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☑ Additional comments / Commentaires supplémentaires:

Various pagings.

In Sessional paper No. 9, Part III, page 13 is incorrectly numbered page 1.

In Sessional paper No. 9, Part IV, page 167 is incorrectly numbered page 16.

In Sessional paper No. 10, Annual report of the Department of Railways and Canals ... June 30, 1899, page xxxi is incorrectly numbered page xx.

In Sessional paper No. 10, Part II, page 31 is incorrectly numbered page 3.

SESSIONAL PAPERS

VOLUME 8

FIFTH SESSION OF THE EIGHTH PARLIAMENT

OF THE

DOMINION OF CANADA

SESSION 1900

VOLUME XXXIV

☞ See also Numerical List, page 5.

ALPHABETICAL INDEX

OF THE

SESSIONAL PAPERS

OF THE

PARLIAMENT OF CANADA

FIFTH SESSION, EIGHTH PARLIAMENT, 1900.

See also Alphabetical Index, page 1.

LIST OF SESSIONAL PAPERS

Arranged in Numerical Order, with their Titles at full length; the Dates when Ordered and when Presented to the Houses of Parliament; the Name of the Member who moved for each Sessional Paper, and whether it is ordered to be Printed or Not Printed.

CONTENTS OF VOLUME 1.

(This volume is bound in two parts.)

1. Report of the Auditor General, for the year ended 30th June, 1899. Presented (in part) 6th February, 1900, by Hon. W. S. Fielding. Presented (in part) 27th February, 1900.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 2.

2. Public Accounts of Canada, for the fiscal year ended 30th June, 1899. Presented 5th February, 1900, by Hon. W. S. Fielding..... .....*Printed for both distribution and sessional papers.*

2a. Estimates of sums required for the service of Canada, for the year ending on the 30th June, 1901. Presented 27th February, 1900, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

2b. Supplementary Estimates for the year ending 30th June, 1900. Presented 1st May, 1900, by Hon. W. S. Fielding..... ..... *Printed for both distribution and sessional papers.*

2c. Further Supplementary Estimates for the year ending 30th June, 1900. Presented 15th May, 1900, by Hon. W. S. Fielding..... .....*Printed for both distribution and sessional papers.*

2d. Further Supplementary Estimates for the year ending 30th June, 1900. Presented 22nd May, 1900, by Hon. W. S. Fielding .... *Printed for both distribution and sessional papers.*

2e. Supplementary Estimates for the year ending 30th June, 1901. Presented 26th June, 1900, by Hon. W. S. Fielding..... ....*Printed for both distribution and sessional papers.*

2f. Further Supplementary Estimates for the year ending 30th June, 1901. Presented 10th July, 1900, by Hon. W. S. Fielding.....*Printed for both distribution and sessional papers.*

3. List of Shareholders of the Chartered Banks of the Dominion of Canada, as on 31st December, 1899, Presented 4th May, 1900, by Hon. W. S. Fielding..*Printed for both distribution and sessional papers.*

3a. Report of dividends remaining unpaid, and unclaimed balