLINGWOOD SCHREIBER, Esq.,

Chief Engineer and General Manager Government Railways,
Ottawa.

PRINCE EDWARD

MECHANICAL

A.—STATEMENT of the Cost of Locomotive

Months.	Miles run by Engines, less Ballasting.	Cost of				
		Enginemen's Wages.	Fuel.	Oil, Tallow, Waste, &c.	Repairs.	Water, including Tank and Pump Repairs.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1886—July	33,337	1,382 55	1,136 13	203 82	2,037 45	30 81
August.....	29,998	1,259 04	832 25	206 83	1,832 27	75 92
September.....	29,768	1,249 05	903 80	202 58	1,937 35	6 05
October	30,050	1,224 74	932 62	207 20	2,092 54	4 34
November.....	29 103	1,272 49	997 66	212 71	1,974 11	40 51
December.....	18,975	1,049 28	768 66	147 73	2,384 88	64 29
1887—January	23,323	1,389 07	946 71	201 71	2,215 76	64 04
February	21,320	1,269 92	961 70	180 98	1,870 16	68 77
March.....	27,114	1,462 52	1,313 47	194 13	2,600 30	90 17
April.....	22,143	1,312 43	936 74	156 65	2,020 62	45 33
May	21,648	1,135 54	963 89	175 01	1,906 73	36 04
June.....	29,984	1,329 22	932 04	187 11	1,414 07	21 58
Totals.....	316,763	15,335 85	11,625 67	2,276 46	24,286 24	547 85

ISLAND RAILWAY.

DEPARTMENT.

Power for the Year ended 30th June, 1887.

Miscellaneous, including expenses of Office and Engine-house.	Average Cost per Mile run.							
	Total.	Enginemen.	Fuel.	Oil, Tallow &c.	Repairs.	Water.	Miscellaneous.	Total.
\$ cts.	\$ cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
210 46	5,001 22	4·15	3·41	0·61	6·11	0·09	0·63	15·00
224 35	4,430 66	4·19	2·78	0·69	6·11	0·25	0·75	14·77
122 20	4,421 03	4·20	3·03	0·68	6·51	0·02	0·41	14·85
190 24	4,651 63	4·07	3·10	0·69	6·96	0·02	0·63	15·47
271 39	4,768 87	4·37	3·43	0·73	6·78	0·14	0·93	16·38
190 57	4,605 41	5·53	4·05	0·78	12·57	0·34	1·00	24·27
204 07	5,021 36	5·96	4·06	0·86	9·50	0·27	0·87	21·52
196 10	4,547 63	5·93	4·51	0·85	8·77	0·32	0·92	21·33
163 97	5,824 56	5·39	4·84	0·72	9·59	0·33	0·60	21·47
277 92	4,749 69	5·93	4·23	0·70	9·13	0·21	1·25	21·45
205 81	4,423 02	5·24	4·45	0·80	8·81	0·17	0·96	20·43
205 15	4,089 17	4·43	3·11	0·63	4·72	0·07	0·67	13·63
2,462 23	56,534 30	4·84	3·67	0·72	7·67	0·17	0·78	17·85

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.			
		Passenger.	Freight and Mixed.	Ballasting.	Piloting.	With Train.	Light.	Shunting.	Total.
1886—July.....	3,768	12,181	15,735	789	.....	28,705	85	5,366	34,156
August.....	3,855	11,442	13,433	3,165	5	28,045	251	5,160	33,456
September.....	3,531	11,127	13,335	895	22	25,379	148	5,136	30,663
October.....	3,485	10,626	14,039	484	28	25,177	28	5,329	30,534
November.....	3,567	9,948	13,554	478	48	24,028	167	5,386	29,581
December.....	2,598	1,103	13,402	56	.....	14,561	108	4,362	19,031
1887—January.....	3,287	2,380	14,806	141	1,875	19,203	52	4,210	23,464
February.....	3,003	2,379	12,515	.....	2,636	17,530	90	3,700	21,320
March.....	3,932	2,619	15,571	.....	3,910	22,100	395	4,619	27,114
April.....	3,125	2,886	13,723	46	1,040	17,695	233	4,256	22,189
May.....	3,159	2,994	14,065	1,007	68	18,134	164	4,551	22,849
June.....	4,006	11,266	13,735	2,404	.....	27,405	118	5,275	32,798
Totals.....	41,316	80,951	167,913	9,465	9,632	267,961	1,844	57,350	327,155

ISLAND RAILWAY.

DEPARTMENT.

of Locomotives, for the Year ended 30th June, 1887.

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 Engines.	Bushels of Coal.	Pints of Oil.	Pounds of Tal-low.	Pounds of Waste.	Bushels of Coal.	Pints of Oil.	Pounds of Tal-low.	Pounds of Waste.
138,907	.....	4·84	9·07	4·06	10,498	1,134	1,114	483	30·73	3·32	3·26	1·41
146,794	.....	5·23	8·68	4·38	10,578	1,138	1,040	505	31·61	3·40	3·10	1·50
121,602	.....	4·80	8·68	3·96	10,473	1,163	947	499	34·15	3·79	3·08	1·62
131,742	.....	5·23	8·76	4·31	10,491	1,121	917	458	34·35	3·67	3·00	1·50
118,563	252	4·94	8·29	4·00	10,817	1,129	960	486	36·56	3·81	3·24	1·64
83,472	32	5·73	7·32	4·39	8,065	760	669	325	42·37	3·98	3·51	1·70
72,699	9,205	4·19	7·14	3·09	9,502	996	761	404	40·49	4·24	3·24	1·72
65,766	8,088	4·41	7·09	3·08	9,808	1,021	828	304	46·00	4·78	3·88	1·42
85,041	8,262	4·67	6·89	3·13	12,087	1,054	800	423	44·57	3·88	2·95	1·56
81,450	1,392	4·89	7·10	3·67	9,064	786	665	366	40·84	3·54	2·99	1·65
118,747	54	6·57	7·23	5·19	10,351	977	844	407	45·30	4·27	3·69	1·78
142,195	.....	5·19	8·18	4·33	12,249	1,224	1,014	500	37·34	3·73	3·09	1·52
1,306,978	27,285	5·06	7·91	3·99	123,983	12,503	10,559	5,160	37·88	3·82	3·21	1·57

*Deduct piloting in making these averages.

J. UNSWORTH,
anical Supt. and Storekeeper.

PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

C.—MONTHLY STATEMENT of Car Mileage, Year ended 30th June, 1887.

Months.	First-class	Second-class and Baggage.	Postal and Smoking.	Box and Stock.	Platform.	Total.
1886—July	34,115	30,664	9,930	46,059	18,139	138,907
August.....	29,432	30,731	8,289	52,443	25,899	146,794
September.....	26,131	27,971	7,295	46,071	14,134	121,602
October	27,479	27,990	14,466	49,676	12,131	131,742
November.....	23,180	27,275	5,847	56,090	6,191	118,563
December.....	15,004	17,270	6,487	37,351	7,360	83,472
1887—January.....	16,209	17,350	9,152	22,615	7,373	72,699
February.....	14,428	14,854	9,495	15,884	11,105	65,763
March.....	16,632	15,547	10,259	22,282	20,321	85,041
April	15,571	16,068	11,842	24,776	13,193	81,450
May	16,966	16,391	13,100	49,033	23,257	118,747
June.....	26,788	27,729	10,900	41,627	35,151	142,195
Totals	261,915	269,840	117,062	463,907	194,254	1,306,978
Less—Ballasting		4,343	2,635	201	49,907	57,086
Balance	261,915	265,497	114,427	463,706	144,347	1,249,892

J. UNSWORTH,
Mechanical Supt., and Storekeeper.

PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

D.—STATEMENT showing the Number of Locomotives and the various classes of Cars and Snow Ploughs on hand, 30th June, 1886 and 1887.

Particulars.	Locomotive.	Classification of Cars.								Snow Ploughs.		Total.
		1st Class.	2nd Class and Baggage.	Postal and Smoking.	Box and Stock.	Platform.	Vans.	Pay Car.	Total.	Snow Ploughs.	Flangers.	
On hand 30th June, 1886, serviceable.....	21	17	15	3	175	123	3	1	337	8	7	15
do do condemned.....	.....	.....	.....	.....	.....	2	.....	.....	2	.....	.....	.....
Total Stock, 30th June, 1886.....	21	17	15	3	175	125	3	1	339	8	7	15
Condemned on hand 1st July, 1886.....	.....	.....	.....	.....	.....	2	.....	.....	2	.....	.....	.....
do during the year.....	.....	.....	.....	.....	.....	5	.....	.....	5	.....	.....	.....
Less rebuilt.....	.....	.....	.....	.....	.....	7	.....	.....	7	.....	.....	.....
.....	.....	.....	.....	.....	.....	2	.....	.....	2	.....	.....	.....
.....	.....	.....	.....	.....	.....	5	.....	.....	5	.....	.....	.....
Add serviceable and repairing.....	21	17	15	3	175	120	3	1	334	8	7	15
Total on record 30th June, 1887.....	21	17	15	3	175	125	3	1	339	8	7	15

J. UNSWORTH,

Mechanical Superintendent and Storekeeper.

PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

E.—COMPARATIVE STATEMENT of the Expenses of the Mechanical Department, for the Year ended 30th June, 1887.

	1887.	1886.
The miles run by trains were	258,457	249,948
do engines were.....	316,763	310,434
do cars were.....	1,249,892	1,235,647
do snow ploughs were.....	27,285	12,754
	\$ cts.	\$ cts.
The cost of locomotive power was.....	56,534 30	51,326 31
do repairs to cars was	17,517 85	38,908 61
do labor, oil and waste, for packing was.....	540 19	578 41
do repairs to passenger cars was.....	9,262 08	9,855 46
do do postal and smoking cars was	1,219 24	1,109 06
do do freight cars and vans was.....	7,036 53	27,914 09
The cost of locomotive power per 100 miles run by trains was.....	.21 87	20 54
do do do engines was.....	17 84	16 53
do do do cars was	4 52	4 15
The cost of repairs to cars per 100 miles run by trains was.....	6 77	15 57
do do do engines was	5 53	12 53
do do do cars was	1 40	3 14
The cost of labor, oil and waste, for packing, per 100 miles run by trains was..	20	23
do do do engines was	17	18
do do do cars was.....	04	04
Repairs to passenger cars per 100 miles run by trains were.....	3 58	3 94
do postal and smoking cars were	47	44
do freight cars and vans were.....	2 72	11 18

J. UNSWORTH,

Mechanical Superintendent and Storekeeper.

PRINCE EDWARD ISLAND RAILWAY.

RETURN of Accidents and Casualties which have occurred on the Prince Edward Island Railway, during the Year ending 30th June, 1887.

Date.	Time Day or Night.	No. of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.	Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accidents.	Extent of Injury.	Verdict of Coroners Jury.
1886.												
Sept. 4.	8.15 a.m.	8	Express ...	Jno. McDonald	A. J. McLaine	13	Mount Stewart.	Albert Prowse...	Employé...	Fell out of engine while train was being stopped, after leaving Mount Stewart Station.	Face injured by striking against rail of side track.	
Nov. 15.							Summerside	Murdock McLeod	do ...	While cleaning postal car used on Nos. 1 and 2 trains, fell from ladder to bottom of turn-table pit.	Sprained his ankle.	
1887.	15. 6.50 p.m.	5	Accommodation.	G. W. Hibbett	Charles Moore	4	Georgetown	Thomas Cherry.	Neither...	While train was backing down to wharf at Georgetown, attempted to jump on train while in motion and fell between rail and snow drift on side of track.	Left leg crushed and maimed from middle of thigh to ankle by blade and wing of fanger; left hand badly cut; injured internally; died from injuries in six hours.	No inquest held.

[1887]

APPENDIX No. 5e.

CAPE BRETON RAILWAY.

OTTAWA, 16th November, 1887.

SIR,—I have the honor to report the progress made with the construction of the Cape Breton Railway up to this date.

The route from Point Tupper on the Strait of Canso *via* Grand Narrows to Sydney and North Sydney having been adopted by Order in Council dated the 29th October, 1886, immediate steps were taken for the active prosecution of the works.

Plans were at once prepared for a 40 feet by 80 feet block of the wharf at Point Tupper, and on the 30th October, 1886, tenders were invited through the public press to be sent in on or before the 3rd November of that year. In response thereto six tenders were received, that of Mr. O'Donohue being the lowest (\$6,000) was accepted and the necessary security deposit having been made, a contract was entered into with him on the 11th November, 1886, and he proceeded forthwith to get out timber and piles, but he was unable to get them to the site of the work until the following spring. The actual construction of the work was commenced on the 23rd of June, 1887, and proceeded with slowly but surely. It having been impossible under the circumstances to complete the work within the specified time, Mr. O'Donohue asked for and was granted an extension of time, and on the 22nd October, 1887, the resident Chief Engineer having reported the work to have been completed and that it was a very strong, well constructed piece of work, the final certificate was at once issued.

As soon as the route was adopted *via* the Grand Narrows, the location surveys were proceeded with and early in December, 1886, the plans, profiles, specifications and other information relating to the eastern section, between Grand Narrows and Sydney, about forty-five miles in length, were in a condition to exhibit to intending contractors, and on the 15th December, 1886, tenders were invited through the public press to be received up to the 12th January, 1887. In response thereto twenty-one tenders were received, Messrs. Sims & Slater being the lowest tenderers, their tender was accepted, and having made the necessary security deposit they entered into a contract for the work on the 28th January, 1887, and commenced work on the 12th February following. There has not been that life displayed in the work I should have liked to have seen exhibited, neither has the management and organization been such as it should have been, especially as regards the masonry, and the fencing has not received the attention it should have done; the consequence is the work has not advanced with such speed as will ensure its completion by the date called for in the contract. The value of work executed to date is reported at \$204,458.

The country through which the western section, between Point Tupper and the Grand Narrows passes is more varied and not so confined as that on the eastern section, making necessary a much larger amount of preliminary work before the location was finally decided on, but towards the end of May, 1887, the information required to exhibit to intending contractors on the western section, forty-six miles in length, was ready, and on the 31st of that month tenders were invited to be received on the 6th July following. In response thereto, eleven tenders were received, Messrs. Isbester & Reid's tender being the lowest, and they being experienced railway contractors, possessed of the necessary resources for carrying on such a work, and having made the required security deposit, entered into a contract on the 27th July, and on the 17th August following commenced work. Very little work has been done up to this date, as the plant intended for the work was, until then, engaged upon the Sault

Ste. Marie Branch of the Canadian Pacific Railway. It has recently been brought forward in considerable quantity, and indications are that the contractors will have a good working outfit, and that they intend at once to organize upon a large scale. Up to this date, however, the value of work done is only \$14,525, chiefly for clearing the line.

	Miles.
The length of the line from Point Tupper to the point at which the extensions, both into Sydney and North Sydney Spring, is	78
The extension to Sydney	12
do North Sydney.....	8
Making an aggregate mileage of.....	98

As soon as the location was completed and the land lines run out Mr. John McKeen was appointed to value the expropriated land on the eastern division and to make agreements with the owners in all cases where it was possible to do so. He was very successful with his work until he approached the town of Sydney, where the proprietors placed what is considered extravagant prices on their properties. In all such cases Mr. McKeen valued the land taken as well as any damage to the property, and this amount was tendered to the proprietor, *who, in most cases, refused to accept.* These cases will be dealt with under the terms of the Government Railway Act.

A large number of deeds have already been procured, and steps are being taken to obtain them for the balance of the properties through which the line runs.

The terminus at Sydney was being located at Fresh Water Creek, but the citizens of Sydney protested that it was inconvenient and did not meet their views, and they offered to furnish the necessary land, free of charge, from the Fresh Water Creek to Barrack Point, a distance of about one and a-half miles, if the terminus was established at the latter point. The Government have complied with their wishes, and have given me orders to carry the road forward from Fresh Water Creek to Barrack Point as soon as the land required is vested in the Crown.

In like manner the Government have undertaken to build the extension into North Sydney so soon as the town vest the necessary land and land covered by water in the Crown, which the town have intimated their willingness to do.

West of the Grand Narrows Messrs. John McKeen and Duncan McDonald are engaged in securing agreements and valuing the lands and damages. Generally they are meeting with fair success in procuring agreements, but there are a number of cases on both ends of this division in which terms cannot be made with the owners. In these cases the Exchequer Court, it appears to me, will have to be resorted to. The agent of the Justice Department is preparing deeds, in all cases in which an amicable arrangement has been arrived at with the owners.

I have the honor to be, Sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,

Chief Engineer and Genl. Manager of Government Railways.

A. P. BRADLEY, Esq.,
Secretary Railways and Canals.

APPENDIX No. 6.

CANADIAN GOVERNMENT RAILWAYS.

OFFICE OF THE CHIEF ENGINEER AND

GENERAL MANAGER OF GOVERNMENT RAILWAYS,

OTTAWA, 10th November, 1887.

SIR,—I have the honor to report the progress made up to date with the railways securing a mileage cash subsidy from the Dominion Government, showing those completed and those in course of construction, with the amounts of subsidy paid in each case and balance unearned.

No.	Name of Railway.	Subsidy Granted.	Com- pleted Road. — Amount Paid.	Works in Progress. — Amount Paid.	Balance of Subsidy Unearned.	Date of Contracts.
		\$	\$	\$	\$	
1	Albert Southern Ry. Co.	51,200	.....	1,000	50,200	23rd May, 1885.
2	Baie des Chaleurs Ry. Co.	620,000	.....	270,000	350,000	7th Nov., 1885.
3	Brockville, Westport and Sault Ste. Marie Ry.	128,000	.....	.....	128,000	16th July, 1886.
4	Buctouche and Moncton Ry.	102,400	.....	40,480	61,920	14th Sept., 1886.
5	Belleville and North Hastings Ry.	22,400	.....	Nil.	22,400	Contract out for signature.
6	Beauharnois Junction Ry.	96,000	.....	Nil.	96,000	do
7	Canada Atlantic Ry.	134,400	.....	92,864	41,536	{ 29th Dec., 1885 12th July, 1886
8	Caragnet Ry.	224,000	.....	170,000	54,000	20th Jan., 1885.
9	Central Ry.	128,000	.....	Nil.	128,000	7th July, 1886.
10	Drummond Co. Ry.	96,000	.....	Nil.	96,000	Contract out for signature.
11	Dominion Lime Co. Ry.	15,360	.....	Nil.	15,360	17th Oct., 1887.
12	Erie and Huron Ry.	96,000	96,000	.....	Nil.	27th Aug., 1885.
13	Elgin, Petitecodiac and Havelock Ry.	38,400	38,400	.....	Nil.	25th May, 1885.
14	Great Northern Ry.	82,688	.....	25,088	57,600	{ 14th Feb., 1885 19th Aug., 1887
15	Great Eastern Ry.	19,200	19,200	.....	Nil.	12th Oct., 1886.
16	Guelph Junction Ry.	51,200	.....	Nil.	51,200	5th Nov., 1887.
17	Harvey Branch Ry.	9,600	.....	Nil.	9,600	3rd Oct., 1887.
18	Irondale, Bancroft and Ottawa Ry.	160,000	.....	15,000	145,000	19th Aug., 1886.
19	International Ry.	152,960	152,960	.....	.....	20th July, 1883.
20	Joggins Ry.	42,400	.....	Nil.	42,400	{ 30th Nov., 1886 13th Oct., 1887
21	Kingston and Pembroke Ry.	48,000	48,000	.....	Nil.	5th March, 1885.
22	L'Assomption Ry.	11,200	11,200	.....	Nil.	16th Sept., 1886.
23	Lake Temiscamingue Ry.	25,600	.....	17,400	8,200	25th Nov., 1885.
24	Leamington and St. Clair Ry.	51,200	.....	Nil.	51,200	3rd May, 1886.
25	Montreal and Sorel Ry.	71,472	.....	69,922	1,550	14th Oct., 1885.
26	Montreal and Champlain Junction Ry.	39,000	30,000	.....	Nil.	1st Oct., 1885.
27	Montreal and Lake Maskinongé Ry.	32,000	.....	Nil.	32,000	29th Sept., 1887. 24th Dec., 1884 26th Nov., 1885
28	Northern and Western Ry.	812,000	.....	280,000	82,000	14th Aug., 1886 12th May, 1887 12th Aug., 1887

STATEMENT of Cash Subsidy paid to Railways—*Concluded.*

No.	Name of Railway.	Subsidy Granted.	Com- pleted Road. — Amount Paid.	Works in Progress. — Amount Paid.	Balance of Subsidy Unearned.	Date of Contracts.
		\$	\$	\$	\$	
29	Northern and Pacific Junction Ry...	1,320,000		1,284,400	35,600	12th April, 1884.
30	Napanee, Tamworth and Quebec Ry	39,600	89,600		Nil.	31st Dec., 1883.
31	New Brunswick and Prince Edward Ry.	113,440		97,440	16,000	18th May, 1886.
32	Nova Scotia Central Ry	108,800		Nil.	108,800	17th Oct., 1887.
33	Ontario and Pacific Ry.	281,600		Nil.	281,600	27th July, 1886.
34	Pontiac Pacific Junction Ry.	272,000		150,670	121,330	22nd Dec., 1884.
35	Quebec Central Ry.	211,200		60,342	150,858	2nd Aug., 1884.
36	Quebec and Lake St. John Ry	775,095		647,264	127,811	{ 4th Sept., 1883 10th Feb., 1886
37	St Louis, Richibucto Ry.	22,400	22,400		Nil.	5th May, 1885.
38	St. Lawrence, Lower Laurentian Ry.	217,600		92,813	124,787	20th Feb., 1886.
39	Stewiacke Valley and Lansdowne Ry	80,000		Nil.	80,000	17th Dec., 1886.
40	Toronto, Grey and Bruce Ry.	16,000		Nil.	16,000	20th Jan., 1887.
41	Temiscouata Ry.	498,000		110,194	387,806	21st June, 1886.
42	West Ontario Pacific Ry.	64,000		60,000	4,000	2nd Nov., 1886.
	Total	6,921,415	507,760	3,434,897	2,978,768	

It thus appears that of the roads securing a mileage cash subsidy, 42 have entered into contracts for their construction under the subsidy Acts; of these, 9 companies have completed their roads and secured the full amounts of subsidy, amounting to \$507,760, leaving 33 companies who have their works in progress; of these, 18 companies have the works of construction well advanced, having earned \$3,434,897, leaving 15 other companies who have entered into contracts, but who have not their works of construction sufficiently advanced to have earned any portion of the subsidy.

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

COLLINGWOOD SCHREIBER,
Chief Engineer and Genl. Manager of Government Railways.

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

 APPENDIX No. 7.

DEPARTMENT OF RAILWAYS AND CANALS,
 SUPERINTENDING ENGINEER'S OFFICE,
 MONTREAL, 23rd November, 1887.

SIR,—I have the honor to submit my report on the various works under my charge, for the fiscal year 1886–87, ended on 30th June last, as called for by your letter No. 72335.

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

These canals have been maintained in an efficient state, without accident, or interruption to the traffic.

Statements are annexed showing the amounts collected for fines, damages, &c., together with monthly returns of the highest and lowest water registered at the lower and upper entrances of each canal, and on each of the mitre sills of St. Ours Lock.

 LACHINE CANAL.

This canal was closed on the 30th November, 1886, not by ice, but for the want of traffic. The water was drawn off on 21st April, 1887, and let in again on the evening of 4th May, and navigation fully opened on the morning of the 5th. While the water was out of the canal all the works under water received the necessary repairs.

The water throughout the year was kept at a good height in all the levels, both for navigable and manufacturing purposes. No detention of any kind was caused to the trade during the year, nor was it necessary to impose a fine on any of the vessels trading through the canal, as no damage was done to the works, or regulations violated. This, in a great measure, is attributable to the close attention to duty by canal officers.

The traffic through this canal was very brisk during the year. Besides the trade from the Ottawa and Richelieu Rivers, a large portion of the trade from the St. Lawrence below and from the Maritime Provinces enters the canal, thereby increasing the business very much; in fact the new Basin No. 1 and the Wellington Basin are almost constantly occupied by sea-going vessels, as many as twelve of those ships being in these two basins at a time for the purpose of unloading their cargoes of coal, sugar, fish, oils and iron, and taking in return cargoes of lumber, phosphate, flour, pork and other goods.

The ships using these two basins can be loaded to a draught of 18 feet of water; in all the other basins, and all through the canal proper, the draught allowed is 12 feet.

All the mechanical structures and other works in connection with this canal have been kept in the best condition possible, except the old wooden swing bridge that stands immediately above old Lock No. 5, at Lachine, which is past repairing. It will have to be replaced during the coming year by a new bridge, of a different design and dimensions.

The tow-path bridge, spanning the mouth of what was known as the "Priest's Basin," on the south side of the canal, immediately below Lock No. 3, is in a dangerous condition, and should be renewed.

The River St. Pierre, which passes through the whole length of what is known as the Lachine Canal swamp lands, as well as the new cut which was made through said lands by the Department in 1878, and all the off-take drains, have been kept in thorough good order.

The plant for lighting this canal from the lower entrance to Lock No. 3 by electricity was completed in July, 1886. It is known as the Edison incandescent system. This work was done under contract by the Royal Electric Light Company, of Montreal, and taken in charge by the officers of this canal on the 1st of September, following. There are 160 50-candle power lamps, distributed 150 feet apart, on line of canal, from Locks No. 1 to No. 3, and around the basins between these two points.

This mode of lighting has given as good satisfaction as could be expected from the incandescent system, which I consider more suitable for inside lighting, but not to be compared, for outside purposes, with the arc light. This opinion is shared by the trade in general, who would prefer arc lights, as in the harbor of Montreal. I am of opinion that the arc light system should eventually be adopted, instead of the incandescent.

NEW WORKS.

Booms in Timber Basin.

During the winter months 4,000 lineal feet of booms were built for the protection of timber and lumber in the Timber Basin, in the new canal entrance at Lachine.

480 lineal feet of these booms, which are most exposed to the wind and storm, are made of four pieces of pine timber, 12 by 12 inches, kept 3 inches apart by tamarack blocks, at intervals of 6 to 8 feet apart, thoroughly bolted together, and secured at the ends by chains passing around angle irons, bent to the required shape, and securely bolted to the end of each boom.

The remaining portion of these booms, 3,520 lineal feet, are built of three timbers, and in the same manner as the portion above referred to.

They were placed in position at opening of navigation in May last, and have proved a great benefit to the lumber and timber trade.

Mill Street.

An appropriation of \$10,300 having been made towards the macadamizing of that portion of Mill Street between Bridge No. 1 and St. Etienne Street, the work was commenced in August, 1886, and completed in January, 1887.

The macadamizing of this street has brought a much needed relief, not only to the manufacturers on the line of said street, but also to the large traffic from Point St. Charles, as it is the principal inlet into the city for the coal and cattle trade.

Foot Passenger Bridges.

Foot passenger bridges were placed both on the Wellington Street Bridge and on St. Gabriel Bridge No. 3. One single bridge 5 feet wide at the former and two bridges 4 feet wide at the latter.

They do not in any way interfere with the passage of vessels—are of a great benefit to the public—and are highly appreciated by them.

BEAUHARNOIS CANAL.

The canal was closed on 1st December, 1886, and reopened to navigation on 3rd May, 1887. No accident occurred, and consequently there was no interruption to navigation during the fiscal year.

LOCKS AND LOCK GATES.

One pair of gates were built and placed in the lower end of Lock No. 12, also a pair of upper gates at Lock No. 7.

Two pairs of gates were brought to the shop and taken apart; one pair of gates was commenced for the upper end of Lock No. 10 and all the other gates were kept in good order.

The wing walls of Locks No. 7 and 11, which had been damaged, were repaired.

BRIDGES.

Two swing bridges were built and placed; one at Lock No. 10, and the other at Lock No. 11.

The swing bridge at Lock No. 7, and that at St. Timothy received considerable repairs.

Two new bridges were placed over the waste weirs at Locks Nos. 6 and 7, respectively.

Several farm bridges were built over the back ditches on the south side of the canals, and all the others maintained in good order.

BANKS, DYKES, DAMS, &c.

The dyke at Hungry Bay suffered considerably during the year. Two hundred toises of stone have been partly delivered on line of dyke and will be utilized in raising it where required, so as to minimize damages to adjoining properties and facilitate the travel over it.

The canal banks have been maintained in good order. The side walls were repaired. The towpath on north side was rounded and nearly six miles of it were macadamized, the whole being covered with a layer of good gravel.

The culvert wells, discharges and side ditches were cleaned last summer, and in the spring were cleared of snow and ice.

The weeds were mowed on both sides of the canal at the proper time.

Three mooring piers, one 50 by 12 feet, and two 20 by 12 feet, have been built at the lower entrance of the canal.

The long pier also at the lower entrance has received considerable repairs.

Two new guard posts were placed at Lock Nos. 6 and 8, and a tender post renewed at Lock No. 13. Seventy-five mooring posts were set on the north or towpath side of the canal where required.

BUILDINGS, FENCES, &c.

The roofs of lockmen's houses at Locks Nos. 12 and 13, and of lockmaster's house at Lock No. 6, were reshingled. Rooms were made in the upper part of lockmaster's houses at Lock Nos. 6, 7, 9, 10 and 12. The interior of all the dwelling-houses was painted, the repairs staff being employed nearly two months towards the above needed repairs.

The workshop was sheeted inside with tongued and grooved plank, and a bull wheel fitted in the saw mill for hauling timber.

Lock shanties or guard houses were built at Locks Nos. 6, 7, 8, 9, 11 and 12. These small houses are well finished and have been painted inside and outside.

The levels below Locks No. 11, 12, 13 and 14, will require deepening and it is intended to send in May next the new dredge now being built on the Lachine Canal to do this necessary work.

CHAMBLY CANAL.

This canal was closed by ice on the 1st December, 1886, and re-opened on the 5th May, 1887. No accident or interruption of any kind occurred, nor was it found necessary to impose fines or collect damages.

The work done during the fiscal year is described under two headings, viz., "Ordinary Repairs," and "Improvements Chargeable to Income."

REPAIRS.

Both the lower and upper entrance guide piers at Chambly and at St. John's, which had been damaged by ice during the high water of the spring of 1886, were extensively repaired.

The lower entrance pier at Chambly which had been repaired last fall, has resisted the spring flood of 1887, but in order to better secure it against the action of the ice, it is intended to sheet the west or up stream face with two-inch plank, placed perpendicular.

As regards the upper, or St. John's entrance pier, it has been so badly disturbed by this spring ice that it must be entirely rebuilt during the present summer, towards which work an appropriation of \$6,000 has been voted.

Important repairs were made to the canal workshops, as well as to the dwellings and outbuildings occupied by the canal employés. Several of these dwellings are in a bad state and will require extensive repairs.

The old workshop situated opposite the Canal Office and which was threatening ruin, was removed to the canal yard, between Locks Nos. 6 and 7, on the south-east side of the canal, and converted into a good storehouse for cement and other materials.

Four pairs of lock gates for locks Nos. 2, 8 and 9 were placed during the fiscal year. Another pair of gates for Lock No. 4 was built in June and placed in position on 10th of July, 1887.

It might be here stated that owing to the different sizes of the locks on this canal it is necessary to have on hand at least eight different sizes of spare gates in case of accident, the cost of which per pair varies from \$800 to \$1,500, but in order to effect a saving we utilize the old gates which, once repaired and in position, last about ten years.

The widening of the public road between the canal and Mullarky's farm, as provided for in the estimates, was done during the winter, but from the swampy and boggy nature of the ground, the work was very hard to perform. It was nevertheless done in such a way as to give full satisfaction to the travelling public, more especially to Mr. Mullarky, who for years past has been clamoring for that much needed improvement on the front of his farm.

The wooden railing, or garde corps, between Bridge No. 3 and St. John's, has been repaired as usual, where required, but it is intended in the future to replace the present wooden rail, which is very expensive to keep in proper repairs, by a $\frac{3}{4}$ -inch steel cable with metallic caps on head of each post. It will not cost any more than the wooden rail and will last much longer.

At close of navigation on 1st of December last, temporary protection rails or garde corps were placed at the approaches of the three public bridges over the canal to prevent accidents during the winter.

During winter months a railway swing bridge was built across the canal by the Atlantic and North-Western Railway, between Lock No. 1 and Jones' Bridge, at St. John's, according to plans which had previously been submitted to the Department for approval. The construction of this bridge has in no way interfered with the navigation of the canal.

Repairs to banks, locks, gates, culverts, bridges and ditches have been made when required, and in such manner as to ensure the efficient working of the canal during the year.

A timber stringer 2,500 feet in length by 1 foot square has been laid on the top of the south side wall, between Locks Nos. 6 and 7.

Seven thousand three hundred and eighty feet of ditches were cleaned.

Nine bridges on the public road and on the tow path were partially re-built or repaired.

The roofs of the lockmasters' houses of Locks Nos. 7, 8 and 9, as well as that of the bridgekeeper's house at Bridge No. 8, were covered with painted Canada plate. The lockmaster's house at Lock No. 6 was clapboarded inside.

Nine lamp posts were placed to receive new lamps. Forty-five mooring posts were set at different places where required.

The by-wash below Lock No. 6 was entirely rebuilt. The five lighthouses also underwent some slight repairs.

The canal bank at Isle Thérèse, which had been damaged by muskrats at three different places, was repaired in time to prevent any detention to navigation.

At the close of navigation on 1st of December last, an inventory was made by the Superintendent of all tools, materials, plant and properties belonging to the canal, copy of same having been forwarded to and being kept in record in this office. This innovation will lead, I believe, to an important yearly saving, and will facilitate the tracing of small objects which formerly were easily lost. I intend that this practice shall be followed in the other canals under my control.

WORKS CHARGEABLE TO INCOME.

The steam dredge was employed from 1st August, 1886, to 1st July, 1887, lowering bottom of canal at different points where required and making meeting places for vessels, direction posts being set on the upper bank at each end of said meeting places for the guidance of navigators.

The dredging fleet was thoroughly overhauled and repaired during the winter. Two new scows were built for the new dredge now in course of construction on the Lachine Canal, also a large new scow (80 by 19) with hoisting derricks at each end for the more rapid unloading of the dredged material, as well as a new scow for repairs to the banks.

The hull of the dredge and her four scows underwent extensive repairs and were thoroughly caulked and painted.

All these vessels with the exception of the two new scows for the new dredge, are being used in connection with the dredge and the repairs to the embankment between St. John's and Ile Ste. Thérèse.

During the present year the most serious matter has no doubt been the danger incurred to the canal bank between St. John's and Ile Ste. Thérèse, through the unprecedented high waters of the Richelieu River. The embankment on a distance of fully three miles was partly washed away, the dry stone wall facing on the river side, being almost entirely disturbed, so much so that the tow-path at certain places, did not measure across more than eight or ten feet.

Steps were at once taken to effect the necessary repairs and to protect effectively for the future that portion of the canal, a special additional grant of \$12,500 was asked for and voted.

Quarries were opened, stone purchased from several parties and a special force detailed to rebuild the damaged embankment. The work is progressing rapidly and in such a manner as to ensure the permanent safety of that section of the bank against the high water of the Richelieu.

Owing to the extraordinary high water this spring, the sum of \$2,500 which had been voted towards removing some rocky spots in the canal bottom at the Ile St. Thérèse mill and in front of the Charland farm at St. John's, could not be used. The two places above referred to are dangerous to vessels and the work will have to be done next year circumstances permitting.

The opportunity of constructing a new By-wash above Lock No. 2, and the altering of the bridge piers of Bridge No. 1 at the lower extremity of Ile St. Thérèse to receive stop logs so as to facilitate the rapid emptying of the portion of the canal comprised between these two points has formed the subject of a special report under date of 24th October last, and I would here again urge the granting of the amount intended to be placed in the estimates towards that object.

There has been during the lapsed fiscal year a remarkable increase in the number of vessels on this canal, and the important works commenced and those contemplated will put the Chambly Canal in a position to meet the wants of the trade until such time as the constantly growing commercial relations between Canada and the United States will warrant its enlargement.

I must here make a special mention of the able and judicious administration of the canal by the newly appointed Superintendent, Mr. Benoit, who has introduced several needed reforms in the staff, and has shown by his management that he is eminently qualified to fill the responsible position he holds.

ST. OURS LOCK AND DAM.

This lock was closed to navigation on 30th November, 1886, and re-opened on 2nd of May, 1887.

During July and August of 1886, while lock gates were being adjusted, some slight delays to traffic occurred, amounting in all to three hours and fifteen minutes.

There was no accident, nor was it necessary to impose any fine for violation of canal regulations.

The bottom of the lock was cleared of sand and gravel, and the leaks under the mitre sills of the gates stopped with three barge loads of gravel. The lock gates were also raised and adjusted.

The re-building of the upper gates commenced during the winter, and was completed in September, 1886.

In order to secure the piers above and below the lock against the action of the ice, twenty-four posts were placed on the four sides of the six new piers, and the other piers, sixteen in number, were chained on each side. The old piers received considerable repairs during the year.

The banks on each side of the lock, damaged by the high spring water, were repaired and gravelled.

Some slight repairs were made to the planking of the dam where required.

The ice was cut away from the piers and lock gates to prevent damages, and the gates were loaded to prevent their being lifted by high water in the spring.

A quantity of timber and lumber, shipped from Montreal for proposed repairs to the lock, was unloaded, hauled and placed under shelter.

The booms were removed in the fall, and replaced in the spring.

Twenty-four wheelbarrows were made, and the pile-driver repaired.

The Superintendent's house, out-buildings and fences were repaired.

This lock, which has had no repairs beyond ordinary maintenance since it was completed in 1849, is now showing some weak points, which will necessitate extensive repairs.

I intend placing an amount for this object in the next fiscal year's estimates.

During next summer the wings of the required coffer dams may be built, leaving a passage way sufficient for vessels, which passage will be closed after season of navigation in November, 1888.

RICHELIEU RIVER.

The survey on the Richelieu River, between St. John's and Rouse's Point, has been continued during the year. I append the report of Mr. L. G. Papineau, C. E., P. L. S., on the subject.

I have the honor to be, Sir,

Your obedient servant,

E. H. PARENT,

Superintending Engineer.

A. P. BRADLEY, Esq.,

Secretary Department Railways and Canals.

[1887]

LACHINE CANAL.

STATEMENT of Amounts collected for Wood Dues and Winterage of Vessels during the Fiscal Year ended 30th June, 1887.

Date.	Items.	Amount.
1886-87.....	Wood dues	\$ cts. 795 38
	Winterage.....	101 72
	Total	897 10

JOHN O'NEILL,

Collector.

CANAL OFFICE,

MONTREAL, July, 1887.

LACHINE CANAL.

STATEMENT of Basin, Firewood and Bank Dues collected during the Fiscal Year ended 30th June, 1887.

Date.	Items.	Amount.
1886-87.....	Basin dues	\$ cts. 1,293 47
	Firewood dues	59 07
	Bank dues.....	27 00
	Fines	5 00
	Total.....	1,384 54

J. B. DESCHAMPS,

Pro Collector.

CANAL OFFICE,

LACHINE, July, 1887.

BEAUHARNOIS CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year ended 30th June, 1887.

Date.	Name of Vessel.	Name of Owner.	Fines.	Damages.	Totals.
1886.			\$ cts	\$ cts.	\$ cts.
Oct. 4....	Barge "Marie Immaculate."	C. Champagne	10 00	.....	10 00
do 18....	Barge "Texas"	Geo. Tait.....	.....	40 00	40 00
Dec. 6....	Barge "Detroit"	M. T. Cox.....	.....	20 00	20 00
		Totals.....	10 00	60 00	70 00

J. F. BEIQUÉ,
Superintendent.

CANAL OFFICE,
MELOCHEVILLE, July, 1887.

LACHINE CANAL.

STATEMENT showing the Depth of the 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, 1887. (From Lockmaster's Returns.)

Months.	Lock No. 1, Lower Sill.		Lock No. 5, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1886.	ft. in.	ft. in.	ft. in.	ft. in.
July.....	20 7	19 4	13 2	12 3
August.....	19 6	18 1	12 3	11 6
September.....	18 3	17 10	11 6	11 2
October.....	18 3	17 10	11 8	11 0
November.....	18 9	17 8	11 11	11 0
December.....	33 6	18 0	12 5	11 0
1887.				
January.....	32 5	28 7	12 7	10 7
February.....	30 3	27 1	13 6	11 4
March.....	30 3	28 10	12 7	11 0
April.....	40 11	27 7	15 4	11 0
May.....	27 0	22 9	16 4	14 2
June.....	22 7	19 8	14 2	12 7

BEAUHARNOIS CANAL.

STATEMENT showing the Depth of River Water on the Mitre Sill of Lock No. 6, at lower entrance, and Lock No. 14, at upper entrance, during the Fiscal Year ended 30th June, 1887. (From Lockmaster's Returns.)

Months.	Lock No. 6, Lower Sill.		Lock No. 14, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1886.	ft. in.	ft. in.	ft. in.	ft. in.
July.....	13 5	12 8	13 0	12 6
August.....	12 6	11 0	12 10	12 3
September.....	11 0	10 11	12 4	11 11
October.....	11 0	10 9	13 0	11 7
November.....	10 8	10 5	12 7	11 5
December.....	11 3	10 8	13 2	12 1
1887.				
January.....	21 6	12 8	12 10	11 11
February.....	22 0	18 6	13 5	12 0
March.....	22 0	17 3	12 10	12 2
April.....	17 0	16 2	14 6	12 3
May.....	16 10	14 6	13 7	12 10
June.....	14 5	13 7	13 0	12 8

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, 1887. (From Lockmaster's Returns.)

Months.	Lock No. 9, Lower Sill.		Lock No. 1, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1886.	ft. in.	ft. in.	ft. in.	ft. in.
July.....	10 9	9 9	8 6	8 0
August.....	9 9	8 11	8 1	7 4
September.....	9 0	8 2	8 10	7 1
October.....	8 8	8 1	8 9	7 0
November.....	12 0	8 2	10 0	7 0
December.....	16 7	11 8	9 2	8 9
1887.				
January.....	17 7	12 10	9 2	8 9
February.....	18 7	15 10	9 7	8 10
March.....	19 0	16 1	9 6	9 2
April.....	25 2	16 0	11 8	9 1
May.....	21 3	15 5	12 4	11 0
June.....	15 4	12 6	11 4	9 5

ST. OURS CANAL.

STATEMENT showing the Depth of River Water on the Mitre Sills of St. Ours Lock, during the Fiscal Year ended 30th June, 1887. (From Superintendent's Returns.)

Months.	Lower Sill.		Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1886.				
July.....	ft. in. 11 4	ft. in. 9 11	ft. in. 9 9	ft. in. 8 10 $\frac{1}{2}$
August.....	10 4	8 6	8 10	8 3 $\frac{1}{2}$
September.....	9 4	8 3	8 5	7 10
October.....	9 5	7 11	8 7	7 11
November.....	10 6	8 2	10 6	8 0
December.....	13 11	11 5	10 7	9 6
1887.				
January.....	13 0	11 3	10 0	8 7
February.....	15 8	12 5	11 9	10 0
March.....	15 4 $\frac{1}{2}$	14 3	11 7	10 5
April.....	25 8	14 5	21 1 $\frac{1}{2}$	10 2
May.....	21 10	15 7	17 7	12 9
June.....	15 2 $\frac{1}{2}$	11 4	12 7	10 8

St. JOHN'S, Que., 26th November, 1887.

SIR,—I have the honor to transmit my annual report concerning the hydrographic survey of which I have had charge, under your control, during the fiscal year 1886-87.

The work consisted of the survey of the Richelieu River, already begun, and on which I had the honor to send you a report in 1886, as also in 1885.

At the beginning of the fiscal year, July, 1886, the outside work was commenced by making a survey of that part of the Richelieu River immediately below the rapids at St. John's. A triangulation, as well as the topography of this section, were made to serve for a plan that will be plotted when the necessary soundings and levels shall have been taken.

In September, 1886, this survey was interrupted in order to resume that of the upper part of the Richelieu, between Ash Island and the boundary of the United States.

The channel was sounded and examined over its whole length, and with particular attention at a point a little below the boundary line, where a rocky shoal is found with small depth of water, lying in the prolongation of the range lights of Ash and Bloody Islands. We also surveyed the low lands bordering on the west shore, and several points on the east.

This survey of the low lands, not included in our former survey, was produced down to Hospital Island, over a distance of eight miles from the boundary line and on both sides of the river.

The outside operations were stopped on the 27th November, owing to the cold weather, and the winter months were employed in plotting the plans of these surveys and making reductions to a smaller scale of the work of the previous year, in order to prepare a general chart of the upper part of the river.

The outside work was again resumed in June, 1887, when the stage of the river allowed us to establish the limit of the cultivated lands between St. John's and Isle aux Noix.

This has been continued during the summer of 1887, completing the whole hydrographic survey of the Richelieu between St. John's and the boundary of the United States, and when the maps of these are finished we shall be enabled to present a comprehensive report of the results obtained, as well as a chart of this part of the river.

I have the honor to be, Sir,

Your most obedient servant,

L. G. PAPINEAU.

E. H. PARENT, Esq.,

Superintending Engineer of Canals of Quebec,
Montreal.

 APPENDIX No. 8.

 OTTAWA RIVER CANALS.

SUPERINTENDING ENGINEER'S OFFICE,
OTTAWA, 5th August, 1887.

SIR,—I have the honor to submit herewith my annual report for the fiscal year ending the 30th June last, upon the Ottawa River Canals, dealing with the works both of construction and maintenance.

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

D. STARK,
Superintending Engineer.

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

 STE. ANNE'S CANAL.

CONSTRUCTION.

The only work here under the head of construction has been the deepening and straightening of the canal entrance above the locks, under contract to Messrs. E. E. Gilbert & Sons. This is now practically completed, all remaining to be done being the clearing away from the bottom of the excavation, loose pieces of rock by divers. It will be entirely finished in the course of the present month.

MAINTENANCE.

The navigation closed here on the 27th November, 1886, and reopened on the 4th May, 1887.

It has since been conducted uninterruptedly and without accident. The "raft navigation" having been only temporarily inconvenienced, by the construction of the large span across its channel of the Canadian Pacific Railway bridge, which necessitated the passing of the rafts through the lock, in cribs.

Ordinary repairs to lock gates, buildings, &c., have received the usual attention and some rather wholesale renewals made to the long "dam pier" above the old lock. The piers of the channel across the river to Isle Perrot have also received repairs where required, some necessary renewals of fender booms made, and a new lifting scow has been provided.

 CARILLON CANAL.

CONSTRUCTION.

Nothing under the head of construction has been done upon this canal during the past year.

MAINTENANCE.

The canal was closed by ice on the 30th November, 1886, and reopened for traffic on 2nd May, 1887.

The locks and all relating to them here are in good order, the only outlay found necessary being for chain renewals, repairs to machinery and some painting.

On the towing path, which was originally formed of stiff clay and consequently became extremely soft in wet weather, it was found necessary to bestow a certain amount of grading and macadamizing, which is now completed.

All requisite repairs have also been made upon the Government roads, fences and bridges. A building originally erected as an office by the Ordnance has been converted into a suitable dwelling house for the canal collector here, an accommodation that was much needed. It is now on the eve of completion.

GRENVILLE CANAL.

CONSTRUCTION.

Nothing coming under the head of construction has been done here during the year.

MAINTENANCE.

The locks here are all in good order and little had to be done to them during the year.

Some pointing to the walls had to be done and the usual amount of attention and repair was bestowed upon the lock gates and machinery.

A few new valves have been inserted and some new chains provided.

New suspension rods had also to be placed upon two pairs of the lock gates.

As regards the canal, the repairs found necessary to buildings, tow paths, fences &c., have received attention, and two new watch houses have been erected, one at Lock No. 3 and the other at Lock No. 4.

The traffic has been carried on throughout these canals uninterruptedly and without detention of any kind.

The dates of the closing and opening of the Grenville Canal are the same as those of the Carillon, viz., the 30th November, 1836, and the 2nd May, 1837.

CULBUTE CANAL.

CONSTRUCTION.

Nothing in the shape of construction has been done.

MAINTENANCE

The only passages made through this canal during the year were by one or two of the vessels belonging to the Upper Ottawa Improvement Company, as it is called.

Some necessary renewals to the cribbing forming the lock walls had to be made in order to render the gates effective, the hold fasts of the suspension gearing having given way.

The canal was closed at the end of November, 1886, and re-opened on the 1st May, 1887.

D. STARK,

Superintending Engineer, O.R.C.

 APPENDIX No. 9.

 CORNWALL CANAL.

CORNWALL, 5th August, 1887.

SIR,—I have the honor to submit the following annual report on the works under my charge, for the fiscal year ended 30th June, 1887.

The Cornwall Canal was maintained in an efficient state, until the 8th December, 1886, when it was closed by ice. It was opened for navigation on the 4th of May, 1887, and maintained in good working order up to the 1st of July last.

The works executed during the past season come under the head of ordinary repairs and construction.

Rebuilding one pair of lower lock gates. General repairs to all lock gates, supply weirs and bridges. Building new scow 53 feet by 14 feet, making six new lock gate knees, and ten sheaves. Raising embankment and repairing slope walls. Clearing outside ditches and drains, and repairing lock houses, &c.

I have the honor to be, Sir,

Your obedient servant,

D. A. McDONELL,

Superintendent.

A. P. BRADLEY, Esq.,

Secretary Department Railways and Canals,

Ottawa.

APPENDIX No. 10.

WILLIAMSBURGH CANAL.

SUPERINTENDENT'S OFFICE,
MORRISBURGH, 2nd August, 1887.

SIR,—I have the honor to submit my report on the working and condition of the Williamsburgh Canals, for the year ending the 30th June, 1887.

These canals include the Farran's Point, Rapide du Plat, Point Iroquois Junction and Gallops Canals, and were maintained in good order and without any interruption to navigation during the season thereof. They were closed on the 4th December, 1886, and re-opened for traffic on the 31st May, 1887.

FARRAN'S POINT CANAL.

The repairs on this canal consisted of repairs to lock gates and banks, placing some snubbing posts, new sheaves on chain holes, repairs to crabs and rebuilding portion of the ice breaker at the foot of the canal, which had been injured by the breaking of the ice jam in the spring of 1886.

The ice bridge formed during last February, from Croil's Island to the Canadian shore, and ice jam from that island to the American shore, created a jam of ice which extended some miles westward, the breaking of which this spring again did very serious injury to this ice breaker and pier. This jam was the worst that has occurred in the neighborhood from the high water in the river. I have not been enabled to rebuild this pier as yet, but as soon as the water falls, during the fall months, the requisite repairs will be made to it.

RAPIDE DU PLAT CANAL.

All the necessary repairs were done to the lock gates, and the banks kept in good order on this canal. The dock at the foot of the canal was rebuilt, and some repairs done to the pier at the head of canal; several new snubbing posts were also placed on banks.

Some difficulty has occurred near the head lock of this canal in keeping the channel clear of boulders and other obstructions thrown up by the dredges working on the improvements, though all exertions have been made that could be to prevent it.

POINT IROQUOIS JUNCTION AND GALLOPS CANALS.

The gates at Lock No. 25 received repairs; the upper gates at Lock No. 26 were taken out and rebuilt; and new blocks for the gates were placed on the coping at upper gates of Lock No. 27. The swing bridges over Locks Nos. 25 and 26 were repaired. The pier at the head of the Gallops Canal injured by ice in the spring of 1886 was rebuilt, and any repairs required to the other piers of these canals were made. The banks of these canals are in good repair, and the booms in Point Iroquois Canal have been properly maintained.

The buoy boat and scow were repaired and the buoys on the River St. Lawrence, between Johnstown and Dickinson's Landing, under my charge replaced in their proper positions this spring and so maintained.

From the water in the River St. Lawrence continuing high during the season, a good depth of water has been kept in all the canals.

I annex a statement showing the depth of water, on the sills of the locks at the entrance and outlets of these canals, during the year, and also a statement of fines imposed.

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.

STATEMENT showing the extreme depth of water on the Mitre Sills of the several locks of the Williamsburgh Canals, during the year ending 30th June, 1887.

FARRAN'S POINT CANAL.

Months.	Lower Sill Lock 22.		Months.	Lower Sill Lock 22.	
	Highest.	Lowest.		Highest.	Lowest.
1886.	ft. in.	ft. in.	1887.	ft. in.	ft. in.
July.....	11 5	10 10	January.....	12 10	8 6
August.....	11 0	10 3	February.....	13 6	10 6
September.....	10 8	10 0	March.....	14 6	11 3
October.....	11 6	9 6	April.....	12 0	10 3
November.....	10 10	8 6	May.....	11 6	10 10
December.....	10 0	9 2	June.....	11 6	11 0

RAPIDE DU PLAT CANAL.

Months.	Lower Sill Lock 23, Foot of Canal.		Upper Sill Lock 24, Head of Canal.	
	Highest.	Lowest.	Highest.	Lowest.
1886.	ft. in.	ft. in.	ft. in.	ft. in.
July.....	11 8	11 1	11 9	10 6
August.....	11 3	10 3	11 0	10 3
September.....	10 6	10 0	10 8	10 0
October.....	12 0	9 3	12 0	9 6
November.....	11 6	9 0	11 2	8 9
December.....	10 6	9 1	10 6	8 9
1887.				
January.....	10 9	8 10	9 6	8 0
*February.....	20 01	9 9	13 0	8 6
*March.....	18 7	12 10	13 5	10 6
April.....	12 8	10 4	11 6	10 0
May.....	11 7	11 1	11 9	11 0
June.....	11 8	1 0	11 8	1 0

* This high water was caused by ice jam at Farran's Point.

POINT IROQUOIS AND GALDOPS CANALS.

Months.	Point Iroquois Canals. Lower Sill Lock 25, Foot of Canal.		Galdops Canal. Upper Sill Lock 27, Head of Canal.	
	Highest.	Lowest.	Highest.	Lowest.
1886.	ft. in.	ft. in.	ft. in.	ft. in.
July.....	14 3	13 9	12 2	11 3
August.....	14 4	13 0	12 0	11 0
September.....	13 6	12 6	11 4	10 7
October.....	13 9	11 6	11 3	10 0
November.....	14 9	11 3	12 0	9 7
December.....	13 2	10 10	10 7	9 3
1887.				
January.....	12 4	10 8	10 2	8 10
February.....	14 9	10 9	11 0	8 10
March.....	14 9	12 10	10 9	10 3
April.....	14 6	12 11	12 0	10 6
May.....	14 7	14 3	12 2	11 8
June.....	14 9	14 0	12 0	11 0

WILLIAMSBURGH CANALS.

STATEMENT of Fines and Damages, collected during the year ending 30th June, 1887.

Date.	Name of Vessel.	Name of Owner.	Fine.	Damage.	Total.
1887.			\$ cts.	\$ cts.	\$ cts.
Sept. 8...	Scow "Agar".....	G. Hull & Co.....	.....	18 00	18 00
Nov. 5...	Barge "J. Buckley".....	O. C. T. & Co.....	3 00	.....	3 00
		Total.....	.....	.....	21 00

APPENDIX No. II.

WELLAND CANAL.

SUPERINTENDENT'S OFFICE,

ST. CATHARINES, 29th September, 1887.

SIR,—I have the honor of herewith submitting my report on the condition and working of the three canals under my charge, viz., the Old, the New and the Feeder, for the year ending 30th June, 1887.

The canals have been operated successfully throughout the year, without serious accident.

The new aqueduct at Welland, having been sufficiently advanced to completion by the opening of navigation, has been used since by all classes of vessels, affording every satisfaction.

Vessels drawing 14 feet have been passing through the new canal, without any difficulty, since the commencement of the season.

The harbor of Port Colborne requires widening, opposite the elevator, without further delay, to afford safety for the long vessels now using it; this is more particularly shown on the plan I forwarded to the Chief Engineer a few weeks since.

The eastern pier at Port Dalhousie requires re-building the coming winter, as it is completely rotted to the water's edge.

The canals were closed 4th December, 1886, and opened 4th May, 1887.

I have the honor to be, Sir,

Your obedient servant,

WILLIAM ELLIS,

Superintendent.

A. P. BRADLEY, Esq.,

Secretary Department Railways and Canals,

NEW WELLAND CANAL—DETAILS OF WORK OF REPAIRS AND MAINTENANCE.

DIVISION No. 1—FROM PORT DALHOUSIE HARBOR TO LOCK No. 13.

Port Dalhousie Harbor.

The end of east pier was injured by ice in the winter by a heavy gale from the north-west, which took the end completely out, besides otherwise injuring the dam. This was repaired and put in good order, but the entire pier requires rebuilding from end to end above water line, being quite rotten.

Gate Yard and Shop—(Port Dalhousie).

The capping on the piles at head of Lock No. 1 all repaired and put in good order. The spare lock gates have all had pieces fitted between the binders and then through bolted to prevent the binders from being split by ice when drawing the levels down.

[1887]

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for any purpose during the winter. The old office used as a toll collector's office has been converted into a dwelling house for the overseer of Division No. 1. The lock-master's house repaired and new basement floor put in, new ceilings in basement, and windows, inside painted one coat, outside two coats.

The old repair scow of Dunnville was drawn out on the skids and thoroughly rebuilt, also the pontoon thoroughly overhauled and painted. Made twelve large signs and posts for ends of bridges. The swing bridge at Old Lock No. 1 was overhauled, new braces, posts, hand rail, and plank put on. The scow "Sir Charles" repaired and put in good working order for the season. The engine and all mill machinery has been put in good condition; after the winter's work of raising the lock gates, 1,200 oak wedges made, and two large pontoon floats drawn out, caulked, and otherwise repaired; 230 shaft boxes made. Floating pile driver drawn out on skids, and thoroughly repaired and caulked.

The towpath bridges have had considerable repairs done to them, as they are badly worn with the heavy teaming last winter.

Lock No. 1, Bridge No. 1, and Level.

The swing bridge had extensive repairs. New cross heads (extra heavy) put in wash weir with new matrix for hoisting.

Bottom of lock chamber in a very bad condition; was cleaned by hand dredging. Several new cables put on. The bridge for public travel over waste weir had considerable repairs, and was replanked and painted.

Lock No. 2, and Level.

Put on two walings and six opening cables; one repaired. Diver repaired lower sill and put on four new slips at two lower valves in head lock gates. The lock chamber in bad order and was cleaned out. Navigation was interrupted several times owing to rubbish in bottom of lock, which was removed by the diver.

Lifted two lock gates and put on the thrust plate; washers let in bottom girt, and through rods cut off.

Lock No. 3, Bridge No. 2, and Level.

Lock gate valve taken out, repaired and replaced. Lifted two lock gates and put on thrust plates; washers let in bottom girt, and through rods cut off.

Lock No. 4, and Level.

Repaired bridge on top of lock gate. Put on two short and two long cables. Lock gates taken out, repaired, and replaced.

Lock No. 5, and Level.

One valve leaf gave out, and was put back in place by diver. The track of the head lock gates taken out and the segments cleaned out, track laid back again and large quantity of stone and rubbish taken out. Several ditches along the base of canal banks were opened, about 380 feet.

Bridge No. 3 (Lake Street).

Approaches repaired and new plank put on. Two new timbers put in float, 12 by 12 inches by 20 feet.

Bridge No. 4 (Railway Bridge).

Put on two pieces waling, one piece 8 by 12 inches by 35 feet and one 8 by 12 inches by 22 feet. Two new timber floats, and floats repaired several times. New chains and clevises used.

Lock No. 6, and Level.

Put on two short and two opening cables. Old track taken out of foot gates and new wrought iron one laid for toe roller of foot gates.

Two lock gates lifted, new thrust plates put on, washers let in bottom girt and through rods cut off.

Bridge No. 5 (Geneva Street).

In fair order.

Lock No. 7, and Level.

Valve in head lock gate repaired by divers.

Bridge No. 6 (Niagara Street).

Put in 4 new float timbers 12 by 12 by 21 feet. New waling 8 by 12 by 30 feet, and 252 feet of 2 by 8½ plank used in planking bridge floor.

Five hundred and seventy-six 2-inch plank used to cover bridge over culvert.

Lock No. 8, and Level.

Repaired binder, and put on one long cable.

Lock No 9, and Level.

Lock gate bridge repaired, 180 feet ditching to carry of soakage water.

Bridge No. 7 (Queenston Road).

Floats repaired by new protection piers.

Three pieces of 12 by 12 by 36, 37 and 38 feet long put in floats, 1 piece oak 6 by 12 feet and 12 eyebolts.

The approaches to the bridge have been overhauled, and put in good order by having new plank put in where required, and old plank repaired, using 380 feet 2 by 8½-inch plank.

Lock No. 10, and Level.

Put on 2 long and 2 short cables. Bridge and binder of lock gate repaired, one new intermediate put on.

Four hundred and ninety feet ditching at base of canal banks was done to carry off soakage water.

Bridge No. 8 (Homer Road).

Put new timber for floats, 12 by 12 by 30 feet, one new waling 8 by 12 by 40 feet, and one 8 by 12 by 23 feet, new plank put on bridge.

Lock No. 11, and Level.

One binder repaired with plates, and screw bolts.

Put on one long and one short cable.

The level was drawn off and a large stump taken out of the waste weir valve, and one out of the bottom of the reach.

Two hundred and seventy-eight feet ditching dug to open up for soakage water.

Lock No. 12, and Level.

Put on one new long cable. Two binder ends repaired.

One new extension piece put on and three wood screws put in.

The right foot raised and oak sole piece put under and the long ends of through rods cut off to prevent cutting the lock bottom.

Two lock gates lifted and new thrust plates put on; washers let in bottom girt and through rods cut off.

DIVISION NO. 2.—FROM THE FOOT OF LOCK NO. 13 TO BRIDGE NO. 13 (MARLATT'S.)

Lock No. 13, Bridge No. 9, and Level.

Cleaned out bottom of lock chamber; adjusted four gates and put on six new cables and repaired four old ones; binders on head gates spliced.

Lock No. 14, and Level.

Cleaned out bottom of lock chamber, raised two gates and put thrust plates under heels. Put on four new cables and repaired four old ones.

Lock No. 15, and Level.

Cleaned out lock chamber; lifted four gates; put on four new extension steps; repaired head and foot sills, also floor of lock; replanked head of mitre sill and sheet piled along king sill and put screws in valves. Put on seven new cables and repaired four old ones.

Lock No. 16, and Level.

Lifted two lock gates and put on new thrust plates under heels; cleaned out lock chamber and St. David's Road Tunnel; put on five new cables and repaired four old ones.

Lock No. 17, and Level.

Lifted two lock gates and put on new thrust plates; cleaned out lock chamber, waling repaired and put on seven new cables and repaired four old ones.

Lock No. 18, and Level.

Lifted two lock gates and put on new thrust plates; cleaned out lock chamber; set screws in valves; put on five new cables and repaired four old ones.

Lock No. 19, and Level.

Cleaned out lock chamber; lifted two lock gates and put on thrust plates; also set screws in valves; waling repaired; put on six new cables and repaired four old ones.

Lock No. 20, and Level.

Cleaned out lock chamber; lifted one lock gate and put on thrust plates; six new cables put on and four old ones repaired.

Lock No. 21, and Level.

Cleaned out lock chamber and set screws in valves. Put on seven new cables and repaired four old ones.

Lock No. 22, and Level.

Put on five new cables and repaired four old ones, cleaned out lock chamber.

Lock No. 23, and Level.

Put on five new cables and four old ones repaired, cleaned out lock chamber and set screws in valves.

Lock No. 24, Bridge No. 10, and Level.

Put on two new cables. Lock chamber cleaned out and set screws put in valves, two lock gates lifted and thrust plates put on. Mitre sills repaired head and foot of lock.

Bridge No. 11 (Railway Bridge).

Railroad bridge floats repaired sundry times, also feeder work.

Lock No. 25, Bridge No. 12, and Level.

Put on six new cables and repaired four old ones; lock chamber cleaned out. Lifted one lock gate and put on thrust plates, set screws in valves. Put on six sets of hoisting gear on waste weir and put iron rack at head of weir and replanked weir bridge.

Guard Lock.

Put on new cables, adjusted lock gates, and removed gravel and stone from mitre sill with diver.

Bridge No. 13 (Marlatt's).

Floats repaired sundry times. Cut thistles and weeds on banks and Government lands from Lock No. 13 to Allanburgh, and banks repaired from Lock No. 24 to Allanburgh. Cut sweet clover, and thrashed out seed and put it in storehouse to sow canal banks.

DIVISION No. 3.—FROM BRIDGE No. 13 (MARLATT'S) TO AQUEDUCT AT WELLAND.

Bridge No. 14 (Allanburgh).

Planked bridge and approaches.

Bridge No. 15 (Port Robinson).

Repaired bridge approaches 400 feet long by lowering fenders and cutting down old and driving new piles and putting on new walings and caps.

Port Robinson Lock.

Repaired highway swing bridge.

Bridge No. 16 (Quaker Road).

Repaired waling, east side; repaired and planked bridge on the Hurricane Road; moved Government house back from dumping ground, South Bridge, No. 16, on the east side of canal.

Port Robinson Storehouse.

Drove piles and built new dock, 60 feet long, at Port Robinson storehouse, and built new storehouse.

Banks, Ditches, &c., &c.

Cleared out ditches and repaired banks, throughout the division; also cleaned out stone road ditch several times; deepened ditch on east side of canal, at Marr's farm; put in snubbing posts at Port Robinson; repaired and caulked the workman's repair boat, also tool scow No. 1.

DIVISION No. 4.—FROM AQUEDUCT, WELLAND, TO PORT COLBORNE HARBOR.

Welland Lock.

Dredged out the lock chamber, which was in bad condition.

Aqueduct.

This great work was sufficiently completed to admit of vessels passing through it from the opening of navigation.

Old Swing Bridge (Welland).

Strengthened bridge by heavy plates and bolts.

New Swing Bridge, No. 17 (Welland).

In fair order.

Bridge No. 19, Junction.

In fair order.

Air Line Ferry (Humberstone).

Removed Air Line Ferry Float Bridge into position for winter use, and replacing same back again into its summer berth and extended approaches.

Bridge No. 21 (Humberstone).

Repaired planking of bridge.

Floats (Rock Out).

Repaired floats several times.

Port Colborne Lock and Bridge.

Repaired swing bridge, damaged by the steam barge "D. D. Calvin."

Harbor (Port Colborne).

Sharpened and drove 145 oak piles, and built new tug dock, 350 feet long. Removed and repaired pier, seriously injured by storms. Quarried out stone and faced banks of harbor with same. Built W. C. for tug men's use.

Harbor Master's and Lock Tenders' Dwellings, etc.

Built new kitchen to lockman's house, and shingled another one. Repaired harbor master's house. Hauled stone off lock tenders' lot and levelled up the same. Built 602 feet fencing around lock tenders' premises, Port Colborne.

Back Ditches, Banks, Culverts, Etc.

Cleaned out and repaired apron of ditch running from back ditch to canal, south of Air Line Ferry, south side of canal; also cleaned out, stoned up and covered back ditch on King street, Port Colborne. Opened up ditch south of Welland town; also opened up ditch on concession between Port Colborne and Humberstone, running from back ditch to canal, and back ditch north and south of Humberstone, west side of canal. Put culvert under tow-path, east side of canal, concession 3; also culvert under tow-path, Ranny's Bend, and built stone wall in rear of lots on north side main street, and west side of canal, Humberstone. Set snubbing posts and repaired banks of canal throughout the Division. Hauled stone and brick for canal Toll Collector and Customs house, Port Colborne.

I append statements, marked 'A' and 'B,' showing the greatest and lowest depth of water on the mitre sills at Port Dalhousie and Port Colborne locks (new and old) in each month during the fiscal year ending 30th June, 1887; also a comparative statement of the average for the month, 1886 and 1887, which shows the water has been three inches lower at Port Dalhousie and 4 inches higher at Port Colborne. The average for June, 1887, new locks, Port Dalhousie 17 feet 10 inches, and Port Colborne 16 feet 6 inches.

"A."

STATEMENT showing the Depth of Water on the Lower Mitre Sill of Old Lock No. 1, Welland Canal, at Port Dalhousie, for the Fiscal Year ending 30th June, 1887.

Months.	Lower Sill.		Months.	Lower Sill.	
	Highest.	Lowest.		Highest.	Lowest.
1886.	ft. in.	ft. in.	1887.	ft. in.	ft. in.
July.....	15 5	14 9	January.....	13 7	13 0
August.....	14 10	14 4	February.....	14 4	13 6
September.....	14 6	14 0	March.....	14 6	14 1
October.....	14 4	13 7	April.....	15 0	14 3
November.....	13 7	12 11	May.....	15 4	15 0
December.....	13 6	13 3	June.....	15 4	15 0

Ft. In.

Average, June, 1886..... 15 5

do 1887..... 15 2

STATEMENT showing the Depth of Water on the Upper Mitre Sill of Old Lock No. 27, Welland Canal, at Port Colborne, for the Fiscal Year ending 30th June, 1887.

Months.	Upper Sill.		Months.	Upper Sill.	
	Highest.	Lowest.		Highest.	Lowest.
1886.	ft. in.	ft. in.	1887.	ft. in.	ft. in.
July.....	13 10	13 1	January.....	14 2	11 9
August.....	13 9	12 9	February.....	15 2	11 7
September.....	13 11	12 2	March.....	13 11	12 4
October.....	14 3	11 9	April.....	14 3	11 10
November.....	15 3	11 6	May.....	13 10	13 2
December.....	14 8	11 10	June.....	14 5	13 3

Ft. In.

Average, June, 1886..... 13 6
do 13 10

“ B. ”

Statement showing the Depth of Water on the Lower Mitre Sill of New Lock No. 1, Welland Canal, at Port Dalhousie, for the Fiscal Year ending 30th June, 1887.

Months.	Lower Sill.	
	Highest.	Lowest.
1887.	ft. in.	ft. in.
April.....	17 10	17 3
May.....	18 2	17 8
June.....	18 1	17 8

Average for June, 1887..... 17 ft. 10 in.

STATEMENT showing the Depth of Water on the Upper Mitre Sill of New Lock, Welland Canal, at Port Colborne, for the Fiscal Year ending 30th June, 1877.

Months.	Upper Sill.	
	Highest.	Lowest.
1887.	ft. in.	ft. in.
April.....	17 3	14 8
May.....	16 9	16 0
June.....	17 4	16 2

Average for June, 1887..... 16 ft. 6 in.

 OLD WELLAND CANAL.

DETAILS OF REPAIRS AND MAINTENANCE OF THE WORKS ON THE OLD WELLAND CANAL.

Lock No. 1, Bridge and Level.

Cut off piles on inside of floats, as directed, so as to allow the floats between Weaver's Point and Reed's Island to be taken out for use at dam at Lock No. 1, New Canal. Hauled out and piled timber for new bridges at Weaver's Point, and for short bridge on towpath above said point.

Bridge at Weaver's Point.

Removed old bridge, cut off piles from 2 feet to 5 feet below water level, capped with 10 by 12 inch pine, erected new bents thereon, built new superstructure thereon, 120 feet long, 14 feet wide, covered with 3-inch pine, with 6 by 8 inch string, through bolted to stringers of bridge.

Bridge above Weaver's Point.

Removed old bridge, framed and put in place new bents to act as retaining walls at both ends of bridge, the originals being rotted away; sheeted bents with 2-inch pine. Put new bridge on top of same, 24 by 12 feet, covered with 3-inch pine, with 6 by 8 cap string through bolted to stringers of bridge.

Bridge at Welland Vale Works.

Took old planking off toe approach. Put in six new stringers 6 by 12 inch and relaid toe approach with 3-inch oak plank, size 24 by 30 feet.

Cleaned long float bridge, painted new float bridgefoot of Lock No. 2 and put in two new snubbing posts, painted two lockhouses, dug out the foundations for the two bridges at Weaver's Point, also building and filling in the approaches to the same. Repaired banks and towing paths with stone facing from Weaver's Point to Lock No. 2, and cleaned out the two waste weirs and built up bridge walls at Binfield's crossing, carried away by spring freshets.

Lock No. 2, Bridge and Level.

Repaired railing at toe approach of bridge at axe factory; raised Lock No. 2 bridge on pivot and adjusted rods of same; raised sill of kitchen at Lock No. 2 dwelling, and put stone support under same; put cove under ceiling of kitchen, eased doors, set steps at outside door; drove 20 piles in tail race behind axe factory; put three rows of 5 by 8 inch oak waling on upper tier, one row on lower tier, all securely bolted to piles; drove a double course of sheet piling, upper tier, 2 feet long in spillway, 8 feet long on wings, cut piles off at proper height.

Bridge at Shipyard.

Took old crib work at ends of bridge down about 2 feet below water line, and rebuilt them. Built new truss bridge 52 by 12 feet, covering it with plank taken off old bridge. Built two new pontoons for floating bridge into and out of place. Oak frames covered with 2-inch pine, properly caulked and payed. Dug out foundation for towpath bridge and filled up same.

Lock No. 2, Waste Weirs.

Put new throat piece in valve at lower weir. Repaired iron on both weirs. Put in two new snubbing posts.

St. Paul Street Bridge.

Stripped toe approach. Raised end next road 2 inches. Relaid approach with 3 inch pine, covered with 2½ by 7 inch oak plank. Put a support for gas pipe on abutment of bridge. Stripped and relaid 190 feet in length of towpath under bridge with 3-inch pine. Jacked up toe approach of bridge. Took out post at lower front corner

Framed and put in place new post securing the same. Removed oak planking on heel of bridge. Removed portion of the dock at Norris' storehouse, 24 feet in length by the width of the same, to make room for temporary bridge, replacing same when temporary bridge was removed. Drove nineteen piles for temporary bridge across canal, tenoned and capped with two pieces of 5 by 10 inch oak through bolted. Built thereon a bridge 140 by 24 feet covered with 3-inch pine; put railing on both sides 5 feet high with guard rail in centre of post, and 8 by 8 inch timber on top of floor. Built sidewalk on upper side of bridge 3 feet wide, protected by railing 3 feet 6 inches high, and built stairs at end of bridge for the convenience of foot passengers. Removed bridge and drew out piles when new approach was complete. Built new frame work for lock of bridge on resting abutment, when bridge is open and fastened same securely in place. Made and fastened securely in place, a bumper block at heel end of bridge. Removed railing of approach where required to make room for derrick, replacing the same when repairs to approach were complete. Tore out old frame work of approach and drove piles where required. Cutting them off to receive floor, placing thereon a floor of 12-inch timber covered with 3 inch pine, on which the masons built new stone approach. Put two streaks of 6 by 10 inch oak waling below water line on piles, in front of approach, through bolted to piles with 1 foot 4-inch screw bolts, solidly between waling, and stone work of approach. Rebuilt sidewalk at both sides of approach after stone work was complete. Built and put in place five pannels of railing at towpath end of bridge. Framed and put in place a light truss bridge 6 feet by 35 feet, leading from sidewalk to sail loft, to replace the one torn down to make room for roadway leading to temporary bridge. Built a flight of stairs leading from sidewalk up to bridge at sail loft. Made and hung two gates in railing with hooks on same. Dug out foundations for new abutment, and built new stone abutment for the toe approach, and new wing walls, and filling up approaches; also macadamized the same, and put in a flag crossing.

St. Paul Street Bridge Tenders House.

Built new stone foundation for house at bridge on lower side of same, made new door frame and door fitted, hung and fastened; put joists in cellar, and laid rough 2-inch floor on same, moved house from old site upon new foundation, put new joists in house and laid 1 foot 4-inch floor; made new chimney stand and placed it under chimney with 3 shelves and door hung, laid new base in house, repaired inside sheeting window casing, stops, etc., where required, made and placed new door frame, and door for house. Built platform and walk in front of house, covered front of platform with lattice work, and put railing at end, and sides of platform where required for safety. Built stairs at side of house leading down to cellar, fitted up bank also shelving, painted new work three coats white lead and oil. Replaced sign at roadway on bridge also sign over sidewalk.

Bridge over Twelve Mile Creek, etc.

Made some repairs to bridge. Drove 17 piles at upper end of boathouse, sheeted face of piles with 3-inch oak, 5 feet above water mark, length of sheeting 70 feet. Cut piles off at top of sheeting. Repaired platform, and door of boathouse broken by ice during freshet in February last.

Bridge at Shickhuna Saw Mill.

Built new bridge across tail race at saw mill, size 24 by 16 feet; 4 stringers 8 feet by 12 inches, 2 stringers 6 feet by 12 inches. Covered with 3-inch pine with 6 inch by 8-inch cap stringers through bolted to stringers of bridge. Rebuilt crib at each end of same from water line to top of bridge.

Lock No. 3, and Level.

Made and put in place new slash boards on waste weir to replace those carried away by freshet. Put 4 new rollers on weir for hoisting and lowering upper slash boards. Repaired floats, and put in two new snubbing posts; painted lock house.

Canal Office.

Took old ceiling off upper hall, and put on new matched sheeting, with cove at intersection of ceiling and put two coats raw oil on same size 13 by 44 feet; set partition in loft of barn and put up shelving for patterns, put inside shutter on windows and made sundry alterations and repairs, and put in step ladder. Sheeted stairway leading to basement of office, and hall of basement all around, 4 feet high, repaired doors, etc.

Lock No. 4, Bridge and Level.

Stripped Lock No. 4 dwelling, repaired roof boards, and covered main building and kitchen with metallic shingles giving same one coat fire proof paint. Put sashes in 5 windows. Repaired doors of dwelling, etc. Put in $1\frac{1}{2}$ -inch bolt through balance beam filling, and top girt of head lock gate heel-path side. Tightened bolts of bridge, and painted same. Repaired floats, and took floats of piles from where carried at time of freshet—drew to place and secured with chains; repaired railings of same, and put on new planking where required. Laid platforms at doors of kitchens.

Lock No. 5, Bridge and Level.

Raised bridge on pivot, and made some repairs to planking of same. Moved house for locktenders from Lock No. 6 down to Lock No 5.

Put balance beam casting on head lock gate, towpath side. Repaired, and renewed bolts in balance beam castings on all the lock gates. Built wire fence around lockhouse lot.

Lock No. 6, and Level.

Put new timbers under and re-set crab, and through eyebolts in head lock gates. Repaired and renewed bolts in balance beam castings on all the lock gates.

Gate Yard and Shop (St. Catharines)

Finished one lock gate for foot Lock No. 7, painted same two coats, and launched it. Took one high left lock gate from yard to pond at back of Lock No. 14 and laid it away. Finished framing timber for one lock gate for foot Lock No. 3. Repaired capstans and timber buggies in yard. Made two step-ladders. Prepared stuff for putting up shelving for patterns in barn back of Canal office. Repaired eleven wheelbarrows. Prepared and put up sheeting for ceiling of hall at Canal office. Made twenty-seven waste weir gates without valves and nine waste weir gates with valves, made of two thicknesses of 2-inch oak, through bolted, size 3 feet 7 inches by 4 feet 7 inches.

Repaired and stiffened pile drivers and scow. Set up driver on scow. Put twenty shears between deck and floor beams of scow. Cut off, sharpened and shod twenty-three piles for driving Lock No. 2 spillway. Put handles in twenty-four ice chisels. Made various repairs to lock houses and sundry working plant. Filled ice house at yard. Did work on lock gates for foot of Lock No. 3. Repaired pile driver and set it up on scow for driving piles, at St. Paul Street Bridge. Took pile driver off and fitted scow out to go to Dunnville. Took blocking from under bridges at Locks Nos. 4, 5 and 7, leaving them in good swinging order. Framed some material for second lock gates, foot of Lock No. 3. Hauled out and stripped old lock gates taken out of Lock No. 7, and one old lock gate lying in pond at yard. Painted derrick in yard. Jointed and piled plank for sheeting lock gates. Got out jamb linings and mouldings for door and window in basement hall at Canal office. Made box drain 18 feet by 12 by 14 inches for towpath at Lock No. 4. Made outside porches and two storm doors for Lock No. 4 dwelling, and put same in place.

Lock No. 7, Bridge and Level.

Put one pair of new lock gates in foot of lock, taking old gates to yard. Put new push bars for shutting them on both gates in lieu of old balance beams. Re-set crab at both gates. Raised bridge on pivot, put one extra roller under heel of bridge. Changed positions of rollers under heel and toe of bridge. Repaired toe approach and put new planks on bridge. Put new circle plank on heel of bridge.

Picked up lock gates in pond at Lock No. 2, brought it up and put it in head of lock—tow-path side—after taking out old one. Put new timbers under and re-set crab at this gate, putting on new style of shutting gear with wire cable instead of chains. Took old lock gate to gate yard.

Hydraulic Race.

Built truss fences at upper and lower ends of Riordon's lot, size 34 by 6 feet, sill 8 by 12 inches, resting on 10 by 12 inch oak sill, 7 feet long, with $\frac{1}{2}$ -inch truss rod on both sides. Door at each end of fence properly hung and fastened to permit men on race to pass through. Repaired bridge, Thorold road.

Lock No. 8, and Level.

Made and put in place new slash boards on waste weir. Re-set timber under crab. Renewed and repaired bolts in balance beam castings on all the gates in lock.

Lock No. 9, and Level.

Framed and put in place new balance beam on foot gate—tow-path side. Put new push bar for shutting in place. Put timbers for and re-set crab. Made and fixed new foot board for head lock gate, and put new cap on sheave block.

Lock No. 10, and Level.

Stripped roof off kitchen at dwelling, and covered same with metal shingles; also stripped roof of dining-room and covered it with pine shingles, giving both roofs two coats fire-proof paint.

Lock No. 11, and Level.

Made and fixed temporary gate front of opening in waste weir where gate had been carried away. Drew down level and filled opening with 3 inch oak. Made and laid box drain, 112 feet by 10 by 12 inches, for draining pond at the back of lock.

Lock No. 12, and Level.

In good order.

Lock No. 13, and Level.

In good order.

Lock No. 14, and Level.

Put in new holder irons and foot boards to foot gates.

Lock No. 15, Bridge and Level.

Took down and removed old swing bridge to gate yard Lock No. 21. Erected new Howe truss swing bridge across canal, size of roadway, 12 by 78 feet, with rack and single operating gear. Painted bridge three coats, and built new heel and toe approaches. Laid 200 feet of sidewalk, and built bridge across culvert west side of lock. Made and put up storm porch to locktender's dwelling.

Lock No. 16, and Level.

Drew off level, and removed stone obstruction from lock chamber.

Lock No. 17, and Level, and Government Quarry.

Repaired lock tenders' dwelling and fences; put up derrick in quarry.

Lock No. 18, and Level.

Repaired lock tenders' dwellings.

Lock No. 19, and Level.

In good order.

Lock No. 20, and Level.

Removed obstruction from waste weir. Took out and repaired one gate, and re-hung the same.

Lock No. 21, and Level.

Built and put in new chain pump in lock tenders' house, also storm porch, and painted lock house.

Gate Yard and Shop (Thorold).

Built wheel house over the water power. Built new tool boat complete for the summit level (new canal) repair gang's use, size 12 by 30 feet, by 2 feet 6 inches in depth, with cabin, and fitted up with stone benches and pumps; also tool boat No. 3, complete, for Division No. 4 repair gang's use, size 12x29 feet, by 2 feet 6 inches deep, with cabin, fitted with lines and pumps. Built two punts for tool boats, size 16 by 4 feet, by 1 foot 5 inches deep, and made one scull oar for the same. Put slash saw in shop. Built new derrick scow for the summit level repair service, size 20 feet beam, 50 feet run over all, 5 feet depth of hold, derrick 18 feet high, with two booms, 12 by 26 feet, fitted out with two crabs for boom hoist and lift, and all necessary blocks, lines, etc.; fitted up cabin with four bunks, cook stove and complete outfit for eight men. Put in floor to shop and wheel house. Rebuilt one pair of lock gates for Lock No. 24. Made a set of patterns for new swing bridge, Marlatt's Crossing. Made two 30-foot lock rakes. Rebuilt one lock gate for Lock No. 16. Put new upper floor in shop, battened outside and painted same. Made six 12-foot ice chisels. Put new stanchions under stone floor of Government scow, "Sir Charles," and put in new pump and covering boards. Partly recaulked scow "Sir John"; also repaired and caulked crane scow "Hercules."

Lock No. 22, Keefer's Bridge and Level.

Rebuilt raceway gates on towpath side; pointed up the lock and waste weir walls with cement; raised and put steel plates under pivot of bridge; painted lock house.

Lock No. 23, and Level.

Pointed lock and waste weir walls with cement.

Lock No. 24, Bridge and Level.

Raised and put steel plates under pivot of bridge and repaired floor of same; drove eight new piles at foot of lock and took off old waling and put new waling on approach. Put on new roller and repaired crabs and slash boards of waste weir; lifted gate at head of lock and diver replaced step in position, put gate back on step and lift all complete. Took out old foot gates and put in a pair of rebuilt ones; put on Walton's rig for operating same without balance beams. Replanked road bridge across race-way 20 by 32 feet; built new bridge across mill-race near lock, 12 by 23 feet. Rebuilt double gear for swing bridge; level drawn off for spring repairs; walls of lock and waste weir pointed up with cement. Stopped leak in waste weir.

Lock No. 25, and Level.

Removed obstruction from supply valve; built new foot bridge, 4 by 30 feet across head of lock; made a heavy timber frame and put in a new supply valve in waste weir. Filled up washout and put in thirteen yards of cement wall; built wood rack 40 by 4 feet under old iron rack of waste weir. Level drawn off for spring repairs; lock and waste weir walls pointed up with cement and stopped leak in waste weir.

Guard Lock.

Caulked the lock gates.

Hurst's Swing Bridge.

Repaired bridge and replanked same and put new timber head and platform to carry abutment.

Marlatt's Swing Bridge.

Repaired heel approach and replanked floor of old swing bridge and rebuilt part of toe approach and put on new swinging rope. Built temporary bridge 12 feet wide and 90 feet long while new one was under way. Took down the old swing bridge and erected a new Howe truss composite bridge 12 feet wide and 87 feet long; rebuilt the approaches to new swing bridge; ballasted them with 80 yards of stone and gravel.

Allanburgh Swing Bridge.

In good order.

Three-Mile Level.

Cleaned out and deepened 260 yards of Beaver Dams Creek. Removed small house from supply weir to east side new canal at Allanburgh for a telephone station; put platform and chimney to same. Cleaned out and opened up all the ditches, etc. Faced 640 yards of banks with broken stone, and repaired break in Higgin's waste weir.

Allanburgh Lift and Guard Lock and Bridge.

In good order. Built new kitchen, fence and sidewalks, and sundry repairs to lock master's dwelling. Cleaned out ditches, filled up gullies and repaired canal banks, etc., both sides. Planked new bridge and approaches, Allanburgh.

FEEDER CANAL.

FEEDER JUNCTION TO DUNNVILLE AND PORT MAITLAND—23 MILES.

From Dunnville to Stromness and Port Maitland, distance six and one-third miles, there are two locks, four swing bridges, three waste weirs, with thirty-six stop gates. Bridge 600 feet by 18 feet, one apron below dam 640 feet long, eleven piers, 10 by 18 by 15 feet, and twenty-six flood gates. One tool house. 1,000 feet boom timber in Grand River, above dam, to prevent driftwood and rubbish from entering waste weirs. 1,735 feet of embankment, 8 head gates at entrance of mill ponds, twelve stationary bridges with an aggregate length of 1,800 feet, two lock tenders' houses, two bridge houses, five culverts, one overseer's house and office, work shop, store house, repair scow and three punts. Two piers and harbor, with a depth of water from Lake Erie to outlet of canal of 19 feet, and to lock an average of 9 feet at low water line.

From Stromness to Bolton Ditch, Marshville and Junction, sixteen and one-third miles. One lock, three swing bridges, two stationary bridges, one sluice way, three culverts and two rock ditches. The supply of water has been equal to the demand, and sufficient to furnish the milling and manufacturing interests along the Division to the close of the season. There has been but one accident during the year, caused by a small scow running into the crib at foot of Port Maitland Lock, on 14th November; she drove a hole in her bow, causing her to sink across the mitre sill. The owner and crew abandoned her, and the tug "Douglas" drew her back out of the lock. I had her sides, bow and stern torn off, and there is 10 feet of water covering her where she lies, about 100 feet below the foot of the lock.

Sunken logs and other obstructions have been removed out of Feeder channel and cut between Stromness and Point Maitland.

Waste Weirs.

The logs and rubbish carried down the Grand River by the spring freshets and driven into the valves and in front of weirs have been drawn out and dumped into the creek at the foot of same. The top gates have been repaired where broken by ice, chains and hooks repaired, screws cleaned and lifting rods straightened. All the top timbers have received a coat of paint. All the broken and worn plank on the bridges have been removed and new ones put in their places.

Dam, Apron and Stationary Bridges.

The apron below dam has been carefully repaired as well as the lower floor under the tool bridge. Six new flood gates have been put in and twelve repaired. The old top plank and two decayed sleepers have been removed from tool bridge and new ones put in their places; also the top covering repaired on the stationary bridges across the entrance to Smith's and Mariatt's mill ponds, and stop gates repaired. The old bridge across Mr. Chamber's mill race rotted and had to be removed. This bridge was 92 feet long by 16 feet wide, which was shortened up to 24 feet by 12 feet, the vacant ends being then filled with clay and gravel.

Guard Lock.

The foot gates have been repaired and balance beams painted, screws cleaned and foot boards renewed. The mitre sills have been cleaned out and rubbish removed from behind the gates. New chains put on, etc., etc.

Swing Bridges.

The swing bridges have been raised on their pivots, properly balanced and track levelled where disturbed by the frost. Old sleepers under toe and heel approaches removed and new ones put in to support the top covering. Old, worn out and broken plank taken up and new ones put down in their places. The slopes around the approaches have been filled in with clay and covered with gravel when washed away. Bridges have all been painted.

Embankments.

The embankment across the Grand River has been repaired with stone and clay, ruts filled in and leakages stopped.

Culverts.

The exposed ends of timbers in the culverts have been painted, and grates in well holes taken out and cleaned. Slats repaired and grates laid back in their places and properly secured. All driftwood and rubbish have been cleaned out of entrance to culverts and piled and burned.

Locks.

The mitre sills of Port Maitland Lock and Junction Lock and the chambers have been cleaned out, and all rubbish and sediment removed, and the sheeting in the back of gates repaired.

Lock and Bridge Houses.

All the lock houses and bridge shanties have been painted, and the locks and bridges supplied with tamarac pike poles, and timber lifters. Boom chains repairs.

Canal Banks.

Towpath repaired throughout and faced with stone protection.

GENERALLY.

All the gearing connected with the lock gates throughout, also the numerous waste weirs, and highway and railway bridges across the canals and the machinery connected with the same have been renewed where necessary and kept in good repair throughout the season, and the same has been done with the lock gates of waste weir valves.

All thistles and weeds have been cut as usual on all Government property, ditches and culverts everywhere cleaned out and deepened where required.

All bridges blocked up for winter use.

WILLIAM ELLIS,
Superintendent.

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

APPENDIX No. 12.

RIDEAU CANAL.

RIDEAU CANAL OFFICE,

OTTAWA, 28th September, 1887.

SIR,—I have the honor to submit my annual report on the state of the works under my charge for the fiscal year ending 30th June, 1887.

Navigation closed at Ottawa 29th November, and at Kingston Mills 30th November, 1886.

Opened at Ottawa 3rd May, and at Kingston Mills 2nd May, 1887.

The water in the descending reaches from the summit level to Ottawa was maintained to full height required on the sills of the different locks until the close of navigation.

In the descending reaches from the summit level towards Kingston, the level on the upper sill at Newboro' (first lock descending) fell below navigation height by the middle of September, and continued falling until the close of navigation, when it fell five inches below.

On the Kingston Mills reach the water fell below navigation height on the 30th July, and commenced falling until the close, when it registered 1 foot 4 inches below navigation height, showing the necessity of keeping this reach at the opening of navigation to 6 feet 9 inches on the upper sill which has hitherto been customary.

The spring freshets this year on the Rideau were higher than usual, and the ice when it broke up unusually solid. This was no doubt caused by the large snow fall and steady cold weather of last winter. Fortunately during the freshet, cold nights prevented the water raising as fast as it otherwise would have, as well as the absence of rain. The new bulkhead at Hogsback stood the strain brought upon it without damage, but would strongly recommend that the area of discharge should be further increased by excavating the rock in the channel south of the bulkhead, as well as putting a boom from the bulkhead to Angus Point, a distance of some 1,600 feet to hold in the solid ice in the bay which generally does all the damage to our works.

All the road bridges between the Hog's Back (saving the new iron ones at New Edinburgh) and the Ottawa were more or less damaged.

The freshets at the Kingston end were not as great as usual, owing to the snow fall in that section of the country being comparatively light compared with the Ottawa section, and no difficulty was experienced in passing it through our waste weirs.

Steps, however, should be taken to hold back the spring water by erecting dams at controlling points. Preliminary surveys with that view were made last fall of the Rock and Bush lake systems, and negotiations are now in progress with the proprietors of the sites of these dams.

The principal repairs to the works were as follows:—

Kingston Mills.

One pair of new lock gates and gravel on dam.

A dredge was employed two months deepening the channel between Birmingham's Point and the entrance into the cut leading to Brewers' Mills. The channel having been filled in with sunken logs and other debris, on which boats complained of insufficiency of water, causing them to break their wheels.

Brewer's Upper Mills.

Embankment at bulkhead strengthened, and general repairs to station.

Brass' Point Bridge.

A new bridge over 500 feet long was built across the channel at this point, connecting the Stormington and Pittsburg sides. A good deal of difficulty was encountered in sinking some of the cribs, on account of the nature of the bottom, some 30 feet of water and mud being found at one place. The bridge is now completed and opened to the public.

Jones' Falls.

One pair of new lock gates; new kitchen to lock house; swing beams renewed.

Davis Station.

Dam put in, both above and below the lock, which was then unwatered, and a portion of the lock wall and lower sill rebuilt.

Chaffey's.

Bulkhead renewed.

Newboro'.

Repairs to lock gates.

Poonamalie.

Long dam repairs.

Smith's Falls.

One pair of new lock gates, dam replanked, and stone dam built west of bulkhead to stop leakage from basin.

Old Slys.

New stone house and kitchen to lockmaster's house. Two new piers at entrance to lock.

Clowe's Quarry.

New bulkhead and repairs to gates.

Burritt's Rapids.

New bulkhead, one pair of swing beams, and addition to lockmaster's house.

Long Island.

New protection pier below bulkhead, new boom at head of island, and two openings made in the White Horse dam.

Hogs Back.

Rebuilt large bulkhead; new swing bridge at locks; and road between Hartwell and Hog's Back Locks graded and gravelled.

Ottawa.

One pair of new lock gates for No. 7, and repairs to lock gates Nos. 2 and 3; general repairs to sluices, chains, blocks, &c.

General repairs to wharf round basin.

Navigation was uninterrupted during the season.

I have the honor to be, Sir,

Your obedient servant,

FRED. A. WISE,

Superintending Engineer.

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

 APPENDIX No. 13.

 TAY CANAL.

 RIDEAU CANAL OFFICE,
 OTTAWA, 1st October, 1887.

REPORT OF PROGRESS FOR THE YEAR ENDING 30TH JUNE, 1887.

The masonry of both Locks No. 1 and 2 at Beveridge's Bay, was completed and lock gates built ready for the water to be let in.

The cribwork at the entrance was completed during the winter, and filled with stone.

A dredge was engaged during the fall and spring, deepening the entrance between the piers to the required depth.

The cut through Beveridge's swamps was completed, slopes trimmed and sides rip-rapped.

The banks between Locks Nos. 1 and 2 were also trimmed up and put into shape.

The regulating dam across the river was completed ready for raising the water.

At the Perth end a dredge was steadily employed deepening the river bed proper, and excavating the new channels across the bends of the river. A force of men was also employed trimming the banks, and rip-rapping when required.

The contractors contemplate finishing their contract, between the east side of Red Bridge Perth, and Beveridge's Bay, early this fall.

No work has yet been done towards making the basin at Perth, which it is proposed to place to the west of the Red Bridge.

I have the honor to be, Sir,

Your obedient servant,

FRED. A. WISE,

Superintending Engineer.

A. P. BRADLEY, Esq.,

Secretary Department Railways and Canals.

APPENDIX No. 14.

TRENT CANAL.

ENGINEER'S OFFICE,
PETERBOROUGH, 20th August, 1887.

SIR,—I have the honor to submit my annual report on the works under my charge for the fiscal year ended 30th June, 1887.

Navigation closed on 23rd November and opened on 27th March. The water on the several stretches has been maintained at the standard level, viz., five feet on the mitre sills of the locks. The total number of lockages during the season was 1,574. There was no interruption to navigation during the season. The following repairs have been executed :—

Fenelon Falls.

No extensive repairs were done here owing to the probability of the change in position of the slide in connection with the new works at this station.

Scugog River.

The snags in the river were removed. The beacon at the mouth of the river was repaired and a light was kept on it, which proved a great benefit to navigation. There is an increase of traffic on this stretch.

Bobcaygeon.

A number of old sunken piers, which were formerly used in connection with the old saw mill and which were an obstruction to navigation, were removed. The dam was gravelled and many of the braces, which were removed by the ice, were replaced. The repairing of this dam is an annual expense. The dam is very old and in a very dilapidated condition. A new dam is greatly needed, and there is every facility for building it on the flat rock below the dam, on which, at this season of the year, there is little or no water.

Buckhorn.

The works under this Department, at this station, are in fair condition. Some new sluiceways on the south side are needed, to increase the area for waste at seasons of high water. The new locks here are about completed and by next season navigation will be opened through.

Lovesick and Burleigh.

The locks and dams at these stations will be completed by the end of the year, and will be ready for navigation next season.

Young's Point.

The new dam recently constructed has answered the purpose for which it was built. The lock here is under the control of the Provincial Government, through which there is considerable traffic.

Lakefield.

The dam at this station is now finished, and has retained the water in the lake above at good navigable height, throughout the season.

Peterborough.

The sawdust is still being thrown into the river, and causes the same trouble to navigation as mentioned in my previous reports. A new breastwork was constructed at the upper entrance to the lock, on the west side, and has been a great improvement to navigation. Two new upper courses were put on all the gates. New guide booms were placed on the east side of the upper entrance, to protect vessels from the heavy draught of water passing through the slides. Several of the guard piers, which were injured by the ice, were repaired.

Hastings.

The dam, which was in a very leaky condition, was repaired. A coffer dam 650 feet long was placed across the river to shut off the water from the dam. The debris, to the depth of 8 or 10 feet along the whole length of the dam, was removed to the bed rock. It was found on clearing this away that there never was a cross sill, or any kind of a stop water chamber in front of the dam, but that the mud sills of the bents, which were of different sizes and lengths, were merely covered with loose stones and gravel (from which all the sand and small stones were washed out). The mud sills were cut off even, and a tier of timber 12 by 12 feet, from one to two sticks in height, was scribed to the bed rock and rock bolted. The whole of the dam on the upper side was double sheeted with 2-inch plank, from the cap to the cross sill. The face of the cross sill was puddled with clay, and on this a layer of gravel to the depth of 4 feet on the lower side, and on this the loose shale rock was thrown. The dam is now perfectly tight.

The ice removed part of the old sheeting on the lower side of the dam, and took out about 50 feet of the crib work on which the lower apron rested.

Chisholm's.

Two piers were built at the entrance of the canal in which stop log checks were placed and stop logs provided therefor. The locks are in good working order, and navigation would be uninterrupted for a distance of twenty-five miles were it not for the fixed bridges of the Central Ontario Railway and county over the canal.

I have the honor to be, Sir,

Your obedient servant,

RICHARD B. ROGERS,

Superintending Engineer.

A. P. BRADLEY, Esq.,

Secretary Department Railways and Canals,

APPENDIX No 15.

ST. PETER'S CANAL.

OTTAWA, 4th August, 1887.

SIR,—I have the honor to submit the following with reference to the St. Peter's Canal:—

Navigation through the canal closed on the 4th January, and opened on the 20th April of the present year.

The following is a statement of the traffic through the canal during the year ended 30th June, 1887:

Year.	Vessels.		Tonnage.		Tolls Collected.	
	North.	South.	North.	South.	North.	South.
1886.	No.	No.	Tons.	Tons.	\$ cts.	\$ cts.
July	163	122	9,106	9,372	93 65	172 00
August	122	110	8,308	5,097	110 00	79 00
September	90	80	8,207	4,985	105 00	88 00
October	130	109	12,406	13,957	38 11	98 14
November	40	54	1,974	2,209	42 32	56 45
December	26	18	1,472	1,712	32 45	24 22
1887.						
January	2	3	106	141	4 10	2 30
April	3	2	101	115	2 10	4 00
May	94	59	3,784	3,512	103 11	88 11
June	124	98	9,108	7,542	94 21	88 44
Totals	794	655	54,632	48,462	625 05	700 66

To this total of \$1,325.71 for tolls collected must be added the sum of \$750, paid as commutation by the steamers "Marion" and "Neptune," making a grand total of \$2,075.71.

I have to report that the works of the canal, with the exception of the retaining wall at the southern entrance, stood very well during the fiscal year, and are now in good working order.

A special appropriation having been made for repairs at the southern entrance, they will be proceeded with at once, to ensure completion before the setting in of winter.

I am, Sir,

Your obedient servant,

HENRY F. PERLEY,
Engineer in Charge.

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

APPENDIX No. 16.

UPPER ST. LAWRENCE AND TRENT VALLEY CANALS.

PETERBOROUGH, 21st November, 1887.

SIR,—I have the honor to submit the following report on the works in my charge for the fiscal year 1886-87, and generally to date.

The works referred to are the Murray Canal, and the Galops Rapid, improvements on the Upper St. Lawrence.

Murray Canal.

This work is situated at the head of the Bay of Quinté, and extends from the channel, across the isthmus of Murray to Presqu'île Bay, on Lake Ontario, a natural harbor and the future western terminus of river navigation.

This, the "Harbor of Refuge" of the north east shore of the lake, lies near the village of Brighton, about 75 miles west of Kingston, and within 120 miles of Port Dalhousie the entrance to the Welland Canal.

The works are embraced in a distance of $9\frac{1}{2}$ miles and consist in—

1. The cutting—or canal proper—through the isthmus, and the formation by dredging and piers, of convenient entrances at either end, a distance of fully six miles, located on a direct line from navigable water in the Bay of Quinté through 12 O'clock Point, Dead Creek Marsh, Wuse's Creek, and towards the Brighton wharf.

The canal is practically an artificial "strait," or channel without locks, and is crossed by one railway and three highway bridges.

2. The formation by dredging of a new entrance and channel to the harbor through the "middle ground" and the other shoals which obstruct the present entrance, and also of a channel near the Brighton shore, to connect the harbor with the upper entrance to the "Strait," a distance of about three miles.

The width of the canal across the isthmus is 80 feet on bottom, and that of the entrances thereto 200 feet, with a depth at ordinary low water (or zero of the Toronto harbor gauge) of 12 feet 6 inches, fully one foot below the level of the "Telegraph" and other shoals in the Bay of Quinté.

The new entrance to Presqu'île harbor is "bell-mouthed" in shape, and varies in width from over 1,000 feet outside the main light, to 200 feet in the channel-way off Salt Point light, with a maximum depth of 16 feet.

In connection with the harbor and new entrance, the attention of the Department is again called to the necessity for immediate action with a view to the preservation of the standing timber remaining on the Presqu'île peninsula.

The progress on the works during the past season has been generally satisfactory; six dredges having been continuously employed on the excavation, as a result the new entrance and channel way across the "Middle ground" and "Calf pasture" shoals are now practically completed.

In the canal, rock at a low elevation above bottom has appeared in the vicinity of the Brighton road bridge site, and is supposed to extend irregularly over a distance of about 2,000 feet, with this exception, and some bottoming near Gould's clearing, the bulk of the excavation on this portion of the work is finished.

The excavation remaining to be done, consists principally in the completion of the prism of canal to its full width and lines, including the bottoming as above, also

the cutting of side ditches, trimming banks, towpath, &c., and the formation of the channel way near Brighton, to connect the harbor with the upper entrance to the "Strait."

The rip rap protection to the banks has been commenced at the Bay of Quinté entrance.

The piers at both entrances are well advanced, and will be completed early next season.

The masonry and superstructure of the Smithfield road bridge was begun and finished during the past season.

The superstructure and approaches of the Trenton road bridge have also been completed, together with the superstructure of the Central Ontario Railway bridge, and the permanent way connected with the latter structure has been replaced on the original alignment.

Only one bridge, therefore, now remains to be built, viz., that at the Brighton road.

The contract was entered into with Messrs. J. D. Silcox & Co., 24th August, 1882, and subsequently, in 1886, a contract for the superstructure of the railway bridge, was awarded to the Dominion Bridge Company, and that for the three road bridges to Mr. R. Weddell, of Trenton.

Galop's Rapids Improvements.

This work is situated near the western end of the Williamsburgh Canals, about seven miles below Prescott, and is the first of the series of rapids which obstruct the navigation of the St. Lawrence.

The improvement was designed in connection with the enlargement of the St. Lawrence Canals, and consists in the formation, by submarine excavation, of a direct channel way through the rapid, traversing the five principal shoals of limestone in situ, within the distance of three-quarters of a mile, and measuring about 2,000 feet across on the centre line of channel.

These shoals are required to be reduced to such an extent, as will afford a depth of 17 feet at ordinary low water, with a channel throughout of not less than 200 feet in width at bottom.

The conduct of the work has been difficult, and sometimes very dangerous from being carried on in the main channel of the river, in rapid and, as at Lower Bar, turbulent water, at a considerable distance from shore, and liable, moreover, to frequent interruptions from navigation, whilst no interference therewith by the contractor in the prosecution of his work was permitted. Nevertheless, by the exercise of great skill and perseverance, the completion of the principal and most difficult portion of the contract has now been successfully accomplished, and it is therefore anticipated that under ordinary circumstances its full completion may be looked for next year.

Season of 1887.

The chain vessel, or dredge commenced operations at Upper Bar on 4th May, and will continue work thereon until the close of the season.

The "Torpedo," or drill scow commenced work on the 26th May, and was engaged until 18th July in drilling and blasting a small outlying shoal in the channel immediately below Lower Bar.

Having thus completed all the operations of drilling and blasting, as required under the present contract, the vessel was removed to the Galops Canal and laid up for the remainder of the season.

The present state of the work is as follows, viz. :—

1. Upper Bar—Drilling and blasting finished; dredging about three-quarters finished.

-
2. North Shoal—Drilling and blasting finished; dredging not commenced.
 3. Caledonia Shoal—Drilling and blasting finished; dredging not commenced.
 4. Island Shoal—Drilling and blasting finished; dredging finished.
 5. Lower Bar—Drilling and blasting finished; dredging nearly completed.
 - 5a. The outlying shoal—Drilling and blasting finished; dredging not commenced.
- The work was commenced in 1880 under a contract awarded to W. Davis & Sons, by whom it was transferred in 1882, to Messrs. E. E. Gilbert & Sons, the present contractors.

I have the honor to be, Sir,

Your obedient servant,

TOM. S. RUBIDGE,

Engineer in Charge.

A. P. BRABLEY, Esq.,

Secretary Department Railways and Canals.

APPENDIX No. 17.

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.	53	Barrow Hematite Steel Co.
2	Richard Fuller.	54	Guest & Co.
3	F. J. Barnard.	55	West Cumberland Iron and Steel Co.
4	Oliver, Davidson & Co.	56	The Kellogg Bridge Co.
5	Joseph Whitehead.	57	The Truro Patent Frog Co.
5a	Joseph Whitehead.	58	W. Hazelhurst.
6	Guest & Co.	59	Whitehead, Ruttan & Ryan.
7	Ebbw Vale Steel, Iron and Coal Co.	60	D. O. Mills.
8	Murray Steel and Iron Co.	61	D. O. Mills.
9	West Cumberland Iron and Steel Co.	62	D. O. Mills.
10	West Cumberland Iron and Steel Co.	63	D. O. Mills.
11	Naylor, Benson & Co.	64	Ryan, Whitehead & Ruttan.
12	Hon. A. B. Foster.	65	James Crossen.
13	Sifton & Ward.	66	Bowie & McNaughton.
	Purcell & Ryan.	67	Moncton Car Co.
14	Sifton & Ward.	68	Ontario Car Co.
	Jos. Whitehead (completing contract No. 14).	69	North-West Transportation Co.
15	Joseph Whitehead.	70	North-West Transportation Co.
16	Canada Central Railway Co.	71	Toronto Bridge Co.
17	Anderson, Anderson & Co.	72	Ontario Car Co.
18	Red River Transportation Co.	73	Toronto Bridge Co.
19	Moses Chevette.	74	Wm. Gooderham, jun.
20	Merchants Lake and River Steamship Co.	75	Pillow, Hersey & Co.
21	Patrick Kenny.	76	Cooper, Fairman & Co.
22	Holcomb & Stewart.	77	Stubbs & Co.
23	Sifton & Ward.	78	Skead & Haycock.
24	Oliver, Davidson & Co.	79	The Truro Patent Frog Co.
25	Purcell & Ryan.	80	James Crossen.
26	James Isabester.	81	Dunlop & Rannie.
27	Merchants Lake and River Steamship Co.	82	Ontario Car Co.
28	Red River Transportation Co.	83	James Crossen.
29	Cooper, Fairman & Co.	84	Ontario Car Co.
30	Robb & Co.	85	Nobles & Follis.
31	Patent Bolt & Nut Co.	86	Fairbanks, Morse & Co.
32	Cooper, Fairman & Co.	87	James Crossen.
32a	LeMay & Blair.	88	Walter Oliver.
33	Kavanagh, Murphy & Upper.	89	J. Paterson.
34	North-West Transportation Co.	90	Ferris, Paul & Milwar.
35	Cooper, Fairman & Co.	91	Canadian Pacific Railway Co.
36	William Robinson.	92	Andrew Onderdonk.
37	Heney, Charlebois & Flood.	93	Andrew Onderdonk.
38	Edmond Ingalls.	94	Horton & Son.
39	John Irving.	95	Bayliss, Jones & Bayliss.
40	Gouin, Murphy & Upper.	96	Guest & Co.
41	Purcell & Co.	97	John McDonald.
42	Manning, Macdonald, McLaren & Co.	98	Colin Nicol Black.
43	Joseph Upper & Co.	99	Canadian Pacific Railway Co.
44	West Cumberland Iron and Steel Co.	100	A. Onderdonk, station building, Yale.
45	Barrow Hematite Steel Co.	101	A. Onderdonk, station building, Lytton.
46	Ebbw Vale Steel, Iron and Coal Co.	102	A. Onderdonk, station building, Ashcroft.
47	Patent Bolt and Nut Co.	103	John Philip Bacon, water tanks.
48	John Ryan.	104	A. Onderdonk, station buildings.
49	Richard Dickson.	105	Wilson & McCready, engine house.
50	Miller Brothers & Mitchell.	106	Head Wrightson & Co.
51	Dominion Bolt Co.	107	James Leamy & Donald McGillivray, rebuild-
52	North-West Transportation Co.		ing wharf at Port Moody, B. C.

APPENDIX No. 18.

ST. LAWRENCE NAVIGATION—TABLE OF DISTANCES—A.

FROM STRAITS OF BELLE-ILE TO PORT ARTHUR, AT HEAD OF LAKE SUPERIOR, BY WATER.

From	To	Sections of Navigation.	Statute Miles.	
			Inter-mediate.	Total to Straits of Belle-Ile.
Straits of Belle-Ile	Cape Whittle	Gulf of St. Lawrence	240	240
Cape Whittle	West Point, Anticosti	do	201	441
West Point, 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	8 $\frac{1}{2}$	994 $\frac{1}{2}$
Lachine	Beauharnois	Lake St. Louis	15 $\frac{1}{2}$	1,009 $\frac{1}{2}$
Beauharnois	Ste. Océile	Beauharnois Canal	11 $\frac{1}{2}$	1,021
Ste. Océile	Cornwall	Lake St. Francis	32 $\frac{1}{2}$	1,053 $\frac{1}{2}$
Cornwall	Dickinson's Landing	Cornwall Canal	10 $\frac{1}{2}$	1,064
Dickinson's Landing	Farran's Point	River St. Lawrence	5	1,070
Farran's Point	Upper end of Croyle's Island	Farran's Point Canal	$\frac{1}{2}$	1,071
Upper end of Croyle's Island	Williamsburg or Morrisburg	River St. Lawrence	10 $\frac{1}{2}$	1,081 $\frac{1}{2}$
Williamsburg	Rapide Plat	Rapide Plat Canal	4	1,085 $\frac{1}{2}$
Rapide Plat	Point Iroquois Village	River St. Lawrence	4 $\frac{1}{2}$	1,090
Point Iroquois Village	Upper end Presqu'île	Point Iroquois Canal	3	1,093
Presqu'île	Point Cardinal, Edwardsburg	Junction Canal	2 $\frac{1}{2}$	1,095 $\frac{1}{2}$
Point Cardinal	Head of Galops Rapids	Galops Canal	2	1,097 $\frac{1}{2}$
Galops Rapids	Prescott	River St. Lawrence	7 $\frac{1}{2}$	1,105
Prescott	Kingston	do	59	1,164
Kingston	Port Dalhousie	Lake Ontario	170	1,334
Port Dalhousie	Port Colborne	Welland Canal	26 $\frac{1}{2}$	1,360 $\frac{1}{2}$
Port Colborne	Amherstburg	Lake Erie	232	1,592 $\frac{1}{2}$
Amherstburg	Windsor	River Detroit	18	1,610 $\frac{1}{2}$
Windsor	Foot of St. Mary's Island	Lake St. Clair	25	1,635 $\frac{1}{2}$
Foot of St. Mary's Island	Sarnia	River St. Clair	33	1,668 $\frac{1}{2}$
Sarnia	Foot of St. Joseph's Island	Lake Huron	270	1,938 $\frac{1}{2}$
Foot of St. Joseph's Island	Foot of Sault Ste. Marie	River St. Mary	47	1,985 $\frac{1}{2}$
Sault Ste. Marie	Head of Sault Ste. Marie	Sault Ste. Marie Canal	1	1,986 $\frac{1}{2}$
Head of Sault Ste. Marie	Pointe aux Pins	River St. Mary	7	1,993 $\frac{1}{2}$
Pointe aux Pins	Port Arthur	Lake Superior	266	2,259 $\frac{1}{2}$
Port Arthur to Lake Shebandowan			45	
Lake Shebandowan to North-West Angle			312	
North-West Angle to Winnipeg			95	
Pointe aux Pins to Duluth			390	

Of the 2,259 $\frac{1}{2}$ miles from the Straits of Belle-Ile to the Head of Lake Superior, 71 miles are artificial navigation, and 2,188 $\frac{1}{2}$ 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 Port Arthur is 532 miles.

APPENDIX No. 19.

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.
				Rise Ft. In		Feet.		Feet.
1	Ottawa	0	8	82 0	3	230	18	4.00
2	Hartwell's	4 1/4	2	22 0	.....	1,320	33	
3	Hogaback	5 1/2	2	13 6	1	100	28	
4	Black Rapids	9 1/2	1	10 0	1	320	60	
5	Long Island	14 1/2	3	27 0	3	300	12	
6	Burritt's	40 3/4	1	10 6	1	850	68	
7	Nicholson	43 3/4	2	15 2	1	240	14	
8	Clowes	44 1/2	1	10 0	1	500	9	
9	Merrickville	46 1/2	3	25 0	1	481	16	
10	Maitland	55	1	4 9	1	150	6	
11	Edmunds	58 1/2	1	10 10	1	270	8	
12	Old Slys	60 1/2	2	15 6	1	343	8	
13	Smith's Falls	61 1/2	4	33 9	2	250	20	
14	First Rapids or Poonamalie	64	1	7 9	1	600	24	
15	Narrows	83 1/2	1	4 0	1	260	5	
Total rise at low water .....		.....	.....	292 3	.....	600	9	0.06
				Fall.				
16	Isthmus	87 1/2	1	4 0	.....	.....	.....	1.25
17	Chaffey's	92	1	12 6	.....	.....	.....	0.13
18	Davis	94 1/2	1	9 0	1	300	15	0.06
19	Jones' Falls	97 1/2	4	60 0	1	300	60	0.25
20	Brewer's Upper Mills	108 1/2	2	19 0	1	200	20	1.75
21	do Lower Mills	110	1	14 2	1	200	12	4.25
22	Kingston Mills	120 1/2	4	46 8	1	6,042	14	0.25
23	Kingston	126 1/2	.....	.....	.....	.....	.....	.....
Total fall at low water .....		.....	.....	165 4	.....	.....	.....	.....
Total .....		.....	47	.....	24	15,472	.....	16.46

APPENDIX No. 20.

TABLE showing the dates of the closing of the Canals in the Autumn of 1886 and of the opening in the Spring of 1887.

Canals.	Closing.	Opening.
Lachine Canal.....	30 November, 1886.	5 May, 1887.
Beauharnois Canal.....	1 December, 1886.	3 May, 1887.
Cornwall Canal.....	8 December, 1886.	4 May, 1887.
Williamsburg Canal.....	4 December, 1886.	30 May, 1887.
Welland Canal—		
New Canal.....	4 December, 1886.	4 May, 1887.
Old Canal.....		
St. Anne's Lock and Dam.....	27 November, 1886.	4 May, 1887.
Carillon Canal.....	30 November, 1886.	2 May, 1887.
Grenville Canal.....		
Culbute Lock and Dam.....	30 November, 1886.	1 May, 1888.
Chute à Blondeau.....		
Rideau { Kingston Mills.....	30 November, 1886.	2 May, 1887.
{ Ottawa.....	29 November, 1886.	3 May, 1887.
St. Ours Lock.....	30 November, 1886.	2 May, 1887.
Chambly Canal.....	1 December, 1886.	5 May, 1887.
Erie Canal (New York).....	1 December, 1886.	7 May, 1887.
St. Peter's Canal (Cape Breton).....	4 January, 1887.	20 April, 1887.
Trent Canal Works.....	23 November, 1886.	27 March, 1887.

APPENDIX No. 21.

STATEMENT of Contracts entered into between 1st July, 1886, and 30th June, 1887.

Railways and Canals.	Deed, Letter or otherwise, under which Contract was made.	Name of Contractor.	Date of Contract.	General Description.
Canadian Pacific Railway	Contract 8,519...	Jas. Leamy and D. McGillivray	Sept. 7, 1886	Remove and rebuild part of wharf at Port Moody, B.C.
Intercolonial Railway	do 8,523...	John F. Teed	do 8, 1886	Construct passenger station and freight shed at Dorchester, N.B.
do	do 8,456...	Chas. Cammell & Co. (Limited)	July 26, 1886	Supply 2,000 tons steel rails, 67 lbs. per yard, and fish plates for Intercolonial Railway, delivered at Intercolonial Ry. Wharf at Richmond, or at Halifax, N.S.
do	do 8,476...	Moss Bay Hematite Iron and Steel Co. (Limited)	do	Supply 230 tons steel rails and fish plates for Contract No. 8,419.
do	do 8,477...	G. P. Jardine and Paul Lea	do 19, 1886	Erect a passenger station at Glengarry.
do	do 8,495...	Jas. Harris & Co.	do 30, 1886	Construct 30 box cars, delivered on track at St. John, N.B.
do	do 8,499...	Peter Nadeau	Aug. 9, 1886	Construct passenger station at Belladune.
do	do 8,501...	James Crossen	do 23, 1886	Construct drawing-room car, delivered at Chaudière Junction.
do	do 8,524...	Patk. A. Fahey	Sept. 4, 1886	Construct wall at Young St. Trestle, Halifax.
do	do 8,528...	Frs. Soucy	do 10, 1886	Construct freight shed at Notre Dame du Portage.
do	do 8,529...	Geo. Fleming & Sons	do 10, 1886	Construct iron foot bridge at Dorchester Street, St. John, N.B. Widen overhead bridge at Wall Street.
do	do 8,530...	A. Grant & Son	do 10, 1886	Construct cribwork protection near Restigouche River Bridge at Metepedia Station, Que.
do	do 8,531...	Rhodes, Curry & Co.	do 2, 1886	Construct coal trestle at Young Street, Halifax, N.S.
do	do 8,535...	do	do 17, 1886	Erect a station and freight shed, Beaver Bank, N.S.
do	do 8,547...	Albert Railway Co.	Oct. 19, 1886	Mortgage securing re-payment to Government of \$15,000 advanced to the Company by way of loan under Act 49 Vic, c. 10, for railway from Hopewell to Salisbury, a feeder of Intercolonial Railway.
do	do 8,571...	F. B. Atkinson,	Sept. 17, 1886	Blasting and removing rock at Davies' ship yard, Lévis, Que.
do	do 8,572...	Rhodes, Curry & Co.	Oct. 11, 1886	Addition to repair shop, St. John, N.B.
do	do 8,573...	do	do 4, 1886	Station and freight shed at Deiby, N.B.
do	do 8,580...	Chas. Cammell & Co. (Limited)	do 27, 1886	Supply 12,000 tons Bessemer steel Hange rails, 67 lbs. per yard, delivered on railway wharf at Halifax, N.S., for Intercolonial Railway.

STATEMENT of Contracts entered into between 1st July, 1886, and 30th June, 1887—Continued.

Railways and Canals.	Deed, Letter or otherwise, under which Contract was made.	Name Contractor.	Date of Contract.	General Description.
Intercolonial Railway	Contract 8,730...	B. Atkinson.....	March 4, 1887	Fencing between St. Simon and St. Henri, 2,660 rods.
do	do 8,731...	do O. Oahoun.....	Feb. 25, 1887	Fencing between Sackville and Moncton, 7,776 rods, including Shediac Branch.
do	do 8,732...	do Edward Crossman.....	do	Fencing between Barnaby River and Campbellton, 3,030 rods.
do	do 8,734...	do James Boyd.....	March 9, 1887	To do all the laundry work for postal, sleeping and official cars.
do	do 8,737...	do Joseph Geddes.....	Feb. 24, 1887	Fencing between a point 4 miles north of Kent Junction and Coal Branch, 1,302 rods.
do	do 8,738...	do Andrew Dunn.....	Feb. 24, 1887	Fencing between Kent Junction and Barnaby River, 1,540 rods; Moncton to Adamsville, 1,298 rods.
do	do 8,739...	do Philibert Onelette.....	Mar. 24, 1887	Construct station and freight room at St. Joseph, Lauzon, Que.
do	do 8,740...	do Rhodes, Curry & Co.....	do	Construct coal trestle at Londonderry, N.S.
do	do 8,741...	do W. R. Geldert.....	do	Construct cribwork at Pictou Station, N.S., 1463 ft. x 10 x 9 ft. high.
do	do 8,742...	do Starr Manufacturing Co. (Limited).....	do	Supply 40 20-ton coal cars.
do	do 8,743...	do John N. McElmon.....	do	Construct a wooden bridge over canal at Dartmouth, near Dartmouth Branch Railway.
do	do 8,745...	do Odillon Mignault.....	do	Fencing between Assametquagan and Sayabec, 3,194 rods.
do	do 8,747...	do Bellavance & Boulay.....	do	do Sayabec and St. Moise 1,120 do
do	do 8,748...	do E. Godbout & Co.....	do	do St. Moise and Little Metis 792 do
do	do 8,750...	do Carrier, Laine & Co.....	do	do Little Metis and St. Flavie 2,587 do
do	do 8,754...	do Smith & McPhail.....	do	do St. Flavie and Rimouski 1,808 do
do	do 8,686...	do Neil Buchanan.....	do	Construct iron trestle at Humphrey's Mills Stream, 2 miles east of Moncton.
do	do 8,687...	do Robert Ellis (senior).....	do	Interchange of freight for Intercolonial Railway, at Pointe du Chêne, Shediac, and between it and Buctouche.
do	do 8,688...	do John Miller.....	do	Supply 600 hemlock sleepers delivered at O'Leary Station. Supply 5,000 hemlock and 1,000 black spruce sleepers, delivered at O'Leary Station.
				Supply 1,000 hemlock sleepers, delivered at Arthur's Siding.

do	8,689...	J. A. Beairto	do	17, 1887	Supply 2,500 hemlock sleepers, delivered at Conway Station.
do	8,690...	Robert Ellis (junior)	do	17, 1887	Supply 10,000 hemlock and 10,000 spruce sleepers, delivered between Bloomfield and Wellington.
do	8,691...	J. R. Larkins.....	do	18, 1887	Supply 13,200 hemlock sleepers delivered between Bloomfield and Wellington.
do	8,692...	F. T. Arsenault.....	do	17, 1887	Supply 500 hemlock and 3,000 black spruce sleepers, delivered at Richmond and St. Nicholas.
do	8,693...	M. A. McNeill	do	17, 1887	Supply 800 hemlock and 600 black spruce sleepers, delivered at Erse and Pont Hill.
do	8,695...	Archibald & Co.....	May	10, 1887	Supply 6,200 tons of coal, delivered at Charlottetown, 3,150 tons; Cape Traverse, 150 tons; Souris, 300 tons, 300 tons; Cape Traverse, 150 tons; Souris, 300 tons, in Strait of Canso.
do	8,576...	O'Donoghue & Kennedy.	Nov.	11, 1886	Construct a crib block for wharf at Point Tupper, N.S., Breton, N.S.
do	8,694...	Sims & Slater.....	Jan.	28, 1887	Construct railway from Grand Narrows to Sydney, Cape Breton, N.S.
do	8,496...	Murray & Cleveland	Sept.	28, 1886	Deepen section A.
do	8,705...	Hamilton Bridge and Tool Co.....	March	12, 1887	Construct a wrought iron caisson gate delivered at Port Dalhousie.
do	8,677...	Burns & Smith.....	Jan.	24, 1887	Construct 6 piers, 1 rest pier, 2 abutments and approaches, with superstructure (except swing) of a wooden bridge at Brass Point, between Storrington and Pittsburg.
do	8,502...	Robt. Weddell	Sept.	17, 1886	Construct 3 road bridges on Murray Canal, for Trenton, Smithfield, and Brighton Roads.
do	8,504...	Dominion Bridge Co. (limited). ..	Oct..	6, 1886	Construct 1 railway bridge over Murray Canal for Central Ontario Railway.
do	8,542...	Chas. Wynne.....	July	16, 1886	Construct 3 pairs lock gates for Fenelon Falls Canal.
do	8,235...	Brockville, Westport and Sault Ste. Marie Railway Co.....	do	16, 1886	Subsidy agreement, line from Brockville to Westport, 40 miles.
do	8,292...	Central Railway Co.....	do	7, 1886	Subsidy agreement, line from Salmon River, at head of Grand Lake, to Norton Station, Intercolonial Railway, between Sussex and St. John, N.B., 40 miles.
do	8,440...	Ontario and Pacific Ry. Co.....	do	27, 1886	Subsidy agreement, for railway from Cornwall to Perth, est'd Newington, Cryler, Manotick and Franktown.
do	8,409...	Canada Atlantic Railway Co...	July	12, 1886	Subsidy agreement for railway, Clark's Island to Valleyfield, Lacolle to 1/4 mile west of Johnson's.
do	8,444...	Irondale, Bancroft and Ottawa Railway Co.....	Aug.	19, 1886	Subsidy agreement for railway from Midland Division, Grand Trunk Railway, at Snowden, to Bancroft, 50 miles.
do	8,408...	Northern and Western Railway Co. of New Brunswick	do	14, 1886	Subsidy agreement between termini from Fredericton and from Indianatown.

SUBSIDIZED RAILWAYS.

- Brockville, Westport and Sault Ste. Marie Railway Co.....
- Central Railway Co.....
- Ontario and Pacific Railway Co.....
- Canada Atlantic Railway Co
- Irondale, Bancroft and Ottawa Railway Co.....
- Northern and Western Railway Co. of New Brunswick

STATEMENT of Contracts entered into between 1st July, 1886, and 30th June, 1887—Continued.

Railways and Canals.	Deed, Letter or otherwise, under which Contract was made.	Name of Contractor.	Date of Contract.	General Description.
SUBSIDIZED RAILWAYS.				
L'Assomption Railway Co.	Contract 8,498...	L'Assomption Railway Co.	Sept. 16, 1886	Subsidy agreement for railway from L'Epiphanie to L'Assomption, 24 miles.
Buctouche and Moncton Railway Co.	do 8,509...	Buctouche and Moncton Railway Co.	do	Subsidy agreement, line from Moncton to Buctouche, N.B.
West Ontario Pacific Railway	do 8,526...	West Ontario Pacific Railway	Nov. 2, 1886	Subsidy agreement, 27 miles, Woodstock to London (line changed subject to approval of Parliament).
Great Eastern Railway Co.	do 8,538...	Great Eastern Railway Co.	Oct. 12, 1886	Subsidy agreement, line from Yamaska to River St. Francis, 10 miles.
Joggins Railway Co.	do 8,578...	Joggins Railway Co.	Nov. 30, 1886	Subsidy agreement, 12 miles from McOann Station, Intercolonial Railway, to Joggins, on Cumberland Bay, N.S.
Canadian Pacific Railway	do 8,579...	Toronto, Grey and Bruce Railway Co.	Jan. 20, 1887	Subsidy agreement, 5 miles, Gilegannan to Wingham, Ont.
Northern and Western Railway Co. of New Brunswick	do 8,648...	Northern and Western Railway Co. of New Brunswick	Aug. 12, 1887	Subsidy agreement, extension to deep water at Chatham, N.B., 2 miles.
Stewiacke Valley and Lansdowne Railway Co. (Limited)	do 8,649...	Stewiacke Valley and Lansdowne Railway Co. (Limited)	Dec. 17, 1886	Subsidy agreement, railway from Intercolonial Railway, through Stewiacke Valley towards Lansdowne, 26 miles.
Carraquet Railway Co.	do 8,674...	Carraquet Railway Co.	Feb. 19, 1887	Subsidy agreement, from end of present subsidized portion of their railway at Lower Carraquet to Shippegan, N.B., 10 miles.
Western Counties Railway Co.	do 8,701...	Western Counties Railway Co.	Jan. 31, 1887	Company agrees to release to Government its title to Windsor Branch, and to build railway from Annapolis to Digby and from Yarmouth to Annapolis.

APPENDIX No. 22.

GENERAL STATEMENT SHOWING

- 1st. Water Power and other Public Property leased on Canals, &c., during the Fiscal year ending 30th June, 1887.
- 2nd. Property purchased or damaged by the Department of Railways and Canals, for the Dominion Railways or Canals; and Property sold by the same Department, as not being required for said Railways or Canals, during the Fiscal year ending 30th June, 1887.
- 3rd. Agreements respecting subsidies granted by the Dominion Government to aid in the construction of Railways, entered into between certain Railway Companies and the Minister of Railways and Canals, during the Fiscal year ending 30th June, 1887.

GENERAL STATE

1st. Water Power and other Public Property leased on Canals

Date of Signature.	Terms of Lease.	Lessees.	Property Leased.	For what purpose used.
			<i>Ste. Anne Canal.</i>	
Oct. 19, '87	Pleasure of the Government.	D. Lebeau.....	Strips encroached upon on lots 112, 113, Ste. Anne de Bellevue.	His buildings....
			<i>Grenville Canal.</i>	
July 21, '87	do ...	Rev. A. J. Grier.....	A brick house on lot No. 8, 1st range, Grenville.	Dwelling.....
			<i>Rideau Canal.</i>	
Aug. 21, '86	20 years only.	Brown & Weston.....	Part of Reserve at Stewarton, lot F, Con. C, and lot F, Con. D, Nepean, for wharves.	Distributi'g yard for lumber and store.
July 20, '87	21 years, renewable for ever.	J. P. & B. Tett, Executors.	Part of Reserve near Isthmus Lock, part 1 and 2 in 4th Con., North Crosby.	.....
Aug. 31, '87	Pleasure of the Government.	Oath. O'Neil.....	Part of Reserve lot L, Con. C, Nepean, near Dow's swamp.	Cultivation.....
			<i>Trent Canal.</i>	
July 25, '87	21 years only..	Francis Sandford....	Part of Water St., between river and Canal, Fenelon Falls village.	Carriage factory
			<i>Intercolonial Railway.</i>	
do 1, '86	1 year.....	Jos. Fortin	License to sell books, &c., on cars, Lévis to Campbellton.	.....
do 1, '87	do	do	do do .....	.....
do 1, '86	do	Canada Ry. News Co.	License to sell books, &c., on cars, Halifax, St. John, Campbellton, and Point du Chêne.	.....
do 1, '87	do	do	do do .....	.....
do 6, '87	3 years.....	Sidney Gray.....	License to sell books on trains and stations, P. E. Island Ry.	.....
June 27, '87	20 years.....	C. & H. Primrose to Government.	Water supply from source on their lot at Pictou, N.S.	.....
			<i>Carillon Canal.</i>	
Sept. 20, '86	2 months.....	Wm. Davis.....	5 Govt. scows, now at Carillon for his works at Ste. Anne.	.....
May 26, '87	1 do	Union Bridge Co.....	2 Govt. scows, now at Ste. Anne, for their work on C.P.B. bridge.	.....
			<i>Williamsburgh Canals.</i>	
Oct. 13, '86	21 years, renewable for ever.	Municipal Council, Village of Morrisburgh.	Lot above lock No. 23, Morrisburgh, Rapide Plat Canal.	Supply water to village.
			<i>Welland Canal.</i>	
Sept. 16, '86	Pleasure of the Government.	H. A. Rose.....	Part of lot 26 in 5th Con., Crowland, N. of West Main St. Welland	His buildings....
Dec. 10, '86	do ...	R. F. Lattimore.....	The "Boomer Mill site," Dunnville.	Flour mill.....

MENT SHOWING

and Railways, during the Fiscal Year ended 30th June, 1887.

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 Due each Year.	When first instalment was Due.	
			\$ cts.	\$ cts.			
.....	15 ft. 10 in.	Sept. 1, '87	1 00	1 00	Sept. 1...	On delivery of lease.	
.....	.....	May 1, '87	5 00	5 00	May 1...	do ...	
.....	0.3 x 2.3 acres.	Aug. 1, '86	100 00	100 00	Aug. 1...	do ...	
.....	.....	May 1, '83	{ Land \$1 Store 2 }	3 00	May 1...	May 1, '87	Renews lease No, 2372.
.....	4.50 acre..	Aug. 1, '87	9 00	9 00	Aug. 1...	On delivery of lease.	
.....	0.66 acre..	Dec. 1, '86	50 00	50 00	Dec. 1...	Dec. 1, '86	
.....	.....	July 1, '86	400 00	33 34	Monthly...	July 1, '86	
.....	.....	do 1, '87	400 00	33 34	do ...	do 1, '87	
.....	.....	do 1, '86	1100 00	91 67	do ...	do 1, '86	
.....	.....	do 1, '87	1100 00	91 67	do ...	do 1, '87	
.....	.....	Jan. 1, '87	300 00	25 00	do ...	5th day of each month	
.....	.....	June 27, '87, for the 20 years.	3000 00	in all....	.....	Paid cash...	
.....	.....	Sept. 20, '86	100 00	for the 2 months....	.....	.....	Paid and returned.
.....	.....	May 26, '87	20 00	for the 1 month.....	.....	.....	Paid.
20 h.p...	0.57 acre..	Sept. 1, '86	70 00	35 00	Jan. 1 and July 1.	July 1, '87	
.....	0.01.....	March 10, '86	1 00	1 00	March 10...	On delivery of lease.	He paid \$4 for arrears of rent from 1866 to 1886.
40 h.p...	0.15.....	Jan. 1, '87	360 00	180 00	Jan. 1 and July 1.	Jan. 1, '87	He assigned to Jno. Moody & Son, Dec. 27, 1886; Minister consented Feb. 21, 1887.

GENERAL STATEMENT showing: 1st. Water Power and other

Date of Signature.	Term of Lease.	Lessees.	Property Leased.	For what purpose used.
<i>Welland Canal—Concluded.</i>				
Dec. 24, '86	Pleasure of the Government.	Rolston & Haskins...	The "Mittleberger Mill site," Dunnville.	Lighting village by electricity.
March 23, '87	do	Phelps Bros.	Surplus water, at town of Welland, in winter only.	Grist mill.
Sept. 8, '87	21 years, renewable for ever.	John Hill.	Lot 15, village Port Robinson, part 203, Thorold.	do
<i>Beauharnois Canals</i>				
Nov. 29, '86	Pleasure of the Government	Valleyfield Canning Co.	Wharf lot above Guard Lock, Valleyfield, on Rivière Basin.	Wharf and shed.
May 31, '87	21 years, renewable for ever.	Valleyfield Water Works Co.	Pt. lot 830, Town Salaberry de Valleyfield, on Grande Isle.	Water for town.
June 13, '87	Pleasure of the Government	Bell Telephone Co. of Canada.	Place poles and wires along canal, from Melocheville to Valleyfield.	.....
<i>Lachine Canal.</i>				
Sept. 2, '86	do	Pierre Poulin.	Lots 1 and 2, W. of Basin No. 4, St. Gabriel, Montreal.	Piling lumber ...
April 19, '87	do	H. Bulmer, jr., & Bro.	Lots 3, 4, 5, 6 and 7, E. of Basin No. 4, St. Gabriel, Montreal.	do
Aug. 30, '86	do	O. Dufresne, jr., & Bro.	Lots 8 and 9, W of Basin No. 3, St. Gabriel, Montreal	do
do 31, '86	do	Bourgouin & Thibault.	Lots 12 W, 15 and 16, E of Basin No. 3, St. Gabriel, Montreal.	do
April 26, '87	do	Henderson Lumber Co. (Limited).	Lots 13, 14 and 18, E. of Basin No. 3, and lots 19 and 22, E. of Basin No. 2, St. Gabriel, Montreal.	do
Aug. 27, '86	do	D. Pariseau.	Lot 17, E. of Basin No. 3, St. Gabriel, Montreal.	do
Sept. 3, '86	do	Pat. McCrory.	Lots No. 20 and 21, W. of Basin No. 2, St. Gabriel, Montreal.	Coal yard
do 3, '87	do	Harbor Commissioners of Montreal.	Motive power for 40 arc light lamps (by electricity).	Lig'ing wharves, Montreal.
do 25, '86	do	Hurteau & Bro.	Lots 1, 2 and 3, S. E. of Wellington Basin, Montreal.	Piling lumber ...
do 18, '86	do	Dobell, Beckett & Co.	Lots 4, 5, 6 and 7, S. E. of Wellington Basin, Montreal.	Deal shipping. ...
do 18, '86	do	J. Burstall & Co.	Lots 8, 9 and 10, S. E. of Wellington Basin, Montreal.	Piling lumber ...
do 21, '86	10 months	Verret, Stewart & Co.	Space in Shed No. 1, St. Gabriel Basin, Montreal.	Storing salt.
do 5, '87	1 year	do	do	do
Oct. 21, '86	3 years	Warren, Scharf Asphalt Paving Co.	Lot on St. Patrick St., St. Gabriel Basin, Montreal.	Manufacture of asphalt paving
do 30, '86	8 months	Dobell, Beckett & Co.	Space in Shed No. 1, St. Gabriel Basin, Montreal.	Storing lumber. .
Dec. 21, '86	6 do	do	Space in Shed No. 2, St. Gabriel Basin, Montreal.	do

Public Property leased on Canals and Railways, &c.—*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 Due each Year.	When first instalment was Due.	
			\$ cts.	\$ cts.			
25 h.p.	0.3 acres	do 1, '87	115 00	115 00	Jan. 1...	On delivery of lease.	Cancels lease 2519 to Dunlop & Seeley. He may have 10 h. p. more for \$50. Cancels 2518.
36 h.p.	.....	Jan. 1, '87	45 00	45 00	Jan. 1...	On delivery of lease.	
15 h.p.	0.25.....	July 1, '86	86 00	43 00	Jan. 1 and July 1.	Jan. 1, '87	
.....	100 feet....	Aug. 1, '85	23 00	23 00	Aug. 1...	Aug. 1, '85	Cancels lease 5260.
260 sq inches.	7,350 feet.	Jan. 1, '87	3.50 per h. po'r.	.....	Jan. 1 and July 1.	July 1, '87	
.....	.....	June 13, '87	1 00	1 00	June 1.....	On delivery of lease.	
.....	.....	May 1, '86	592 77	592 77	May 1.....	At auction, April 27, '86	
.....	.....	do 1, '86	1,102 93	1,102 93	do	do ...	
.....	.....	do 1, '86	420 75	420 75	do	do ...	
.....	.....	do 1, '86	684 44	684 44	do	do ...	
.....	.....	do 1, '86	1,277 06	1,277 06	do	do ...	
.....	.....	do 1, '86	253 68	253 68	do	do ...	
.....	.....	do 1, '86	428 08	428 08	do	do ...	
40 h.p.	.....	Sept. 1, '86	{ 500 00 } { \$2p.h. po'r. }	.....	Sept. 1.....	Sept. 1, '87	
.....	2.37 acres.	May 1, '86	500 00	500 00	May 1.....	On delivery of lease.	
.....	2.15 do	do 1, '86	800 00	800 00	do	do ...	
.....	1.41 do	do 1, '86	800 00	800 00	do	do ...	
.....	100 × 40ft.	Aug. 1, '86	100 00	100 00	All in advance at once.	do ...	
.....	50 × 40ft.	June 1, '87	100 00	100 00	Alltogether.	do ...	
.....	19,200 feet	Oct. 1, '86	100 00	100 00	Oct. 1.....	do ...	
.....	650 × 40ft.	Sept. 1, '86	400 00	\$30 per month	.....	do ...	Continued for 1 year, by letters.
.....	200 × 40ft.	Nov. 1, '86	100 00	.....	In advance	do ...	

2nd. Property purchased or damaged by the Department of Railways and Canals, and property sold by the same Department, as not being required for, the Railways or Canals of the Dominion, during the Fiscal Year ended 30th June, 1887.

Date of Signature.	Vendors, &c.	Purchasers	Property Purchased, Sold, or Damaged.	For what Purpose used.	Area of Land.	Amount Paid.	Remarks.
Sept. 13, 1887	T. & W. Owens.	Her Majesty.	<i>Grenville Canal.</i> Release, flooding goods, &c, in cellar, on lot 11, Stonefield, by freshet in January, 1886, drainage being stopped by Canal works....	Grenville Canal....	.....	\$ c/s. 177 65	
do 22, 1886	Cath. Winters et al..	do	<i>Cornwall Canal.</i> S. pt. of E½ 4 in 1st Con., Osnabruk; land, \$197 50; damages, \$:0.....	Cornwall Canal....	0.79 acres ...	217 50	And release, Jan. 14, 1887.
Oct. 30, 1886	R. E. Moss et al.....	do	S. pt. of E½ 4 in 1st Con., Osnabruk	do	0.79 do ...	217 50	
June 28, 1887	G. O. Smith et srs., et al.....	do	E½ of lot 14, 1st Con., Cornwall, for enlargement.....	do	2.20 do ...	4,000 00	And release, July 6, 1887.
do 28, 1887	Toronto Paper Manufacturing Co. (Lim.)	do	W½ of lot 13, 1st Con., Cornwall, for enlargement.....	do	1.10 do ...	2,000 00	And release, July 5, 1887.
May 26, 1887	Acadia Coal Co.....	do	<i>Intercolonial Railway.</i> Deed of their railway, Westville to Stellarton, N S.....	Intercolonial Ry....	3 miles long	45,000 00	Transportation rates, agreement May 28, 1887. Per mile.
Sept. 13, 1885	Railway Safety Appliances Co.	do	Right to use 'Cook's All-rail Safety Switch' on all lines of Intercolonial Railway ...	do	.....	3 00	
do 3, 1887	Order in Council.....	do	Transferring from Department of Marine to this Department, the East Public Wharf at Pictou, N.S.....	do	.....	.....
Aug. 23, 1886	A. H. Murphy and J. Roche, Executors .	do	Cadastral lot 25, St. Lawrence Ward, town of Lévis, for St. Charles Branch	do	5,156 feet...	13,963 34	
Feb. 24, 1887	Hon. Geo. Couture...	do	Cadastral lot 405 Lauzon Ward, town of Lévis, for St. Charles Branch	do	5,175 do ...	19,500 00	

Date	Name	Description	do	79½ do ...	1,400 00
do 26, 1887	L. & J. Nadeau	Oadastral lot 445, Lauzon Ward, town of Lévis, for St. Charles Branch	do	...	1,400 00
Mar. 27, 1887	Helra J. Chabot	Oadastral lots 461, 461a, Lauzon Ward, town of Lévis, for St. Charles Branch	do	5,245 do ...	11,000 00
Feb. 24, 1887	Julien Chabot	Oadastral lots 468, 469, 470, Lauzon Ward, town of Lévis, for St. Charles Branch	do	{ 2,511 } feet.	30,000 00
do 21, 1887	C. Paquet	Oadastral lot 346, village of Lauzon, for St. Charles Branch	do	{ 11,712 } feet.	300 00
Dec. 12, 1886	Wm. Chapman	A number of lots in St. Lawrence Ward, town of Lévis, for St. Charles Branch	do	450 feet...	50,000 00
<p><i>Ottawa River—Damages by Dams at Rocher Fendu and Grand Calumet Falls.</i></p>					
Sept. 18, 1886	R. R. Armstrong et al	Release, damages to lot 9, 1st Con., Litchfield	Culbute Works	...	350 00
Nov. 26, 1886	N. McGusig	do do do	do	...	300 00
do 26, 1886	W. T. Durrell	do do do 21 (or 20-21) 3rd Con., Litchfield	do	...	150 00
June 30, 1886	J. W. and J. Bryson	do do do 2, in A, Mansfield	do	...	125 00
Dec. 18, 1886	Wm. Gillis Sons and J. Colton	do do do 8, in B do	do	...	45 00
do 18, 1886	A. Fraser et al	do do do 9, 10, 1st Con., Waltham	do	...	50 00
July 16, 1886	J. Oughlin	do do do 47, 2nd Con., Waltham	do	...	150 00
Apr. 16, 1887	J. W. and J. Bryson	do do do 6, 7, B, Mansfield	do	...	350 00
June 13, 1887	J. Hanrahan et al	do do do 6, 5th Con., Calumet Island	do	...	75 00
Mar. 28, 1887	A. Ricard et al	do do do 13, 1st Con., Calumet Island	do	...	100 00
Feb. 12, 1887	John Moorhead	do do do 7, 1st Con., Litchfield	do	...	550 00
Aug. 1, 1887	Arch. Campbell et al	Release for damages to lot 1, in 2nd Range, lot 21, in 4th Range, Litchfield	Culbute	...	100 00
Mar. 31, 1887	Catharine McNally	Release for damages to lot 6, in 5th Range, Calumet Island	do	...	110 00
Apr. 9, 1887	Corporation of Mansfield and Pontefract	Release for damages to roads in Village of Fort Coulonge, Mansfield	do	...	950 00
Mar. 9, 1887	R. Kennedy	Release for damages to lot 16, in 5th Range, Litchfield	do	...	10 00
<p style="text-align: center;"><i>Rideau Canal.</i></p>					
July 17, 1886	John Polk	Release, damages by Poonamalie dam to lot 13, in 2nd Con., Bastard	Rideau Canal	...	150 00
do 19, 1886	Thos. McDonald	Release, damages by Poonamalie dam to lot 16, in 2nd Con., Bastard	do	...	70 00

\$3,000 for other lots to be acquired by Mr. Chapman and conveyed to Govt.

Additional.

Including 2 islands, causeway, &c.

2nd. PROPERTY purchased, damaged, or sold by the Department of Railways and Canals, &c.—Continued.

Date of Signature.	Vendors.	Purchasers.	Property Purchased, Sold, or Damaged.	For what purpose used.	Area of Land.	Amount Paid.	Remarks.
			<i>Rideau Canal—Concluded.</i>			\$ cts.	
Aug. 21, 1886	John Lyons et al.....	Her Majesty.	Release, damages by Poonamalie dam to lot 14, in 2nd Con., Eastard	do .....	.....	180 00	
July 31, 1886	Pat. Blake et al.....	do ...	Release, damages by works at Kingston Mills, to lots 8, 9, 10, 6th Con., Pittsburgh	do .....	.....	600 00	
do 27, 1887	W. W. Handley.....	do ...	<i>St. Peter's Canal.</i> Deed of privilege of drainage through his property, cross post road, 115 feet west of drawbridge	St. Peter's Canal. ....	.....	50 00	
Sept. 5, 1887	Jas. Amies, et al.....	do ...	<i>Oxford and New Glasgow Railway.</i> Deed of part of lot 64, Wallace, N.S., for the railway	Short Line.....	2.86 acres...	14 30	
do 5, 1887	Widow Mary Harrison	do ...	Deed of part of lot 65, Wallace, N.S., for the railway	do	0.987 do ...	6 00	
Aug. 31, 1886	J. E. Kearney	do ...	<i>Trent Valley Canal.</i> Release, damages by Lakefield dam to lot 36, in 12th Con., Smith	Trent .....	.....	50 00	
Dec. 24, 1886	W. J. Young et al.....	do ...	Release, damages by Lakefield dam to lot 36, in 12th Con., Smith	do .....	.....	100 00	2 heirs not of age, to be paid each \$36 hereafter.
Oct. 13, 1885	Hon. J. G. Ross.....	do ...	Release, damages by Lakefield dam to Lakefield Village lots 1 to 13 (or part lot 18 in 7th and 6th Con., Deuro)	do .....	.....	150 00	

Date	Name	Description	Canal	Acres	Principal and Interest
July 14, 1886	Thos. Moorehouse, jun	Deed to Government of part of lot E. 3 of W. 3, and W. 3 of E. 5, 1st Con., Matilda.	Rapide Plat Canal	1.3	450 00
do 15, 1886	Executors of T. Dardis	Deed to Government of part of lot W. 3, 6, 1st Con., Matilda.	do	1.85	2,123 67
do 13, 1887	A. Farlinger et al, et uz.	Deed to Government of part of lot E. 5, and W. 3, 4, in 1st Con., Matilda.	do	3.65	1,103 67
Mar. 27, 1883	do	Deed to Government of part of lots 1 and 2 in 6th Range, village of Mariatown.	do		459 00
Ap. 28, 1887	J. McLaughlin	Release, damages by running ranges on lot W. 1, 1, in 1st Con., Edwardsburg	Galops Canal.		20 00
<i>Welland Canal.</i>					
July 30, 1886	J. M. Reid et al.	Release, damages by Dunnville dam to S. 18, in 3rd Con., and N. pt 8, in 4th Con., North Cayuga.	Welland Canal, damages by Dunnville dam.		145 00
Sept. 24, 1886	John Boyer et al.	Release, damages by Dunnville dam to E. pt. 6, lot 6, in 3rd Con., and 6, in 2nd Con., Dunn.	do		33 00
July 15, 1886	R. H. Bruce	Release, damages by Dunnville dam to pts. 11 in 3rd and 4th Con., North Cayuga.	do		200 00
Aug. 18, 1886	M. W. Carnes.	Release, damages by Dunnville dam to N. 3, 16, in 4th Con., South Cayuga.	do		48 00
July 30, 1886	R. P. Reid	Release, damages by Dunnville dam to lots 6 and 7, in 3rd Con., North Cayuga.	do		540 00
do 14, 1886	S. Chadbourne	Release, by Dunnville dam to pt. 1 in 3rd Con., Canborough.	do		126 00
July 27, 1886	A. Neville	Release, damages by Dunnville dam to lots 15 and 16, 3rd Con., North Cayuga.	do		423 00
Aug. 31, 1886	S. Moyer et al.	Release, damages by Dunnville dam to lot 7, 4th Con., South Cayuga.	do		70 00
July 17, 1886	W. Bruce.	Release, damages by Dunnville dam to lots 11 and 12, 3rd Con., North Cayuga.	do		140 00
Aug. 30, 1886	O. G. Snider et al.	Release, damages by Dunnville dam to lot 17, 3rd Con., North Cayuga.	do		97 00
July 20, 1886	G. H. Law et al.	Release, damages by Dunnville dam to lot 1, 3rd Con., Canborough.	do		100 00
Aug. 31, 1886	J. D. Rao.	Release, damages by Dunnville dam to lot 14, 3rd Con., North Cayuga.	do		187 00
Oct. 2, 1886	W. Happell et al.	Release, damages by Dunnville dam to lot 12, 4th Con., South Cayuga.	do		100 00
June 26, 1886	Malon Lymburner.	Release, damages by Dunnville dam to lot 1, 3rd Con., and lot 13, Dochstader tract, Canborough.	do		450 00

2nd. PROPERTY purchased, damaged, or sold by the Department of Railways and Canals, &c.—Continued

Date of Signature.	Vendors, &c.	Purchasers.	Property Purchased, Damaged, or Sold.	For what purpose used.	Area of Land.	Amount Paid.	Remarks.	
Sept. 21, 1886	W. McBay <i>et al.</i>	Her Majesty.	<i>Welland Canal—Continued.</i>					
			Release, damages by Dunnville dam to lot 7, 2nd Con., Dunn	Welland Canal, damages by Dunnville dam		\$ cts.		
Oct. 23, 1886	James Topp	do	Release, damages by Dunnville dam to lots 18, 3rd and 4th Cons., South Cayuga	do		10 00		
Nov. 30, 1886	Exors. of O. Rittenhouse	do	Release, damages by Dunnville dam to lot 1, 3rd Con., Dunn	do		50 00		
Dec. 13, 1886	E. Darling	do	Release, damages by Dunnville dam to lots 3 and 4, Indian Reserve, Canborough	do		170 00	Her children to get \$187.50 when vested with estate.	
Mar. 16, 1887	J. Johnson <i>et al.</i>	do	Release, damages by Dunnville dam to lots 4, and 6, Indian Reserve, Canborough	do		400 00		
Nov. 27, 1886	C. T. Meadows	do	Release, damages by Dunnville dam to lot 26, 3rd Con., South Cayuga	do		33 00		
do 20, 1886	J. & H. L. Laws	do	Release, damages by Dunnville dam to lots 26 and 27, 3rd Con., South Cayuga	do		75 00		
Apr. 28, 1887	D. B. Fradenburgh <i>et al.</i>	do	Release, damages by Dunnville dam to lots 23 and 24, 3rd Con., and lots 23, 24 and 25, 4th Con., South Cayuga	do		70 00		
Jan. 29, 1887	J. W. Fradenburgh <i>et al.</i>	do	Release, damages by Dunnville dam to lot 21, 3rd Con., and lots 31 and 22, 4th Con., South Cayuga	do		50 00		
Apr. 27, 1887	Eliz. Thompson	do	Release, damages by Dunnville dam to lot 21, 3rd Con., and lots 21 and 22, 4th Con., South Cayuga	do		1 00	Inchoate right of dower.	
June 9, 1887	Geo. A. Windecker <i>et al.</i>	do	Release, damages by Dunnville dam to lots 7 and 8, Huff tract, North Cayuga	do		287 00		
Oct. 23, 1886	Geo. f. Windecker ..	do	Release, damages by Dunnville dam to lot 18, 3rd Con., North Cayuga	do		100 00		
May 19, 1887	D. T. Stephens	do	Release, damages by Dunnville dam to lots 33, 34, 35 and 36, North Cayuga	do		250 00		
June 10, 1887	J. Smith	do	Release, damages by Dunnville dam to lot 8, Dochstader tract, Canborough	do		133 75		

Date	Party	Description	Amount	Notes
May 4, 1886	Robt. Baifour	Order of distribution of Court re lot 22, West St, Port Colborne, to pay damages to Jas. Johnston & Co.	450 00	Interest, \$13.50.
Sept. 21, 1886	J. M. Ellsworth et al	Deed of lot 28, 2nd Con, Humberstone (or lot 4, North of Main St., Petersburg)	850 00	0.19 acres.
do	John Jackson et al	Deed of life interest on lot 28, 2nd Con, Humberstone (or lot 4, North of Main St., Petersburg)	240 00	
May 18, 1887	Corp. of Chippewa	Surrender of "Chippewa Cut" and bridge on br. front 23, Willowby	1 00	
Sept. 8, 1887	F. E. Andrews	Surrender of lots 1, 2, 3 and 4, N. of James St., Port Dalhousie, (being part of lot 21, F. E. An-1st Con., Grantham)	1 00	Andrew's ship-yard lot.
do	Her Majesty	Special grant of part of lot 21, in 1st Concession Grantham, Port Dalhousie	.....
Dec. 16 1886	Hunter, Murray & Cleveland	Her Majesty Surrender of lots M, N, O, P, Q, R, S, T, U, and V, East side of East St., Port Colborne	1,750 00	
May 6, 1887	John Offspring	Release, damages by removal of bridge to lot S. E. 4 2, W. of Carl St., Port Robinson	75 00	
Apr. 9 1887	Ann Booth et al	Release, damages by removal of bridge to lot E 4 4, W. of Carl St., S. of Main St., 1, 2, 3, 4, 5, E of Carl St., Port Robinson	175 00	
Jan. 27, 1886	A. P. Farrell	Her Majesty. Release, damages by Dunnville dam to lots 31, 32 and 33, 1st Con., North Cayuga	68 00	
do	J. Baker	Release, damages by Dunnville dam to lot 2, Dockstader tract, Canborough	408 00	
do	H. Amden	Release, damages by Dunnville dam to lot 6, Indian Reserve, Canborough	200 00	
do	E. & M. Evans et al.	Release, damages by Dunnville dam to lots 15 and 16 4th Con., South Oryuga	285 00	
Feb 6, 1886	H. E. Farr et al	Release, damages by Dunnville dam to lot 1, Dochtader tract, Canborough	113 00	
Mar. 5, 1886	W. J. Aikens	Release, damages by Dunnville dam to lots 27, 28 and 29, Haldimand tract, Dunnville	225 00	
do	R. Martin et al.	Release, damages by Dunnville dam to lot H, No. 1, Indian St., and lot I, Victoria St., Town of Cayuga	183 00	
July 10, 1886	Wm. Edie	Release, damages by Dunnville dam to lots 8 and 9, 4th Con., South Cayuga	480 00	
Feb. 21, 1887	B. & E. Barter	Release, damages by Dunnville dam to lot 12, Jones' tract, North Cayuga	6 00	
Apr 19, 1887	R. Sutor et al.	Release, damages by Dunnville dam to lot 6 (or 6), Huff tract, North Cayuga	6 00	
			218 00	

2nd. PROPERTY purchased, damaged, or sold by the Department of Railways and Canals, &c.—Continued.

Date of Signature.	Vendors, &c.	Purchaser.	Property Purchased, Damaged, or Sold.	For what purpose used.	Area of land.	Amount paid.	Remarks.
			<i>Welland Canal—Continued.</i>			\$ cts.	
Dec. 23, 1886	T. & W. Teesdale....	Her Majesty	Release, damages by Dunnville dam to lot 1, Huff tract, and lots 4 and 5, Jones' tract, North Cayuga ..	Welland Canal, damages by Dunnville dam.....	.....	100 00	
Apr. 9, 1887	R. Gibson	do	Release, damages by Dunnville dam to lots 4 and 5, Jones' tract, North Cayuga.....	do .....	.....	70 00	
Feb. 15, 1887	Wm Walters et al....	do	Release, damages by Dunnville dam to lots 28 and 29, 2nd Con., North Cayuga	do .....	.....	56 00	
Dec. 24, 1886	Corp. North Cayuga.	do	Release, damages by Dunnville dam to highways and bridges, North Cayuga ..	do .....	.....	300 00	
Jan. 26, 1887	F. G. A. Henderson et al.....	do	Release, damages by Dunnville dam to lot 10, 4th Con., South Cayuga	do .....	.....	125 00	
Dec. 2, 1886	S. Fradenburgh	do	Release, damages by Dunnville dam to lots 21, 22 and 23, 3rd Con., and lots 22 and 23, 4th Con., South Cayuga	do .....	.....	64 00	
do 1, 1886	D. A. Fradenburgh .	do	Release, damages by Dunnville dam to lots 22 and 23, 3rd Con., and lots 23 and 24, 4th Con., South Cayuga	do .....	.....	375 00	
do 11, 1886	O. Fathers et al.....	do	Release, damages by Dunnville dam to lot 11, 4th Con., South Cayuga.....	do .....	.....	100 00	
Jan. 16, 1887	J. Walsh	do	Release, damages by removal of canal bridge to lot 2, W. of Hill St., Port Robinson....	Removal of canal bridge.....	.....	75 00	
do 16, 1887	M. A. Wilson	do	Release, damages by removal of canal bridge to lot 21, Port Robinson	do .....	.....	100 00	
do 2, 1887	B. Redfern.....	do	Release, damages by removal of canal bridge to lot 4, S. of Main St., and lot 1, W. of Hill St., Port Robinson.....	do .....	.....	100 00	
Nov. 30, 1886	Hudson Bay Co	do	Deed of S.W. ¼ sec. 26, Tp. 12, Range 2 E. do lot 36, outer 2 miles, St. John, being part of S.W. ¼ sec. B, and broken ¼	Stonewall Branch. 4.12 acres....	.....	1 00	
May 26, 1887	D. Sinclair.....	do	sec. 5, T.p. 11, Range 3 E.....	do .....	.....	0 92	

[1887]

Date	Party	Description	Area	Notes	Value	Remarks
Feb. 8, 1887	Hudson Bay Co.	Deed of N.W. 1/4 sec. 26, Tp. 12, Range 2 E.	60 00			Re A. G. Ascher.
do 8, 1887	do	do S.E. 1/4 do do	19 00		1 79	do
do 8, 1886	Peter Flett	do lot 87, Parish St. Paul	1 00		0 04	Pembina Branch
Oct. 13, 1886	Jas. Flett	do lot 191, Parish St. Andrews	17 00		1 70	do
do 2, 1886	Caroline Sargant	do do	15 30		1 53	do
do 18, 1886	A. Bannerman	do lots 268 & 269 do	7 50		0 75	do
do 6, 1886	do	do do	15 30		1 03	do
do 6, 1886	do	do do	9 60		0 96	do
do 8, 1886	John Flett	do lot 198 do				
do 8, 1886	John Flett	do do				
Sept. 27, 1886	Hon. J. Schultz	do N.E. 1/4 sec. 8, Tp. 13, Range 6 E., and lot 288, outer 2 miles, St. Andrews, and lot 75, outer 2 miles, St. Clement	1 00		7 96	
do 21, 1886	Geo. Davis	do do			0 89	
Oct. 8, 1886	J. O. Orrrigal	do do	7 60		1 75	Area is only 0 77 acres.
Nov. —, 1886	R. Bullock	do do			0 76	
Sept 6, 1886	Rev. S. Pritchard	do do	7 60		0 76	
Dec 27, 1886	J. Forrester, sen	do do	14 80		1 48	
Nov. 15, 1886	C. Frobisher	do do	36 40		2 60	
do 15, 1886	C. Genthon	do do	1 00		0 12	
do 15, 1886	G. Brissart	do do	9 32		1 04	
do 24, 1886	L. H. Peto	do do	12 24		1 53	
April 2, 1881	H. Pritchard	do do lots 58 and 60, St. Agathe, inner 2 miles	52 00		2 60	
Jan. 4, 1882	S. O. Biggs	do do	10 61		2 60	Northern extension
do 10, 1887	Jas. Macnewson	do do	4 10		0 82	do
April 6, 1887	D. S. Curry	do do	40 60		4 08	
Nov. 29, 1886	R. Mulholland	do do	10 00		2 00	
Jan. 31, 1881	Rev. N. J. Ritchob	do do	31 70		1 72	
Apr. 25, 1881	John C. Schultz	do do	1 00		1 72	
do 25, 1881	do et al	do do			1 72	
do 25, 1881	do	do do			3 68	
Mar. 12, 1881	A. St. Germain	do do	1 00		1 34	
May 10, 1887	Isabel Wolf et vir	do do	1 00		1 44	
Mar. 22, 1887	North-West Canada Investment (Limited)	do do	1 00		3 08	
do 23, 1887	R. Patterson	do do	1 00		1 21	
May 18, 1887	J. Caldwell	do do	1 00		1 02	
do 23, 1887	R. Patterson	do do	1 00		1 58	
Mar. 22, 1887	North-West Canada Investment (Limited)	do do	30 00		6 00	
May 18, 1887	J. Caldwell	do do	20 00		4 00	acres.
do 23, 1887	R. Patterson	do do	2 60		0 26	
do 23, 1887	R. Patterson	do do	30 00		6 00	Pembina Branch

2nd PROPERTY purchased, damaged or sold by the Department of Railways and Canals, &c.—Continued.

Date of Signature.	Vendors.	Purchasers.	Property Purchased, Damaged or Sold.	For what purpose used.	Area of Land.	Amount paid.	Remarks.
Mar. 25, 1887	Scottish, Ontario and Manitoba Land Co (Limited).....	Her Majesty.	<i>Canadian Pacific Railway—Continued.</i>			\$ cts.	
do 25, 1887	do	do	Deed of N.E. ¼ sec. 1 and S. ½ S.E. ¼ 12, S.E. ¼ 1, Tp. 6, R. 3 E., and N.E. ¼ sec. 25, Tp. 5, Range 3 E.....	Pembina Branch...	14-00 do ...	70 00	
do 25, 1887	do	do	Deed of N. ½ N.W. ¼ sec. 7, and N. ½ legal subdivision 11 of sec. 7, Tp. 6, Range 4 E.; S.W. ¼ sec. 31 and N. ½ N.W. ¼ 30 and S. ½ S.W. ¼ 19, Tp. 6, Range 4 E.....	do	11-00 do ...	55 00	
do 25, 1887	do	do	Deed of S.E. ¼ and S. ½ N.E. ¼ sec. 24, Tp. 8, Range 3 E.; N. ½ N.E. ¼ Tp. 8, Range 3 E.; N.E. ¼ 13, S. ½ S.E. ¼ 24, and S.E. ¼ S. ½ of N.E. ¼ 1, Tp. 7, Range 3 E.	do	20-00 do ...	100 00	
May 23, 1887	London Canadian Loan and Agency Co. (Limited).....	do	Deed of lot 72, Ste. Agathe, being part of W. ½ sec. 29, Tp. 1, Range 3 E.	do	2-60 do ...	26 00	
do 26, 1887	Ann Taylor et vir	do	Deed of N.W. ¼ sec. 35, Tp. 3, Range 3 E.	do	2-91 do ...	14 55	
do 27, 1887	W. Bailey	do	do S.E. ¼ and S. ½ N.E. ¼ sec. 24, Tp. 5, Range 3 E.	do	6-00 do ...	30 00	
do 31, 1887	H. McEwen	do	Deed of S. ½ of N.W. ¼ and S.W. ¼ sec. 6, Tp. 5, Range 4 E.	do	16-03 do ...	80 15	
Mar. 16, 1887	J. Bullis	do	Deed of lots 78 and 80, Ste. Agathe, or part of W. ½ sec. 29, Tp. 1, Range 3 E.	do	5-20 do ...	52 00	Paid to Manitoba and N. W. Loan Co. (Limited).
Apr. 21, 1887	J. and E. and W. Bullis	do	do	do	.....	.....
May 26, 1887	Ias. Quinn	do	Deed of N.W. and S.W. ¼ sec. 22, Tp. 3, Range 3 E.	do	12-87 do ...	64 25	
do 26, 1887	E. Jane Quinn	do	Deed of S.E. ¼ sec. 27, Tp. 3, Range 3 E.	do	0-85 do ...	4 25	
Dec. 18, 1886	Jos. St. Germain	do	do lot 139, St. Norbert	do	1-60 do ...	12 88	
June 14, 1887	N. Bonneau	do	do N.E. ¼ sec. 36, Tp. 5, Range 3 E.	do	4-00 do ...	20 00	
May 31, 1887	W. Grant	do	do lot 46, Ste. Agathe	do	2-60 do ...	39 00	do

[1887]

June 23, 1887	D. McArthur	do	S.W. $\frac{1}{2}$ sec. 7 and N. $\frac{1}{2}$ of N.W. $\frac{1}{4}$ sec. 6, Tp. 5, Range 4 E.	do	6-00	do	45 00
Jan. 4, 1887	T. Nixon	do	Deed of N.E. $\frac{1}{4}$ sec. 25, and S. $\frac{1}{4}$ S.E. $\frac{1}{4}$ sec. 36, Tp. 8, Range 3 E.	do	6-00	do	60 00
May 26, 1887	M. Lawrence, widow..	do	Deed of lot 7 Grande Pointe Settlement, St. Norbert Station	do	3-37	do	26 96
Nov. 15, 1886	Roger Marion	do	Deed of lot 176, St. Norbert (already decided 17th March, 1881, for \$1)	do	1-71	do	13 88
May 25, 1887	J. R. Bensen	do	Deed of N.W. $\frac{1}{4}$ sec. 7, Tp. 9, Range 4 E.	do	4-00	do	32 00
June 24, 1887	W. J. Christie	do	S.E. $\frac{1}{4}$ sec. 12, Tp. 9, Range 3 E.	do	3-72	do	18 60
July 6, 1887	A. M. Nanton	do	S.E. $\frac{1}{4}$ sec. 36, Tp. 5, Range 3 E.	do	4-00	do	20 00
do 9, 1887	S. Mortimore	do	do lot 70, Ste. Agathe	do	2-60	do	26 00
Apr. 27, 1886	W. N. Fairbanks	do	do lots 8, 9 and 10, block 4; lots 7, 8, 9 and 5, block 11; lot 3, block 18; lots 6, 7 and 10, block 26; lots 10, 12, 3, 4 and 5, block 31; lots 7, 9 and 10, block 40; at Emerson	do	0-31	do	75 60
June 25, 1887	John Church	do	Deed of S.E. $\frac{1}{4}$ and S. $\frac{1}{2}$ of N.E. $\frac{1}{4}$ sec. 25, Tp. 7, Range 3 E.	do	4-00	do	31 55
Mar. 8, 1887	Hiram Clark	do	Deed of lot 30, Ste. Agathe (to be paid to Manitoba and North-West Loan Co., if mortgage is foreclosed, or deposit into court)	do	3-56	do	103 40
Jan. 13, 1881	R. Goulet	do	Deed of lot 180, St. Norbert	do	3-36	do	1 00
Dec. 2, 1886	do	do	do do do and S. $\frac{1}{2}$ S.W. $\frac{1}{4}$ sec. 31, Tp. 9, Range 4 E.	do	2-00	do	42 88
July 2, 1887	Scottish, Manitoba and North-West Real Estate Co. (Limited)	do	Deed of N.E. $\frac{1}{4}$ and N. $\frac{1}{2}$ of S.E. $\frac{1}{4}$ sec. 24, Tp. 7, Range 3 E.	do	6-00	do	30 00
do 20, 1887	H. Archibald	do	Deed of N.E. $\frac{1}{4}$ and N. $\frac{1}{2}$ of S.E. $\frac{1}{4}$ sec. 12, Tp. 5, Range 3 E.	do	6-00	do	30 00
Nov. 15, 1886	A. Trottier <i>et al.</i>	do	Deed of lot 169, St. Norbert	do	1-56	do	12 48
July 30, 1887	Corp. Arch. Catholique-Romaine de St. Boniface	do	do do do (confirmatory)	do	1-02	do	8 16
Nov. 15, 1886	Marie Fretteau	do	do lot 138 do outer 2 miles	do	12-44	do	62 20
July 7, 1887	Geo. Church	do	S.E. $\frac{1}{4}$ sec. 36 and N. $\frac{1}{2}$ N.E. $\frac{1}{4}$ sec. 25, Tp. 7, Range 3 E.	do	2-57	do	42 00
Nov. 15, 1886	Rev. N. J. Ritchot	do	Deed of lots 201 and 204, St. Norbert (No. 204 already decided)	do	3-69	do	30 00
July 13, 1887	J. Gillies	do	Deed of N.W. $\frac{1}{4}$ and N. $\frac{1}{2}$ S.W. $\frac{1}{4}$ sec. 18, Tp. 5, Range 4 E.	do	6-00	do	31 55
..... 1887	Dominion of Canada Mortgage Company (Limited)	do	Deed of N.W. $\frac{1}{4}$ sec. 2, Tp. 4, Range 3 E.	do	6-31	do	17 52
do	do	do	do lot 184, St. Norbert	do	2-19	do	
June 20, 1887	do	do	do	do	6-00	do	

And interest from 1st Oct, 1876. Paid to Building and Loan Association.

Paid to Eilken Klyne.

2nd PROPERTY purchased, damaged or sold by the Department of Railways and Canals, &c.—Continued.

Date of Signature.	Vendors.	Purchasers.	Property Purchased, Damaged or Sold.	For what purpose used.	Area of land.	Amount paid.	Remarks.	
Feb. 28, 1881	R. Terrot.....	Her Majesty.	<i>Canadian Pacific Railway.</i> Deed of lot 6, block 31, Emerson do lot 202, St. Norbert do lot 76, Ste. Agathe do lot 259, St. Andrews	Pembina Branch...	0.09 do ...	\$ 2 66	Already decided.	
Mar. 31, 1881	J. H. Kennedy.....	do ...			do	0.87 do ...	1 00	
June 9, 1887	S. H. Phippen.....	do ...			do	2.60 do ...	26 00	
Oct. 18, 1886	Margaret Allan.....	do ...			N. Extension	0.75 do ...	6 80	John Allan confirms it 7th Jan, 1887.

AGREEMENTS

Respecting Subsidies granted by the Dominion Government to aid in the construction of Railways, entered into by certain Railway Companies with the Minister of Railways and Canals, during the Fiscal Year ended 30th June, 1887.

3rd. AGREEMENTS respecting subsidies granted by the Dominion Government to
with the Minister of Railways and Canals, during

Date of Signature.	Name of Railway Company.	Line of Railway to be Constructed.	Acts of Canada Granting Subsidy.	Amount of Subsidy	
				Per Mile.	Not exceeding in the whole
1886.				\$	\$
July 18	Brockville, Westport & Sault Ste. Marie Railway Co.	From Brockville to Westport.....	48-49 Vic., c. 59.	3,200	128,000
July 7	Central Railway Co.	From Salmon River, at head of Grand Lake, to Norton Station, Intercolonial Railway, between Sussex and St. John, N.B.	47 Vic, c. 8.	3,200	128,000
Aug. 14	Northern & Western Railway Co., of New Brunswick.	Between termini from Fredericton and from Indiantown.	49 Vic., c. 10	3,200	32,000
July 12	Canada Atlantic Railway Co.	From Clark's Island to Valleyfield, and from Lacolle to 1½ mile west of Johnston's.	48-49 Vic., c. 59, 49 Vic., c. 10.	1,600 } 3,200 }	96,000 } 38,400 }
do. 27	Ontario and Pacific Railway Co.	From Cornwall via Newington, Crysler, Manotick and Franktown to Perth.	47 Vic., c. 8.	3,200	262,400
Aug. 19	Irondale, Bancroft & Ottawa Railway Co	From Midland Division to Grand Trunk Railway in Snowdon to Bancroft.	do ...	3,200	160,000
Sept. 16	L'Assomption Railway Co.	From L'Epiphanie to L'Assomption...	49 Vic., c. 10	3,200	11,200
do 14	Buctouche and Moncton Railway Co.	From Moncton to Buctouche, N.B.....	do ...	3,200	96,000
Nov. 2	West Ontario Pacific Railway Co.	From Woodstock to London, in place of from Ingersoll to London, as per Act.	do ...	3,200	86,400 in place of 266,000
Oct. 12	Great Eastern Railway.	From Yamaska to River St. Francis...	do ...	3,200	32,000
Nov. 30	Joggins Railway Co.	From Maccan Station, Intercolonial Railway, to the Joggins, on Cumberland Basin, N.S.	do ...	3,200	38,400
1887.					
Jan. 20	Toronto, Grey and Bruce Railway Co.	From Glenannan to Wingham, Ont...	do ...	3,200	16,000
Aug. 12	Northern and Western Railway Co. of New Brunswick.	2-mile extension to deep water, at Chatham, N.B.	do ...	3,200	32,000
1886.					
Dec. 17	Stewiacke Valley and Lansdowne Railway Co. (Limited)	From Intercolonial Railway, through Stewiacke Valley, towards Lansdowne, N.S.	do ...	3,200	80,000
Oct. 19	Albert Railway Co.	To place their Railway in proper repair from Salisbury to Hopewell.	do ...	3,200	15,000

* Second mortgage on railway and personal property subject to first mortgage of 1st Dec., 1877, to trustees, Government to pay now \$4,836 to laborers, balance as works progress. Company to refund the \$15,000, 1st Dec., 1897, with interest at 6 per cent., payable 1st Dec. and 1st June each year, the first on 1st Dec., 1886. In default of Company paying principal or interest Government may take possession on one month's notice. The Company to work the line and receive profits, &c.

aid in the construction of Railways, entered into by certain Railway Companies the Fiscal Year ended 30th June, 1887.

Number of Miles to be Subsidised.	Maximum Grade, Feet per Mile.	Radius of Curvature, not less than—	Width of clearing each side.		Width of Outtings.	Embankments.	Steel Rail, lbs. per lineal yard.	When to be Completed.	Remarks.
			Ft.	Ft.					
No.	Feet.	Feet.	Ft.	Ft.	Ft.	Lbs.			
40	66	955	50	20	16	56	Aug. 1, 1889		
40	66	933	50	20	16	56	July 1, 1889		
8	70	955	50	20	16	56 60 if iron	Jan. 1, 1887		
47 12 }	40	1,166, Clarke's Island to Valleyfield. 5,730, Lacolle to 1½ miles west of Johnston's. 1,433	50	20	16	56	Oct. 1, 1886		
82	53		50	20	16	56	July 1, 1888		
40	60	1,000	50	20	16	56	{ Dec. 1, 1886 July 1, 1888	10 miles. Remainder.	
3½	47	955	50	20	16	56	Jan. 1, 1887		
30	60	955	50	20	16	56	July 1, 1887		
27	53	1,433	50	20	16	56	Nov. 1, 1887	Subject to approval of Parliament.	
10	10	1,910	40	20	16	56	Oct. 1, 1887		
12	79	955	50	20	16	56	Nov. 1, 1887		
5	53	1,433, except at its junction with T. G. & B. Ry., a 573-foot radius.	50	20	16	56	Dec. 1, 1887		
2	90		714	50	20	16	56 or 60 if iron.	Sept. 1, 1888	
25	60 except first 5 miles, new survey to be made	955	50	20	16	56	Dec. 1, 1889		
								To be carried on with all reasonable speed.	

3rd. AGREEMENTS respecting subsidies granted by the Dominion

Date of Signature.	Name of Railway Company.	Line of Railway to be Constructed.	Acts of Canada Granting Subsidy.	Amount of Subsidy.	
				Per Mile.	Not exceeding in the whole.
1887.				\$	\$
Feb. 19 1886.	Caraquet Railway Co	From end of present subsidized portion of Company's Railway at Lower Caraquet to Shippegan, N.B.	49 Vic., c. 10	3,200	32,000
Mar. 4 1886.	†Chignecto Marine Transport Railway Co. (Limited)	A ship railway across Isthmus of Chignecto to connect Baie Verte with Bay of Fundy.	45 Vic., c. 25, 49 Vic., c. 18.	\$150,000 a year for 25 years, changed to \$170,602 a year for 20 years.	

† Hydraulic lifts to raise vessels of net less than 1,000 tons register each, with full cargo. Docks at each end capable of holding securely six steamers at least, to be enlarged hereafter. Company to construct passing places for traffic. Work and maintain the railway, charging tolls approved by C. O. Company to receive \$85,301 each half year, if contract is duly fulfilled and complied with, or as may be required to make up the net earnings to 7 per cent. per annum on the authorized share and bond capital of the Company, viz.: \$5,500,000. If earnings exceed 7 per cent. Company to pay to Government one half of surplus profit beyond the 7 per cent. until subsidy is all repaid to Government, subject to approval of Parliament.

OTTAWA, 2nd November, 1887.

Government to aid the construction of Railways, &c.—*Concluded.*

Number of miles to be Subsidized.	Maximum Grade, Feet per Mile.	Radius of Curvature not less than—	Width of clearing each side.		Width of Outtings.		Embankments.	Steel Rails, lbs. per lineal yard.	When to be Completed.	Remarks.
			Ft.	Ft.	Ft.	Ft.				
No.	Feet.	Feet.	Ft.	Ft.	Ft.	Ft.	Lbs.			
10	37½	1,433	50	20	16		50	Oct. 1, 1887		
16½	Near level.	Straight.	50	20	16		110	July 1, 1889		

H. A. FISSIAULT.

APPENDIX No. 22.

REPORT OF THE BOARD OF OFFICIAL ARBITRATORS.

OTTAWA, 3rd September, 1887.

SIR,—I beg to enclose you herewith the report of the cases referred and arbitrated and awarded upon by the Official Arbitrators, in connection with your Department, during the fiscal year ending 30th June, 1887.

CHAS. THIBAUT,
Sec'y. to Official Arbitrators.

A. P. BRADLEY, Esq.,
Sec'y. Department of Railways and Canals.

STATEMENT of Claims Arbitrated or Reported upon by the Official Arbitrators in connection with the Department of Railways and Canals, during the Fiscal Year ended 30th June, 1887.

Claimants.	Nature of Claims.	When referred.	To whom referred.	Whether referred for Report or Award.	Amount Claimed.	Amount Awarded or Recommended.	Date of Award.	Remarks.
J. Ste. Plante.....	I.C.R., St. Charles Branch—Horse killed by.....	1886. July 5...	Full Board....	Award..	\$150 00	150 00	Nov. 6, 1886.	
W. D. Ohisholm.....	I. O. R., E. Extension—Barn burnt from sparks.....	do 15...	do	do ..	Not stated	750 00	do 8, 1886.	
Wm. Serviss.....	Cornwall Canal—Land taken for... do	do 15...	do	do ..	do ..	865 00	do 23, 1887.	
Edward Ryan.....	do do do	do 15...	do	do ..	do ..	747 50	do 23, 1887.	
Timothy Shield.....	do do do	do 15...	do	do ..	do ..	533 00	do 23, 1887.	
George Moss.....	do do do	do 15...	do	do ..	do ..	618 00	do 23, 1887.	
Francis Clark.....	do do do	do 15...	do	do ..	do ..	55 00	do 23, 1887.	
Isaac Mason.....	I.C.R.—One horse killed by.....	do 21...	One Arbitrator	Report..	do ..	Nil.	Sept. 7, 1886.	
Hairs of Elot Rioux....	do Damage by water and cattle killed.....	do 21...	Full Board....	Award..	do ..	100 00	do 30, 1886.	
W. H. Johnson.....	do Organ lost by negligence of officials.....	do 21...	One Arbitrator	Report..	do ..	115 00	Aug. 25, 1887.	
Duncan Ross and Rod-erick Fraser.....	do E. Extension—Wood burnt by sparks.....	August 15...	do ..	do ..	do ..	Nil.	June 18, 1887.	
Hugh McPhee.....	do One horse killed by.....	do 23...	do ..	do ..	do ..	100 00	do 18, 1887.	

CHAS. THIBAULT,
Secretary of Official Arbitrators.

OTTAWA, 3rd September, 1887.

The following Cases have been Awarded during the Fiscal Year ended 30th June, 1887.

Claimants.	Nature of Claims.	When referred.	To whom referred.	Whether referred for Report or Award.	Amount Claimed.	Amount Awarded or Recommended.	Date of Award.	Remarks.
Widow Meg. Martel.....	I.O.R.—Damage to her land by water from .....	.....	Full Board.....	Award..	\$ cts. Not stated	\$ cts. 15 00	1886. Sept. 30...	
David Rioux.....	do Damage to his land by water from.....	.....	do	do	do	80 00	do 30...	
George Rioux.....	do do .....	.....	do	do	do	30 00	do 30...	
Johnny Rioux.....	do do .....	.....	do	do	do	20 00	do 30...	
Etienne Michaud.....	do Loss of six cows killed by.....	.....	do	do	do	120 00	do 30...	
Daniel Chouinard.....	do Damage to land (1 rood) by water from.....	.....	do	do	do	600 00	do 30...	
Henri Beaulieu.....	do do .....	.....	do	do	do	160 00	do 30...	
Louis Chassout.....	do do .....	.....	do	do	do	50 00	do 30...	
Adolphe Ross.....	do do .....	.....	do	do	do	100 00	do 30...	
Josué Bouillon.....	do do .....	.....	do	do	do	200 00	do 30...	
Sylvain Lavoie.....	do do .....	.....	do	do	do	87 50	do 30...	
Octave Lamontagne.....	do do .....	.....	do	do	do	450 00	do 30...	
Napoleon Rioux.....	do do .....	.....	do	do	do	100 00	do 30...	
Joseph Roy <i>alias</i> Desjardins.....	do do .....	.....	do	do	do	15 00	do 30...	
Jules Larivière.....	do do .....	.....	do	do	do	15 00	do 30...	
George Lavoie.....	do Barn and cattle destroyed by fire.....	.....	do	do	do	1,072 50	do 30...	This case is in appeal before Exchequer Court.
Mrs. J. Pouliot.....	do Damage to land by water from .....	.....	do	do	do	450 00	do 30...	
Jean Pierre, Saint Laurent.....	do do .....	.....	do	do	do	500 00	do 30...	
Louis Bérubé.....	do do .....	.....	do	do	do	500 00	do 30...	
Charles Dumas.....	do Land taken for.....	.....	do	do	do	200 00	do 30...	
Charles W. Oarriet.....	do St. Charles Branch—Land taken for.....	.....	do	do	do	61,811.86	do 30...	
Antoine Carrier.....	do do .....	.....	do	do	do	450 00	do 30...	
Messrs. Walker & Maling	do Cotton Factory Siding at Halifax—Land taken for.....	.....	do	do	do	201 50	do 30...	
Maurice Downey.....	do Dartmouth Branch, I.O.R.—Land taken for.....	.....	do	do	do	2,500 00	do 30...	

Year	Description	Cost	Term	Value	Notes	Land on Vancouver Is-land (see V, c. 6).
1885 18-49 Vic, c. 59.	Central Ontario Ry. Co., Ooe Hill or Rathburn to Bancroft.....	3,200	20	64,000		
1886 48-49 Vic, c. 59.	Canada Atlantic Ry. Co. { Valleyfield to Lacolle..... Terminus, Ottawa, to Chaudière Falls	{ 1,600 3,200 3,200	{ 34 10 3	{ 96,000 96,000		
1886 49 Vic, c. 10.....	do { Clarke's Island to Valleyfield..... Lacolle to International Boundary..	{ 3,200	12	38,400		
1881 44 Vic, c. 1.....	Canadian Pacific Ry. Co., Callander to Port Arthur, and Selkirk to Kamloops.....	6,000	180	{ 960,000 340,000		
1884 47 Vic, c. 8.....	For extension of C. P. R. { St Martin's Junction to Quebec do do (additional)			200,000		
1885 48-49 Vic, c. 58	do { Connecting Jacques Cartier Union Junction with North Shore.			38,400		
1884 47 Vic, c. 8.....	do { Junction with North Shore. Carillon and Grenville Ry. Co., St Eustache to Sault-au Recollet	3,200	12	41,600		
1887 50-51 Vic, c. 24.	do { Cornwallis Valley Ry. Co., Kentville to Kingsport Cumberland Railway and Coal Co, Near Spring Hill to near Oxford Village	3,200	13	44,800		
1887 50-51 Vic, c. 24.	do { Cap Rouge and St. Lawrence Ry. Co., Lorette to Quebec.....	3,200	14	38,400		
1886 49 Vic, c. 10.....	do { Chicouto Marine Transport Ry. Co., Ship Railway—Gulf of St Lawrence to Bay of Fundy.....		16-85			
1882 45 Vic, c. 55...}	do { Drummond Jounty Ry. Co., Drummondville towards Nicolet..... Dominion Lime Co., from point on Quebec Central Ry. to Dudswell Lime Co's Quarries.....	3,200	30	96,000		
1886 49 Vic, c. 18...}	do { Esquimalt and Nanaimo Ry. Co., Esquimalt to Nanaimo, Vancouver's Island.....	3,200	7	22,400		
1887 50-51 Vic, c. 24.	do { Erie and Huron Ry. Co., Wallaceburg to Sarnia.....	3,200	30	96,000		
1883 46 Vic, c. 25.....	do { Elgin, Peticoctiac and Havelock Ry. Co., Peticoctiac to Havelock Corner.....	3,200	12	38,400		
1886 49 Vic, c. 10.....	do { For a line, Eganville to a point on C. P. R.....	3,200	22	70,400		
1887 50-51 Vic, c. 26.	do { Frederickton and St. Mary's Bridge Ry. Co.....					
1884 47 Vic, c. 8.....	do { For a line, Fredericton to the Village of Prince William.....	3,200	32	70,400		
1883 46 Vic, c. 25.....	do { Gananoque, Perth and St. James Bay Ry. Co.....	3,200	17	64,400		
1885 48-49 Vic, c. 59	do { Gattneau Valley Ry. Co., Hall towards Le Desert.....	5,193	62	320,000		
1881 47 Vic, c. 8.....	do { Great Northern Ry. Co., St. Jérôme to New Glasgow.....	3,200	10	32,000		
1886 49 Vic, c. 10.....	do { do do do, New Glasgow or St. Lin to Montcalm.....	3,200	18	57,600		
1886 49 Vic, c. 10.....	do { do do do, Yamaska to River St. Francis.....	3,200	10	32,000		
1887 50-51 Vic, c. 24.	do { do do do, St. Francis to St. Grégoire.....	3,200	39	96,000		
1886 49 Vic, c. 11.....	do { Great North-West Central Ry. Co., Brandon to Battleford.....	6,400 acres	450	51,200		
1887 50-51 Vic, c. 24.	do { Guelph Junction Ry. Co., from Junction with C. P. R. to Guelph Branch Ry. Co., from Southern Terminus of Albert Ry. to Harvey Bank.....	3,200	16	9,600		
1886 49 Vic, c. 10.....	do { For a line, Hereford to International Railway.....	3,200	3	108,800		
1883 46 Vic, c. 25.....	do { International Ry. Co., Sherbrooke to International Boundary.....	3,200	34	156,800		
1887 50-51 Vic, c. 24.	do { Land on Vancouver Is-land (see V, c. 6).					2,880,000
1886 49 Vic, c. 10.....	do { Loan of 80 p.c. on cost, repayable in 15 yrs.					70,400
1886 49 Vic, c. 10.....	do { do do do					64,400
1885 48-49 Vic, c. 59	do { do do do					320,000
1881 47 Vic, c. 8.....	do { do do do					32,000
1886 49 Vic, c. 10.....	do { do do do					57,600
1886 49 Vic, c. 10.....	do { do do do					32,000
1887 50-51 Vic, c. 24.	do { do do do					96,000
1887 50-51 Vic, c. 24.	do { do do do					51,200
1886 49 Vic, c. 10.....	do { do do do					9,600
1883 46 Vic, c. 25.....	do { do do do					108,800
1883 46 Vic, c. 25.....	do { do do do					156,800

ALPHABETICAL LIST of Railways Subsidized by the Dominion Government.—Continued.

A.D.	Designation of Act.	APPROPRIATION OF GRANT WITH DESCRIPTION OF LINE SUBSIDIZED.	Rate per Mile. Money and Land	Estimated Number of Miles.	If per mile.		If for a term of years.	Total Subsidy.	
					Total for the whole work not to exceed—	\$		Money.	Land.
1884	47 Vic, c. 8...	International Ry. Co., Montreal to Harbors of St. Andrews, St. John and Halifax.....	\$	351	\$		\$170,000 for 15 yrs, \$80,000 for 20 yrs, or \$250,000 p. an. for 20 yrs.....	\$	Acres.
1885	48-49 Vic, c. 58								
1888	47 Vic, c. 8.....	Irondale, Bancroft and Ottawa Ry. Co., Victoria Branch of Mid-land Ry. to Bancroft.....	3,200	50	160,000			160,000	
1886	49 Vic, c. 10.....	Intercolonial Ry., Branch of, Derby Station to Indian town.....	3,200	14	140,000			140,000	
1887	50-51 Vic, c. 24.....	Joggins Ry. Co., McCann Station to Joggins.....	3,200	12	38,400			38,400	
1887	50-51 Vic, c. 24.....	do from S. end to the Wharves.....	3,200	14	4,000			4,000	
1884	17 Vic, c. 8.....	Jacques Cartier Union Ry. Co., to extend and complete the line. Kingston and Pembroke Ry. Co., Mississippi to Renfrew.....	3,200	16	20,000			20,000	
1886	49 Vic, c. 10.....	L'Assomption Ry. Co., L'Assomption to L'Epiphane.....	3,200	34	48,000			48,000	
1887	50-51 Vic, c. 24.....	Lake Erie, Essex and Detroit River Ry. Co.....	3,200	27	11,200			11,200	
1885	48-49 Vic, c. 59.	Lake Temiscamingue Colonization Ry. Co., Long Sault to Lake Temiscamingue.....	3,200	8	118,400			118,400	
1887	50-51 Vic, c. 24.	Lake Temiscamingue Ry. Co., to overcome rapids of the Ottawa River, at La Micharge, La Cave, Les Etibles and La Montagne, and for construction of Wharves and Landings at such Rapids. Lake Temiscamingue Colonization Ry. Co., Long Sault to Lake Kippewa.....			25,600			25,600	
1887	50-51 Vic, c. 24.	do do from N. end of section subsidized to Comber.....			12,400			12,400	
1885	48-49 Vic, c. 59.	Leamington and St. Clair Ry. Co., Comber to Lake Erie.....	3,200	10½	33,600			33,600	
1887	50-51 Vic, c. 24.	do do from N. end of section subsidized to Comber.....	3,200	14	44,800			44,800	
1885	48-49 Vic, c. 60.	Manitoba and North-Western Ry. Co., Portage la Prairie to 20 M. from Prince Albert.....	6,400 acres	430				6,400	2,752,000
1886	49 Vic, c. 11.....	Manitoba and North-Western R. Co., Branch from Toddburn to Shellmouth.....	6,400 do	26					166,400
1885	48-49 Vic, c. 60.	Manitoba South-Western Colonization Ry. Co., Winnipeg to White Water Lake.....	16,400 do	150					960,000

Year	Vic.	C.	Description	Acres	10	32,000	32,000	32,000
1867	50-51	Vic., c. 24.	Massawippi Ry. Co., from point on Atlantic North-Western Ry., near Megog, to Ayer's Flat Station on the Massawippi Ry.	6,400 acres	10	32,000	32,000	51,300
1887	50-51	Vic., c. 23.	Medicine Hat Ry. and Coal Co., Medicine Hat to Coal fields	3,200	8	17,600	17,600	17,600
1887	50-51	Vic., c. 24.	Minurie Branch Ry. Co., from near River Hebert Ry. Bridge to Minurie	1,600	54	72,000	72,000	72,000
1885	48-49	Vic., c. 59.	Montreal and Sorel Ry. Co., St. Lambert to Sorel	500	60	30,000	30,000	30,000
1885	48-49	Vic., c. 59.	Montreal and Champlain Junction Ry. Co., Brossseau to Dundee					
1887	50-51	Vic., c. 24	do do Salmon River at Fort Covington to Massena Springs	5,161	70	64,000	361,270	64,000
1888	49	Vic., c. 10....	Montreal and Western Ry. Co., St. Jérôme towards Le Desert...					
1886	49	Vic., c. 10....	Montreal and Lake Maskinongé Ry. Co., for a line, St. Felix to Lake Maskinongé	3,200	10	32,000	32,000	32,000
1884	47	Vic., c. 8	Northern and Western Ry. Co., Fredericton to Miramichi River	3,200	40	128,000	128,000	128,000
1886	48-49	Vic., c. 59.	do do end of line previously subsidized to Boiestown	3,200	6	19,200	19,200	19,200
1886	49	Vic., c. 10....	Northern and Western Ry. Co., additional between Fredericton and Indian town, and extension to Deep-water at Chatham	3,200	10	32,000	32,000	32,000
1885	48-19	Vic., c. 59.	Northern and Western Ry. Co., Indian town to Junction with N. & W. Ry. at or near Boiestown	3,200	44	140,800	140,800	140,800
1882	45	Vic., c. 14....	Northern and Pacific Junction Ry. Co., Gravenhurst to Calder	6,000	110	680,000	680,000	1,320,000
1883	45	Vic., c. 25....	Northern and Pacific Junction Ry. Co., Gravenhurst to Calder (additional)	6,000		680,000	680,000	
1883	43	Vic., c. 25....	Napance, Tamworth and Quebec Ry. Co., Napance to Tamworth	3,200	28	89,600	89,600	89,600
1886	49	Vic., c. 10....	do do Tamworth to Tweed		18	70,000	70,000	70,000
1887	50-51	Vic., c. 24.	do do from N. end section subsidized to Tweed	3,200	4	12,800	12,800	12,800
1886	49	Vic., c. 10....	From Intercolonial Ry. near Newcastle to opposite Chatham, N.B	3,200	6	19,200	19,200	19,200
1885	48-49	Vic., c. 59.	New Brunswick and Prince Edward Ry. Co., Sackville to Cape Tormentine	3,209	37	118,400	118,400	118,400
1885	48-49	Vic., c. 60 }	North-Western Coal } Dunmore Station, C.P.R. to Leithbridge	3,800	109			418,560
1887	50-51	Vic., c. 22 }	and Nav. Co. } do do additional	40				
1887	50-51	Vic., c. 24.	Nova Scotia Central Ry. Co., Lunenburg to a point in district of New Germany, and branch to Bridgewater Ry. Wharf	3,200	34	108,800	108,800	108,800
1887	50-51	Vic., c. 24.	Ontario and Pacific Ry. Co., Cornwall to Perth	3,200	82	262,400	262,400	262,400
1885	48-49	Vic., c. 59.	do do from N. end of subsidized line to Perth	3,200	6	19,200	19,200	19,200
			Ottawa, Waddington and New York Ry. Co., Ottawa to Waddington	3,200	52	166,400	166,400	166,400
			Oxford to Louisburg					
1883	45	Vic., c. 14....	Oxford to New Glasgow	3,200	70	224,000	224,000	224,000
1883	46	Vic., c. 25....	Canso to Louisburg	3,200	80	256,000	256,000	256,000
1884	47	Vic., c. 8	Oxford to Sydney or Louisburg (additional)					
			for 15 years, with lease or transfer of Eastern Extension from New Glasgow to Canso					

ALPHABETICAL LIST of Railways Subsidized by the Dominion Government.—Continued.

A. D.	Designation of Act.	APPROPRIATION OF GRANT WITH DESCRIPTION OF LAND SUBSIDIZED.	CONDITION OF GRANT UNDER THE SUBSIDY ACTS.					Total Subsidy.	
			Rate per Mile. Money and Land.	Estimated Number of Miles.	If per mile.		If for a term of years.	Money.	Land.
					Total for the whole work not to exceed—	\$				Amount and duration of instalments.	\$	Acres.
1887	50-51 Vic, c. 24.	Oshawa Ry. and Navigation Co., Port Oshawa towards Baglan.	3,200	7	22,400	22,400	22,400		
1884	47 Vic, c. 8.	Provincial Government of Quebec { Montreal to Quebec.	6,000	159	954,000	2,384,000	2,384,000		
		do Ottawa.	12,000	120	1,440,000				
1886	49 Vic, c. 10.	Parry Sound Colonization Ry. Co., Parry Sound to Sandridge.	3,200	40	128,000	128,000	128,000		
1884	47 Vic, c. 8.	Pontiac Pacific Junction Ry. Co., Hull to Pembroke.	3,200	85	272,000	272,000	272,000		
1885	48-49 Vic, c. 60.	Qu'Appelle, Long Lake and Saskatchewan Ry. and Steamboat Co., Regina to Long Lake.	6,400 acres	22½				142,784	
1887	50-51 Vic, c. 23.	Qu'Appelle, Long Lake and Saskatchewan Ry. and Steamboat Co., Long Laketon to near Elbow N. Saskatchewan with branches to Prince Albert and Battleford.	6,400 do	325				2,080,000	
1884	47 Vic, c. 8.	Quebec Central Ry. Co., Beauce Junction to International boundary.	3,200	66	211,200		211,200		
1882	45 Vic, c. 14.	Quebec and Lake St. John Ry. Co., St. Raymond to Lake St. John.	3,200	120	384,000		384,000		
1883	46 Vic, c. 25.	Quebec and Lake St. John Ry. Co., St. Raymond to Lake St. John (additional).	3,200	25	80,000		80,000		
1885	48-49 Vic, c. 59.	Quebec and Lake St. John Ry. Co., Junction on North Shore Ry. to St. Raymond.	3,200	32	96,000		96,000		
1886	49 Vic, c. 10.	Quebec and Lake St. John Ry. Co., 50 miles north of St. Raymond to Lake St. John (additional).		(95)	186,295		186,295		
1887	50-51 Vic, c. 24.	Quebec and Lake St. John Ry. Co., Quebec to Lake St. John—being portion uncovered by previous subsidies.	3,200	9	28,800		28,800		
1887	50-51 Vic, c. 24.	Richmond Hill Junction Ry. Co., Richmond Hill Junction on Northern Ry. to Richmond Hill Village.	3,200	5	16,000		16,000		
1887	50-51 Vic, c. 24.	South Norfolk Ry. Co., Port Rowan to Simcoe.	3,200	17	54,400		54,400		
1884	47 Vic, c. 8.	St. Louis, Richibuctoo and Buctouche Ry. Co., Richibuctoo to St. Louis.	3,200	7	22,400		22,400		
1887	50-51 Vic, c. 24.	St. Lawrence and Lower Laurentian and Saguenay Ry. Co., Grand Pilec to Junction with Lake St. John Ry.			217,600		217,600		

1887 50-51 Vic, c. 24	Saguenay and Lake St. John Ry. Co., Lake St. John towards Chicoutimi or Chicoutimi towards Lake St. John.	3,200	30	96,000	96,000
1887 50-51 Vic, c. 24	St. John Valley and Rivière du Loup Ry. Co., Village of Prince William towards Town of Woodstock	3,200	22	70,400	70,400
1883 46 Vic, c. 26	St. John Bridge and Railway Extension Co., to build bridge and connections.			\$500,000 loan.	22,400
1886 49 Vic, c. 10	For a line, St. Andrews to Lachine.	3,200	7	22,400	57,600
1886 49 Vic, c. 10	For a line, St. Eustache to Ste. Placide.	3,200	18	57,600	80,000
1886 49 Vic, c. 10	Stewiacke Valley and Lansdowne Ry. Co. from a point on Intercolonial Ry. through Stewiacke Valley towards Iron Mines, &c.	3,200	25	80,000	38,400
1887 50-51 Vic, c. 24	St. Catharines and Niagara Ry. Co., St. Catharines to Bridge over Niagara River	3,200	12	38,400	16,000
1886 49 Vic, c. 10	Toronto, Grey and Bruce Ry. Co., Glenannan to Wingham.	3,200	5	240,000	498,000
1882 45 Vic, c. 14	Témiscouata Ry. Co., Rivière du Loup to Edmundston	\$3,200 for 75 m. \$2,800 for 75 m. \$8,000 for 8 m.	83	288,000	96,000
1885 48-49 Vic, c. 58	do Branch from Edmundston towards St. Francis River.	3,200	30	96,000	271,200
1887 50-51 Vic, c. 24	Thunder Bay Colonization Ry. Co., Marillo to East end of Whitefish Lake.	3,200	28½	92,000	156,800
1886 49 Vic, c. 10	Thunder Bay Colonization Ry. Co., end of subsidized line to Crooked Lake.	3,200	56	179,200	89,600
1886 49 Vic, c. 10	For a line, Truro to Newport.	3,200	49	156,800	6,880,000
1887 50-51 Vic, c. 24	Tobique Valley Ry. Co., Perth Centre towards Plaister Rock.	3,200	14	89,600	
1884 47 Vic, c. 25	Winnipeg and Hudson's Bay Ry. Co., Winnipeg to Hudson's Bay	6,400 acres in Man. 12,800 ac. in N. W. T.	225		
1886 49 Vic, c. 11	Wood Mountain and Qu'Appelle Ry. Co., from Wood Mountain via Qu'Appelle and Fort Qu'Appelle to the Manitoba and North-Western Ry.	6,400 acres	240		1,636,000
1886 49 Vic, c. 10	West Ontario Pacific Railway Co., Ingersoll via London to Chatham, Ont.	3,200	30	288,000	256,000
1887 50-51 Vic, c. 24	Vaudreuil and Prescott Ry. Co., Vaudreuil towards Hawkebury	3,200	30	96,000	76,800
1887 50-51 Vic, c. 24	For a Company, Mount Forest to Walkerton.	3,200	24	76,800	64,000
1887 50-51 Vic, c. 24	do Woodstock towards Centreville.	3,200	20	64,000	
1887 50-51 Vic, c. 24	do For a bridge over the St. Lawrence at Coteau Landing on the line of the Canada Atlantic Railway.			15 per cent. on value of the structure	180,000
1887 50-51 Vic, c. 25	Western Counties Ry., Yarmouth to Annapolis				500,000

Votes granted under Subsidy Acts, cancelled or amended by Subsequent Acts of Parliament.

GRANTS CANCELLED OR AMENDED.									
Year.	Act.	Granted to.	General description of Line Subsidized.	Amount.	Authority for change.	Amount of revoke.	Remarks.		
1883	46 Vic., c. 25.....	Gatineau Valley Ry.	For first 50 miles section of their railway from Hull Station.	160,000	Cancelled 48-49 Vic., c. 59, 1885.	\$			
1883	46 Vic., c. 25.....	Great American and European Short Line Ry. Co.	For 80 miles from Oanseo to Louisburg or Sydney.	256,000	Amended. 47 Vic., c. 8, 1884	256,000	Amended by striking out "to the G. A. and E. Ry. Co." inserting word "the" for "their" and omitting the words and figures "80 miles of."		
1883	46 Vic., c. 25.....	Northern and Western Ry. Co.	From I. O. R., near Miramichi to Morans near Demphy Village.	102,400	Cancelled 47 Vic., c. 8, 1884	128,000.			
1883	46 Vic., c. 25.....	Montreal and Western Ry. Co.	For first 50 mile section out of St. Jérôme, P.Q.	160,000	Cancelled 49 Vic., c. 10, 1886	S. 47 V., c. 8.			
1884	47 Vic., c. 8.....	Gatineau Ry. Co.....	For a line from Kazabazua to Le Desert.	160,000	Cancelled 48-49 Vic., c. 59, 1885.	320,000	For 62 miles, Hull to Le Desert in lieu of subsidies granted by 46 Vic., c. 25, and 47 Vic., c. 8.		
1884	47 Vic., c. 8.....	Napaneze, Tamworth and Quebec.	Tamworth to Bogart or Bridge-water.	70,400	Cancelled 48-49 Vic., c. 59, 1885.	70,000	Again cancelled.		
1884	47 Vic., c. 8.....	Montreal and Western Ry. Co.	From end of line subsidized towards Le Desert.	160,000	Cancelled 49 Vic., c. 10, 1886	361,270	\$5,161 per mile in lieu of subsidies under Act 46 Vic., c. 25, and 47 Vic., c. 8.		
1884	47 Vic., c. 8.....	For a Railway	St. Andrews to Lachute	22,400	Amended. 49 Vic., c. 10, 1886	22,400	For 7 miles to connect with O. P. R.		
1884	47 Vic., c. 8.....	For a Railway	From Grand Piles to Lake Edward.	217,600	Cancelled 48-49 Vic., c. 59, 1885.	217,600	Again cancelled.		
1885	48-49 Vic., c. 59.	Napaneze, Tamworth and Quebec.	Tamworth towards Bogart and Bridge-water.	70,000	Amended. 49 Vic., c. 10, 1886	70,000	For 18 miles of their railway in place of 16 miles.		

1885/48-49 Vic, c. 59	For a Railway	For 8 miles of railway from Long Sault to Foot of Lake Temiscamingue.	20,600	Amended. 50-51 Vic, c. 24, 1887.	12,400	For 4 short sections of 2 miles in lieu of a portion of 3 miles out of the 8 miles subsidized.
1886/48-49 Vic. c. 59.	For a Railway	From Grand Piles to Lake Edward.	217,600	Amended. 50-51 Vic, c. 24, 1887.	217,600	Granting subsidy to St. Lawrence, Lower Lawrentian and Saguenay Ry. Co.
1886/49 Vic, c. 10.....	Caraquet Ry. Co.....	For 10 miles, Lower Caraquet to Shippegan.	33,900	Amended. 50-51 Vic, c. 24, 1887.	32,000	For 7 miles in place of 10 miles subsidized.
1886/49 Vic, c. 10.....	Lake Erie, Essex and Detroit Ry. Co.	For 37 miles, Windsor to Leamington.	118,400	Amended. 50-51 Vic, c. 24, 1887.	118,400	For 37 miles in place of 37 miles subsidized.
1886/49 Vic, c. 10. . .	Lake Temiscamingue Ry. Co.	For wharves and landing stages.	6,000	Cancelled		
1886/49 Vic, c. 10.....	For a Railway	For 28 miles from Perth Centre to near Plaister Rock.	89,600	Amended. 50-51 Vic, c. 24, 1887.	89,600	To Tobique Ry. Co, for 14 miles of same line.

APPENDIX No. 24.

CANADIAN PACIFIC RAILWAY.

OFFICE OF THE ENGINEER-IN-CHIEF,

OTTAWA, 26th December, 1887.

SIR,—Since I last had the honour of reporting to you upon the Canadian Pacific Railway, the construction of the very important extension of the Company's system to Sault Ste. Marie has been practically completed; the track having reached the Sault, and the last span of the fine steel structure across the Ste. Marie River being in course of erection. This done, and it is expected it will be done next week, the track will be extended across the bridge, connecting the Canadian Pacific Railway, at this point also, with the American railway system, and bringing the wheat fields of the American North-west, and the business metropolis of Minneapolis, into close connection with the ports of Montreal, Quebec, St. John and Halifax. The benefits to accrue to the Dominion, and especially to the cities above mentioned, are, in my opinion, very great. The ramifications of the Canadian Pacific Railway are becoming very extensive; and as extensions and branches are thrown out into district after district, the people rejoice and take fresh courage, and all the interests of the country feel the impulse, as new sections are opened, full railway accommodation supplied where it had only existed more or less partially, or rates lowered by competition.

The Company's lines now extend from ocean navigation on the east to ocean navigation on the west, while numerous limbs stretch to north and south, covering altogether a mileage of—

	Miles.
Transcontinental line	2,906
Extensions and branches.....	1,750
	<hr/>
Total.....	4,656
	<hr/>

The system taps almost every city of importance in Canada. Among this number, I may mention St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Winnipeg and Vancouver.

Much indeed has it contributed to the prosperity of the country already, and its future benefits to the Dominion extend far beyond the range of our present vision. In benefitting the country, it has necessarily improved the circumstances of other railways. As a through route between Europe and China and Japan and the east, its merits, though amply established, must become more and more apparent. Already notes of alarm have been sounded by the American press, at the manner in which the Canadian Pacific Railway is cutting into the business of the transcontinental roads of the United States. I attach hereto diagrams of the several transcontinental routes, making Liverpool, England, the starting point, touching at Yokohama, Japan, and terminating at Shanghai, China; giving the mileage between the places shown, and the estimated time required for the journeys, reckoning the speed by rail at thirty-two miles an hour, and by steamer at sixteen miles. From these the Honourable Minister will be able to judge at a glance of the merits of the rival routes; and I think the conclusion is unavoidable, that the Canadian Pacific Railway will occupy a very high place among the great highways of the world.

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

COLLINGWOOD SCHREIBER,

Engineer in Chief.

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

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APPENDIX No. 25.

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CERTIFIED COPY of a Report of a Committee of the Honorable the Privy Council, approved by His Excellency the Administrator of the Government in Council, on the 2nd November, 1886.

On a memorandum, dated 23rd October, 1886, from the Minister of Railways and Canals, submitting an application from the Canadian Pacific Railway Company for the return to them, under the Act of last Session, 49 Vic., cap. 9, of the \$5,000,000 of the land grant bonds held under the construction contract as security for the operation of the road, on the grounds that the Canadian Pacific Railway has been constructed and duly placed in operation to its terminus in British Columbia, and that inasmuch as the operation of the railway has proved to be remunerative, the retention of those bonds is no longer necessary in the public interest.

The Minister states that the Canadian Pacific Railway has been constructed and equipped of a quality and character, equivalent upon the whole to the approximate standard agreed upon between the Government and the Company, that is to say, the Union Pacific Railway of the United States, as accepted by the Government of that country, the railway being in many respects of superior quality and character to the said approximate standard, and only in some degree inferior in respect of the said portion of the line in the Province of British Columbia of nine miles in length passing Mount Stephen.

That while the remainder of the railway is of superior quality and efficiency, the said portion is not inferior to similar portions of railway in the leading railways of the United States, that it offers no difficulty in operation, and that it is sufficient for the traffic as at present existing, but that it would be advisable to make provision that if at any time hereafter it should be found expedient to improve the gradients of the portion in question, it should be in the power of the Government to cause such improvement to be made without further expense to the public.

The Minister further states that the Company represent that it is in their interest also that the railway should be fitted in all respects for its traffic and business, and that they are prepared to set apart and place in the hands of the Government \$1,000,000 of land grant bonds as a provision for the improvement in question and as security for its completion when required by the Government, and that in the opinion of the Minister of Railways and Canals such provision and security would be sufficient to secure the attainment of the desired object.

That the revenue derived from the operation of the railway largely exceeds the running expenses, and that under such circumstances the retention of security that such operation will be continued is not necessary in the public interest.

The Minister, therefore, with the object of closing all matters now outstanding between the Government and the Canadian Pacific Railway Company under their contract of the 21st October, 1880, and its several modifications, and in consideration of the early completion of the railway admitting of the carriage of traffic thereover and of regular operation since the 28th of June, 1886, and also of the fact that the several loans made to them by the Government, under authority of Parliament, have been repaid by the Company, and provided that the Company accept the conditions hereinafter imposed, recommends as follows:—

1. That the Government accept the said railway as equivalent in its quality and character in the materials used in its construction and its equipment, to the approximate standard agreed upon between the Government and the Company, namely, the

Union Pacific Railway of the United States as the same was when accepted by the Government of that country.

2. That the Government convey to the Company the portions of the road which have been constructed by the Government, and to which, under their contract, the Company are entitled, the Company accepting the same subject to the adjustment and correction by the Government of the defects or deficiencies in construction (if any) according to the specifications and conditions of the contract therefor, except in so far as the same were modified by the Government prior to 21st October, 1880.

3. That in consideration of the completion of the construction and equipment of the railway under the construction contract, the Government pay over to the Company the balance of the subsidy remaining in its hands.

4. That the Government release and return to the Company the \$5,000,000 of land grant bonds held as security for the operation of the railway.

5. That in consideration of the premises the Company undertake that upon being so required by the Government they will make such alteration and improvement of the portion of their railway at and near Mount Stephen as shall be prescribed by the Government, not being in excess of the requirements of the Government Engineer as shown by the plans and specifications prepared by him in that respect, and that, as security for the performance of this condition, the Company do deposit with the Government \$1,000,000 of land grant bonds to be held so long as such condition shall remain unperformed and to be used in such performance if the Company makes default therein.

6. That a proper agreement be prepared and executed in the premises.

The Committee submit the above recommendation for Your Excellency's approval.

JOHN G. MCGEE,

Clerk, Privy Council.

To the Honourable

The Minister of Railways and Canals,
&c., &c., &c.

THIS AGREEMENT, made between Her Majesty the Queen, as representing the Dominion of Canada, hereinafter called the Government, herein represented and acting by the Honorable John Henry Pope, Minister of Railways and Canals of Canada, under the authority of an Order in Council duly made and passed by His Excellency the Governor in Council on the second day of November, 1886, and the Canadian Pacific Railway Company, a body corporate and politic, duly incorporated by Letters Patent of the Dominion of Canada, hereinafter called the Company, herein represented and acting by the Chief Executive Officers thereof, Witnesses :

Whereas under the construction contract, made and executed by and between the Government and Sir George Stephen, Bart., then George Stephen, Esquire, and others, on the 21st day of October, 1880, and assumed by the Company, the Canadian Pacific Railway has been constructed and equipped, of a quality and character, equivalent upon the whole to the approximate standard agreed upon between the Government and the Company, that is to say, the Union Pacific Railway of the United States, as accepted by the Government of that country, the said railway being in many respects of superior quality and character to the said approximate standard and only in some degree inferior in respect of the gradients of a portion of the line in the Province of British Columbia, nine miles in length passing Mount Stephen ;

And whereas it has been agreed between the parties hereto that if at any time hereafter it should be found expedient to improve the gradients of the said portion

of the said railway, the Company will make such improvements thereto as is herein-after provided for, and will give security for its undertaking so to do ;

And whereas the Company has applied under the provisions of the Act passed in the last Session of the Parliament of Canada respecting the Canadian Pacific Railway, for the return to it of the sum of five million dollars in land grant bonds now held by the Government as security for the operation of the said railway ;

And it has been established to the satisfaction of the Government that the revenue derived from the operation of the said railway largely exceeds the running expenses, and therefore the retention of security that such operation will be continued is not necessary in the public interest ;

And whereas it is expedient to close all matters between the Government and the Company arising out of the said contract of the twenty-first day of October, 1880, and its several modifications ;

Now, therefore, this agreement witnesses, that upon the conditions hereinafter stated, the parties hereto have covenanted and agreed to and with each other as follows, namely :—

1st. That the Government shall accept, and hereby does accept, the said railway as equivalent in its quality and character, in the materials used in its construction, and its equipments, to the approximate standard agreed upon between the Government and the Company, namely, the Union Pacific Railway of the United States, as the same was when accepted by the Government of that country ; and it is hereby declared and agreed that the said railway has been and is completed and equipped according to the terms of the said construction contract.

2nd. That according to the provisions of the said contract, the Government do hereby transfer and convey to the Company the portions of the road which have been constructed by the Government, and to which, under the said contract, the Company is entitled, as the same were or are held by the Government, and free and clear of all liens or charges thereon existing or due by the Government, at the time when the possession and right to run and work through such portions were respectively transferred to the Company by the Government ; and the Company hereby accepts thereof, but in respect of the Western Section of said railway, subject to the adjustment and correction by the Government of any deficiencies in the construction thereof, if any, according to the specifications and conditions of the contracts therefor, except in so far as the same were modified by the Government prior to twenty-first October, 1880.

3rd. That in further consideration of the completion of the said railway and of the equipment thereof, according to the said contract, the Government shall forthwith pay to the Company the balance remaining due of the subsidy of twenty-five million dollars granted to the Company under the provisions of the said contract.

4th. That the Government will forthwith release and return to the Company the sum of five million dollars of the land grant bonds of the Company, now held by the Government, under the 17th section of the contract, as security for the due performance of the said contract in respect of the maintenance and continuous working of the railway by the Company for ten years after its completion thereof.

5th. That in consideration of the premises, the Company covenants and agrees to and with the Government that upon being so required by the Government it will make such alteration and improvement of the portion of its railway at and near Mount Steph'n, as shall be prescribed by the Government, not being in excess of the requirements of the Government Engineer, as shown by the plans and specifications prepared by the Company in that respect, copies whereof have been submitted by the Company and approved by the Governor in Council.

And as security for the performance of this condition, the Company has deposited with the Government \$1,000,000 of the said land grant bonds, to be held as such security until such condition shall be performed ; and to be used in such performance if the Company makes default therein.

In witness whereof the parties hereto represented as aforesaid have executed these presents, at the times and places respectively set opposite the signatures of their respective representatives.

Signed, sealed and delivered on }
behalf of Her Majesty, at }
Ottawa, the twentieth day of }
November, 1886. }

(Signed) J. H. HOPE,

Minister, Railways and Canals.

(Signed) A. P. BRADLEY,

Secretary.

SEAL.

Signed, sealed and delivered by the }
Canadian Pacific Railway Com. }
pany, at Montreal, the fifteenth }
day of November, 1886. }

(Signed)

W. C. VANHORNE,

Vice President.

(Signed)

C. DRINKWATER,

Secretary.

SEAL.

REPORT

OF THE

ROYAL COMMISSION ON RAILWAYS

WITH

APPENDICES.



OTTAWA:
PRINTED BY MacLEAN, ROGER & CO., WELLINGTON STREET.
1888.

REPORT
OF THE
ROYAL COMMISSION ON RAILWAYS.

To His Excellency the Most Honorable Sir Henry Charles Keith Petty-Fitzmaurice, Marquess of Lansdowne, &c., &c., &c., Governor General of Canada and Vice-Admiral of the same.

MAY IT PLEASE YOUR EXCELLENCY:—

The Commissioners appointed under Royal Commission, of date the fourteenth day of August, in the year of our Lord one thousand eight hundred and eighty-six, to consider the advisability of creating a Commission with power to determine matters in dispute between Railway Corporations, and generally to regulate the system of railway management in its relations to the commerce of the country; and further, as to the expediency of having a general Railway Law for the construction of railways, instead of special Charters, beg leave to report:—

That the Commission met for organization at Ottawa on the fourth day of September, eighteen hundred and eighty-six. The procedure of the Commission was then settled, as regards Canada, by deciding that meetings should be held in all the principal centres of commerce, of which notices should be given by advertisement in the public journals and by letters to the Boards of Trade and Managers of the railway companies. All parties to be invited to attend and give evidence—all evidence to be taken under oath—to be forthwith printed and communicated to the Boards of Trade of the Dominion and to the several railway companies.

It was also decided to apply, through the High Commissioner, for all reports and documents in relation to the Railway Legislation of Great Britain.

Circular letters were directed to be addressed, by the chairman, to the Secretaries of States of the several United States, requesting communication of all reports and documents relating to the course adopted in their respective States with regard to the subjects to be enquired into by the Commission.

The Commission desire to record their acknowledgments for the extremely prompt and courteous manner in which their applications to the authorities of the several States were uniformly responded to, and also to the High Commissioner for similar attention on his part.

ENQUIRY IN CANADA.

The Commission have held meetings for evidence in the following cities, in the order named:—Toronto, Halifax, St. John, Ottawa, Quebec, Montreal, Kingston, Hamilton and London.

By the courtesy of the Boards of Trade, the meetings were held in the Board of Trade rooms. They were open to the public, and all parties who appeared were examined; in many cases persons were summoned, whose testimony was considered valuable, and in no case were the meetings adjourned until the list of witnesses was exhausted.

The number examined was very large, and from their standing, intelligence and acquaintance with the commerce of the country, it is believed that the testimony will be found to contain a fair and full expression of the views of the community at large.

Divergence of opinion necessarily existed upon the subjects under consideration, but this is the more valuable as affording the Commission the opportunity of carefully weighing the adverse views expressed.

In taking evidence the Commission soon discovered that their investigations would be indefinitely prolonged—if they examined the railway officials on each point under immediate discussion. The managers of the railways were therefore informed that their testimony would be taken last, and would then apply to the whole subjects dealt with.

Without inviting any personal complaint, the Commission could not avoid receiving evidence of alleged grievances, illustrative of the system objected to. They did not consider themselves authorized to pronounce any opinion on such cases, but only invited the railway managers to offer in their closing examination such explanations as they might deem proper.

The course thus adopted has, it is believed, been promotive of much economy of time, and has given satisfaction. The evidence of the railway managers and officials will be found to contain a lucid and well considered statement of their views, obtained after a full review of all the previous testimony.

ENQUIRY IN UNITED STATES.

The Commission obtained in reply to their applications the fullest published information in regard to the condition of railway legislation in all the States where Railway Commissions exist.

Careful consideration of these documents and also of the books of writers of acknowledged ability on the subject, including Messrs. Hadley, Hudson and

Grierson (of England), and others, convinced the Commission that their labors and ultimate recommendations could not be confined to information obtained from purely Canadian sources. It became evident that the conditions of commerce in relation to railway transportation were in most cases identical with those of the United States, and that in considering the advisability of placing the railway system more directly under the control of the State, prudence required that the experience of other countries where such control existed should be thoroughly availed of.

The Commission, therefore, on the sixth of September last (1887), appointed Messrs. Burpee and Moberly as a committee to proceed to certain States and obtain from State officials, railway managers and other parties, the fullest information on all points included in the enquiry.

The Report of this Committee is attached as an appendix to this report, and will be found a great interest and value.

Subsequently, the Commission found it necessary to obtain further information in elucidation of the subject referred to, and on the twenty-first day of December last (1887) the same Commissioners were again requested to visit the United States. Reference is made to their supplementary report also in the appendix.

It will be observed that in addition to the cordial assistance granted by the State authorities in all cases, the Committee were able to obtain most valuable information from gentlemen of the highest standing in railway management, of whom may be named Mr. Commissioner Fink, Messrs. Blanchard, Midgely, C. F. Adams, and many others, for whose uniform courtesy and frankness the Commission desire publicly to express their deep sense of obligation.

The Committee also obtained many additional valuable reports, especially those containing the proceedings before the special Railway Committee of New York (1879), and the evidence taken before the Committee of the Senate (1885) respecting the interstate Commerce Bill and the proceedings before the House of Representatives.

ENQUIRY IN GREAT BRITAIN.

The Commission obtained, through the High Commissioner, many valuable reports and documents relating to the progress of railway legislation in Great Britain, and the operation of the Railway Commission, including the draft of a Bill introduced during last Session of the Imperial Parliament extending and perpetuating the Railway Commission.

Believing the discussions upon this Bill would prove of much value, the Commission directed their chairman, on visiting London in the early part of the year eighteen hundred and eighty-seven (1887), to watch the passage of the measure and report to them.

Unfortunately the pressure of other public business upon the British Parliament prevented the Government from proceeding with the Bill, and deprived the Commission of the opportunity of judging of the value of the important modifications proposed in respect to the British Railway Commission.

The Commission herewith submit to entire evidence taken before them, together with all reports, publications and other documents furnished to them, with the following report:—

RAILWAY PROGRESS.

The Minister of Railways, in his statistical report for 1886, shows the progress of railway construction in Canada, commencing with 1837, when sixteen miles were opened for traffic, increased in 1847 to fifty-nine miles, and in 1852 to two hundred and twelve miles. From this time, which marks the initiation of the Grand Trunk system, the progress of construction was more rapid, rising to two thousand and eighty-seven miles in 1860, and in

					Tons.
1875.....	4,826	miles, carrying one mile			5,670,836
1876.....	5,157	do do			6,331,757
1877.....	5,574	do do			6,859,796
1878.....	6,143	do do			7,883,472
1879.....	6,484	do do			8,348,810
1880.....	6,891	do do			9,938,858
1881.....	7,260	do do			12,065,323
1882.....	7,530	do do			13,575,787
1883.....	8,726	do do			13,266,255
1884.....	9,653	do do			13,712,269
1885.....	10,149	do do			14,659,271
1886.....	10,697	do do			15,670,460

These figures illustrate the extent and rapidity with which the commerce of the country has become identified with and dependent upon the railway system of transportation.

It will be interesting to observe the comparative cost at which the movement of goods is made in various countries. The following tables have been compiled from the most reliable authorities, and are believed to be substantially accurate:—

	Class.	Rate.	Class.	Rate	Class	Rate	Class.	Rate	Class.	Rate.	Class.	Rate.	Remarks.
		cts.		cts.		cts.	Special	cts.	Special	cts.	Special	cts.	
Germany...	A 1	3-60	B	2-4	A 2	1-93	I	1-74	II	1-35	III	1-08	Special is
France ...	1	4-70	2	4-09	3	3-52	4	2-80	5	2-20	6	1-08	given on
to 125 mls. }	A	2-5	B	2-0	C	1-40	D	1-32	E	0-80	F	0-62	coal in
Up to 450 }	1	3-75	2	3-12	3	2-50	4	1-90	5	1-20	6	0-78	Ruhr dis-
mls }	A	1-56	B	1-08	C	1-02	D	1-02	E	0-78	F	0-62	trict 0-85.
Holland....	1st	4-3	2	3-4	A	2-57	B	2-11	C	1-72	D	1-28	Special on
Belgium, 50 }	1st	3-12	2	2-50	3	1-88	4	1-24					coal some
mls }													cases 0-84.

There is added to each of these rates from 20 cents to 30 cents a ton for terminal charges, billing, weighing, &c.

Germany.—Class A 1 is for general merchandise in half-car loads. Class B for the same in full car loads. Class A 2 for grain and lumber in half-car loads. Special I is for grain of all kinds and similar goods. Special II for lumber, &c. Special III for coal, stone, &c., all in ten-ton lots. An exceptional tariff of 85 cents per ton per mile is made on coal from the Ruhr district.

France.—A, B, C, D, E and F refer respectively to the same goods by the full car load as 1, 2, 3, 4, 5 and 6, in less than car loads. Plated goods, quicksilver, laces, statues, bronzes, painting and such goods are charged the highest class, plus 50 per cent.

For France the rates are taken from the modified tariff of the Paris, Lyons and Mediterranean Railway, being the longest road and having the lowest rates.

Holland.—1st and 2nd class are used for quantities of less than five tons. A, B and C for quantities of not less than five tons, and D for quantities of not less than ten tons.

Belgium.—1st class applies to general merchandise in less quantities than five tons, 2nd and 3rd class to quantities of not less than five tons, and 4th class to quantities of not less than ten tons.

The above is extracted from Grierson Railway Rates, English and foreign, appendix, pages 12 to 62.

It is extremely difficult to get a detailed statement of rates charged on English railways. "The Great Western Railway Companies Act" allowed on coal, sand, iron, salt, etc., $\frac{3}{4}$ of a penny or $1\frac{1}{2}$ cents, and on sugar, grain, flour, etc., 2d. or 4 cents per ton per mile.

"London Engineering," August 20th, 1886, page 187, states the average rate on heavy freight in England is as near as may be, 1d. or 2 cents per ton per mile. I. S. Jean, in his Annual Statistical Report for 1884, to the British Trade Association, makes the same statement.

For the purpose of comparison, take for England the rate for such heavy articles; for the principal countries of Europe, figures given by Jean's Railway Problems published in 1887, page 277; for the United States, Poor's Manual for 1887; and for Canada, the evidence of the Grand Trunk and Canadian Pacific, the following results:—

AVERAGE charge per ton per mile on freight traffic in cents.

England.....	2·00
Germany	1·70
Belgium	1·57
France	2·14
Italy	2·40
Holland.....	1·50
Russia.....	2·32
United States.....	1·04
Canada	0·93

A table is also submitted showing the comparative cost of railways in different countries and the population to each mile of railway.

After examining various authorities which do not differ materially, the following figures are taken from Jean's Railway Problems, pp. 541, 542, for the year 1884:—

Country.	Cost per Mile.	Pop. per Mile.
Great Britain.....	\$206,500	1,930
Germany.....	103,000	2,065
France	134,000	2,110
Italy.....	94,700	5,000
Belgium	123,400	2,102
Holland	95,200	3,400
Russia.....	97,200	5,965
United States	61,000	417
Canada.....	61,000	491

A review of the foregoing tables will show that the cost of railway construction in Canada is at a minimum compared with other countries. It also appears that the charges for moving merchandise by Canadian railways are absolutely the lowest, and compared with the great nations of Europe, very greatly less.

Two natural causes exist whereby the very important advantage of low cost for transportation is ensured to Canada. No doubt the cost of our railways enables their managers to work at smaller charges for capital account; but the main reasons are to be found, 1st. In competition by water; and 2nd. In competition by American railways at all points accessible by our navigable waters.

The competition by water is created by the natural geographical position of Canada and its possession of means of internal communication and export by the great lakes, the River St. Lawrence, and in the Maritime Provinces, the Gulf of St. Lawrence and the ocean. There is in fact no business centre of any importance in the older Provinces which is not directly situated upon the channel of water communication with the outside world. Canadian railways have to consider this in the establishment of their tariffs, and avoid by too high rates all inducement to merchants and others to hold over their imports and exports till the season of open navigation.

The American system of railways, also connecting the great lakes with the ocean, is able during the season of navigation to take very low rates from points in Ontario to the Maritime Provinces, and having also possession of one important railway in Ontario, the Canada Southern, can practically compete with the Canadian lines during the entire year; the whole trade of Canada undoubtedly benefiting by the water and rail competition of rival routes. By possessing the control of the St. Lawrence, Canada offers the shortest and cheapest route to the seaboard from the Western States bordering upon the great lakes. Her railways are thus enabled to draw largely upon the commerce of these States, making them contributory to the maintenance of her internal system of transportation, and cheapening the cost of performing it.

Other recent causes are also now operating to develop and extend these advantages. The Canadian Pacific Railway in completing its line to the Pacific Ocean points to an early revolution in the future carrying trade of Eastern Asia and Australia. While the connection of the same railway at Sault St. Marie with the new lines leading from St. Paul and Minneapolis seem to ensure the diversion through Canada of a large part of the traffic of the North-Western States with New England and New York. A point of the greater importance, as it is proved that the wheat growing zone in America is, from some unknown climatic influence, steadily moving northward, promising shortly to be in a great measure confined to the North-Western States, Manitoba and our own North-West Territories.

In proof of the direct advantage of this through American trade to Canada, the evidence of Mr. Hickson, the able manager of the Grand Trunk Railway, may be cited, he says:—"The payments by the Grand Trunk Railway in Canada in working the through traffic have not been less than four millions of dollars annually for the last four years. The effect of such an expenditure in employment and in the consumption of supplies must have been very beneficial, while as a necessary consequence, the railway service of the entire Grand Trunk system must have been largely extended, to the manifest advantage of local districts."

The importance of maintaining and developing the foreign traffic passing through Canada can scarcely be exaggerated, and the natural advantages we pos-

sess, when, supported and increased through a wise system of railway construction and management, cannot fail to promote in the highest degree the prosperity of the country.

The Commission consider it unnecessary to examine the theoretical relation of railways, as common carriers, to the State. This subject has been exhaustively treated by many very able writers and in debate in Parliament and in Congress, to which reference can be had. Whatever judgment may be pronounced on this vexed question, the practical conclusion has been arrived at both in Great Britain and in the United States, that the public interest requires the great powers and privileges granted to railway corporations to be exercised under proper control by the State, and wise, efficient and economical service absolutely obtained. The great benefits derived through the adoption of the system of the transportation by railway must not be permitted to be sacrificed or even endangered through selfish, grasping, or inefficient administration, on the part of the railways.

The Commission in thus strongly stating the principle which they have decided must govern the conclusions of their present report, desire to be understood as distinctly disavowing any intention to reflection on the management of the Canadian railways. The evidence taken before them shows a number of cases of complaint, but the Commission have great pleasure in expressing the opinion that the explanations given on each case by the railway officials, if not absolutely conclusive in every case, are sufficient to exonerate them from the charge of wilful favoritism; the blame attaches to defect in the system and existing railway law rather than to its administrators. And it is to the removal of these defects that the attention of the Commission has been given.

HISTORY OF RAILWAY LEGISLATION.

Before entering upon the consideration of the remedial measures necessary, the Commission believe it will be useful and instructive to trace briefly the course of legislation in Great Britain and in the United States. The conditions of the latter country especially, are those of Canada, and the evils complained of in the evidence given before your Commission will be found to be absolutely identical with those which have led to remedial legislation in the countries named.

The history of railway legislation in Great Britain and the United States has been so fully and ably given by Professor Hadley, whose views have been also recited by the Senate Committee on Interstate Commerce in their report, that it is thought desirable to embody it in the appendix. The Commission have also availed themselves of the late Mr. Grierson's work on railways, important extracts from which will be found appended.

In brief, it may be stated that the principle of controlling railway corporations by commissioners appointed by the State has been in practice in England since 1673, and in the United States since 1868.

The powers and methods of control have been of the most varied character, but, in their results, it is admitted that the public and the railways have both benefited. Indeed, this opportunity may be taken for stating that in many cases the railways are more sinned against than sinning, and require protection from exactions and demands by the public, frequently as unreasonable as the alleged offences of the railways themselves.

The Commission regret to state that they lost the valuable aid of their colleague, Mr. Thomas E. Kenny, at an early stage of their enquiry, through his election to the Federal Parliament.

AMENDMENTS TO RAILWAY LAW.

The Commission now proceed to consider the amendments, which in their judgment are required to meet admitted evils in the present system of railway management, and to provide such control over railway corporations as, while not unduly interfering with their freedom of action, will secure to the country and its commerce all those benefits which a widely administered use of the modern system of transportation cannot fail to confer.

INTER-RAILWAY DISPUTES.

In the order in which the consideration of the subject has been submitted to them, the Commission have first to deal with what may be termed Inter-Railway disputes. Their very nature appears to preclude their satisfactory decision by ordinary legal process, as in a majority of cases, if not in all, they require proceedings in the character of arbitration. The Commission believe that their settlement calls for the creation of a tribunal especially qualified to deal with such questions, and it will be their duty, at the conclusion of this report, to express their opinion fully as to the character and scope of the railway tribunal which they regard as necessary.

Attention has been particularly given to the special case of the right of one railway company to expropriate the property of another company. It appears to the Commission that the circumstances attending each case must necessarily be special and peculiar; and in principle it may be admitted that if the interests of the several companies are alone concerned, no expropriation should be permitted. But in almost every case it will probably appear that the public interest and convenience are involved, and the right of expropriation should then rest upon precisely the same considerations of public utility as originally permitted the the railway company to obtain possession of the property of an individual.

The Commission suggest:—

“That special legislation in each particular case of expropriation is not desirable, but recommend that such questions should be decided by some properly constituted tribunal.”

In cases of dispute between railway companies as to traffic arrangements the adjustment of rates for passengers and freight, the crossing of tracks and compensation therefor, including the cost of maintenance, the alignment, arrangement, disposition and location of tracks; rights of way over or through lands, owned or occupied by railway companies; running powers; haulage; use of tracks; use of stations and station grounds; adjustment of tables; transshipment and interchange of freight; and other matters relating to "powers," "highways" and "bridges," and "traffic arrangements," in the Act of the Parliament of Canada known as "The Consolidated Railway Act, 1879, and its Amendments."

The Commission decided:—

"That legislation was required to empower an independent tribunal to deal with all such questions, whose decision should be final."

The Commission now respectfully offer their suggestions and recommendations upon the general subject of the relations of the railways to the public.

CLASSIFICATION OF FREIGHT.

The convenience to the public and also to the several railway companies of an uniform classification is so obvious that the Commission consider it unnecessary to offer any extended remarks upon it, so far as it applies solely to railways in Canada. But as regards the through traffic from and to the United States, or such traffic as is carried on in connection with United States railways, it does not appear desirable to insist upon the Canadian classification being made applicable to such transportation.

They therefore recommend:—

"That a uniform classification of freight be established and maintained by all railway companies, subject to the adoption, if desired by them, of the American classification for through traffic to and from the United States."

TARIFFS.

The Commission have carefully considered all the information before them on this important subject, and believe the interests of commerce will be best served by leaving the arrangement of tariff rates for passengers and goods in the control of the several railway companies respectively, subject only to approval and revision of the maxima rates by an authorized tribunal.

They therefore recommend:—

"That the railway companies may make and establish tariffs, subject to the approval and revision of the maxima rates by such tribunal as may be constituted,"

LONG AND SHORT HAUL.

Uniform Mileage Rates.

This question has probably given rise to more discussion than almost any other point connected with railway management. It forms the subject of much of

the evidence given before the Commission, and the greatest diversity of opinion exists upon it.

It has been the subject of repeated legislation in the United States, and in the celebrated "Granger" agitation in the West, uniformity of mileage rates was imposed upon the railways by State legislation. Experience, however, tended to prove that the effect of such laws was injurious, leading to their early repeal or modification.

The subject has also received the greatest attention in connection with the Inter-State Commerce Bill, and the principle of uniformity of mileage rates was finally sanctioned by the Act, reserving, however, to the Railway Commission power to suspend its operation on sufficient reason being shown. This power has since been exercised by the Commission in certain cases, and it is not now imperative on all railways to establish uniform mileage rates under like conditions and in the same direction for long and short distances.

The reasons given for the suspension of this section of the Inter-State Commerce Act have received the greatest attention by the Commission. They cannot lose sight of the fact, that where conveyance by water comes into competition with railways, it is not in the public interest to compel railways to transport freight at uniform mileage rates, as it involves the establishment either of such low rates as render the local traffic unremunerative, or such high rates as leave the through traffic between the competitive points wholly at the mercy of the carriers by water. The public interest will be best served by permitting rates between such competitive points to be determined by the respective carriers.

It is, moreover, manifest that the through traffic of Canada by railway, which the Commission regards as of the utmost importance, cannot possibly be carried on except at such rates, in combination sometimes with navigation, but more generally with American railways, as would be utterly inadequate if applied to ordinary local traffic.

While stating their opinion that the competition by water and rail from almost every important business centre in Canada forbids the adoption of uniform mileage rates, the Commission have not lost sight of the alleged unfair treatment of certain localities in Canada itself by railways. They believe, however, that such cases can be considered and relief obtained under the powers which they hereafter recommend should be granted.

They therefore recommend:—

"That it is inexpedient to adopt a rule of equal mileage rates, irrespective of distance and cost of service."

Unit of Transportation.

By the adoption of an uniform unit for transportation it is not proposed to disturb or interfere with the right of the railways to establish a classification of freight nor to require them to depart from their practice of making their rates per 100 lbs. But the Commission, in view of the general character of the business of Canada, and to avoid complaints by small shippers that large shippers are treated on more favorable terms, desire to establish such an unit of transportation as may govern all transactions that do not absolutely belong to the export trade of the country. It has been given in evidence that the railway companies, in order promptly to furnish cargo for ocean steamships, induce wholesale dealers, by special low rates, to furnish large quantities of grain or flour, and it has been alleged as a grievance that such rates are not granted to shippers of small quantities.

The Commission are of opinion that the grain and flour trade of Canada cannot be advantageously carried on unless the railway and the merchant can arrange together, as to the cost by rail and ocean vessel, of delivery in the foreign port.

The same necessity does not exist in regard to the ordinary trade in other articles, and while prepared to admit the necessity, in certain cases, of making the rate of transport depend upon the quantity carried, the Commission consider that this privilege should be confined to not less than car loads, and be subject to the regulations proposed to be established in regard to discriminations.

They therefore recommend :

“ That one car load of not less than ten tons shall be the unit of railway transportation, in respect of any special rates granted ; all quantities under a car load being treated alike, but the railway company to be at liberty to make special rates for larger shipments.”

DISCRIMINATION.*Individuals.*

Undoubtedly one of the most frequent causes of complaint against all railways, not only in Canada but also in Great Britain and the United States, is that of discrimination of an unjust or partial character between individuals under like conditions. It interferes most improperly with legitimate trade, and should certainly be prohibited by law. It cannot be the desire of the principal railway officers or managers to permit such favoritism, but it is generally the act of local agents—especially such as are paid by commissions, and influenced either by personal favoritism or desire of gain. The practice should be peremptorily ended and such penalties imposed as will secure the attention of the railway managers to the strict observance of the law by their servants and employees.

The Commission recommend :—

“ That discrimination of unjust or partial character between individuals under like conditions be effectively prohibited, and any infraction of such law punished by severe penalties.”

Localities.

Much complaint has also been made of discriminations in favor of one locality over another. These cases differ widely from the preceding, and are found generally to arise from the presence of competition, either by water or by rail. They seem to be inseparable from any railway system and each case requires special investigation. Where like conditions exist, such discriminations should be prohibited and under the pressure of being exposed to penalty the railway managers must exercise the power of determining the respective rates of transport.

The Commission believe that these cases will generally be amicably arranged if the following recommendation be adopted, and the difficulty will be met which has been referred to under the head of Long and Short Haul—Uniform Mileage Rates:—

“ That discrimination of an unjust or partial character between different localities under like conditions be effectively prohibited, and any infraction of such law punished by penalties, after due cognizance having been taken of the effect of water and rail competition.”

SPECIAL RATES.

The objection to secret special rates, rebates, drawbacks, and all concessions to shippers of a discriminative character are fully set forth, not only in the testimony given in Canada, but also in the great body of evidence furnished from the United States. The practice is not only unfair to traders engaged in the same business, but has been shown to be opposed to the best interests of the railways themselves, and should certainly be prohibited under penalties for infraction of the law.

The Commission do not, however, desire to object to such special rates or concessions where made to all parties alike, and their existence made public. It is in the interests of commerce, as shown in treating of discriminations, that railway managers should be permitted to grant special relaxation of their tariff rates in certain cases ; but such concessions should be alike available to all.

It is believed the case will be met by the adoption of the following recommendations :—

“ That all secret special rates, rebates, drawbacks or concessions to shippers be declared illegal and made subject to penalties, and that every special rate be made public on demand of any enquirer.”

EXTORTION OR UNJUST CHARGES.

The evidence given before the Commission and the information derived from the United States and Great Britain disclose the existence of many complaints by individuals of overcharge under the railway tariff, or of exactions imposed unfairly in various forms. Such abuses have their remedy under the common law of all countries, but the process is slow and expensive and presses hardly upon the complainant, who frequently will rather submit to what he considers unjust treatment than enter into litigation with a powerful corporation. In many cases, moreover, the amount at issue is small, though equally vexatious in its supposed extortion.

It appears to the Commission desirable, in the interests both of the public and of the railway companies themselves, to provide an easy and prompt mode of settlement of all such complaints, reserving, however, to the party aggrieved, the option of proceeding through the ordinary law courts, if he prefers.

In the United States generally, the Railway Commissions have power to hear such cases, and in some instances to decide them, while in others the ultimate decision is left to the ordinary tribunals.

The Commission are of opinion, that where the complainants elect to go before the special tribunal to be created in Canada, the proceedings should be final, subject only to the regulations proposed hereafter in this respect.

In dealing with such cases in other countries, the amount to be recovered in Great Britain is limited to the overcharge, while in the United States it varies; in most cases, being followed by a penalty to be recovered by the complainant of three times the amount of the damage actually sustained.

The Commission, in proposing to apply this remedial system to Canada, consider that the damage claimed should be distinctly limited to the actual overcharge, and that if indirect damage is alleged or claimed, the complainant should proceed by an ordinary action at law. It appears, also, that in many instances, it may be shown that the overcharge has not been willful or intentionally unjust; therefore, it is thought that the amount of penalty should be in the discretion of the tribunal, but not to exceed three times the amount awarded as overcharge.

As regards the costs attendant upon the investigation of complaints, the tribunal should be empowered to exercise its discretion in awarding them.

The experience of the United States has shown that the existence of such a tribunal leads to the amicable settlement of complaints, and it is believed that a similar result would follow in Canada, removing a fruitful source of irritation against railways.

It is therefore recommended :—

“ That complaints of extortionate rates, or unjust discrimination, may be referred to an authorized tribunal for settlement, whose decision shall be final. That the damages be limited to the amount proved as overcharged, with any further amount not exceeding three times the sum awarded, as a penalty to be recovered by the complainant, with costs in the discretion of the tribunal. No indirect damage to be considered or awarded. That the right be reserved to the complainant of proceeding at common law. That the right be reserved to complainant of proceeding at common law, if he so elect.”

EXPRESS BUSINESS.

The express business is primarily a commission business, the expressman undertaking to serve whomsoever may employ him on doing various errands at some other place than where such employer lives, taking care and charge of such commission personally or by deputy. The transportation of merchandise is an incidental matter and dependent upon the commissions given the expressman to execute. The express companies neither own the lines nor railways upon which they do business, nor have they (as a rule) any exclusive privileges; anyone possessing the necessary security being able to do an express business for themselves. They must employ special teams, drivers, agents, &c., at their offices, and messengers, transfer men, &c., *en route*, and it would be extremely difficult to bring express charges under any ordinary classification or tariff.

It is therefore suggested :—

“ That railway companies be not compelled to undertake express business, but must afford equal facilities to all express companies alike in the transaction of the same.”

FREE PASSES.

The practice of granting free passes is shown, by the evidence obtained from the United States, to be in many respects equivalent to “discrimination,” and therefore objectionable. Its abolition is clearly in the interests of the railway companies, and it certainly cannot be claimed that the public, under any circumstances, are entitled to free transportation.

Under the Interstate Commerce Law free passes have been abolished, and it is understood the change has given much satisfaction and been beneficial to the railways. It is true that the law in question reserves the right of railway companies to exchange “passes,” which is clearly unobjectionable as simply as an exchange of service. In Canada, where the Government as representing the public are the owners of one important railway, it seems proper that they should at all times be entitled to pass over and examine their railway, but the Commission consider that the privilege of obtaining “passes” from other railways should be strictly confined to the actual officials of the Dominion railway.

They therefore recommend:—

“That the grant of free passes by railway companies be abolished, saving the reservations contained in the United States Interstate Commerce Act, and excepting members of the Federal or Provincial Government on Federal or Provincial railways respectively.”

UNIFORM RAILWAY REPORTS.

It is evidently desirable, in the public interest, that the several railway companies should render their reports to the Government in the same form and for the same periods.

It is recommended:—

“That the railway companies be enjoined to furnish their several reports to the Government as required by law, in a uniform shape and for the same periods.”

PENALTIES ON RAILWAYS.

It appears important to provide by law for the due observance, by the several railway companies, of all duties and obligations imposed upon them under existing and future Statutes. This is done both in Great Britain and the United States, and it is believed to have been beneficial in its operation.

It is suggested:—

“That the illegal infraction of any statutory obligation should be left to the proposed tribunal, who, after hearing the case, may impose for any proved violation or neglect to comply with the regulations established by law, such penalty as may be deemed proper, being not less than one hundred dollars nor more than five thousand dollars.”

COST OF TRIBUNAL.

The Commission have considered the practice pursued in Great Britain and in the United States in regard to defraying the expense attendant upon the proposed railway tribunal. In most cases it is met by an assessment upon the railways, based upon various methods. A fair consideration of the whole subject leads to the conclusion that the regulation and control of railways by the State is entirely based upon grounds of public interest, and for the immediate and direct benefit of commerce, involving changes which may in some cases be thought to press somewhat hardly upon the railway companies. It is therefore considered more equitable that the charges connected with the proposed tribunal should as in the case of other courts be borne by the community at large.

It is therefore recommended:—

“That the expenses connected with the formation and operation of the proposed Railway tribunal be borne by the public exchequer, excepting so far as may be caused through investigation of complaints, in which case costs may be included in the award, at the discretion of the tribunal.”

GENERAL REMARKS.

In recommending the foregoing amendments to the existing railway laws, the Commission desire to be understood as in no respect proposing to alter or diminish the existing statutory obligations for prevention of accident and general oversight. They would, however, suggest that special provision should be made into the investigation of serious accidents, as is now provided under the English law. Such enquiries might, probably, in the case of Canada, be fittingly entrusted to the proposed railway tribunal.

FORMATION OF TRIBUNAL.

In considering the important question of the character and composition of a tribunal to give effect to the various recommendations made in their report, the Commission have felt themselves limited to the selection of one of two courses:—

First.—The creation of a Commission, independent of Government control, with practically irresponsible authority.

Second.—The maintenance of the Railway Committee of the Privy Council with such extension of its powers and requisite departmental machinery, to secure the proper execution of the law.

In considering the subject the Commission have the advantage of knowing the scope and operation of independent Railway Commissions in Great Britain and the United States. But in the former case they are met by the difficulty that the present law requires important amendments which have not yet been considered, and which are known to excite much opposition and criticism. In the several States of the American Union very great diversity exists in the powers and character of these tribunals, for each of which methods peculiar advantages are claimed. It may be unhesitatingly stated that the Commission are unable to accept any of these commissions as the model upon which the Canadian tribunal should be framed. Apart, moreover, from the intrinsic defects that are found in them all, it is evident that they are unsuited to the condition under which the commerce of Canada is carried on, through their scope being restricted within too limited an area, and unfitted to deal with the foreign through traffic upon which the prosperity of Canada is so largely dependent.

The Interstate Commerce Act and the Commission established to give it effect are much more analogous to the circumstances of Canada, and the Commission would have felt their labors greatly lightened if the operation of this law could be regarded as final and settled. It deals with questions precisely similar to our own, and its working has already proved of the greatest value in the present enquiry. But the Interstate Railway Commission has, in its initiatory judgments, found it necessary to partially suspend the operation of the most important section (4th section) of the Act, and has already indicated other important particulars in which

it desires amendments to the law. It has, however, confessedly been already productive of great good to the public and also to the railways themselves, whose apprehensions of injury from it have been in a great measure dispelled.

With respect to the machinery through which the Interstate Commerce Act is expected to work, your Commission have grave doubts whether it will be found applicable to the vast extent of territory over which it has jurisdiction. They are inclined to believe, that in requiring the presence of even one Commissioner at all enquires, it will be found impossible to meet the demands upon the Commission, and the necessity of making all original applications to the central authority at Washington will, they fear, lead to serious delay, and in the case of such individual complaints as it is proposed to refer to the Canadian tribunal, amount practically to a denial of justice.

Whether these opinions be justified by experience is, however, immaterial, as the Commission cannot recommend the adoption of any system which is now on its trial, and which it is conceded requires substantial amendment, none of the existing Commissions having sufficiently extensive powers to deal effectively with the various matters which would come under their jurisdiction. It is undoubtedly the wiser policy to benefit by the experience of others rather than by our own.

The Commission desire to provide by immediate legislation for admitted evils, with the least possible disturbance to existing methods, only accepting such conclusions as have been tested and proved to be beneficial. They wish to avoid the hasty creation of any system of which experience in the United States, England and Canada may soon require serious modification. They think it better to test the working of the proposed law by temporary provision for its execution, and after full experience of the results of the Interstate Railway Commission and of our own legislation to consider whether such system should be made permanent.

Other considerations also weigh with your Commission in their conclusions. The political constitution of Canada recognizes direct ministerial responsibility to Parliament, much more than in the United States, and, therefore, as a Railway Tribunal is necessarily tentative, it seems to them undesirable to remove its operation, in its inception, beyond the direct criticism and control of Parliament.

At the same time the Commission admit that serious objection may be taken to the selection of the Railway Committee of Privy Council as the General Railway Tribunal. The members cannot leave their duties at Ottawa, and must, therefore, delegate to subordinates much very important work, though the Interstate Commission is open to the same objection.

They hold their office by a political tenure and are liable to sudden change, whereby the value of their experience is lost. They can scarcely be regarded by

the public as so absolutely removed from personal or political bias as independent members of a permanent tribunal. They cannot possibly give their exclusive attention to their railway duties, and in taking upon themselves the duties which would necessarily devolve upon them they would be in fact performing judicial functions. These and other reasons occur against the selection of the Railway Committee of the Privy Council as the Railway Tribunal; but it is believed they are outweighed by the considerations of general and ultimate advantage, through proceeding with extreme caution in dealing with subjects affecting the entire commerce and progress of the country; while a material practical advantage is secured by the fact that any required changes in the law or in its application are secured through identifying the Government with its execution.

After the fullest discussion and most deliberate consideration the Commission desire to report as their final recommendation:—

“That the powers of the Railway Committee of the Privy Council be enlarged so far as to enable them to administer the proposed law, providing—

“1st. That the Committee shall itself hear and determine all disputes arising between railway companies, with power to appoint proper officers to take evidence locally.

“2nd. That the Committee shall itself decide all questions of classification of freight, tariff and uniform railway returns.

“3rd. That the Committee shall have power to appoint officers in each Province, to hear and determine all complaints against railway companies, subject to power of reference by such officer of any point to the Committee, and also subject to the right of appeal to the Committee itself.”

GENERAL RAILWAY LAW.

The Commission consider the decision of this question to be rendered more difficult from the existence of co-ordinate powers in the constitutions of the several Provinces reserving the right of chartering local railways. But as regards the Dominion at large, they are of opinion that a general railway law would be more beneficial than special charters, provided such general law contained provisions for securing the public from undertakings either uncalled for by the community, or projected without adequate security for their *bonâ fide* prosecution.

Such provisions should comprise:—

“1st. The submission of plans and profiles of location of proposed lines, and estimates of cost to be filed for a certain time with the Railway Tribunal.

“2nd. Adequate proof of ability to complete the undertaking, either by subscription of share capital, or by deposit with the Government, subject to release as the works progress.

“3rd. No bonds to be issued until a certain specified proportion of the cost has been actually expended upon the work.

" 4th. The operation of such general law to be excluded from any part of the Dominion, wherein Parliament has forbidden the construction of railways, during such period as the prohibition may exist."

All respectfully submitted.

(Signed) A. T. GALT, *Chairman*,
COLLINGWOOD SCHREIBER,
GEORGE MOBERLY,
E. R. BURPEE.

MONTREAL, 14th January, 1888.

THE ROYAL COMMISSION ON RAILWAYS.

Appendices to Report.

1st. REPORT OF COMMITTEE VISITING UNITED STATES.]

2ND. SUPPLEMENTARY REPORT OF SAME.

3RD. EXTRACTS, HADLEY, &c.

APPENDIX No. 1.

**THE REPORT OF THE SUB-COMMITTEE OF THE COMMISSION APPOINTED
TO ENQUIRE INTO THE RAILWAY LAWS AND RAILWAY COMMISSIONS
IN THE UNITED STATES.**

To the Chairman and Members of the Royal Commission on Railways for Canada :

Your Committee beg to report that, in accordance with the instructions of the Commission, they proceeded to the United States, in order to obtain as full and perfect a knowledge of the working, not only of the Interstate Commerce Law, but of the separate State Railway Laws and Commissions, as it would be possible to get in the limited time at their command.

In furtherance of the object, your Committee visited the following States and cities:—

States.	Cities.
1. Minnesota.....	St. Paul, Minneapolis.
2. Wisconsin.....	Madison, Milwaukee.
3. Illinois.....	Chicago.
4. Michigan.....	Detroit, Lansing.
5. New York	Albany, New York.
6. Massachusetts.....	Boston.
7. Connecticut.....	New Haven.

During our visit to Minneapolis the Interstate Commerce Commissioners were holding a session of their Board, investigating several causes of complaint, and we had an opportunity of observing the manner in which business was conducted by them, which seemed to give satisfaction to all parties interested.

We also met at same time the State Commissioners of Iowa, Missouri, Wisconsin, Illinois, Nebraska and Minnesota, who had gathered there to meet the Interstate Commission, and also to discuss with a number of delegates—representing the mercantile interests of those States—matters of joint interest to be presented to that Commission. From all these gentlemen we were able to gather information regarding the laws governing the railways in their respective States,—and wherever it was possible your Committee endeavored by interviews with the leading business men, railroad managers and public officials, as well as State Commissioners, to get the best and most diversified information as to the working of the separate State and the Interstate laws and Commissions.

The result of our enquiries in the separate States as to their local laws and Commissioners have for convenience been placed under the head of each State.

WISCONSIN.

The law in this State provides for one Commissioner appointed by the Governor, whose power is only advisory. All unjust discrimination or unjust charges are prohibited. A maximum tariff is made, and any person sustaining damage from a violation of these provisions of the law may recover from the railroad three times the amount of such damage. It is the duty of the Commissioner to investigate all

grievances brought under his notice, and if well founded to report the facts to the Attorney General who shall prosecute at the expense of the State. The Commissioner has also to examine into the condition and management of all the railways in the State and report thereon to the Legislature, giving also the financial condition and a list of the stockholders of each road. Railroads are chartered under a general incorporative Act and not by special legislation. From enquiries at Madison, the State Capital, and Milwaukee, it appears there is perfect harmony between the railways and the State Commissioners, and that the Interstate law was not working injuriously to anyone.

MINNESOTA.

This State has had a varied experience in railway legislation, having tried nearly all kinds. In the general anxiety to open the wild lands of the State for settlement, in 1868, laws were passed granting charters to any persons filing articles of association with Secretary of State, giving them power to raise their capital and build railways when or where they chose. The State also gave State bonds to the extent of ten millions of dollars and large grants of lands towards building certain lines of road. In 1872, the opposite course was pursued and legislation was passed restricting the operation of the railways and regulating their charges and appointing one Commissioner.

The railroads chartered previous to the passage of these laws, questioned the right of the Legislature to interfere with their rates, but on appeal it was finally decided by the Supreme Court of the United States, that the State had the right to regulate the rates on all railroads within its borders. When the general collapse took place following the failure of Jay Cooke and with him of the Northern Pacific Railroad, in order to induce capital to return to the State and open up its resources by the construction of more railroads, this law was repealed and the duties of the Railroad Commissioner were confined to examining into the physical condition of the railways as bearing upon safety of the travelling public.

In 1885 the present law was passed which provides for three Commissioners to be appointed by the Governor and paid by the State. The law prohibits unjust discrimination of any kind and unjust or extortionate charges, and gives the Commissioners power to adjust rates, locate stations and sidetracks, and also to compel railways to build sidings to warehouses, where in their judgment such are required. It is their duty to investigate all complaints or grievances against the railways or their management for violation of the law, and when their findings are not obeyed, to report to the Attorney General of the State, whose duty it is to enforce obedience to the law. They are also to examine into the condition and management of all railroads in the State and report to the Legislature. One of the three Commissioners must visit every town in the State, where there is a railroad station, at least once every three months, giving the public twenty days' notice of the time of such visit. The railroads, in lieu of exemption from all local or other taxes on their property or lands, pay into the State Treasury three per cent. of their gross earnings.

We had long interviews with the Governor and Secretary of State, ex-Governor Austin, now Chairman of Railroad Commission, and many leading business men, from whom we learned that the railroads almost universally complied with the requirements of the Commissioners under the law.

At St. Paul, Mr. Clough, lately Solicitor for the Northern Pacific but now assistant to Manager of St. Paul, Minneapolis and Manitoba Railroad, informed us that he regarded the clauses in the Interstate law relating to long and short hauls if literally interpreted as injurious to trade, if not absolutely impracticable, and that the clause prohibiting pooling if continued must lead to the consolidation of railroads into large systems. He thought for the State an advisory and investigating Commission useful, but would not give them power in making tariff rates. In most cases the rates on the St. Paul, Minneapolis and Manitoba are lower than those named by the Commission.

Mr. Shephard, the head of a large firm of contractors, instanced that as the effect of long and short haul in the Interstate law in advancing rates on the railways between competing points, he had already paid, during the present season, \$30,000 more in freights than he would have done under the tariff of last year.

I. I. Hill, Esq., the most successful and probably the ablest railroad manager in the North-West, said the value or otherwise of a Commission depends entirely upon the law governing the railways and the power given to the Commissioners. As a rule, he found the Commissioners were sensible men, and when they had to look at both sides of the railway problem, the railroads had no difficulty with them. He had no trouble on his road in keeping pace with public opinion, and as a matter of business he reduced rates when practicable, oftentimes even lower than required by the State laws. He believes railroads should be built and operated on commercial principles, and pay a good interest on their actual cost.

In doing so there should be some restriction to the present system in Minnesota, of giving charters indiscriminately (often to build roads where none are needed), and also there should be a strong supervision over the location and construction of new roads, compelling them to build on the lowest grades and easiest curves practicable between terminal points, in order (even at greater first cost) to minimize operating expenses.

IOWA.

Peter A. Dey, Esq., Chairman of the Iowa State Commission, informed us that the Granger Law (so-called) was passed in that State in 1874. This law made classification and rates for both passengers and freight. There being no Commission, the penalties could only be enforced, by the individual aggrieved, through the Courts.

In 1878 a law was passed forbidding railroads charging unreasonable rates or discriminating in favor of individuals or places (under a penalty of three times the actual damage sustained), and creating a board of three Commissioners, to be appointed by the Governor and paid by the State. The money required was collected from the railroads according to the assessed value of their property within the State. They were required to examine into the condition, equipment and management of each railroad in the State, with reference to public safety and convenience, and to advise the said railroads of any improvements which they judged to be proper or of any violation of the laws. In 1884 the law was amended, giving the Commission power to decide what were reasonable rates, and in case any railroad refused or neglected to carry out their recommendations, to report to the Attorney General of the State, whose duty it became to enforce them through the Courts.

In 1886 the Commissioners fixed a maximum scale of rates for the railways, and they expect to have an Act passed at the next session of their Legislature applying the principles of the Interstate Commerce Act to the railways within the State. Some of the roads are already adjusting their tariff within the State to accord with its provisions.

He also stated that as the railways have grown stronger, and from an increased volume of business are able to carry traffic cheaper, they have reduced their rates voluntarily, until at the present time they are actually much lower than those fixed by the Granger Law of 1874.

MISSOURI.

In 1875 a law was passed creating a board of three Commissioners (to be appointed by the Governor) who were to have a general supervision over the railroads in the State, and with power to make classification and maximum rates for freight traffic. A special session of the Legislature was convened in May last for the purpose of legislating in regard to railway management and as far as possible of assimilating the railway Acts of the State with the Interstate Act of Congress. An Act was passed prohibiting discrimination, either in rates or accommodation, or of

pooling freight or earnings of different competing roads for a greater charge for a shorter than for a long haul on the same road and in the same direction. A railroad violating any of these provisions of the Act is liable to the party aggrieved for three times the amount of damages sustained and also to the State in a penalty not to exceed \$5,000.

The Commission have to classify freight and adjust rates with the railroads, and if any railroad company refuse or neglect to adopt and publish such tariff rates the Commissioners are to make and publish one for them.

It is also their duty, either at their own instance or on the request of the party aggrieved, to see that all the provisions of the law are enforced.

ILLINOIS.

The constitution of the State of Illinois adopted in 1870 declared railroads to be public highways and free to all for the transportation of their persons or property under such regulations as may be prescribed by law. The Legislature was required to pass laws establishing reasonable maximum rates and prevent discrimination, and to enforce such laws by adequate penalties, even if necessary to the forfeiture of the property and franchise of the railways. In 1871 a board of three Commissioners was created, who were to be appointed by the Governor and paid by the State (with the right to free transportation over the railroads). In order to overcome a decision of the courts which declared that the law relating to discrimination was unconstitutional because it did not make the distinction between discrimination and unjust discrimination and because it did not allow the railroads to explain the reasons for discrimination, the law was amended in 1873, defining and prohibiting extortion and unjust discrimination and fixing penalties in addition to awarding triple damages to the party injured. The Commissioners are to examine into the condition and management of the railroads within the State, also to make for each a schedule of reasonable maximum rates, regulate the interchange of traffic between them and prosecute all violations of the law which come to their knowledge.

For much of this information regarding the laws of Illinois, and also many valuable statistics relating to the traffic over, and working of the railway system of the West, we are indebted to I. W. Midgely, Esq., Chairman of the Southwestern Traffic Association, representing over 40,000 miles of railroad centering in Chicago. He also informed us that the railroads in Illinois usually adopted the tariffs as arranged by the Commissioners or amended by them on conference.

MICHIGAN.

In 1873 the Legislature passed an Act which provided for a Commissioner of Railways to be appointed by the Governor, whose duties were to examine into the condition and management of the railroads within the State and all matters relating to the public safety, with power to regulate the crossing of the track of one railroad over that of another, and the interchange of traffic, as well as to arbitrate in cases of dispute. No special charter can be obtained from the Legislature in this State; but any number of individuals can file articles of association, and a map of location of the proposed railroad with the Secretary of State; which location being approved by a board consisting of the Attorney General, Secretary of State, and Railroad Commissioners, entitles them to a charter under the general Act for incorporation. The laws as now in force prohibit unjust discrimination in rates.

In our interviews with the Governor of the State and Railroad Commissioners at Lansing, the managers and other officials and also the solicitor of the Chicago and Grand Trunk with others at Detroit, we learned that the operations of the State Commission were regarded as beneficial, and also that the Interstate law as it was being interpreted by the Commission was, if anything, working advantageously.

Before leaving Detroit we had an interview with Hon. Jas. F. Joy, for many years prominently connected with the railroads of America. He expressed the

opinion that the Interstate law had been a benefit to the railroads, inasmuch as it had prevented unjust discrimination and helped to maintain fair rates on through business. The great trouble with all railways, and especially trunk lines, was in cutting rates and carrying freight too low. For this he would recommend legislation fixing a minimum rate for all railroads, with a heavy penalty in cases of violation. This, he thought, would tend to prevent ruinous competition and the building of unnecessary roads.

NEW YORK.

This State having within its borders the Atlantic terminus of most of the trunk lines to the west, and across the continent, must be seriously affected by the management of these railroads, yet it had no Commission until 1882. It has been legislating on railway subjects since 1850, and the most memorable Commission of enquiry into the abuses of railway management in America was the Hepburn Committee of the Legislature of New York for 1879. The result of this investigation was the legislation of 1882, which amongst other things created a Board of three Commissioners.

These Commissioners are appointed by the Governor, with salary of \$8,000 per annum each, which with the salaries of a secretary, accountant, engineers, inspectors, clerks and other expenses, is paid by the State out of a fund collected from the railroads *pro rata* according to their gross earnings. Their powers are those of an investigating and advisory board. They are to keep themselves fully informed in all matters affecting the condition, operation, management and transportation facilities of the railroads, and are also directed to report any violations of the laws to the Attorney General, whose duty it is to take such action as may be necessary for the protection of the public interests.

Their duty is also to recommend that repairs to the superstructure be made when necessary, that additions to the rolling stock and additional station and terminal accommodation shall be afforded where needed, and also such changes in the freight and passenger rates as they deem reasonable and expedient in order to promote the public convenience.

They have no power to enforce these recommendations, but in case of the refusal by any railroad to comply, they report the facts to the Attorney General, who takes action in cases of violation of the law; or to the Legislature, when special legislation is needed.

Charters are granted under the general law for incorporating companies.

Not less than 25 individuals are required to file articles of association with the Secretary of State, after having got the approval of the State Engineer to their map and plan of location, when they are entitled to a charter to build; but if at any time a railway company wishes to increase its capital stock or make a mortgage for a further issue of bonds, they must get authority from the Railroad Commissioners. The Commissioners on receiving applications for such authority send their accountant to examine into the financial condition of the company, to ascertain if the value of stock and bonds previously authorized has been properly expended, and whether the increase asked for is necessary, and on his report they decide whether to authorize such increase of capital or otherwise.

From information gathered in New York City and Albany, we learned that the railroads generally comply with the recommendations of the Commissioners, and almost all complaints were remedied without the necessity of formal action.

MASSACHUSETTS.

The Railroad Commission of this State was frequently referred to during our enquiries as one of the oldest and most useful in America. We understand from the Commission that the law relating to extortion and unjust discrimination was framed largely from the experience of investigation and legislation in relation to English railways. At the time they were passed they prohibited both unjust discrimination

and charging more for a shorter than for a long haul over the same road and in the same direction for the same class of goods.

The Act creating a Board of Commissioners was passed in 1869. It consists of three members appointed by the Governor and paid by the State from funds which are assessed on the railroads in proportion to their gross earnings. Their duties are to make a thorough examination into the physical condition and structures of the railroads, to decide upon the location of the road and the stations, to regulate the crossing of railroads and the interchange of traffic between connecting roads, and to examine into the causes of accidents, ordering necessary precautions to prevent the same. They also investigate complaints when made to them of discrimination or unjust charges for transportation of either passengers or freight, and report the result to the railway company complained against, and in case of refusal or neglect to comply with their recommendations they report the same to the Legislature.

The Select Committee of the Senate of the United States on Interstate Commerce in their report in January, 1886, say:—

“In the way of practical results the Massachusetts Commission is shown by its record, and by the testimony, to have exercised by its reports and decisions an acknowledged influence upon the railroads in bringing about needed reforms and to have been successful in the redress of grievances and correction of abuses. It has held the railroads to obedience of the laws and has not only secured the passage of needful legislation but has prevented unwise measures. Through its recommendation voluntary reductions in rates have been made and discriminations of different kinds have been done away with. It has secured uniformity in the accounts and reports of the railroads. It has fixed the responsibility of accidents and has done great service in requiring the adoption of improved appliances for safety.”

They also refer to Hon. Charles Francis Adams, for many years Chairman of the Massachusetts Commission, as an acknowledged authority on railroad matters. He said in 1874:—

“The Commission is simply a medium, a species of lens by means of which the otherwise scattered and powerless rays of public opinion could be concentrated to a focus and brought to bear upon any corporation.”

It would therefore seem from what has been said that four of the States, Minnesota, Illinois, Missouri and Iowa, have laws regulating among other matters tariff rates, and giving the Commissioners very extensive power in enforcing the laws within the respective States.

Four States, Michigan, Wisconsin, New York and Massachusetts, while they have laws providing against unjust discrimination and extortion, and while the Commissioners in each have full and extensive power in the oversight of the condition of the roads on all matters relating to the security of life and property, yet in regard to questions relating to rates their duties are only of an investigating and advisory nature.

We may also add from personal observation and enquiry, that the States of Connecticut, New Hampshire and Maine, have Railroad Commissioners whose duties are confined to the examination and oversight of the physical condition of the railroads as affecting the safety to life and property in transportation; they have to report yearly to the Legislatures of their respective States on these matters, as well as on the financial condition of each railway within the State.

The testimony we were able to obtain from personal interviews with the Governor and Secretaries of State (in the States visited) as expressing the views of the people by whom they were elected, also from leading men engaged in trade and manufacturing—from the reports and opinions of the different State Commissioners, and also from the managers or other officials of such railroads and traffic associations as we were able to see, lead us to the conclusion that in the United States, the form of Commission most popular with all classes and most successful in correcting abuses and instituting reforms, is one for investigating and advising such as that adopted by the State of Massachusetts, and copied in many of its leading features by New York. This system was brought to its present state of efficiency in Massachusetts mainly

through the labor of Charles F. Adams, Esq., for many years the Chairman of the Commission, and now President of the Union Pacific Railroad, Boston.

Mr. Adams not being at home when we first visited Boston, we deemed it necessary to make a second visit to that city to see him, and at the same time to visit New Haven to see Prof. Hadley, of Yale College, who has made the railway problem of both America and Europe a special study.

Prof. Hadley thought as the railways of Europe (outside of Great Britain) were so largely owned or under control of the Governments, and the circumstances governing them were so different from those governing the railways of America, that no laws regulating them would be of use in America.

In Prussia nineteen-twentieths of all the railroads are practically owned by the Government, and there the tariff on all good except coal and such articles (which are carried by special contract) are based upon equal mileage rates with a terminal fee added.

In Belgium all the railroads, excepting one, are owned by the Government, and here where the freight charges are the lowest of any country in the world the same principle of equal mileage rates is applied.

In France the territory is divided by the Government between a certain number of companies who have the exclusive right to build and operate railroads within their respective districts. The result is that roads are not always built as fast as needed to meet the requirements of the increasing demands of trade, and in 1884 the Government had to guarantee some of the companies even as high as 13 per cent. on the actual cost in order to secure the construction of certain branch lines which they considered demanded in the interest of the country.

The tariff rates on all the railroads in France are made by the companies and Government jointly, and no railroad can charge either more or less without first getting the consent of the Government. This has a beneficial effect in keeping rates uniform, and if applied here might prevent the building of many competing lines (where there is no business to warrant them), and also in maintaining fair remunerative rates would protect the value of railway securities.

The system of pooling was almost universal both with private and Government roads, and often with also water routes with good results.

In regard to the Interstate law Prof. Hadley stated that in the present shape it was not meeting all the requirements expected, yet by reason of the decision of the Commissioners its effect upon the railroads has not been injurious.

There are two classes dissatisfied: 1st, those who were able to take care of themselves, and formerly had special favors; and 2nd, those who think it has not borne so heavily upon the railways as was expected and as they thought it should.

As a matter of fact he said the railway problem is now so complicated and the commercial prosperity of the whole country so dependent upon its proper solution, that it requires the most careful study and mature judgment.

Neither the courts nor the Legislature are competent or have the time to decide correctly regarding the proper management of railway traffic. They may often give decisions or pass measures seriously and perhaps injuriously affecting the trade of a whole continent. Too much stress cannot be laid upon the necessity of having intelligent and carefully prepared laws.

Mr. Hadley thinks a competent advisory Board of Commissioners with power to investigate and consider with the railway managers all the peculiarities of their traffic would be able to come to conclusions beneficial to trade and useful to the railroads in meeting public opinion and shaping legislation.

Mr. Adams says the present Interstate Commerce Act was passed under pressure of popular clamor, was not properly digested and is defective in many respects. It could not be expected that Congress, a body composed of men elected on account of their local ability to represent the particular districts in which they reside, are able to deal intelligently with so comprehensive a subject as the railways, often running through districts thousands of miles removed from their own and affecting for good or evil the business interests of a whole continent. The present Board of Interstate

Commissioners are an able body of men, and he had no doubt that in time they would improve the present Act until they got a good law through Congress. They have already by their decisions on the long and short haul clause suspended its operation, literally (as interpreted) in many cases actually demanded in the interests of commerce, which shows that as an absolute law it is impracticable. He thinks an advisory Commission of good men to investigate causes of complaint and assist in shaping legislation best in the interest of both the railways and commerce. He has no doubt that the fear, that under the Interstate law, a cut in through rates would be disastrous to their local traffic, has prevented the cutting of rates by the trunk lines.

The attempt of Congress to prevent pooling must tend towards consolidation, or of the larger roads swallowing up the smaller. He thinks that parties making very large shipments are fully entitled to lower rates than those making smaller shipments. The railways could certainly do the business cheaper and with less risk, and he did not see that the public were injured. He instanced some coal mines who, shipping thousands of tons of coal daily by having special rates, really gave cheaper coal to the consumer.

The Standard Oil Company may have grown rich from concessions made by railroads, but they have refined oil on so extensive a scale and they could do it so cheaply that no small concern could compete, and as a matter of fact refined oil never was so cheap as since they have been established, so he did not see wherein the public suffered. He did not think equal mileage rates fair, as no railway could carry traffic as cheaply through a sparsely settled country as through a more densely populated one. He doubted the policy of the Legislature attempting to fix even maximum rates, but he would like to see some way to prevent cutting rates or reducing them below what was fairly remunerative. In regard to charters for railroads it was not possible now to prevent their being granted where asked for, but the public would learn by experience that where they encourage unnecessary roads to be built they must ultimately pay for them.

From Mr. Lincoln, of Boston, agent for one of the European lines of steamers and so prominently engaged in foreign commerce as to be delegated to represent the merchants of Boston before the Select Committee of the United States Senate on Commerce, and also the Interstate Commissioners, we learned that through the interpretation of the law by the Interstate Commissioners its operations had not the injurious effect on the trade of Boston expected, and so far as it had tended to prevent cutting rates it had been a boon to the merchants. As a business man he deprecated railroad wars, which always cause a great deal of uncertainty in business.

In the absence of the President of the Fitchburg Railroad and Hoosac Tunnel Line to the west, we gathered from their solicitor, that owing largely to the interpretation of the law by the Interstate Commissioners in the interest of commerce it had worked better than they had expected.

Mr. G. R. Blanchard, President of the Central Traffic Association of Chicago, one of the very best authorities on matters connected with railway traffic in America, and who represents an association comprising over 50,000 miles of railway, in all matters affecting their interests before Congress and the Interstate Board of Commissioners, stated that the law as it had been interpreted had not worked injuriously to the railways. To some extent it had helped to maintain rates, as no road cared to take the initiative in cutting rates, fearing the effect of the operation of the long and short haul upon their local traffic.

The clause to prevent pooling if persisted in he said would lead to the amalgamation of the principal roads into large systems. The cost per ton of handling goods at way stations was often five and six times greater than at terminals (owing, of course, to the relatively small quantity), consequently adding to the cost of hauling local freight short distances.

He did not object to a fair Commission to stand between the railroads and the Legislatures, even though they had extensive power subject always to appeal to the courts. It was, in his opinion, much easier to arrive at intelligent conclusions with

five men whose time was given to the study of the subject than with two or three hundred changing at every election and representing most frequently entirely different interests. He would very much like to see some treaty, understanding, or arrangement, bringing the American and Canadian railway systems more in harmony.

Mr. Midgely, of Chicago, to whom we have referred before, made statements of a similar nature. He believed an investigating and advisory Commission useful, but considered giving them the power to make classification and fix rates likely to make trouble, even if it were not unconstitutional.

We came in contact with and interviewed a great number of prominent business men and railway officials, besides those mentioned in our report, and found the opinion generally unanimous in favor of legislative supervision of some kind over the operations and management of the railways; and that a Board of Commissioners was best adapted to make effectual such supervision.

We also found a similar unanimity expressed that "the Interstate Commerce Law had come to stay," and that even some railways that at first were opposed to its passage, are now beginning to look upon it as not injurious to them but on the contrary in some respects beneficial, and susceptible of being amended so as to be much more so. It was also made apparent that the railway problem is so intricate and extensive, and its proper solution has so much to do with the commercial prosperity of the country, that too much care and study cannot be given in the preparation of any legislation dealing with it.

We cannot close this report without referring to the most cordial and kind manner in which we were met and assisted in our labors by all those gentlemen with whom we came in contact during our visit to the United States.

But we beg especially to refer to the kindness and valuable assistance rendered us by Mr. Hickson, General Manager of the Grand Trunk Railway, and his able assistants on the Chicago and Grand Trunk Railway, at Detroit and Chicago.

All which is respectfully submitted.

(Signed) E. R. BURPEE,
GEORGE MOBERLY.

APPENDIX No. 2.

SUPPLEMENTARY REPORT OF THE SUBCOMMITTEE VISITING THE UNITED STATES.

To the Chairman and Members of the Royal Commission on Railways:

Since submitting the report and information resulting from our visit of enquiry to the United States last September, we have been prosecuting our enquiries further in the same direction; particularly on the following points:—

First.—Working of the Interstate law, regulating commerce.

Second.—Allowing railways to be built under a General Railway Act without requiring separate charters from the Legislature.

Third.—Practicability of railway companies conducting the express business on their roads.

Fourth.—The powers under which one railway may expropriate the property of another railway.

On the first point, E. B. Phillips, a gentleman of long experience in matters connected with railway management, President of the Fitchburg Railroad and Hoosac Tunnel Route, says:—

“So far the operation of the Interstate Commerce Law has been injurious to the through business from the west, and to the export trade of Boston, but not to so great an extent as was feared. This was due to the ruling of the Commissioners interpreting the law, and declaring that it was not illegal for the trunk lines to allow an export rebate on the western products from the port of Boston.”

Albert Fink, of New York, Commissioner for the Trunk Line Association, who is generally acknowledged as the best authority in America on questions of railway transportation, informed us: “That the Interstate Commerce Law is defective, and if literally enforced would have proven disastrous to the railways and the commerce of the country. Happily the appointment of excellent and practical men on the Commission, by suspending the operation of some sections of the Act, has prevented interruption to the carrying trade of the country and the consequent ruin which would have followed its literal enforcement. This Commission have not judicial powers.”

In his opinion no Commission or set of men should have the right to regulate or make rates for railways in which they have no interest. It seemed little short of confiscation of the property of the men who have invested their money in the securities which have built the roads. In his experience, three-fourths of all the complaints made against the railways were imaginary, and when investigated and all the circumstances connected therewith considered, the complaints vanished.

Advisory Commissions are a means of making these explanations public and thus prevent the repetition of the complaints.

When a Railway Commission have great powers, as is sometimes the case, there is danger that in order to court popular favor with some classes, or from undue influence, they may use their power to oppress some roads.

In the matter of railroad charters, his experience has satisfied him that the right to build railroads should be free to all, and it being so, there is less danger of charters being taken out for useless and speculative schemes, or with the intention of selling to existing roads. He would make it obligatory by statute that at least one-half the capital of the proposed road should be *bond fide* subscribed for, before a charter is granted, and that the whole subscription should be paid, and actually expended in the construction of the road, before any bonds on it are allowed to issue.

He said : " Your Government cannot be too careful on this point. It is very important to existing roads, and even more so to investors of capital ; and if rigidly enforced would create more confidence in our securities." His opinion is that a greater power both over the character of a road and its financial standing can be exercised on a charter granted by a fixed statute, than will be done in a special charter granted by the Legislature.

He could not see the justice in a railroad being compelled to allow another and perhaps competing road, to appropriate their tracks, buildings and property, even if they are willing to pay for them.

He believed that almost invariably, any railway rather than have a parallel road built a short distance along their right of way would agree to allow the use of their track for a reasonable compensation, and in his opinion it had better be left to themselves and the courts.

In our interview with Mr. Crocker, Chairman of the Massachusetts Commission, in regard to railway charters, he and his Board were quite pronounced in the opinion that the right to build railroads under statutory limitations should be free to all. Their experience in Massachusetts, since this mode has been in operation, is that the Legislature has been relieved of a vast amount of work, and fewer speculative and unnecessary roads have been started.

In the matter of the expropriation of the real estate or other property of one railroad company by another, he said there was no power under the laws of Massachusetts, but, when necessary, the railway company wishing to exercise the right of appropriating a portion of another road's property, applied to the Legislature to grant them that right. He did not think the Legislature of Massachusetts would delegate this power.

On this question, at the instance of Mr. Boardman, Manager of the Railroad Gazette in New York, a visit was made to J. D. Lawson, in New Jersey, who has made railway law a specialty.

From him we learned that under the constitution of the State of California and the Territories of Idaho, Utah and Montana the law of eminent domain provides that all real estate or property of private individuals may be taken for public use ; and in the same way property which has been expropriated for one public use may be expropriated again for another public use if more necessary.

There is no other State in the Union where the constitution makes such provision. The question has, however, been tested in the courts, and decisions have almost always been that the power to expropriate real estate " already expropriated and owned by one railroad," for the use of another railroad, can only be exercised by the Legislature.

Following are some leading decisions made by courts in different States :—

Illinois Court, 1876, Full Bench.

" One street railroad company cannot, under the power granted by the Eminent Domain Act, take a fragment of a competing road in successful operation, thereby destroying the usefulness and value of the whole road, but it may, by paying just compensation and by proper authority, condemn the entire road."

Indiana Supreme Court, December 17th, 1875.

Judge Gresham ruled :—

" That the lands appropriated by the complainant, and owned and occupied by it under its charter, remained liable by virtue of the general Act for the incorporation of railroad companies, as all other lands in the State, to be taken for public use for a fair compensation.

" Lands appropriated for a public use are not withdrawn from liability to further appropriation, where the public good requires it. The language of the Act is general and authorizes the taking of any land.

"Lands appropriated to one public use, may be taken and appropriated to another and distinct public use. Property condemned and appropriated to the use of one corporation for the benefit of the public, cannot be again seized by the State and given to another corporation for the same purpose. This, in effect, would be to take from one corporation its franchise and bestow it on another. Such an act would not be warranted by the Law of Eminent Domain. Property once dedicated to a public use and given to a corporation, remains its property against all the world, and can only be taken from those on whom it is first bestowed when the public interest requires that it shall be appropriated to another and different use."

New Jersey (1872).

The Supreme Court decided:—

"That all railroads in the State had the power to cross the tracks of another railroad without any special law, but had no power without special law to take any of the land of a railroad to build parallel or alongside."

New York Court of Appeals, in 1873.

Re Boston and Albany, decided:—

"That, though the railroad law allowed a railroad corporation power to take any real estate for railway purposes, yet after the land has once been appropriated for public use, it cannot be taken again without special legislation."

The same principle was established by the Supreme Court, Mass., in 1872, case of *E. R. R. vs. B. & M.* III Mass. Reports, page 125.

Also in Connecticut, case of *N. Y. R. vs. Boston*, 36 Conn. Reports, page 196.

Michigan, 1877, *re Grand Rapids and Indiana Railway*, 35 Mich. Reports, page 265, Supreme Court decision:—

"Courts have uniformly held no difference between individual and corporate rights, and one railroad can take the property of another corporation by making proper compensation."

Illinois—February, 1881.

Justice Dickey, in case of *Lake Shore R. R. vs. Chicago*, decided:—

"That under ordinary Eminent Domain Act one railroad has not power to take property of another; but recognize the fact that the legislative power of the State can make it valid."

Virginia Court of Appeal—1881.

Report 40, page 743:—

"The taking and condemnation, by a railroad company, of part of the road bed or another company, is an interference with the rights and franchise of such other company. One railroad company has no right, without express statutory authority, to acquire for its own uses land already acquired by another railroad company."

Peter A. Dey, chairman of the Iowa Board of Railroad Commissioners, writes on this subject: "I beg to state that, in Iowa, when one railroad company desires to cross the track of another company, the ruling of our Commission, as to the safety and kind of crossing at the proposed point, is first obtained. Then, if an agreement cannot be arrived at between the companies interested, the junior company applies to the court for a jury to condemn the right of way necessary, and to fix the damages following to the senior company."

"The question as to the right of one company to use the terminal facilities of another company, in a case where the only available ground is occupied, is not covered by the law of this State. We have a law under which a company is required to haul the cars of connecting lines over its lines, and under this law, and the gen-

eral law as to the rights of shippers as against common carriers, the Iowa Commissioners have decided that a company at a terminal point must switch the cars of another company over any of its side tracks or tracks voluntarily extended beyond its station house, at the request of a shipper, adequate compensation to follow. This decision has been contested by the companies affected, and is now in the courts for final adjudication."

EXPRESS BUSINESS.

James Egleston, Manager of the American Express Company for New England, gives the following information, which seems to show that it is not expedient that the railroads should undertake express business:—

"The express business is primarily a commission business, the express man undertaking to serve whomsoever may employ him in doing various errands at some other place than where such employer lives, taking care and charge of such commission personally or by deputy. The transportation of merchandise is an incidental matter, and dependent upon the commission given the express man to execute. The expresses neither own the lines of railroad upon which they do business, nor have they (as a rule) any exclusive privileges, any one possessing the necessary security being able to do an express business for themselves, and you will find, by enquiry of any of the leading railroad or express company's officials, that the proportion of the expense for actual transportation upon the railroad is one-third of the total expense to the expresses for transacting their business, the two-thirds balance being spent in giving the commissions entrusted to it proper care, such as is the employment of teams, drivers, agents, &c., at their offices, and of messengers, transfer men, &c., *en route*, and that fact alone proves that express charges should continue to be controlled by competition.

"I would add that the expresses, both large and small, are (as a rule) private enterprises, and are not doing business by any Act of Congress or of the State Legislature."

All of which is respectfully submitted.

(Signed) E. R. BURPEE,
GEO. MOBERLY,
Commissioners.

APPENDIX No. 3.

EXTRACTS.

ENGLISH RAILROAD LEGISLATION. (*See Hadley, page 163.*)

The history of the general questions of railroad policy and legislation may be pretty sharply divided into two periods. Railroad construction formed the subject of discussions and action in the first period, railroad combination in the second. The dividing line between the two periods falls in the years 1845 and 1848.

It was at first supposed that a railway would be used like a canal, individuals furnishing their own cars and motive power. The clauses in the charter were drawn up with the idea; it was soon seen to be false. Competition between different carriers on the same railroad was impossible. Could competition between different railroads be secured instead?

It is to the credit of English statesmen that they did not deceive themselves in this respect. They learned more in a few years from the workings on a few miles of railroad than the general public has learned from all the railroads in the world in half a century. They recognized that competition could not be relied upon or aimed at with hope or success. As early as 1836 Mr. Morrison, of Inverness, delivered a remarkable speech in which he made the points: that railroads must naturally be monopoly; competing roads will combine; that parallel roads are a waste of capital; and that fixed maximum rates are useless.

* * * * *

In the years 1839 to 1845 several attempts were made to secure railroad legislation, Mr. Gladstone taking an active part in these matters. Beyond a declaration of the right to revise tariffs, and even to purchase the railroads for State management in the remote future, nothing was actually accomplished. One or two experiments in the way of Railroad Commissions made during those years had worse than no result. Free railroad competition was meantime being and found wanting. It was not tried on purpose or because Parliament believed in the principle. It was because so many speculators wanted to build railroads and Parliament had not the moral courage to refuse them charters.

* * * * *

Railroad combinations of importance may be said to have begun in 1844. In 1845 the Board of Trade made a report to Parliament on the subject of amalgamation, taking the ground that it was right for continuous but not for competing lines. In 1846 a special committee of Parliament considered the subject, but no distinct action was taken on their report.

Another committee on the same subject was appointed in 1853. Cardwell and Gladstone were its leading members. They made a strong effort to do something, but found it easier to explain the troubles than to find remedies. They hoped to encourage "running powers," by which one company should have the right to run its trains over the lines of other companies. Serious obstacles met them in the attempt. Nevertheless, if anything at all was to be done, it must be done in this way. A railroad which had a London connection must not be allowed to freeze out one which had no such connection; otherwise the London road would compel the country to unite with them on their own terms.

This was the point the committee seized clearly; and the Bill which they brought in and which became law under the title of the "Railways and Canals Traffic Act, 1854," was conceived with this view—to protect the local roads in their through business. It provided, first, that every company should afford proper facilities for forwarding traffic, and second, that no preference should be given.

* * * * *

From 1853 to 1872 Parliament suggested a great many things and accomplished nothing. Least of all did they check the tendency of the roads to consolidate. Much was expected of the Royal Commission from 1865 to 1867; but nothing came of it.

Another committee was appointed in 1872, and this time, for a wonder, something was actually accomplished. They brought forward no new views, and in one sense no new laws. They simply provided means for carrying out the old laws and the old views. The outcome of their work was an Act for carrying into effect the provisions of the Act of 1854.

They recommended the appointment of a special Railway Commission provisionally established for five years, to take cognizance of a variety of cases under the Act of 1854, whose decisions were to have judicial force. They were further to decide many cases where the interests of different railways conflicted. The Bill was passed in 1873. With the Act of 1873 the general railway legislation may be said to have closed.

* * * * *

The idea of a Railway Commission was by no means new. As long ago as 1840 it was felt that some such authority was necessary. In that year powers were given to the Board of Trade not unlike those now exercised by the Massachusetts Railroad Commission. Those powers were further defined in 1842. The Board of Trade was as well adapted to the work as any body then existing. It failed when the Massachusetts Commission succeeded, not because of the differences of the law, but because the English public sentiment with regard to railroads was not sufficiently active to give such a body the necessary moral support to make up for lack of legal authority.

In 1844 another Commission was appointed with more specific powers. Their special duty was to make preliminary reports to Parliament on applications for railroad charters. After a luckless existence of about a year, this Board was abolished. In 1846 Parliament tried the experiment of a Commission of another kind. It offered first rate salaries and secured well known men; then it avoided all causes of offence by not giving them any powers. This lasted five years.

We have seen what were the events which led to the passage of the Regulation of Railways Act in 1873. The Commission appointed under that Act was to consist of three members, one of them a railroad man and one a lawyer. They receive the salary of £3,000 each. They were to decide all questions arising under the Act of 1854 and subsequent Acts connected with it. They were further empowered to arbitrate between railroads in a variety of cases; to compel companies to make through rates, which should conform to the intention of the Act of 1854; to secure publicity of rates, to decide what constitutes a proper terminal charge, and some other less important matters. On questions of fact their decision was to be final; on questions of law it was subject to appeal. The Railway Commissioners themselves were to determine what were questions of law and what were questions of fact. Subsequent Acts have made but slight changes in these powers.

In 1878, the original term of the Commission expired. People supposed that it would be made permanent. Instead of that the renewals have been for shorter periods, leaving the Commissioners a precarious tenure and showing dissatisfaction somewhere. A Parliament investigation on railroad rates in 1881-82, showed the ground of dissatisfaction only too clearly. The substance is that the power of the Commission satisfied nobody. It has power enough to annoy the railroad, and not power enough to help the public efficiently.

* * * * *

The Commission could not act, partly from want of jurisdiction, partly from want of executive power; its jurisdiction did not cover by any means the whole ground. The provisions about terminals, arbitration, working agreements, &c., &c., amounted to very little. Its real power was under the Act of 1854. It could under this Act require companies to furnish "proper facilities" and it could prevent it giving "preferences." But it could not compel a company to comply with special acts or special provisions of its charters.

Nor could it enforce its decrees. "On the face of the Act of 1873 the decisions of the Commission as to what were questions of fact or questions of law, appeared to be final. But by a writ of mandamus from a Court of Appeal, the decision on this point could be at once taken out of the hands of the Commissioners by compelling them 'to state a case' which could then be made the subject of action in the higher court."

So this important power was made of no effect.

* * * * *

It is not easy to see what can be done in the face of these difficulties, so different from anything we see in most American States. Our Commissioners with fewer powers, have infinitely more power. The reason is, in America, to defy such an authority involves untold dangers; public sentiment being irritable and unrestrained, whereas in England it involves no danger at all, public sentiment being long suffering and conservative.

* * * * *

In England as everywhere else two distinct sets of grievances, involving totally different treatment. Some charges are complained of as exorbitant in themselves involving extortion. Others are complained of as unequal, involving discrimination. When railroads were first started, they feared the first evil and hardly thought of the second. They tried to prevent extortion by a very definite system of maximum rates. It is hardly necessary to say these provisions were of little effect. First, the railroad could carry much cheaper than was at first expected, so that most of the maxima were too high to be of any practicable effect. Second, the whole system of provision concerning equal mileage rates, terminal, classification, &c., is quite inapplicable to the new conditions of railway service which have grown up since the original charters.

* * * * *

The subject of exorbitant rates is really a subordinate one. It is the question of differential rates that mostly agitates the public mind, and it comes in almost exactly the same forms which it takes in America. One set of low rates arises from competition of different routes, another from special contracts to develop business.

* * * * *

By the Act of 1845 the companies were allowed to vary their charges at will within the maxima, but must charge all persons the same rate for the same service.

From the very outset the court enforced the point that there should be no personal preference. That under exactly similar circumstances all shippers should be treated alike. The railroads could make as many special rates as they pleased, but they must be given to everybody under the same conditions.

* * * * *

The present state of things may be summed up as follows:—

1. The roads may make what special rates they please, but if they make a rate for one man, they must extend the same privilege to all others in like circumstances. If they have been secretly paying rebates to one shipper, they may be compelled to refund any other shipper similarly placed, the same rebates on all his shipments, since the special contract with the one shipper began.
2. It is held by the Commissioners that two shippers are similarly placed and must be similarly treated when the cost to the railroad of handling the goods for one is the same as for the other, and conversely, unless some special reason can be shown the railroad has no right to put a less favorably situated shipper on an equality with a more favorably situated one.
3. But the last Parliament Committee has refused to endorse these principles and has said that "a preference is not unjust so long as it is the natural result of fair competition."

* * * * *

This brings us to 1886, when the time for which the Commission was created had expired, and a Bill was before Parliament. "The principal objects of which are

to reconstitute and perpetuate the Railway and Canal Commission, established by the regulation of Railway Acts of 1873, to enlarge its jurisdiction and powers, and to regulate the rates to be charged for traffic on railways and canals." This Bill has now been before Parliament two years, and is not yet disposed of. We quote what Mr. Grierson says as introductory in a work published a few months ago:—

"For many reasons the failure to pass the Railway and Canal Traffic Bill ought not to be regretted even by those who are dissatisfied with railway companies, but who sincerely desire to benefit the trade of the country. In the discussion of that Bill, and in the debates on the subject of railway rates in recent Sessions of Parliament, the existence of many misconceptions was disclosed. As to principles, there was little agreement; there was, if possible, still less as to details. Charges which have often been explained or refuted were repeated as if they were new, and as if they had never been answered. One of the greatest defects of the discussion was its fragmentary, one-sided character; it was carried on with far too little regard to the interests of many classes, districts and ports, which would have been seriously injured by some of the changes hastily proposed. Many of those who professed to represent traders, ignored the interests of large sections of them; and what would benefit the consumers was, to a remarkable degree, lost sight of. The delay may be useful, and it may be hoped that any future legislation will be shaped according to the interest of all traders, and not of a part of them only, and of the general public, to whom extended, and not restricted trade, cheapness, and a wide area of supply are desirable."

* * * * *

"One point is at the outset very clear—the inconsistent nature of many of the charges made against railway companies. Within the last twenty years such complaints have been the subject of three elaborate enquiries before Royal Commissions of Parliamentary Committees. Before all of them were submitted proposals completely at variance with each other. With equal emphasis railways are now asked to satisfy contradictory demands; and to a large extent the multifarious charges made against them answer or cancel each other. Many traders demand the very opposite of what is a necessity to others, and of what consumers, naturally anxious to enlarge the field of supply, earnestly desire. Some of the former complain, for example, in language which seems borrowed from mediæval times, that their 'geographical' or 'natural advantages' are diminished. Other traders blame railway companies for not sufficiently effacing natural disadvantages and not offering inducements for the development of trade in new districts. Exporters want favorable terms; importers do the same; and no other class protests against concessions either in favor of exports or imports. It is a remarkable fact that many of the proposals which were most in fashion a few years ago, have now been abandoned, and that in Parliament and the press we now hear chiefly of schemes totally different from those which were formerly supported. Equal mileage rates were once strongly advocated."

* * * * *

"Ingenuous schemes were devised for equalizing, within certain zones or areas, rates, irrespective of distance and other circumstances. There is a fashion in so-called railway reform. Such schemes are now little heard of; they have given place to proposals essentially different, which may in their turn make way for others.

"In all the recent discussion of rates much was heard of those who were discontented, but very little of those who, being satisfied, were silent. Most errors in Political Economy, it has been said, come from not taking into account what is not seen. Especially true is this of the question of railway rates, not the least important problem of Political Economy. Of the trades and interests which are dissatisfied with existing arrangements, people hear and see so much. Unfortunately they appear to take little heed of other interests, equally important, which are contented, or comparatively so, which do not send deputations to the Board of Trade, and which

changes, such as have been from time to time proposed, would injure or even go far to ruin."

AMERICAN LEGISLATURE.

Last April the United States Congress, as the result of the labors of a Committee of the House of Representatives appointed in 1879-78, and a Special Committee of the Senate appointed in 1885 under pressure of a wave of popular excitement, passed an Act to regulate Interstate Commerce, and appointed an able Commission. Their very first act was to suspend the operation of some of the vital sections of the Act, and after nine months they are recommending important changes.

In some of the Western States there has been hasty laws passed under excitement which retarded the cause which the promoters had in view. In 1873 Illinois passed stringent laws regulating the management of the railways, and appointed a commission to fix rates. Similar laws were passed immediately by Iowa and Minnesota. In 1874 Wisconsin passed a similar Bill, the "Potter Law." They were all inoperative on account of their power, and appeals were made to the Court by railways for protection. While the courts established the fact that the States had the right to pass such laws, a more potent factor was at work, and in all the States the laws were repealed or were not enforced.

Hadley says, page 135:—"But a more powerful force than the authority of the courts was working against the Granger system of regulations. The laws of trade could not be violated with impunity. The effects there must have been sharply felt in Wisconsin—the law reducing railroad rates to the basis which competitive points enjoyed left nothing to pay fixed charges. In the second year of its operation the Wisconsin roads paid a dividend; only four paid interests on their bonds; railroad construction has come to a standstill. Even the facilities on existing roads could not be kept up. Foreign capital refused to invest in Wisconsin, the development of the State was sharply checked; the men who most favored the law found themselves heavy losers. These points were plain to every one. They formed the theme of the Governor's Message at the beginning of 1876. The very men who passed the law in 1874 repealed it in 1876. In other States the laws either were repealed, as in Iowa, or were sparingly and cautiously enforced. By the time the Supreme Court published the Granger discussions the fight had been settled, not by constitutional limitations but by industrial ones."

REPORTS

RAILWAY STATISTICS

OF CANADA,

AND CAPITAL, TRAFFIC AND WORKING EXPENDITURE
OF THE RAILWAYS OF THE DOMINION.

1887

Printed by Order of Parliament.



OTTAWA:
PRINTED BY MACLEAN, ROGER & CO., WELLINGTON STREET.
1888.

ERRATA AND ADDENDA.

Pages 4 and 35.—Earnings, for \$38,841,609, read \$38,842,010.

do 12, Location of Quebec and Lake St. John Railway. After
“from Quebec” read “to Roberval, Lake St. John.”

Table No. 1.—New Brunswick Railway, bonded debt subscribed, for
\$2,616,000, read \$2,916,000.

Table No. 2.—Albert Railway, gauge of, for $6\cdot8\frac{1}{2}$, read $4\cdot8\frac{1}{2}$.

Table No. 6.—Earnings from passenger traffic, for \$11,867,597.45, read
\$11,867,677.35.

CANADIAN GOVERNMENT RAILWAYS.

OFFICE OF THE CHIEF ENGINEER AND

GENERAL MANAGER, OTTAWA, 12th March, 1888.

SIR,—I have the honor to submit to you the statistics of the railways of the Dominion for the year 1886-87, compiled, as in past years, from returns made to the Government by the railway companies. In so doing, I may in the first place remark that, of these returns, many are not furnished by the companies with the promptitude necessary to enable me to have them compiled and out of the printer's hands in time to be laid before Parliament within three weeks after its meeting, and also that their value is in many cases impaired by some of the railway companies omitting or misplacing very important items. To give a few examples, one railway represents its paid capital at less than half its real amount; another puts its municipal aid in the place of its Government bonuses; a third leaves out its bonds, although they have been quoted on the London market, and when the officer furnishing the return is called upon to explain the omission, he states that he has no knowledge, beyond hearsay, of any issue of bonds having taken place; a fourth leaves out its Government bonus, and when called upon to correct the omission, declares it has had no such assistance. Scarcely any returns are furnished in such a manner as to enable them to be used without sending them back to the companies for correction. So glaring are many of the errors that their detection is easy; but it is possible, and even probable, that many go undiscovered. Under circumstances like these the compilation of the railway statistics in form to lay before Parliament is attended by much needless delay and loss of time, and in the end may not be satisfactory. These remarks, I have much pleasure in stating, do not apply to the two leading railway companies of the Dominion, nor to the Government lines.

The year under consideration has been marked by much enterprise and activity in construction, and by a prosperity quite without example to the lines in operation. Thirteen new lines appear in the tables submitted herewith. Others, under construction last year, are now wholly or partially in operation. Several of the older lines have added to their mileage under traffic. Iron rails are fast disappearing. The equipment of the railways has received notable additions and improvements. The increase of the traffic has been such as no former year can show, amounting to nearly \$5,500,000. I introduce here a summary of the tables appended, from which the healthy state of the railway interest may be inferred:—

Miles of Railway completed (track laid).....	12,332 00
Capital paid (including the four following items). \$683,773,191 23	
Government bonuses paid.....	129,810,633 00
do loans do	20,592,026 00

Government subscriptions to shares paid..... ..	300,000 00
Municipal aid	12,812,836 00
Miles in operation.....	11,691 00
Earnings.....	\$38,841,609 00
Working expenses..... ..	27,624,683 00
Net earnings..... ..	11,216,926 00
Passengers carried... ..	10,698,638
Tons of freight carried.....	16,356,335
Miles run by trains.....	33,638,748
Passengers killed.....	10
do injured.....	49
Miles of iron rails.....	1,175
do steel do	11,157
do sidings.....	1,462
Number of elevators.....	25
Guarded level crossings.....	204
Unguarded do	7,701
Overhead bridges..... ..	344
Crossings of other railways	145
Junctions with other do	218
do with branch lines	128
Engines owned.....	1,587
do hired	46
Sleeper and parlor cars owned.....	69
do do hired.....	8
First class cars owned..... ..	729
do do hired.....	35
Second class and emigrant cars owned.....	415
do do hired.....	16
Baggage, mail and express cars owned.....	440
do do do hired.....	23
Cattle and box cars owned	24,023
do do hired.....	747
Platform cars owned	12,665
do do hired.....	197
Coal and dump cars owned.....	2,957
do do hired.....	.....

NOMINAL CAPITAL PAID

	Total.		Per Mile.	
	\$	cts.	\$	cts.
Ordinary share capital	227,335,811	03	18,434	63
Preference do	96,792,926	77	7,848	92
Bonded debt	194,801,553	41	15,796	44
Aid from Dominion Government	129,497,668	34	10,500	94
do Ontario do	5,947,007	52	482	24
do Quebec do	7,729,987	81	635	01
do New Brunswick do	3,979,095	00	322	66
do Nova Scotia do	1,653,902	68	134	11
do Manitoba do	1,895,000	00	153	66
do Municipalities	12,812,836	43	1,030	88
Capital from other sources	1,317,404	24	107	64
Total	683,773,191	23	55,447	13

This statement does not include the capital of the Montreal and Vermont Junction and Stanstead, Shefford and Chambly Railways, which are operated by the Central Vermont Railway Company, whose officers express themselves unable to furnish it. Application to the secretaries of the two companies is equally unavailing. No statement of the capital of those railways has ever been received by this Department, and the Director of Railways of the Province of Quebec has been equally unsuccessful in obtaining one.

GOVERNMENT and municipal loans, bonuses, &c., promised, paid, and to be paid, to railways, completed and under construction.

	Total.		Paid.		To be Paid.	
	\$	cts.	\$	cts.	\$	cts.
Dominion Government	133,420,154	53	129,497,668	34	3,922,488	19
Ontario do	5,947,007	52	5,947,007	52	.....	.....
Quebec do	9,897,900	02	7,729,987	81	2,167,922	21
New Brunswick do	4,229,665	00	3,979,095	00	250,570	00
Nova Scotia do	1,986,194	94	1,653,902	68	312,292	26
Manitoba do	1,895,000	00	1,895,000	00	.....	.....
Municipalities in Ontario	9,501,541	78	9,451,325	81	50,215	97
do Quebec	4,190,024	00	2,191,910	62	1,998,113	38
do New Brunswick	316,500	00	293,500	00	20,000	00
do Nova Scotia	250,000	00	250,000	00	.....	.....
do Manitoba	585,600	00	585,600	00	.....	.....
do British Columbia	37,500	00	37,500	00	.....	.....
do North-West Territories	35,000	00	.....	.....	35,000	00
Total	172,272,097	79	163,515,495	78	8,756,602	01

Although the casualties during the year were numerous, I observe that only 10 passengers were killed, and that they all met their death from their own fault, either by falling from cars, by jumping from trains in motion, or by trespassing on the track. Of the remaining 163 persons killed, 69 were trespassers on the track. In fact, of the whole 173 deaths, 128 were due to carelessness or disregard of regula-

tions on the part of the victims themselves, leaving only 52 fatal accidents from causes over which they had no control. I introduce here an abstract of the fatal accidents and their causes.

Accidents.	Passengers Killed.	Employés Killed.	Others Killed.	Total.
Falling from cars or engines	5	15	2	22
Getting on or off trains in motion	4	8	8	20
At work making up trains		2		2
Coupling cars		8	1	9
Oollisions and derailments		15		15
Walking or being on track	1	16	69	86
Striking bridges				
Explosions		2		2
Other causes		18	4	22
Total.....	10	84	84	178

I have the honor to be, Sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,

Chief Engineer and General Manager.

A. P. BRADLEY, Esq.,

Secretary Department Railways and Canals.

TABLE showing Locations of the Railways of the Dominion of Canada, 30th June, 1887.

Name of Railway.	Description.	Distances.	
		Miles.	Total.
Albert	Salisbury Station, Intercolonial Railway, to Hopewell and Albert on Chignecto Bay, and Harvey, N.B.		52·00
Albert Southern.....	Hopewell to Herring Cove, N.B. (under construction)		17·00
*Atlantic Northwest.....	Mile End to Montreal Junction, thence to Sherbrooke (30·86 miles track laid).....		107·10
Baie des Chaleurs	Metapedia to Paspébiac (27 miles of track laid, rest under construction)		100·00
Bay of Quinté and Navigation Co.	Deeronto, on Bay of Quinté, Lake Ontario, to Deeronto Junction, Grand Trunk Railway ..		3·50
Buctouche and Moncton.....	Moncton, on Intercolonial Railway, to Buctouche, N.B. (26 miles of track laid).....		32·00
Canada Atlantic	City of Ottawa to Junction with Grand Trunk Railway at Lacolle; located thence to Boundary. Crosses the St. Lawrence at Coteau by Steam ferry. Connects with Grand Trunk Railway at Coteau and Lacolle		128·30
Canada Southern	Main Line—Windsor to Suspension Bridge.....	226·18	
	Amherstburg Branch—Essex Centre to Amherstburg.....	15·70	
	St. Clair Branch—St. Clair Junction to Courtright ..	62·63	
	Fort Erie Branch—Fort Erie to Welland Junction.	17·50	
	Erie and Niagara Branch—Fort Erie to Niagara ...	30·60	
	Oil Springs Branch—Oil Springs to Oil City.....	2·83	
do Leased.....	Sarnia, Chatham and Erie—Oil City to Petrolia...	7·00	
			362·44
Canadian Pacific	Main Line—Montreal to Vancouver	2,906·30	
	Branches in operation in Manitoba and North-West	219·70	
	Leased Line in Manitoba and North-West—		
	Manitoba South-Western Colonization	211·20	
	Branches in operation and under construction in Ontario and Quebec	634·40	
	Leased Lines in Ontario	626·40	
	do Quebec	107·10	
	Branches in British Columbia	10·40	
			†4,715·60
	Main Line in operation—		
		Miles.	
	Montreal to Vancouver	2,906·30	
	Branches in operation—		
	St. Martin's Junction to Quebec... ..	159·80	
	Grand Piles to Three Rivers	27·50	
	Joliette Junction to St. Felix	17·10	
	Berthier Junction to Berthier	1·50	
	Ste. Thérèse to St. Lin.....	15·00	
	do St. Eustache	8·00	
	St. Lin Junction to St. Jérôme	11·00	
	Buckingham Station to Buckingham Village	4·10	
	Hull to Aylmer.....	7·50	
	Carleton Junction to Brockville... ..	45·50	
	Winnipeg to Emerson	64·80	
	do Manitou	100·60	
	do Stonewall	18·10	
	do Selkirk	22·50	
	Carried forward.....	503·00	2906·30

*Leased to Canadian Pacific.

†Including 3·20 miles from Toronto Junction to Strachan Avenue.

TABLE showing Locations of Railways, &c.—Continued.

Name of Railway.	Description.	Distance.	
		Miles.	Total.
Canadian Pacific—Continued.	Brought forward.....	503·00	2,908·30
	Vancouver to Coal Harbor.....	1·20	
	New Westminster to New Westminster Junction.....	9·20	
	* Emerson to Rosenfeldt.		
	Rosenfeldt to Gretna.	13·70	
			527·10
	Leased Lines in operation—		
	St. Lawrence and Ottawa, <i>i.e.</i> ,		
	Ottawa to Prescott	51·80	
	Chaudière Junction to Ottawa.....	4·70	
	Ontario and Quebec—		
	Toronto Junction to Smith's Falls	211·00	
	Leased Lines.....		
	Credit Valley—		
	Toronto Junction to St. Thomas..	118·20	
Streetsville Junction to Melville Junction.....	31·60		
Cataract to Elora.	27·50		
Toronto, Grey and Bruce—			
Toronto to Owen Sound.	116·50		
Orangeville to Teeswater	67·10		
Manitoba South-Western Colonization—			
Winnipeg to Glenboro'	110·20		
Manitou to Deloraine	101·00		
		837·60	
	Total in operation..	4,274·20†	
Cape Breton	Hawkesbury to Sydney, C. B. (under construction).		90·00
Caraquet	From Gloucester Junction, Intercolonial Railway, 5 miles south of Bathurst Station, easterly along the south shore of Baie des Chaleurs to Shippegan Harbour, N.B., 61 miles completed, and open for traffic.		68·00
Carillon and Grenville.....	Carillon to Grenville, P.Q., connecting at both termini with Ottawa River Navigation Company's steamers, <i>Gauge, 5 ft. 6 in.</i>		13·00
Central Ontario.....	From Picton, in Prince Edward County, Ont. to Coe Hill Iron Mines, Wollaston, County of Hastings; connects with Grand Trunk at Trenton, Midland Railway, 2 miles west of Stirling, and Ontario and Quebec, in Township of Rawdon ...		104·00
Central Railway of New Brunswick.....	From Norton Station, on the Intercolonial Railway to Salmon River (five miles under construction)		44·33
Chatham Branch.....	Town of Chatham, N.B., to Chatham Junction with Intercolonial Railway, and connecting with Northern and Western Railway		9·00
Cobourg, Peterboro' and Marmora	Town of Cobourg to Chemong Lake, 38 miles, the track on twelve miles of which has been taken up. Connects at Harwood, Rice Lake, by steamer, with its Marmora Branch to Blairton Iron Mines, on Crow Lake	24·50	
	Two short branches to saw mills.....	8·50	
		2·00	
	Now only in operation between Cobourg and Rice Lake, 15 miles. <i>Gauge, 5 ft. 6 in.</i>		35·00

* Abandoned; track taken up.

† Including 3·20 miles Toronto Junction to Strachan Avenue.

TABLE showing Location of Railways, &c.—Continued.

Name of Railway.	Description.	Distances.	
		Miles.	Total.
Cumberland Railway and Coal Company (formerly Spring Hill and Parraboro')	Spring Hill Junction, Intercolonial Railway, to Spring Hill Coal Mines, N.S., and Parraboro', on the Bay of Fundy.....		32-00
Eastern Extension (late Halifax and Cape Breton)	Junction with Intercolonial Railway at New Glasgow to Gut of Canso, N.S.....		80-00
Elgin, Petitcodiac and Havelock.....	From Elgin, County of Albert, N.B., to Petitcodiac. Junction with Intercolonial Railway; thence to Havelock, in County of King's.....		26-50
Erie and Huron.....	Rondeau, Lake Erie, Ont., to Wallaceburg, passing through town of Chatham, Ont.; connects with Canada Southern and Great Western Railways.....		73-12
Esquimaux and Nanaimo	Russell's Station to Wellington Mines		78-00
Grand Southern.....	St. John to St. Stephen N.B.....		82-50
Grand Trunk—Grand Trunk Division.....	Main Line Sarnia to Point Lévis and Island Pond Sarnia Extension—Port Edward to Great Western Branch—Montreal to Wharves..... Three Rivers Branch—Arthabaska to Doucet's Landing..... Kingston Branch—Main Line to Kingston..... Galt and Waterloo Branch—Waterloo and Berlin to Galt..... London Branch—St. Mary's to London..... Champlain Branch—St. Lambert to Rouse's Point, Montreal to Lachine, St. Isidore to Province Line. Jacques Cartier Union—Jacques Cartier to Canadian Pacific Railway Junction.....	735-25 3-00 2-00 35-25 2-25 14-50 22-00 73-50 6-50	
Leased and Operated.....	Buffalo and Lake Huron—Goderich to Fort Erie. Georgian Bay and Lake Erie—Port Dover to Warton..... Montreal and Champlain Junction—Brossseau to Dundee.....	162-00 171-50 62-25	
Great Western Division.....	Main Line—Niagara Falls to Windsor..... Toronto Branch—Hamilton to Toronto..... Galt do Harrisburg to Guelph..... Brant do do Brantford..... Sarnia do Komoka to Sarnia..... Petrolia do Wyoming to Petrolia..... Loop Line—Fort Erie to Glencoe..... Allanburg Branch—Allanburg to Clifton Junction Welland—From Port Colborne to Port Dalhousie, Ont.....	229-63 38-50 28-98 8-00 50-85 4-75 145-50 8-32 25-00	
Leased and Operated.....	Wellington, Grey and Bruce—Guelph to Southampton and Palmerston to Kincardine..... London and Port Stanley—London to Port Stanley London, Huron and Bruce—Hyde Park to Wingham Junction..... Brantford, Norfolk and Port Burwell—Brantford to Tilsenburg Junction.....	168-35 23-66 68-89 34-74	
Leased—Midland Division.....	NOTE.—The Georgian Bay and Lake Erie Railway includes the former Georgian Bay and Wellington, Port Dover and Lake Huron, and Stratford and Huron Railways. Midland—Port Hope to Peterboro' and Midland on Georgian Bay..... Toronto and Nipissing (including former Lake Simcoe Junction Railway).....	165-75 111-50	
	Carried forward.....	2,402-42	

TABLE showing Location of Railways, &c.—Continued.

Name of Railway.	Description.	Distances.	
		Miles.	Total.
	Brought forward.....	2,402.42	
Grand Trunk— Leased—Midland Division.....	Grand Junction—From Belleville to North Hastings and Peterboro'	87.75	
	Whitby and Haliburton (including former Victoria and Whitby, Port Perry and Lindsay Railways).....	99.75	
	Madoc Junction to Bridgewater.....	8.50	
			2,598.42
Great Eastern	From Dundee, County Huntington, Que., to Lévis, Que.	220.00	
	Branch from St. Lambert's to Rouse's Point (6.12 miles track laid).....	36.00	
			256.00
Great Northern	From near St. Andrew's on Ottawa River, to Quebec; 8 miles constructed from St. Jérôme to New Glasgow.....		170.00
Intercolonial	Main Line—Halifax to Quebec	678.00	
	Branch—Moncton to St. John.....	89.00	
	do Truro to Pictou.....	52.00	
	do Painsec to Pointe du Chêne.....	11.00	
	do St. Charles to Lévis (via Chaudière).....	25.00	
	do Dalhousie Junction to Dalhousie.....	7.00	
	do Richmond to Dartmouth.....	4.00	
	do Derby to Indiantown.....	14.00	
			880.00*
Irondale, Bancroft and Ottawa ...	From Orillia, Ont., to Ottawa (located from Mackinmount to Bancroft, 50 miles). Will connect with G. T. R. and Northern Railways at Orillia. Also with Kingston and Pembroke and with C.P.R. at Ottawa. 10 miles of track laid.....		225.00
International	Lennoxville, P.Q., to Boundary Line of Maine.....		81.66
Joggins	Maccan Station, I. C. R., to Prospect Mine.....		11.00
Kent Northern	Richibucto, N. B., to Intercolonial Railway.....		27.00
Kingston and Pembroke	Main Line—Kingston to Pembroke.....	103.00	
	Glendon Branch—Bedford to Zaneville.....	4.00	
	do to Robertsville Mines.....	1.00	
	do to Doran's Mills, Charcoal Works, McLaren's Mills, Bethuen's Mines, Lavant Mills, Clyde Forks Mills and Francis Mills.....	4.00	
	(Connects with Grand Trunk at Kingston, Canadian Pacific at Sharbot Lake and at Renfrew.)		
L'Assomption	L'Épiphanie Station, C. P. R., to L'Assomption.....		3.50
Lake Temiskaming Colonization Railway	Mattawa to head of Long Sault, Ottawa River.....		6.00
Manitoba and North-Western	From Junction with Canadian Pacific Railway at Portage la Prairie, 56 miles west of Winnipeg, north-westerly to Solsgirth.....		130.02
	(An extension of 50 miles westward is now under construction.)		
Manitoba South-Western Colonization	From Winnipeg to Glenboro and from Manitou to Deloraine. Leased to C.P.R.....		211.20
Massawippi Valley	From Lennoxville to Vermont Boundary, there connecting with Connecticut and Passumpsic Rivers Railway. Also connects with Grand Trunk and International Railways at Lennoxville.....	32.00	
	Branch—Stanstead Junction to Stanstead.....	2.00	
			34.00
Montreal and Sorel	From Junction with Grand Trunk at St. Lambert to Armstrong, on Richelieu River, opposite to Sorel.....		44.67

*Also 11.5 miles of wharf branches.

TABLE showing Location of Railways, &c.—Continued.

Name of Railway.	Description.	Distances.	
		Miles.	Total.
Montreal and Vermont Junction..	From Junction with Stanstead, Shefford and Chambly Railway, 2½ miles east of St. John, P.Q., to Junction with Vermont and Canada Railway, at Vermont Boundary. Also connects at Stanbridge with Lake Champlain and St. Lawrence Junction Railway		23·60
Napanee, Tamworth and Quebec.	From Junction with Grand Trunk Railway at Town of Napanee, Ont., to Village of Tamworth		28·50
New Brunswick.....	From Gibson (opposite Fredericton on St. John River) N.B., to Edmundston.....	164·00	
	Branch—Newbury Junction to Woodstock.....	6·00	
	do Aroostook to Maine Boundary	4·00	
			174·00
	Leased Lines—		
	New Brunswick and Canada—Woodstock to St. Stephen and St. Andrew.....	127·00	
	St. John and Maine—Carleton to St. Croix and Vanceboro'	92·00	
	Fredericton—Fredericton Junction to City of Fredericton.....	22·50	
			241·50
New Brunswick and Prince Edward.....	From Sackville Station, Intercolonial Railway, to Cape Tormentine.....		37·00
Northern and North-Western.....	Northern Railway of Canada and Hamilton and North-Western Railway are worked under a joint arrangement.		
	Northern Railway—		
	Main Line—Toronto to Collingwood	94·96	
	Branch—Allandale to Gravenhurst	50·94	
	do Collingwood to Meaford	20·50	
	do Colwell to Penetanguishene	33·34	
	do Flos Tramway—Elmvale to Hillsdale... ..	8·28	
			208·00
	Hamilton and North-Western—		
	Main Line—Port Dover, on Lake Erie, to Allandale, on Lake Huron	134·07	
	Branch—Beeton to Collingwood.....	39·83	
			173·90
	Leased—		
	Northern and Pacific Junction (from Northern Railway at Gravenhurst to Junction with Canadian Pacific Railway at La Vase River, Lake Nipissing).....		111·37
Northern and Western of New Brunswick.....	From Gibson (opposite City of Fredericton) to Chatham Junction—Intercolonial Railway.....	106·00	
	Blackville to Indiantown.....	9·90	
	(Connects also with New Brunswick Railway at Gibson.)		115·00
Northern and Pacific Junction Railway.....	Leased to Northern and North-Western.....		111·37
North Shore, formerly portion of Quebec, Montreal, Ottawa and Occidental Railway.	Purchased by Canadian Pacific.....		205·90
North-Western Coal and Navigation	From Junction with Canadian Pacific Railway at Dunmore, 651 miles west of Winnipeg, in a westerly direction to the Colliery at Lethbridge, in the District of Alberta, gauge 3 ft.....		109·50

TABLE showing Locations of Railways, &c.—Continued.

Name of Railway.	Description.	Distance.	
		Miles.	Total.
Nosbonsing and Nipissing.....	From Nosbonsing, on Canadian Pacific Railway, to Lake Nipissing.....		5.50
Nova Scotia Central.....	From Middleton, on the Windsor and Annapolis Railway, to town of Lunenburg, on the Atlantic Coast, N.S.—under construction.....		75.00
Ottawa and Gatineau Valley.....	Canadian Pacific Railway Station at Hull, Que., to Wakefield..... (3 miles graded.)		19.50
Oxford to New Glasgow, section of Montreal and European Short Line Railway.....	Pugwash Junction to Granton, N.S.....	50.00	
	Oxford Branch—Oxford to Pugwash.....	20.00	
	Pictou Branch—Loch Broom to Pictou..... (Not completed.)	6.00	76.00
Pontiac Pacific Junction.....	From Junction with Canadian Pacific Railway at Aylmer, Que., to Pembroke, Ont..... (Rails laid on 61 miles only from Aylmer.)		86.00
Prince Edward Island.....	Main Line—Alberton to Georgetown.....	147.00	
	do Branches—Mount Stewart to Souris.....	38.40	
	do do Alberta to Tignish.....	13.10	
	do de County Line to Cape Traverse..... (Gauge, 3 ft. 6 in.)	12.10	210.00
Qu'Appelle, Long Lake and Saskatchewan.....	From Canadian Pacific Railway at Regina north-westerly to Long Lake.....		23.00
Quebec and Lake St. John.....	Quebec to Lake St. John..... (Junction with North Shore Railway 4 miles from Quebec to 177 miles completed, 54 miles under traffic.)		190.00
	Branches not built—		
	St. Gabriel to Rivière aux Pins.....	10.00	
	Lake Edward to La Tuque.....	30.00	
	Lake St. John to Chicoutimi.....	70.00	110.00
Quebec Central.....	Main Line—Sherbrooke to Harlaka Junction, Intercolonial Railway, 5 miles from Lévis, Que.....	138.00	
	Chaudière Branch—Beauce Junction to St. Francis.....	15.00	
	Angus Branch—East Angus to Angus Mills.....	1.00	159.00
	(Also 40 miles under construction.) (Also connects with Grand Trunk Passumpsic and Waterloo and Magog Railways at Sherbrooke.)		
Stanstead, Shefford and Chambly.....	From Junction with Montreal and Vermont Junction Railway, near St. John, Que., easterly to Waterloo..... (Connects with South-Eastern, and Champlain and St. Lawrence Junction Railways)		43.00
South-Eastern.....	Main Line—West Farnham to Boundary Line.....	44.00	
	Northern Division—Sutton Junction to Sorel.....	96.00	
	Branch—Drummondville to L'Avenir.....	12.00	
	Leased Lines—		
	Montreal, Portland and Boston—Longueuil and St. Lambert to Farnham.....	36.00	
	Branch—Marieville to St. Obaire.....	9.00	
	Lake Champlain and St. Lawrence Junction—Stanbridge to St. Guillaume.....	63.00	280.00
	(Connects with Connecticut and Passumpsic Railway, Grand Trunk, and Stanstead, Shefford and Chambly.)		

TABLE showing Locations of Railways, &c.—*Concluded.*

Name of Railway.	Description.	Distance.	
		Miles.	Total.
St. John Bridge and Railway Extension	Lies within the limits of the City of Portland, N.B., and connects the Intercolonial and New Brunswick Railways		1·75
St. Lawrence and Ottawa. (Now under lease to Canadian Pacific Railway)	Ottawa to Prescott	51·80	
	Branch—Chaudière Junction to Ottawa—(Connects with Grand Trunk Railway and St. Lawrence River Steamers at Prescott, and with Canadian Pacific Railway at Chaudière, Ottawa, and Canada Atlantic Railway)	4·70	
St. Lawrence, Lower Laurentian and Saguenay	From St. Tite on Canadian Pacific Railway to Rivière à Pierre on Quebec and Lake St. John Railway (20 miles of track laid)		56·50
St. Martin's and Upham	Hampton, Junction, Intercolonial Railway, to St Martin's, on Bay of Fundy		42·75
Thousand Islands	Gananoque to Gananoque Station, G. T. R.		29·12
Temiscouata	Rivière-au-Loup, Que., on Intercolonial to Edmundston, N. B., on the New Brunswick Railway		3·15
Waterloo and Magog	Waterloo to Sherbrooke, Que. (Connects with Stanstead, Shefford and Chambly and South-Eastern Railways)	39·00	
	Missisquoi Valley Railway. (Only completed from Bolton Forest on Waterloo and Magog, southerly for 10·10 miles, and operated by the latter)	10·10	
			49·10
Western Counties	Yarmouth to Digby, N. B.		67·00
Windsor and Annapolis	Windsor to Annapolis N.S.	84·00	
Leased Line	Windsor Branch—Windsor to Windsor Junction, Intercolonial Railway, 14 miles from Halifax	32·00	
			116·00
Wood Mountain and Qu'Appelle	From Canadian Pacific Railway, near Qu'Appelle Station to Fort Qu'Appelle, thence northwesterly (17 miles under construction)		110·00
Winnipeg and Hudson Bay	Winnipeg to Port Nelson on Hudson Bay		650·00
	(Constructed 40 miles, Winnipeg to St. Laurent on Lake Manitoba.)		
West Ontario Pacific	London to Woodstock, Ont.		26·60
	(Included in Canadian Pacific).		

SUMMARY STATEMENTS.

No. 2.—SUMMARY STATEMENT of Characteristics of

Number.	Name of Railway.	Length of Line.				Length of Sidings.	Weight per Yard.	
		Completed (Rails laid)	Under construc- tion.	Iron Rails.	Steel Rails.		Iron Rails.	Steel Rails.
1	Albert	52 00		52 00		2 25	56	
2	Albert Southern		17 00					
3	Baie des Chaleurs	27 00	73 00		27 00	1 00		56
4	Bay of Quinté and Navigation Co... ..	3 50			3 50			50
5	Buctouche and Moncton	26 00	6 00		26 00	5 00		56
6	Canada Atlantic	128 30	6 10		128 30	15 00		56
7	Canada Southern	362 44	76 30	49 29	313 15	119 66	60	60 & 65
8	Canadian Pacific	3452 20						
	Atlantic and North-West	30 80						
	Manitoba South-Western							
	Colonization	211 20						
	North Shore	205 90						
	St Lawrence and Ottawa	56 50	4556 20	86 10	66 00	4490 20	405 90	56 & 57½
	Toronto, Grey and Bruce	183 60						60 & 70
	Ontario and Quebec	211 00						
	Credit Valley	175 30						
	West Ontario Pacific	26 60						
9	Cape Breton		90 00					
10	Caraguet	61 00	7 00		61 00	3 25		50
11	Carillon and Grenville	13 00		13 00			65	
12	Central Ontario	104 00			104 00	11 00		42 & 56
13	Central of New Brunswick		5 00					
14	Cbatham Branch	9 00			9 00	1 00		56½ & 60
15	Cobourg, Peterboro' and Marmora	28 00		28 00			56	
16	Cumberland Railway and Coal Co.	32 00			32 00	7 00		56
17	Eastern Extension	80 00			80 00	3 75		56
18	Elgin, Petitecodiac and Havelock	26 50		12 50	14 00	1 00	60	50
19	Erie and Huron	73 12			73 12	4 25		54 & 56
20	Esquimault and Nanaimo	78 00			78 00	1 75		50 & 54
21	Grand Southern	82 50			82 50	2 00		50
22	Grand Trunk	894 25						
	Buffalo and Lake Huron	162 00						
	Georgian Bay & Lake Erie	171 50						
	Montreal & Champlain Jn	62 25						
	Great Western	539 53						
	London and Port Stanley	23 66						
	Wellington, Grey & Bruce	168 35						
	London, Huron & Bruce	68 89						
	Brantford, Norfolk & Port							
	Burwell	34 74	2598 42	252 17	2346 25	491 25	40 to 66	56, 65 & 66
	Midland	165 75						
	Toronto and Nipissing	111 50						
	Grand Junction	87 75						
	Whitby, P. Perry & Lindsay	46 50						
	Victoria (Lindsay to Haliburton)	53 25						
	Madoc Jn. to Bridgewater	8 50						
23	Great Eastern	6 12			6 12	25		56
24	Great Northern	7 84			7 84			56
25	Hamilton and North-Western	173 90		35 25	138 65	21 06	56	
26	Intercolonial	880 00			880 00	123 30		56, 57½, 67
27	International	81 66			81 66	3 50		56
	Carried forward	9490 50	368 50	508 21	8981 29	1226 17		

Roads, &c., for the Year ended 30th June, 1887.

No. of Ties to Mile.	Nature of Rail Fastening	No. of Grain Elevators.		No. of Level Crossings.	No. of overhead Bridges.	Height of overhead Bridges above rail level.	Level Crossings of other Railways.	No. of Junctions with other Railways.	No. of Junctions with Branch Lines.	Radii of sharpest curve.	No. of feet per mile of heaviest gradient.	Gauge of Railway.	Number.
		Guarded.	Not Guarded.										
2,240	Fishplates.....		93				1	1		76	6'8 $\frac{1}{2}$	1	
2,640	do									637	87	4'8 $\frac{1}{2}$	2
3,000	do		11				1			400	90	4'8 $\frac{1}{2}$	3
	do		19				1			955	80	4'8 $\frac{1}{2}$	4
2,640	do	4	86	3		5	4			2865	40	4'8 $\frac{1}{2}$	5
2,800	do	2	359	10		19	11	4		913	75	4'8 $\frac{1}{2}$	6
2,640	Angle and fishplates	5	18	1795	44	20 to 22'10	24	30	21	500	116	4'8 $\frac{1}{2}$	7
2,600	Fishplates.....												9
2,200	do and chairs	1	7	1		16		1		1000	80	4'8 $\frac{1}{2}$	10
2,640	do and bolts		94				4	3		19'0	100	5'6	11
	do							1		4'50	105	4'8 $\frac{1}{2}$	12
	do									966	66	4'8 $\frac{1}{2}$	13
2,640	Fishplates		5				2			955	52'80	4'8 $\frac{1}{2}$	14
2,500	Chairs	1	1	10			1			273		5'6	15
2,000	Bolts and fishplates.....		13					1		900		4'8 $\frac{1}{2}$	16
2,640	Fishplates.....		60	9		20		1		955	79 $\frac{1}{2}$	4'8 $\frac{1}{2}$	17
2,640	Chairs and fishplates		19					1		717	80	4'8 $\frac{1}{2}$	18
2,816	Fishplates		108					3	3	661	52	4'8 $\frac{1}{2}$	19
2,992	Angle fishplates and bolts		15	2		23				573	80	4'8 $\frac{1}{2}$	20
2,464	Suspended joint fishplates		52				1	3		716	79	4'8 $\frac{1}{2}$	21
2,640	Fish and angle plates.	10	157	2081	205	15 6 to 28'4	54	67	62	1100	105'60	4'8 $\frac{1}{2}$	22
2,640	Fishplates and bolts.....		6					1		1910	16	4'8 $\frac{1}{2}$	23
2,640	do							1		1273	52'80	4'8 $\frac{1}{2}$	24
2,640	do	1	2	148	9	16 to 19 $\frac{1}{2}$	6	9	1	603	74	4'8 $\frac{1}{2}$	25
2,640	Angle and fishplates.....	1	8	439	29	18 to 45	3	19	13	694	65	4'8 $\frac{1}{2}$	26
2,260	Fishplates		27					2		1146	74	4'8 $\frac{1}{2}$	27
		18	193	5437	311		114	151	102				

No. 2.—SUMMARY STATEMENT OF

Number.	Name of Railway.	Length of Line.				Length of Sidings.	Weight per Yard.	
		Completed. (Rails laid.)	Under construction.	Iron Rails.	Steel Rails.		Iron Rails.	Steel Rails.
	Brought forward.	9490 50	386 50	508 21	8992 29	1226 17		
28	Irondale, Bancroft and Ottawa.	10 00	50 00		10 00	12		56
29	Joggins.	3 00	9 00		3 00			56
30	Kent Northern.	27 00		27 00		1 00		
31	Kingston and Pembroke.	112 50		9 50	103 00	18 00	50 to 84	56
32	L'Assomption.	3 50			3 50	166		56
33	Lake Temiskaming Colonization and Railway Co.	6 00			6 00			16
34	Manitoba and North-Western.	207 49			207 49	13 24		56
35	Massawippi Valley.	34 00		2 00	32 00	1 00	56	50
36	Montreal and Sorel.	44 67			44 67	3 33		56
37	Montreal and Vermont Junction.	23 80			23 60	2 00		60
38	Napanee, Tamworth and Quebec.	28 50			28 50	2 00		56
39	New Brunswick New Brunswick & Canada. 127 00 } St. John and Maine. 92 00 } Fredericton. 22 50 }	415 50		53 30	362 20	30 50	52 & 56	52 & 56
40	New Brunswick and Prince Edward	36 00			36 00	1 50		56
41	Northern Railway of Canada 208 02 } Northern and Pacific Jn. 111 37 }	319 37		31 04	288 33	68 07	56 & 58	56 & 58
42	Northern & Western of N. Brunswick	115 00			115 00	5 00		56 1/2 to 61
43	North-West Coal and Navigation Co	109 50			109 50	2 50		28
44	Nova Scotia Central.		75 00					
45	Noshonong and Nipissing.	5 50			5 50	1 00		56
46	Ottawa and Gatineau Valley.		3 00					
47	Oxford and New Glasgow.		76 00					
48	Pontiac and Pacific Junction.	61 00	24 00		61 00	2 00		56
49	Prince Edward Island.	210 60		148 16	62 44	15 31	40	50 & 52
50	Qu'Appelle, Long Lake and Saskat- chewan.	23 00			23 00			
51	Quebec and Lake St. John.	177 00			177 00	8 00		56
52	Quebec Central.	159 00	40 00	81 00	78 00	10 00		56
53	Stanstead, Shefford and Chambly.	43 00		33 50	9 50	5 50	60	60
54	South-Eastern. 152 60 } Montreal, Portland and Boston. 45 00 } Lake Champlain and St. Lawrence Junction. 63 00 }	260 00		129 50	130 50	29 00	40, 56, 60	57 & 60
55	St. John Bridge and Railway Exten- sion.	1 75			1 75			
56	St. Lawrence, Lower Laurentian and Saguenay.	20 00			20 00	1 50		56
57	St. Martin's and Upham.	29 12		29 12			56, 60, 70	
58	Temiscouata.	81 00			81 00	3 00		56
59	Thousand Islands.	3 15			3 15	61		56
60	Waterloo and Magog. 39 00 } Missisquoi Valley. 10 10 }	49 10		10 10	39 00	2 50		56
61	Western Counties.	67 00		67 00		4 00	56	
61	Windsor and Annapolis. 84 00 } Windsor Branch. 32 00 }	116 00		46 00	70 00	4 50		
63	Wood Mountain and Qu'Appelle.		17 00					
64	Winnipeg and Hudson Bay.	40 00			40 00			56
		12332 35	660 50	1175 43	11156 92	1462 01		

Characteristics of Roads, &c.—Concluded.

No. of Ties per Mile.	Nature of Rail Fastening	No. of Grain Elevators.		No. of Level Crossings.	No. of overhead Bridges.	Height of overhead Bridges above rail level.	Level Crossings of other Railways.	No. of Junctions with other Railways.	No. of Junctions with Branch Lines.	Radius of sharpest curve.	No. of feet per mile of heaviest gradient.	Gauge of Railway.	
		Guarded.	Not Guarded.									Number.	
		18	193	5437	311		114	151	102				
2,640	Fishplates			8				1		1000	60	4' 8"	28
2,600	do									478	106	4' 8"	29
2,432	do			4				2	1	1000	60	4' 8"	30
2,540	Plain & angular fishplates			54	4	16 to 21½	4	3	11	955	79	4' 8"	31
2,500	Fishplates			7				1			20	4' 8"	32
												3' 0"	33
2,700	Angle and fishplates	4		130				1	2	955	105' 60"	4' 8"	34
2,600	Fishplates			20	1	19				955	76	4' 8"	35
2,640	Fishplates			12			1	2		2292	53	4' 8"	36
2,600	do			51	1	17.5		2			52	4' 8"	37
3,000	Angle and fishplates			24				1		882	88	4' 8"	38
2,610	Fishplates			158	3	18	1	5	5	540	85	4' 8"	39
2,400	do			26				1		1000	68	4' 8"	40
2,640	Angle and fishplates	3	5	360	19		11	13		818	74	4' 8"	41
2,640	do do			25			1	4	1	955	80	4' 8"	42
2,112	Fishplates		4					1		1433	52	3' 0"	43
													44
2,600	Fishplates			1			1			637	132	4' 8"	45
													46
													47
2,640	Angle and fishplates							1		1433	52' 80"	4' 8"	48
2,640	do do			956	2	17½				396	90	3' 6"	49
	do do			4				1		1146	53	4' 8"	50
2,640	Fishplates			24				1		716	132	4' 8"	51
2,640	do			26			1	5	1	882	76	4' 8"	52
2,400	do			42			3	4			60	4' 8"	53
3,000	do		1	229	1	20.6	7	11	5	637	80	4' 8"	54
			1	3				2				4' 8"	55
2,600								1		717	80	4' 8"	56
2,240	Fishplates			22				1		717	129.5	4' 8"	57
								2		819	79	4' 8"	58
3,000	Angle and fishplates			8						660	84.4	4' 8"	59
2,400	Fishplates			1	1	24	1	3		574	75	4' 8"	60
2,800	do									600	84	4' 8"	61
2,640	do			69	1	32		1		693	75.5	4' 8"	62
2,640	Fishplates											4' 8"	63
												4' 8"	64
		25	204	7701	344		145	218	128				

No. 3.—SUMMARY STATEMENT of the different descriptions of

Number.	Name of Railway.	Length of Line.		Number of Engines.		Number of Sleeping Cars.		Number of Palace or Drawing Room Cars.	
		Completed.	Under Construction.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.
1	Albert	52·00		3					
2	Albert Southern		17·00						
3	Baie des Chaleurs	27·00	73·00	2					
4	Bay of Quinté and Navigation Co	3·50		2					
5	Buctouche and Moncton	26·00	6·00	1	1				
6	Canada Atlantic	128·30	6·10	8	10				
7	Canada Southern	362·44		126					
8	Canadian Pacific	3,452·70	86·10						
	Atlantic and North-West	30·80	76·30						
	Manitoba South-Western Colonization	211·20							
	North Shore	205·90							
	St. Lawrence and Ottawa	56·60							
	Toronto, Grey and Bruce	193·60							
	Ontario and Quebec	211·00							
	Credit Valley	175·30							
	West Ontario Pacific	26·60							
9	Cape Breton		90·00						
10	Caraguet	61·00	7·00	2					
11	Carillon and Grenville	13·00		3					
12	Central Ontario	104·00		10					
13	Central of New Brunswick		5·00						
14	Chatham Branch	9·00		2					
15	Cobourg, Peterboro' and Marmora	28·00		3					
16	Cumberland Railway and Coal Co	32·00		5					
17	Eastern Extension	80·00		9					
18	Elgin, Petittcodiac and Havelock	26·50		2					
19	Erie and Huron	73·12		5					
20	Esquimault and Nanaimo	78·00		4					
21	Grand Southern	82·50		5					
22	Grand Trunk	894·25							
	Buffalo and Lake Huron	162·00							
	Georgian Bay and Lake Erie	171·50							
	Montreal and Champlain Junction	62·25							
	Great Western	539·53							
	London and Port Stanley	23·66							
	Wellington, Grey and Bruce	168·35							
	London, Huron and Bruce	68·89							
	Brantford, Norfolk and Port Burwell	34·74							
	Midland	165·75							
	Toronto and Nipissing	111·50							
	Grand Junction	87·75							
	Whitby, Port Perry and Lindsay	46·50							
	Victoria (Lindsay to Haliburton)	53·25							
	Madoc Junction to Bridgewater	8·50							
23	Great Eastern	6·12							
24	Great Northern	7·84			1				
25	Intercolonial	880·00		164		12			
26	International	81·68		3					
27	Irondale, Bancroft and Ottawa	10·00	50·00	1					
28	Joggins and Maccan	3·00	9·00						
29	Kent Northern	27·00		2					
30	Kingston	112·50		10					
31	Lake Temiskaming Colonization and Railway Co	6·00		1					
32	L'Assomption	3·50		1					
	Carried forward	9,479·08	425·50	1366	39	69	8		

* Including 3·20 miles Toronto Junction to Strachan Avenue.

Rolling Stock, for the Year ended 30th June, 1887.

	Number of First Class Cars.		Number of Second Class and Emigrant Cars.		Number of Baggage, Mail and Express Cars.		Number of Cattle and Box Freight Cars.		Number of Platform Cars.		Number of Hopper and Dumping Cars.		Remarks.
	Owued.	Hired.	Owued.	Hired.	Owued.	Hired.	Owued.	Hired.	Owued.	Hired.	Owued.	Hired.	
3					1		10		20				1
1									19				2
6	4	1	2	3	2	12			20				3
38		21		30		2724			145		75		4
													5
													6
													7
													8
111	9	97	12	87	13	4721	375	3000	91	360			9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
328		212		177		13496		4509					23
													24
													25
													26
													27
													28
													29
													30
													31
													32
601	18	425	15	372	17	22628	375	10170	91	2733			

Also 7 boarding, 10 tool, and 39 coil tank cars.

Other cars, 327 owned and 18 hired. The rolling stock under the heading "hired" is on special trust.

No. 3.—SUMMARY STATEMENT of the different

Number.	Name of Railway.	Length of Line.		Number of Engines.		Number of Sleeping Cars.		Number of Palace or Drawing Room Cars.	
		Completed.	Under Construction.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.
	Brought forward.....	9,479.08	425.50	1366	39	69	8		
33	Manitoba and North-Western	207.49		6					
34	Massawippi Valley	34.00							
35	Montreal and Sorel	44.67			2				
36	Montreal and Vermont Junction	23.60							
37	Napanee, Tamworth and Quebec	28.50		2					
38	New Brunswick.....	174.00	415.00	45					
	New Brunswick and Canada.....	137.00							
	St. John and Maine.....	92.00							
	Fredericton	22.50							
39	New Brunswick and Prince Edward.....	36.00		3					
40	Northern and North-Western.....	581.92	493.29	52					
	Northern and Pacific Junction	111.37							
41	Northern and Western of New Brunswick.....	115.00		6					
42	North-Western Coal and Navigation Co.....	109.50		7					
43	Nova Scotia Central		75.00						
44	Nosbonsing and Nipissing	5.50		1					
45	Ottawa and Gatineau Valley		3.00						
46	Oxford and New Glasgow		76.00						
47	Pontiac Pacific Junction.....	61.00	24.00	4					
48	Prince Edward Island	210.00		21					
49	Qu'Appelle, Long Lake and Saskatchewan	23.00			1				
40	Quebec and Lake St. John.....	177.00		11	2				
51	Quebec Central	159.00	40.00	9					
52	Stanstead, Shefford and Chambly.....	43.00		6					
53	South-Eastern	152.00	260.00	30					2
	Montreal, Portland and Boston	45.00							
	Lake Champlain and St. Lawrence Junc	63.00							
54	St. John Bridge and Railway Extension.....	1.75							
55	St. Lawrence, Lower Laurentian and Saguenay.....	20.00							
56	St. Martin's and Upham	29.12		1	1				
57	Temiscouata	81.00		2					
58	Thousand Islands.....	3.15		1	1				
59	Waterloo and Magog	39.00	49.10						
	Missisquoi Valley	10.10							
60	Western Counties.....	67.00		4					
61	Windsor and Annapolis	84.00	116.00	10					
	Windsor Branch	32.00							
62	Wood Mountain and Qu'Appelle		17.00						
63	Winnipeg and Hudson Bay	40.00							
		12,332.35	660.50	1587	46	69	8	2	

descriptions of Rolling Stock—Concluded.

	Number of First Class Cars.		Number of Second Class Emigrant Cars.		Number of Baggage, Mail and Express Cars.		Number of Cattle and Box Freight Cars.		Number of Platform Cars.		Number of Hopper and Dumping Cars.		Remarks.
	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	
002	16		425	15	373	17	23628	375	10170	91	2733	...	
4			2		4		107		45			33	
												34	Rolling stock furnished by lessees
												35	(Passumpsic Railway.)
												36	Operated by Central Vermont.
												37	Also 1 construction car.
28			22		14		390		700			38	
1							2		20			39	
41			4		18		447		818			40	Also 19 other cars of various kinds.
2					2		12		76			41	
2			2				18		2		134	42	
												43	
									32			44	
												45	
												46	
1			2		1		5				20	47	
17			15		4		178		125			48	
								1		6		49	
3			4		2		13		110			50	
5			7		5		75		158			51	
4					2							52	
9	15	8			6	4	61	371	248	100	50	53	
												54	Operated by New Brunswick Rail-
												55	way Co.
												56	
												57	
1					1							58	
												59	Operated by equipment of Stanstead,
2			2		2		17		57			60	Shefford and Chambly Railway.
5			5		6		70		72		20	61	
												62	
												63	
72b	35	498	16	440	23	24023	747	12668	197	2957	...		

No. 4.—SUMMARY STATEMENT of the Operations of the

Number.	Name of Railway.	Mileage.	TRAIN MILEAGE.			
			Passenger Trains.	Freight Trains.	Mixed Trains.	Total Train Mileage.
1	Albert.....	52·00	256	1,740	26,592	28,588
2	Bay of Quinté and Navigation Co.....	3·50			13,874	13,874
3	Canada Atlantic.....	128·30	182,792	250,240	31,300	464,332
4	Canada Southern.....	362·44	990,140	1,689,187	112,665	2,791,992
5	Canadian Pacific.....	3,227·50				
	Manitoba South-Western Colonization.....	211·20				
	North Shore.....	205·90				
	St. Lawrence and Ottawa.....	56·50				
	Toronto, Grey and Bruce.....	183·60				
	Ontario and Quebec.....	211·00				
	Credit Valley.....	175·30				
	Toronto Junction to Strachan Avenue.....	3·20				
6	Carquest.....	61·00				
7	Carillon and Grenville.....	13·00	10,500		850	11,350
8	Central Ontario.....	104·00	20,000	24,000	68,000	118,000
9	Chatham Branch.....	9·00			25,776	25,776
10	Cobourg, Peterboro' and Marmora.....	15·00			7,200	7,200
11	Cumberland Railway and Coal Co.....	32·00				88,000
12	Eastern Extension.....	80·00				79,060
13	Elgin, Petterodiac and Havelock.....	26·50			16,589	16,589
14	Erie and Huron.....	73·12	44,625		41,547	86,172
15	Esquimaux and Nanaimo.....	78·00				70,619
16	Grand Southern.....	82·50			56,000	56,000
17	Grand Trunk.....	894·25				
	Buffalo and Lake Huron.....	162·00				
	Georgian Bay and Lake Erie.....	171·50				
	Montreal and Champlain Junction.....	62·25				
	Great Western.....	539·53				
	London and Port Stanley.....	23·66				
	Wellington, Grey and Bruce.....	168·35				
	London, Huron and Bruce.....	68·89				
	Brantford, Norfolk and Port Burwell.....	34·74				
	Midland.....	165·75				
	Toronto and Nipissing.....	111·50				
	Whitby, Port Perry and Lindsay.....	46·50				
	Grand Junction.....	87·75				
	Victoria (Lindsay to Haliburton).....	53·25				
	Madoc Junction to Bridge-water.....	8·50				
18	Great Northern.....	7·84				
19	Intercolonial.....	880·00	924,919	3,567,650	Ft. & Mix.	4,492,569
20	International.....	81·66		10,200	44,980	55,180
21	Kent Northern.....	27·00			17,700	17,700
22	Kingston and Pembroke.....	112·50	95,000	130,600	Ft. & Mix.	225,600
23	Lake Temiskaming Colonization Railway Co.....	6·00				
24	L'Assomption.....	3·50				3,297
25	Manitoba and North-Western.....	207·49	34,506	12,710	34,439	81,655
26	Massawippi Valley.....	34·00	62,663	98,732	3,978	165,373
	Carried forward.....	9,352·97	9,370,967	16,533,530	3,452,969	25,598,442

Year and Mileage, for the Year ended 30th June, 1887.

Engine Mileage.	Total Number of Passengers Carried.	Total of Freight of 2,000 lbs., Handled.	Average rate of Speed of Passenger Trains. Miles per Hour.	Average rate of Speed of Freight Trains. Miles per Hour.	Number.	Remarks.
29,202	10,515	20,934	15	12	1	
14,487	7,971	22,172	15	10	2	
486,441	114,690	243,216	35	15	3	
3,762,215	475,870	2,580,895	35	15	4	
10,044,675	1,949,215	2,118,319	22	14	5	
					6	No return of operations.
11,500	12,600	1,000	25	18	7	
110,090	62,119	50,467	20	16	8	
26,756	10,324	12,448	30		9	
7,200	3,000	10,449	15		10	
88,000	16,851	438,626	15	15	11	
86,550	42,640	11,686	24	15½	12	
19,550	10,868	18,879	15		13	
117,330	87,624	59,694	25	18	14	
70,619	13,000	8,278	20	12	15	
57,000		11,646	20		16	
17,575,397	5,080,638	6,458,056	28	15	17	
					18	No returns. Only a short time in operation.
5,466,488	940,144	1,131,334	30	15	19	
55,180	25,947	33,908	14	10	20	
17,700	4,960	11,071	15		21	
271,300	49,160	100,136	25	18	22	
	223	61			23	Return incomplete. Opened for traffic on 9th June.
3,297	4,158	90			24	
153,410	14,588	53,257	25	15	25	
165,373	54,498	99,650	24	12	26	
38,618,670	8,992,603	13,493,272				

No. 4.—SUMMARY STATEMENT of the Operations of the

Number.	Name of Railway.	Mileage.	TRAIN MILEAGE.			
			Passenger Trains.	Freight Trains.	Mixed Trains.	Total Train Mileage.
	Brought forward.....	9,352 97	9,370,967	10,533,530	3,452,969	25,598,442
27	Montreal and Sorel.....	44 67				21,060
28	Montreal and Vermont Junction.....	23 60	54,012	105,800	8,502	168,314
29	Napanee, Tamworth and Quebec.....	28 50			39,284	39,284
30	New Brunswick..... 174 00					
	New Brunswick and Canada..... 127 00	415 50	280,025	264,608	391,665	936,298
	St John and Maine..... 92 60					
	Fredericton..... 22 50					
31	New Brunswick and Prince Edward.....	36 00	2,092	1,416	12,804	16,312
32	Northern and North-Western..... 381 92					
	Northern and Pacific Junction..... 111 37	493 29	494,294	482,299	253,303	1,229,796
33	North-Western Coal and Navigation Co.....	109 50			95,048	95,048
34	Northern and Western of New Brunswick.....	115 00			6,384	6,384
35	Nosbensing and Nipissing..... 5 50			12,500		12,500
36	Pontiac Pacific Junction..... 61 00				10,795	10,795
37	Prince Edward Island..... 210 60		80,951	167,913	Ft. & Mix.	248,864
38	Qu'Appelle, Long Lake and Saskatchewan..... 23 00				5,500	5,500
39	Quebec and Lake St. John..... 54 00		39,468	54,925	Ft. & Mix.	94,393
40	Quebec Central..... 159 00		80,767	90,978	20,562	192,307
41	Stanstead, Shefford and Chambly..... 43 00		47,321	33,122	18,199	98,642
42	South-Eastern..... 152 00					
	Montreal, Portland and Boston..... 45 00	260 00	259,421	223,268	67,575	550,264
	Lake Champlain and St. Lawrence Junction..... 63 00					
43	St. John Bridge and Railway Extension.....	1 75				
44	St. Martin's and Upham..... 29 12				13,500	13,500
45	Thou-and Islands..... 3 15		7,550		4,302	11,852
46	Waterloo and Magog..... 39 00		38,473	26,273	9,211	73,957
	Missisquoi Valley.....					
47	Western Counties..... 67 00			1,187	45,613	46,800
48	Windsor and Annapolis..... 84 00		83,652		84,684	168,336
	Windsor Branch..... 32 00	116 00				
	Total.....	11,691 15	10,838,993	17,997,819	4,539,900	33,638,748

Year and Mileage, for the Year ended 30th June, 1887.—*Concluded.*

Engine Mileage.	Total Number of Passengers Carried.	Total of Freight of 2,000 lbs.. Handled.	Average rate of Speed of Passenger Trains. Miles per Hour.	Average rate of Speed of Freight Trains. Miles per Hour.	Number.	Remarks
33,619,670	8,992,603	13,496,272				
21,410	13,130	2,774	25	.....	27	
168,314	95,242	696,472	30	13	28	
38,284	31,132	25,693	18	.....	29	
1,029,927	259,650	274,198	25	15	30	
21,076	6,988	10,551	18	15	31	For 7 months.
1,545,308	563,659	602,139	35	18	32	
160,025	1,598	41,011	.....	14	33	
6,384	5,087	11,059	20	15	34	For 6 months.
12,800	.....	.....	.....	20	35	Carries saw logs only.
11,230	4,356	3,657	25	25	36	For 6 months.
316,763	130,067	53,587	20	14	37	
5,500	1,000	500	.....	.....	38	For 6 months.
103,713	68,096	44,040	20	12	39	
210,420	77,072	96,720	25	15	40	
98,642	116,993	689,183	23	12	41	
550,264	167,744	185,549	30	15	42	
.....	.....	.....	.....	.....	43	Operated under arrangement
14,500	4,442	5,847	15	.....	44	with New Brunswick Railway.
11,852	15,447	9,335	25	20	45	
73,957	17,270	21,511	20	14	46	
56,065	26,760	19,662	22	15	47	
199,364	101,302	67,575	22	14	48	
43,276,468	10,698,638	16,356,335	.....	.....	.....

No. 5.—SUMMARY STATEMENT of Description of

Number.	Name of Railway.	Mileage.	Flour.		Grain.		Live
			Barrels.	Tons.	Bushels.	Tons.	No.
1	Albert.....	52 00	3,849	385	11,231	191	873
2	Bay of Quinté and Navigation Co..	3 50	15,120	1,512	111,378	3,311	5
3	Canada Atlantic.....	128 30	71,630	7,163	1,914,680	47,867	4,034
4	Canada Southern.....	362 44	1,385,950	138,595	15,746,741	370,391	365,491
5	Canadian Pacific.....	3,227 50					
	Manitoba South-Western						
	Colonization.....	211 20					
	North Shore.....	205 90					
	St. Lawrence and Ottawa.....	56 50					
	Toronto, Grey and Bruce... ..	183 60					
	Ontario and Quebec.....	211 00					
	Credit Valley.....	175 30					
	Toronto Jun. to Strachan						
	Avenue.....	3 20					
6	Caracquet.....	61 00					
7	Carillon and Grenville.....	13 00	1,000	100			450
8	Central Ontario.....	104 00	3,600	360	165,000	4,860	700
9	Chatham Branch.....	9 00	26,436	2,643	3,376	100	194
10	Cobourg, Peterboro' and Marmora.....	15 00			33,000	561	
11	Cumberland Railway and Coal Co.....	32 00	9,101	910	10,000	170	16
12	Eastern Extension.....	80 00	10,413	1,042	2,061	37	2,114
13	Elgin, Petibodiad and Havelock.....	26 50	5,732	572	14,448	256	1,833
14	Erie and Huron.....	73 12	140,791	14,147	204,930	6,785	4,657
15	Esquimault and Nanaimo.....	78 00	250	25			120
16	Grand Southern.....	82 50	7,334	723	13,589	264	391
17	Grand Trunk.....	894 25					
	Buffalo and Lake Huron.....	162 00					
	Georgian Bay & Lake Erie.....	171 50					
	Montreal & Champlain Junc.....	62 25					
	Great Western.....	539 53					
	London and Port Stanley.....	23 66					
	Wellington, Grey & Bruce.....	168 35					
	London, Huron & Bruce.....	68 89					
	Brantford, Norfolk and Port						
	Burwell.....	34 74					
	Midland.....	165 75					
	Toronto and Nipissing.....	111 50					
	Whitby, Port Perry and						
	Lindsay.....	46 50					
	Grand Junction.....	87 75					
	Victoria (Lindsay to Hali-						
	burton).....	53 25					
	Madoc Junc. to Bridgewater.....	8 50					
18	Great Northern.....	7 84					
19	Intercolonial.....	880 00	753,480	75,348	1,016,334	21,993	80,782
20	International.....	81 66	6,193	619	4,593	120	1,639
21	Kent Northern.....	27 00	8,076	807	1,815	45	49
22	Kingston and Pembroke.....	112 50	300	30	90,500	2,715	150
23	Lake Temiskaming Colonization and						
	Railway Co.....	6 00	97	10	550	2	
24	L'Assomption.....	3 50	600	72			
25	Manitoba and North-Western.....	207 49	10,573	1,057	406,878	11,643	1,720
26	Massawippi Valley.....	34 00	8,000	800	330,000	8,250	3,100
27	Montreal and Sorel.....	44 67	625	62	8,000	240	400
28	Montreal and Vermont Junction.....	23 60	631,833	61,922	6,298,472	171,639	575,908
29	Napawee, Tamworth and Quebec.....	28 50	1,830	184	83,000	2,093	625
	Carried forward.....	9,449 74	10,211,031	1,019,920	78,886,231	1,952,161	2,430,482
		30					

Freight Carried, for the Year ended 30th June, 1887.

Stock.	Lumber of all kinds, except Firewood.		Firewood.		Manu- factured Goods.	All other Articles.	Total Weight Carried.	Number.	Remarks.
	Tons.	Feet.	Tons.	Cords.	Tons.	Tons.	Tons.		
398	5,862,789	8,913	2,334	3,607	708	6,732	20,934	1	
2	770,000	9,140	230	275	6,343	1,589	22,172	2	
1,660	77,864,000	114,760	3,940	5,780	12,203	53,778	243,216	3	
96,439	231,898,960	341,237	18,292	24,205	38,371	1,571,657	2,580,895	4	
66,618	348,813,929	483,557	76,217	136,013	482,961	535,005	2,118,319	5	
300					450	150	1,000	6	No returns.
480	5,416,200	7,965	1,600	3,440	6,584	26,778	50,467	7	
97	563,049	751	150	225	5,950	2,682	12,448	8	
	6,240,000	9,515	249	373			10,449	9	
8	13,308,000	16,630			4,416	*416,492	438,626	11	* Coal.
1,216	633,760	932			3,553	4,906	11,666	12	
177	9,292,880	13,666	240	360	1,176	2,672	18,879	13	
1,103	30,316,390	17,617	737	1,158	4,631	14,253	59,694	14	
48	600,000	900	1,780	2,520	3,283	1,500	8,278	15	
109	2,822,000	4,195	864	1,312	2,228	2,815	11,646	16	
-258,835	507,940,000	732,265	86,800	165,374	793,269	2,883,020	6,458,056	17	
12,233	181,168,003	201,460	12,726	25,452	240,667	554,281	1,131,334	18	No returns; opened
486	18,025,500	23,022	47	66	1,406	8,209	33,908	19	for traffic in May,
26	2,139,000	2,674	1,560	2,660	2,560	2,300	11,071	20	1887.
76	30,190,000	45,285	10,300	19,050	21,990	11,091	100,126	21	
					28		61	22	
	6,000	12				22	90	23	For three weeks, from
642	1,232,100	1,812	25	45	34,754	3,304	53,257	24	9th June, 1887.
1,100	10,860,000	14,500				*75,000	99,650	25	
24	84,000	144	28	56	180	2,667	2,774	26	
86,213	28,243,000	42,330	37	44	134,828	199,696	696,471	27	* Including 39,600
264	1,512,000	2,269	7,684	11,527	7,719	1,637	25,693	28	tons of ore.
528,530	1,495,801,560	2,095,551	225,640	403,542	1,809,985	6,381,642	14,221,211	29	

No. 5—SUMMARY STATEMENT of

Number.	Name of Railway.	Mileage.	Flour.		Grain.		Live
			Barrels.	Tons.	Bushels.	Tons.	No.
	Brought forward	9,449 74	10,211,031	1,019,920	78,886,231	1,982,161	2,430,433
30	New Brunswick	174 00					
	New Brunswick and Canada	127 00					
	St. John and Maine	93 00					
	Fredericton	21 50					
31	New Brunswick and Prince Edward	36 00	5,733	573	7,527	125	98
32	Northern and North-Western	331 93					
	Northern and Pacific Junc. ..	111 37					
33	Northern & Western of New Brunswick	115 00	3,302	330	14,704	245	121
34	North-Western Coal and Navigation Co.	109 50	5,750	575	51,614	827	154
35	Nosbonsing and Nipissing	5 50					
36	Pontiac and Pacific Junction	61 00	3,079	308	2,124	62	45
37	Prince Edward Island	210 60	21,634	2,164	351,678	6,057	10,134
38	Qu'Appelle, Long Lake & Saskatchewan	23 00					
39	Quebec and Lake St. John	54 00	9,360	936	10,500	252	80
40	Quebec Central	159 00	44,960	4,496	21,240	531	1,173
41	Stanstead, Shefford and Chambly	43 00	648,468	63,586	6,775,396	173,040	570,456
42	South-Eastern	152 00					
	Montreal, Portland & Boston	45 00					
	Lake Champlain and St. Lawrence Junction	63 00					
	St. John Bridge and Railway Extension	1 75					
44	St. Martin's and Upham	29 12	1,338	134	6,856	118	7
45	Thousand Islands	3 15	1,454	146			750
46	Waterloo and Magog	39 00	2,252	206	5,892	155	1,238
	Missisquoi Valley						
47	Western Counties	67 00	8,110	911	959	17	248
48	Windsor and Annapolis	84 00					
	Windsor Branch	32 00					
		11,691 15	11,293,802	1,127,478	91,967,708	2,307,958	3,112,169

Description of Freight Carried—*Concluded.*

Stock.	Lumber of all kinds, except Firewood.		Firewood.		Manu- factured Goods.	All other Articles.	Total Weight Carried.	Number.	Remarks.
	Tons.	Feet.	Tons.	Cords.	Tons.	Tons.	Tons.		
528,530	1,495,801,560	2,095,551	225,640	403,542	1,809,965	6,381,642	14,221,211		
8,400	18,700,000	18,700	3,000	5,200	197,060	29,248	274,198	50	
20	3,380,700	5,071	378	566	291	3,905	10,551	31	For 7 months.
9,208	157,713,364	227,203	48,186	79,507	21,970	124,056	602,159	32	
76	5,865,000	6,900	840	900	202	2,398	11,059	33	
85	695,000	1,001	.....	.....	1,768	*36,755	41,011	34	* Including 36,326 tons of coal.
.....	.....	.....	.....	.....	.....	.....	.....	35	220,000 sawlogs.
33	248,880	366	500	670	985	233	2,657	36	For six months.
1,639	3,584,662	5,163	2,893	5,475	33,089	In foregone.	53,587	37	
.....	.....	.....	.....	.....	.....	.....	.....	38	For 4 months.
48	8,280,000	10,560	20,025	26,664	744	4,836	44,040	39	
782	26,514,560	38,992	11,058	5,779	425	45,715	98,720	40	
59,826	31,216,000	45,861	2,842	3,263	135,731	207,876	689,183	41	
5,100	38,593,400	56,755	.....	.....	50,250	57,133	185,549	42	
.....	.....	.....	.....	.....	.....	.....	.....	43	Operated under agreement with N. B. Ry.
3	3,182,000	4,650	260	240	187	415	5,847	44	
313	760,000	883	.....	.....	7,893	200	9,435	45	
88	2,465,890	6,164	2,382	3,573	2,601	8,724	21,611	46	
117	9,784,250	12,554	2,203	3,380	2,238	445	19,662	47	
2,598	10,213,292	12,433	1,365	1,952	12,040	33,708	67,575	48	
616,866	1,816,968,458	2,548,807	321,572	540,821	2,277,379	6,937,287	16,856,335		

No. 6—SUMMARY STATEMENT OF EARNINGS, for the Year ended 30th June, 1887.

Number.	Name of Railway.	Mileage.	Passenger Traffic.		Freight Traffic.		Mails and Express Freight.		Other Sources.		Total.		Remarks.
			\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.	
1	Albert.....	52-00	4,846	58	10,116	54	2,119	68	864	83	17,947	63	
2	Bay of Quinté and Navigation Co.....	3-50	1,938	46	9,559	38	986	31	1,160	39	13,624	54	
3	Canada Atlantic.....	128-30	96	293	219,504	43	24,866	36	In foregoing		340,668	96	
4	Canada Southern.....	362-41	1,069	643	3,113,378	96	143,077	51	3,798	34	4,329,898	05	
5	Canadian Pacific.....	3,227-50											
	Manitoba Southwestern Colonization.....	211-20											
	North Shore.....	205-90											
	St. Lawrence and Ottawa.....	66-50											
	Toronto, Grey and Bruce.....	183-60											
	Ontario and Quebec.....	211-00											
	Credit Valley.....	175-30											
	Toronto Junction to Strachan Avenue.....	3-20											
6	Caraguet.....	61-00									12,635	04	No details given.
7	Carillon and Grenville.....	13-00	2,855	69	1,008	83					3,862	51	
8	Central Ontario.....	104-00	31,705	46	44,704	00	5,712	39	285	58	82,387	43	
9	Chatham Branch.....	9-00	2,573	48	10,954	13	1,197	45	863	67	16,588	75	
10	Cobourg, Peterboro' and Marmora.....	15-00	987	20	7,069	17					8,056	37	
11	Cumberland Railway and Coal Co.....	32-00	7,030	14	31,196	15	1,308	34	74,456	80	113,991	43	
12	Eastern Extension.....	80-00	36,639	72	20,275	83	7,644	35	537	20	64,107	10	
13	Elgin, Petricodiac and Havelock.....	26-50	3,301	54	16,334	48	640	32	611	28	20,888	22	
14	Erie and Huron.....	73-12	39,569	44	39,524	59	4,730	08	550	00	84,374	11	
15	Esquimaut and Nanaimo.....	78-00	30,072	92	9,071	85	2,744	00	1,793	47	43,673	24	In liquidation.
16	Grand Southern.....	82-50									32,000	00	
17	Grand Trunk.....	894-25											
	Buffalo and Lake Huron.....	162-00											
	Georgian Bay and Lake Erie.....	171-50											
	Montreal and Champlain Junction.....	62-25											
	Great Western.....	539-53											
	London and Port Stanley.....	23-68											
	Wellington, Grey and Bruce.....	168-35											
	London, Huron and Bruce.....	68-89											
	Brantford, Norfolk and Port Burwell.....	34-74											
	Midland.....	165-75											
	Toronto and Nipissing.....	111-50											
		2,598-42	4,971,504	82	10,445,537	19	557,658	93	74,487	85	16,049,188	79	

	7 84	1,657,695 76	145,635 51	1,500 00	For May and June.
18 Grand Junction..... 87-75	880 00	79,478 56	1,657,695 76	1,500 00	
19 Whitty, Port Perry and Lindsay... 46-50	81 66	18,913 69	38,443 88	2,596,009 83	
20 Victoria (Lindsay to Haliburton)... 63-25	27 00	3,587 98	8,636 96	60,949 21	
21 Madoc Junction to Bridgewater... 8-50	112 50	36,786 45	95,078 35	13,111 54	
22 Kingston and Pembroke	6-00	520 90	1,143 43	152,507 86	
23 Lake Temiskaming Colonization & Railway Co.	3-50	719 65	31 05	1,564 33	
24 L'Assomption	207 49	27,691 31	83,911 05	4,434 89	
25 Manitoba and North-Western	34 00	57,051 36	83,468 44	1,000 00	
26 Mississippi Valley	44 67	9,451 14	2,316 09	1,971 90	
27 Montreal and Sorel	28 50	45,511 61	115,111 73	128 87	
28 Montreal and Vermont Junction	23 60	16,138 26	9,668 61	167,901 77	
29 Napanee, Tamworth and Quebec	415 50	243,366 75	428,539 76	29,147 67	
30 New Brunswick	36 00	2,772 90	5,601 32	31,083 99	
31 New Brunswick and Canada... 174 00	493 29	446,088 75	930,840 93	7 7,919 91	
32 St. John and Maine... 22 50	115 00	5,251 83	7,986 30	9,106 22	
33 Fredericton	109 50	9,507 03	1 4,319 75	1,453,871 45	
34 Northern and Prince Edward	5 50	4,109 33	3,894 03	204 30	
35 Northern and North-Western... 381 93	61 00	65,374 95	71,153 52	In foregoing	
36 Northern and Pacific Junction... 111 37	23 00	1,000 00	500 00	13,458 01	
37 Northern and Western of New Brunswick	54 00	25,048 79	45,593 79	126,727 42	
38 North-Western Coal and Navigation Co.	169 00	56,765 38	114,770 93	35,373 10	
39 Pontiac Pacific Junction	43 00	23,975 15	47,449 07	8,010 93	
40 Prince Edward Island	260 00	147,440 36	226,348 99	7 82	
41 Qu'Appelle, Long Lake and Saskatchewan	1 75	17,259 74	21,860 64	403 90	
42 Quebec and Lake St. John	3 15	2,261 85	3,069 96	1,500 00	
43 Quebec Central	59 00	10,635 84	17,659 47	73,537 22	
44 Stanstead, Shefford and Chambly	67 00	25,939 04	17,877 38	2,322 87	
45 South-Eastern	116 00	91,311 42	122,188 60	74,960 86	
46 Montreal, Portland and Boston... 152 00	11,691 15	11,867,597 45	24,581,047 05	413,608 95	
47 Lake Champlain and St. Lawrence Junction	63 00	17,259 74	21,860 64	17,065 59	
48 St. John Bridge and Railway Extension	29 12	2,261 85	3,069 96	39,982 93	
49 Thousand Islands	3 15	3,244 06	7,461 01	6,331 81	
50 Waterloo and Marg	59 00	10,635 84	17,659 47	1,539 99	
51 Missisquoi Valley	67 00	25,939 04	17,877 38	393 10	
52 Windsor and Annapolis	81 00	91,311 42	122,188 60	47,837 65	
53 Windsor Branch	32 00	11,691 15	11,867,597 45	225,451 00	
				546 00	
				771,992 87	
				38,841,609 12	

No. 7.—SUMMARY STATEMENT of Operating Expenses for the Year ended 30th June, 1887.

Number.	Name of Railway.	Mileage	Maintenance of Line, Buildings, &c.		Working and Repairs of Engines.		Working and Repairs of Cars.		General Operating Expenses.		Total.	Remarks.
			\$	cts.	\$	cts.	\$	cts.	\$	cts.		
1	Albert.	53-00	10,714	56	5,607	89	2,156	47	5,974	43	21,406	35
2	Bay of Quinte and Navigation Co.	3-50	2,610	36	3,371	12	191	70	4,805	29	10,981	47
3	Canada Atlantic	128-30	59,351	70	84,425	00	12,933	90	62,515	10	221,375	30
4	Canada Southern	362-44	631,503	86	648,956	83	216,877	86	997,913	10	2,475,250	65
5	Canadian Pacific	3,227-50										
	Manitoba South-Western Colonization.	211-20										
	North Shore	205-90										
	St. Lawrence and Ottawa	56-50										
	Toronto, Grey and Bruce.	183-60										
	Ontario and Quebec	211-00										
	Credit Valley	175-30										
	Toronto Junction to Strachan Avenue.	3-20										
6	Carlaquet	61-00										No returns
7	Carillon and Grenville	13-00										4,707 40
8	Central Ontario.	101-00	24,560	66	19,185	01	4,226	62	30,134	67	78,096	96
9	Chatham Branch.	9-00	1,685	11	2,857	72	9-2	18	1,580	00	7,035	01
10	Jobourg, Peterboro' and Marmora	15-00										5,815 16
11	Cumberland Railway and Coal Co.	32-00	12,471	53	25,457	26	3,403	54	7,572	69	48,905	02
12	Eastern Extension	80-00	51,311	61	14,933	56	4,325	22	23,683	62	94,254	01
13	Rigin, Petite-diac and Havelock.	26-50	1,772	39	2,567	46	1,173	17	1,755	10	7,268	12
14	Erie and Huron	73-12	12,178	71	16,723	20	1,735	67	20,230	09	52,812	67
15	Esquimault and Nanaimo.	78-00	30,072	92	9,073	85	2,744	00	1,782	47	43,672	24
16	Grand Southern.	82-50	35,000	00							35,000	00
17	Grand Trunk	894-25										In liquidation.
	Buffalo and Lake Huron	162-00										
	Georgian Bay and Lake Erie	171-50										
	Montreal and Champlain Junction.	62-25										
	Great Western.	639-53										
	London and Port Stanley	23-66										
	Wellington, Grey and Bruce.	168-35										
	London, Huron and Bruce.	68-89										
	Brantford, Norfolk and Port Burwell.	34-74										
	Midland	165-75										
	Toronto and Nipissing	111-50										
	Whitby, Port Perry and Lindsey	46-50										
			2,156,039	19	3,700,854	71	1,162,545	39	4,036,839	78	11,056,279	07

	7-84	712,052 79	887,626 41	442,360 61 (in fore going)	716,085 77	2,898,115 68
18 Grand Junction.....	880 00	782,052 79	887,626 41	442,360 61	716,085 77	2,898,115 68
19 Victoria (Lindsay to Haliburton).....	81 66	19,571 09	5,359 33	31,737 86	31,737 86	60,668 28
20 Madoc Junction to Bridgewater.....	27 00	6,459 27	3,291 82	6 38	2,124 30	12,568 75
21 Kent Northern.....	112 60	54,583 67	42,111 44	7,620 07	28,404 29	132,739 45
22 Kingston and Pembroke.....	6 00	.....	.....	.....	1,132 30	1,132 30
23 Lake Temiskaming Colonization and Railway Co.....	3 60	82 52	324 28	.....	1,260 07	1,668 87
24 L'Assomption.....	207 49	33,922 94	36,921 94	9,564 61	41,298 70	121,706 19
25 Manitoba and North-Western.....	34 00	25,133 88	26,453 85	8,691 97	34,679 99	93,959 70
26 Massachusetts Valley.....	44 67	.....	3,115 09	390 00	3,768 37	13,438 37
27 Montreal and Sorel.....	23 60	20,050 12	41,118 21	27,338 17	24,330 38	112,826 83
28 Montreal and Vermont Junction.....	28 50	6,551 85	6,466 84	339 78	10,152 80	23,500 27
29 Napanee, Temworth and Quebec.....	415 50	172,500 12	186,423 19	45,713 59	127,078 55	531,715 45
30 New Brunswick.....	36 00	2,348 47	2,284 54	149 97	1,253 78	6,036 76
31 New Brunswick and Canada.....	493 29	254,288 08	235,092 53	49,099 25	344,468 15	892,938 01
32 St. John and Maine.....	115 00	8,371 45	3,262 66	5,023 77	12,381 95	29,042 83
33 Fredericton.....	109 60	28,628 91	37,855 28	1,239 51	31,406 24	99,126 91
34 Northern and Pacific Junction.....	5 60	7,209 80	6,740 00	3,000 00	17,649 00	34,498 00
35 Northern and Western of New Brunswick.....	61 00	24,835 61	2,587 18	350 60	5,311 05	33,084 37
36 Nobsong and Nioissing.....	210 60	74,888 95	56,534 30	18,933 15	63,876 05	204,237 45
37 Pontiac and Pacific Junction.....	23 00	100 00	1,200 09	.....	400 00	1,700 00
38 Prince Edward Island.....	54 00	16,022 70	17,709 61	5,116 14	13,592 71	52,441 16
39 Qu'Appelle, Long Lake and Saskatchewan.....	159 00	51,279 33	42,261 13	11,408 87	60,558 40	185,507 73
40 Quebec and Lake St. John.....	43 00	19,974 84	16,108 81	5,190 84	13,625 91	56,000 40
41 Stanstead, Shefford and Chambly.....	260 60	133,856 07	126,462 58	23,081 88	112,550 47	395,951 00
42 South-Eastern.....	1 75	1,909 48	.....	.....	11,096 96	13,066 44
43 Montreal, Portland and Boston.....	29 12	1,216 30	1,945 97	83 50	1,064 28	4,310 05
44 Lake Champlain and St. Lawrence Jun. Extension.....	3 15	2,959 74	4,522 31	550 60	3,981 87	12,016 92
45 St. John Bridge and Railway Extension.....	39 00	12,366 26	13,685 82	3,562 16	9,209 70	38,813 84
46 St. Martin's and Upham.....	67 00	16,842 26	9,301 91	3,413 67	11,023 03	40,580 77
47 Waterloo and Magog.....	116 00	74,209 00	30,889 20	8,933 33	42,328 74	166,593 27
48 Missisquoi Valley.....	11,691 15	6,405,390 14	9,114,874 96	2,761,929 46	9,331,975 73	27,634,683 85
49 Western Counties.....	.....	.....	.....	.....	.....	.....
50 Windsor and Annapolis.....	.....	.....	.....	.....	.....	.....
51 Windser Branch.....	.....	.....	.....	.....	.....	.....

No. 8.—SUMMARY OF ACCIDENTS

Number.	Name of Railway.	Mileage.	Passengers, Employés or Others.	Fell from Cars or Engines.		Jumping on or off Trains or Engines while in motion.		
				Killed.	Injured.	Killed.	Injured.	
1	Albert	52 00	.....	.....	.....	.....	.....
2	Bay of Quinté and Navigation Co	3 50	.....	.....	.....	.....	.....
3	Canada Atlantic	128 30	{ Passengers..... Employés..... Others.....	1	.....	.....	1 1
4	Canada Southern	362 44	{ Passengers..... Employés..... Others.....	5	2	.....	3 2
5	Canadian Pacific	3273 30	{ Passengers..... Employés..... Others.....	7	20	1	2 4 1	
	Manitoba South-Western Colonization	211 20						
	North Shore	205 90						
	St. Lawrence and Ottawa.....	58 57						
	Toronto, Grey and Bruce	183 60						
	Ontario and Quebec	211 00						
	Credit Valley	175 30						
	Toronto to Strachan Avenue.....	3 20	.....	.....	.....	.....
6	Caragnet	61 00	.....	.....	.....	.....	.....
7	Carillon and Grenville.....	15 00	.....	.....	.....	.....	.....
8	Central Ontario	104 00	{ Employés..... Others.....	.....	.....	.....	.....
9	Chatham Branch.....	9 00	.....	.....	.....	.....	.....
10	Cobourg, Peterboro' and Marmora.....	15 00	.....	.....	.....	.....	.....
11	Cumberland Railway and Coal Co.....	32 00	.....	.....	.....	.....	.....
12	Eastern Extension.....	80 00	.....	.....	.....	.....	.....
13	Elgin, Petittcodiac and Havelock.....	28 50	.....	.....	.....	.....	.....
14	Erie and Huron.....	73 12	Employés.....	.....	.....	.....	.....
15	Esquimault and Nanaimo.....	78 00	.....	.....	.....	.....	.....
16	Grand Southern.....	82 50	.....	.....	.....	.....	.....
17	Grand Trunk.....	894 25	{ Passengers..... Employés..... Others.....	3	4	1	9 7 12	
	Buffalo and Lake Huron.....	162 00						
	Georgian Bay and Lake Erie.....	171 50						
	Montreal and Champlain Junction.....	62 25						
	Great Western.....	539 53						
	London and Port Stanley.....	23 66						
	Wellington, Grey and Bruce.....	168 35						
	London, Huron and Bruce.....	68 89						
	Brantford, Norfolk and Port Burwell... ..	34 74						
	Midland.....	165 75						
	Toronto and Nipissing.....	111 50						
	Whitby, Port Perry and Lindsay	46 80						
	Grand Junction	87 75						
	Victoria (Lindsay to Haliburton).....	53 25						
	Madoc Junction to Bridgewater.....	8 50	.....	.....	.....	.....
16	Great Northern.....	7 84	.....	.....	.....	.....	.....
19	Intercolonial.....	880 00	{ Passengers..... Employés..... Others.....	1	1	10	2	1 7 3
20	International	81 66	Others.....	.....	.....	.....	.....
21	Kent Northern.....	27 00	.....	.....	.....	.....	.....
22	Kingston and Pembroke.....	112 50	.....	.....	.....	.....	.....
23	Lake Temiskaming Colonization.....	6 00	.....	.....	.....	.....	.....
24	L'Assomption.....	3 50	.....	.....	.....	.....	.....
25	Manitoba and North-Western.....	207 49	{ Passengers..... Employés.....	1	.....	.....	.....
26	Massawippi Valley.....	34 00	.....	.....	.....	.....	.....
	Carried forward.....	9,352 97	.....	22	56	16	56

for the Year ended 30th June, 1887.

At work on or near Track making up Trains.		Putting Arms or Heads out of Windows		Coupling Cars.		Collisions, or by Trains thrown from Track.		Walking, standing, lying or being on Track.		Explosions.		Striking Bridges.		Other Causes.		Totals.		Number.
Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
.....	1
.....	2
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3	3
.....	2	1	.....	.....	.....	.....	.....	.....	2	1	3
.....	13	2	.....	1	3	.....	.....	.....	.....	.....	6	8	26	4
.....	3	1	.....	.....	.....	.....	.....	.....	3	2	4
.....	11	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	5
2	9	.....	1	2	73	8	20	8	9	.....	2	.....	.....	12	18	3	13	5
.....	19	10	.....	.....	.....	.....	1	3	43	160	5
.....	21	14	5
.....	6
.....	7
.....	1	.....	.....	.....	.....	.....	1	.....	.....	8
.....	1	9
.....	10
.....	11
.....	12
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13
.....	2	14
.....	15
.....	16
.....	1	1	.....	.....	.....	.....	.....	.....	2	5	16	17
.....	4	132	5	16	6	12	.....	.....	.....	2	5	31	23	216	17
.....	1	36	29	.....	.....	.....	.....	1	4	43	47	17
.....	18
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19
.....	7	.....	.....	.....	36	.....	4	1	.....	1	1	.....	.....	.....	18	4	83	19
.....	1	.....	.....	1	2	.....	.....	.....	.....	.....	1	2	8	20
.....	21
.....	22
.....	23
.....	1	.....	.....	24
.....	25
.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
2	16	.....	1	7	263	15	55	79	68	2	3	.....	2	20	85	163	605	26

No. 8—SUMMARY OF

Number.	Name of Railway.	Mileage.	Passengers, Employés or others	Fell from Cars or Engines.		Jumping on or off Trains or Engines while in motion.	
				Killed.	Injured.	Killed.	Injured.
	Brought forward	9,352 97	.....	22	56	16	56
27	Montreal and Sorel.....	44 67	.....	.....	.....	.....	.....
28	Montreal and Vermont Junction.....	23 60	Others.....	.....	.....	.....	1
29	Napanee, Tamworth and Quebec	28 50	{ Employés.....	.....	.....	.....	.....
			{ Others.....	.....	.....	.....	.....
30	New Brunswick	174 00	415 50	{ Employés.....	.....	.....	.....
	New Brunswick and Canada.....	127 00					
	St. John and Maine.....	92 00					
	Fredericton.....	22 50					
31	New Brunswick and Prince Edward.....	36 00	.....	.....	.....	.....	.....
32	Northern and North-Western.....	381 92	493 29	{ Passengers.....	.....	.....	.....
	Northern and Pacific Junction.....	111 37					
33	North-Western Coal and Navigation Co.....	109 50	.....	.....	.....	.....	.....
34	North-Western and New Brunswick.....	115 00	Employés.....	.....	.....	1	.....
35	Nosbosing and Nipissing.....	5 60	.....	.....	.....	.....	.....
36	Pontiac Pacific Junction.....	61 00	.....	.....	.....	.....	.....
37	Prince Edward Island.....	210 60	{ Employés.....	.....	1	.....	.....
			{ Others.....	.....	.....	1	.....
38	Qu'Appelle Long Lake and Saskatchewan.....	23 00	.....	.....	.....	.....	.....
39	Quebec and Lake St. John.....	54 00	.....	.....	.....	.....	.....
40	Quebec Central.....	159 00	{ Employés.....	.....	.....	.....	.....
			{ Others.....	.....	.....	.....	.....
41	Stanstead, Shefford and Chambly.....	43 00	Others.....	.....	.....	.....	.....
42	South-Eastern.....	152 00	260 00	{ Passengers.....	.....	.....	1
	Montreal, Portland and Boston.....	45 00					
	Lake Champlain and St. Lawrence Jn.....	63 00					
43	St. John Bridge and Railway Extension.....	1 75	.....	.....	.....	.....	.....
44	St. Martin's and Upham.....	29 12	.....	.....	.....	.....	.....
45	Thousand Islands.....	3 15	.....	.....	.....	.....	.....
46	Waterloo and Magog.....	39 00	.....	.....	.....	.....	.....
	Missisquoi Valley.....						
47	Western Counties.....	67 00	.....	.....	.....	.....	.....
48	Windsor and Annapolis.....	84 88	116 00	.....	.....	.....	.....
	Windsor Branch.....						
		11,691 15		22	59	20	60

ACCIDENTS—Concluded.

At work on or near Track making up Trains.		Putting Arms or Heads out of Windows		Coupling Cars.		Collisions or by Trains thrown from Track.		Walking standing, lying or being on Track.		Ex-plosions.		Striking Bridges.		Other Causes.		Totals.		Number.
Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
2	16	.....	1	7	263	15	55	79	68	2	3	.....	2	20	85	163	605	72
.....	1	.....	.....	.....	.....	.....	.....	.....	1	1	28
.....	1	.....	.....	.....	.....	.....	.....	3	1	3	29
.....	1	.....	.....	.....	.....	2	1	.....	1	2	30
.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	31
.....	2	.....	1	4	.....	.....	.....	1	1	.....	.....	.....	.....	2	2	1	10	32
.....	1	3	.....	3	6	33
.....	1	.....	34
.....	35
.....	36
.....	1	.....	.....	2	37
.....	1	.....	38
.....	39
.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	40
.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	41
.....	1	1	42
.....	1	.....	.....	.....	.....	1	.....	.....	1	1	43
.....	44
.....	45
.....	46
.....	47
.....	48
2	18	.....	1	9	267	15	57	85	70	2	3	.....	4	23	94	178	633	

No. 9.—LINES of Railway owned by Coal and Iron Mines, for the Year ended 30th June, 1887.

Name.	Length of Rail-way.	Gauge.	No. of Engines.	No. of Waggons	Remarks.										
NOVA SCOTIA.															
Intercolonial Coal Mining Co—															
Granton Line	7·00	4·8½	} 2	118	Cars furnished by Intercolonial Railway.										
Stellarton Branch	3·00	4·8½													
Acadia Coal Co.....	6·00	4·8½	2												
Steel Company of Canada	11·00	4·8½	5	56											
Albion Mines	8·00	4·8½	3	90											
	35·00		12	264											
CAPE BRETON.															
New Campbellton	1·25	3·6	1	40	Rolling stock furnished by International Coal Co.										
Old Bridgeport	0·50	4·8½											
General Mining Association—															
Sydney	4·80	4·8½	2	194											
Victoria	5·00	4·8½	1	90											
Sydney and Louisburg	43·00	3·0	3	160											
Gowrie	1·75	3·6	1	115											
International	13·00	4·8½	3	128	Also 2 passenger and 4 flat cars.										
Lingan	1·00	3·6	40	Not running.										
Caledonia	2·25	4·8½	1	70											
	72·55		12	837											
					<table style="margin-left: auto; margin-right: auto;"> <tr> <td>Gauge.</td> <td>Miles.</td> </tr> <tr> <td>4 feet 8½ inches.....</td> <td>25·55</td> </tr> <tr> <td>3 " 6 "</td> <td>4·00</td> </tr> <tr> <td>3 " 0 "</td> <td>43·00</td> </tr> <tr> <td>Total.....</td> <td>72·55</td> </tr> </table>	Gauge.	Miles.	4 feet 8½ inches.....	25·55	3 " 6 "	4·00	3 " 0 "	43·00	Total.....	72·55
Gauge.	Miles.														
4 feet 8½ inches.....	25·55														
3 " 6 "	4·00														
3 " 0 "	43·00														
Total.....	72·55														

No. 10.—STATEMENT of Aid granted to Railways—Constructed and under Construction—by Governments, for the Year ended 30th June, 1887.

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscrip- tion to Shares or Bonds.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
DOMINION GOVERNMENT.						
Albert	15,000 00					
Albert Southern			51,200 00			
Bale des Chaleurs			620,000 00			
Buctouche and Moncton			102,400 00			
Canada Atlantic			124,400 00			
Canada Central			1,526,850 00			
Canadian Pacific			55,130,339 51			
Cape Breton			224,000 00			
Caraquez			85,090 62			
Central of New Brunswick			128,000 00			
Eastern Extension			1,284,495 76			
Elgin, Petitoctic and Havelock			38,400 00			
Erie and Huron			98,000 00			
Esquimaux and Nanaimo			750,000 00			
Grand Trunk	15,142,633 33					
Great Eastern			128,000 00			
Great Northern			89,600 00			
Intercolonial			44,995,982 42			
International			166,800 00			
Irontdale, Bancroft and Ottawa			160,000 00			
Joggins			41,400 00			
Kingston and Pembroke			48,000 00			
L'Assomption			11,200 00			
Lake Temiskaming Colonization			25,600 00			
Montreal and Champlain Junction			94,000 00			
Montreal and Sorel			72,000 00			
Napanee, Tamworth and Quebec			89,600 00			
New Brunswick and Prince Edward			118,400 00			
Northern and Western of New Brunswick			320,000 00			
Northern and Pacific Junction			1,320,000 00			
Nova Scotia Central			108,800 00			
Oxford and New Glasgow			* 319,657 00			
Carried forward	15,157,633 33					108,318,615 31

No. 10 — STATEMENT of Aid granted to Railways by Governments — Continued.

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward	15,157,633 33		108,818,615 31			
DOMINION GOVERNMENT — Concluded.						
Ottawa and Gaiineau Valley			320,000 00			
Pontiac and Pacific Junction			272,000 00			
Prince Edward Island			3,741,780 89			
Quebec and Lake St. John			775,093 00			
Quebec Central			211,200 00			
Quebec, Montreal, Ottawa and Occidental, Quebec to Montreal, do do			954,000 00			
St. John Bridge and Railway Extension	433,900 00		217,600 00			
St. Lawrence, Lower Laurentian and Saguenay			486,000 00			
Temiscouata			2,668 00			
Toronto, Grey and Bruce			1,089,674 00			
Windsor and Annapolis		15,591,633 33				117,828,621 20
ONTARIO GOVERNMENT.						
Canada Atlantic			270,000 00			
Canada Central			1,479,000 00			
Canada Southern			147,858 85			
Central Ontario			126,500 00			
Cobourg, Peterboro' and Marmora			18,740 00			
Credit Valley	26,000 00		531,000 00			
Erie and Huron			83,000 00			
Grand Junction			182,500 00			
Georgian Bay and Lake Erie			336,000 00			
Hamilton and North-Western			565,020 00			
Kingston and Pembroke			458,493 00			
London, Huron and Bruce			178,630 08			
Midland			168,350 20			

Province/Region	1887	1888	1889	Total
Northern				
Toronto and Nipissing	186,188 00			
Lake Simcoe Junction	105,212 00			
Toronto, Grey and Bruce	53,006 00			
Victoria	375,282 00			
Wellington, Grey and Bruce	312,000 00			
Whitby, Port Perry and Lindsay	241,276 00			
	94,957 59			
	26,000 00	5,921,007 52		
QUEBEC GOVERNMENT.				
Baie des Chaleurs	700,000 00			
Great Eastern	148,000 00			
International	391,122 02			
Lake Champlain and St. Lawrence Junction	380,000 00			
Levis and Kennebec				
Missisquoi Valley				
Montreal, Portland and Boston	228,000 60			
Pontiac Pacific Junction	197,582 00			
Quebec and Lake St. John	510,000 00			
Quebec Central	1,445,000 00			
Quebec, Montreal, Ottawa and Occidentals, Quebec to Montreal	681,250 00			
do do				
South-Eastern	727,000 00			
Teniscouats	444,000 00			
Waterloo and Magog	231,000 00			
	82,000 00	6,174,954 02		
NEW BRUNSWICK GOVERNMENT.				
Albert	455,000 00			
Albert Southern	48,000 00			
Buctouche and Moncton	79,000 00			
Caraget	180,000 00			
Central of New Brunswick	132,000 00			
Chatham Branch	37,000 00			
Fredricton	230,000 00			
Grand Northern	425,000 00			
Kent Southern	135,000 00			
New Brunswick	76,000 00			
New Brunswick and Canada	575,000 00			
New Brunswick and Prince Edward	109,000 00			
Northern and Western	321,500 00			
Petitodiac and Elgin (Elgin, Petitodiac and Havelock)	107,500 00			
St. Martins and Upham	145,665 00			
St. John and Maine	860,000 00			
	19,347,489 33	3,939,665 00	300,000 00	300,000 00
	183,854,247 74			

Carried forward
 * \$155,657 represents an annuity of \$14,000 for 15 years.
 † Included in Quebec Central.
 ‡ Dominion Government pays to Quebec Government 5 per cent. per annum on these two amounts.
 § Granted to late European and North American Railway.

No. 10.—STATEMENT of Aid granted to Railways by Government—Concluded.

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Brought forward .....	.....	19,340,489 33	.....	133,854,247 74	.....	300,000 00
NOVA SCOTIA GOVERNMENT.						
Halifax and Cape Breton Railway and Coal Co. (Eastern Extension)	.....	.....	643,545 00	.....	.....	.....
Joggins .....	.....	.....	38,200 00	.....	.....	.....
Nova Scotia Central .....	.....	.....	411,119 94	.....	.....	.....
Springhill and Parrsboro' (Cumberland Railway and Coal Co.) .....	.....	.....	144,230 00	.....	.....	.....
Western Counties	50,000 00	50,000 00	679,100 00	1,016,194 94	.....	.....
MANITOBA GOVERNMENT.						
Manitoba and North-Western	789,000 00	.....	.....	.....	.....	.....
Manitoba South-Western Colonisation	900,000 00	.....	.....	.....	.....	.....
Winnipeg and Hudson Bay .....	.....	1,639,000 00	.....	256,000 00	.....	.....
Total Aid from Governments .....	.....	21,029,489 33	.....	136,026,442 68	.....	300,000 00

No. 10.—STATEMENT of Aid Granted to Railways by Municipalities, 30th June, 1887.

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscriptions to Shares or Bonds.	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
ONTARIO.							
Desoronto	Bay of Quinté and Navigation Company .....	.....	.....	5,000 00	.....	.....	.....
Various Municipalities.....	Buffalo and Lake Huron.....	.....	.....	986,000 01	.....	.....	.....
Township of Cambridge	Canada Atlantic .....	.....	.....	20,000 00	.....	.....	.....
Renfrew	Canada Central.....	.....	.....	.....	.....	.....	.....
Horton	do .....	.....	.....	.....	.....	.....	.....
Admaston	do .....	.....	.....	.....	.....	.....	.....
County of Elgin.....	Canada Southern .....	.....	.....	200,000 00	.....	.....	.....
Township of Townsend	do .....	.....	.....	30,000 00	.....	.....	.....
do Durham.....	do .....	.....	.....	15,000 00	.....	.....	.....
do Anderson.....	do .....	.....	.....	15,000 00	.....	.....	.....
Town of St. Thomas.....	do .....	.....	.....	25,000 00	.....	.....	.....
Township of Malden.....	do .....	.....	.....	15,000 00	.....	.....	.....
Town of Amherstburg.....	do .....	.....	.....	15,000 00	.....	.....	.....
South Norwich	do .....	.....	.....	7,500 00	.....	.....	.....
Northumberland and Durham.....	Cobourg, Peterboro' and Mar- more .....	.....	.....	113,500 00	.....	.....	.....
Trenton Village	Central Ontario .....	.....	.....	10,000 00	.....	.....	.....
Wellington Village	do .....	.....	.....	2,500 00	.....	.....	.....
Town of Picton.....	do .....	.....	.....	21,000 00	.....	.....	.....
County of Prince Edward.....	do .....	.....	.....	60,000 00	.....	.....	.....
do Oxford.....	Credit Valley.....	.....	.....	200,000 00	.....	.....	.....
do Wellington.....	do .....	.....	.....	135,000 00	.....	.....	.....
do Waterloo.....	do .....	.....	.....	110,000 00	.....	.....	.....
do Peel.....	do .....	.....	.....	75,000 00	.....	.....	.....
do Halton.....	do .....	.....	.....	70,000 00	.....	.....	.....
Carried forward.....		.....	.....	590,000 00	.....	.....	.....
						.....	42,500 00
						.....	1,530,000 00

No. 10.—STATEMENT of Aid granted to Railways by Municipalities—Continued.

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscrip- tions to Shares or Bonds.	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
ONTARIO—Continued							
	Brought forward			590,000 00	1,520,000 00		42,500 00
City of Toronto	do			350,000 00			
do St. Thomas	do			50,000 00			
Town of Milton	do			30,000 00			
do Brampton	do			20,000 00			
do Ingersoll	do			10,000 00			
do Orangeville	do			15,000 00			
Village of Streetsville	do			20,000 00	1,085,000 00		
County of Kent	Erie and Huron			155,000 00			
do Town of Chatham	do			30,000 00			
do Dresden	do			20,500 00			
do Blenheim	do			11,000 00			
Village of Wallaceburg	do			11,000 00			
Township of Sombrā	do			11,000 00			
do Sarnia	do			14,000 00			
do Woodhouse	do			16,000 00	257,500 00		
Town of Simcoe	Georgian Bay and Lake Erie			15,000 00			
Township of South Norwich	do do			10,000 00			
do North do	do do do			10,000 00			
Town of Woodstock	do do do			40,000 00			
Township of East Oxford	do do do			25,000 00			
do Woodstock	do do do			25,000 00			
Town of Woodstock	do do do			60,000 00			
do Stratford	do do do			120,000 00			
County of Perth	do do do			40,000 00			
Township of Mornington	do do do			10,000 00			
do Elma	do do do			15,000 00			
Town of Listowel	do do do			10,000 00			
Township of Wallace	do do do			15,000 00			
Town of Palmerston	do do do			10,000 00			
Township of Minto	do do do			30,000 00			
Town of Harriston	do do do			25,000 00			
Township of Normanby	do do do			20,000 00			
				80,000 00			

No. 10.—STATEMENT of Aid granted to Railways by Municipalities—Concluded.

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscrip- tions to Shares or Bonds.	Total.
ONTARIO—Continued.							
Township of Osborne	Brought forward						
do Hay	London, Huron and Bruce			32,500 00	5,270,596 00		192,500 00
do Goderich	do			25,000 00			
do E. Wawanosh	do			15,000 00			
do do	do			15,000 00			
do do	do			25,000 00			
do Tuckersmith	do			25,000 00			
do Turnberry	do			10,000 00			
do Morris	do			5,000 00			
do Stanley	do			10,000 00			
do do	do			10,000 00			
do do	do			20,000 00			
do do	do			10,000 00			
do do	do			10,000 00			
do do	do			9,000 00			
do do	do			100,000 00			
do do	do				311,500 00		
Township of Thorah	Midland			50,000 00			
Town of Port Hope	do			30,000 00			
Township of Orillia and Matche- dash.	do			12,500 00			
Town of Orillia	do			12,500 00			
Township of Tay	do			21,370 85			
Village of Ormeau	do			2,000 00			
Township of Mars.	do			12,500 00			
Town of Peterborough	do			4,000 00			
do do	Napanee, Tamworth and Quebec			50,000 00	144,870 85		
Village of Newburgh	do			7,500 00			
Township of Camden	do			30,000 00			
do Sheffield	do			15,000 00			
City of Toronto	Northern			100,000 00	82,500 00		
County of Simcoe	do			30,000 00		190,000 00	
Town of Barrie	do			12,500 00		200,000 00	
do Orillia	do						
Townships of Collingwood, Eu-	do						

	11,000 00	23,000 00	60,000 00	60,000 00	100,000 00	100,000 00
do Lyden.....						
City of Calais.....	12,500 00	23,000 00	60,000 00	60,000 00		
do Houston.....	22,000 00					
do St. Stephen.....	13,000 00					
Town of Chatham.....		47,500 00				
Parish of Elgin.....	13,000 00					
City of St. John.....	20,000 00	13,000 00	60,000 00			
St. John and Maine.....						
NOVA SCOTIA.						
Township of Yarmouth.....	23,000 00	233,500 00				
Counties of Yarmouth and Digby.....					100,000 00	
MANITOBA.						
City of Winnipeg.....	200,000 00					
County of Selkirk.....	35,000 00					
Township of St. Andrews.....	35,000 00					
Town of Morris.....	100,000 00					
County of Westbourne.....	75,000 00	370,000 00				
Town of Portage la Prairie.....	50,000 00					
do Minnedosa.....	30,000 00					
Municipality of Shoal Lake.....	20,000 00					
do Birtle.....	40,000 00					
do Strathclair.....	600 00					
BRITISH COLUMBIA.						
City of New Westminster.....		215,600 00				
Canadian Pacific.....		585,600 00				
NOVA WEST TERRITORIES.						
Not stated.....		37,500 00				
Wood Mountain and Qu'Appelle.....						35,000 00

* Nova Elgin, Petitediac and Havelock.

No. 10.—STATEMENT of Aid granted to Railways—Constructed and under Construction—by Governments and Municipalities,
30th June, 1887—Concluded.

SUMMARY.

	Loan.	Total.	Bonus.	Total	Subscrip- tions to Shares or Bonds.	Total.	Grand Totals.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Governments.</i>							
Dominion	15,591,533 33	.....	117,828,621 20	.....	.....	.....	133,420,154 53
Ontario	26,000 00	.....	5,921,007 52	.....	.....	.....	6,947,907 52
Quebec	3,722,966 00	.....	6,174,984 02	.....	.....	.....	9,897,910 02
New Brunswick .....	.....	.....	5,929,665 00	.....	300,000 00	.....	4,229,665 00
Nova Scotia	50,000 00	.....	1,916, 94 94	.....	.....	.....	1,866,194 94
Manitoba	1,635,000 00	.....	256,000 00	.....	.....	.....	1,891,000 00
		21,029,489 33		136,026,442 68		300,000 00	157,355,932 01
<i>Municipalities.</i>							
Ontario	300,000 00	.....	8,529,041 78	.....	672,500 00	.....	9,501,541 78
Quebec	2,434,000 00	.....	388,024 00	.....	1,368,000 00	.....	4,190,024 00
New Brunswick	23,000 00	.....	283,500 00	.....	60,000 00	.....	316,500 00
Nova Scotia .....	.....	.....	160,000 00	.....	100,000 00	.....	260,000 00
Manitoba .....	.....	.....	585,660 00	.....	.....	.....	585,660 00
British Columbia .....	.....	.....	37,500 00	.....	.....	.....	37,500 00
North West Territories .....	.....	.....	35,000 00	.....	.....	.....	35,000 00
		2,757,000 00		9,958,665 78		2,200,500 00	14,916,165 78
		23,786,489 33		145,985,108 46		2,500,500 00	172,272,097 79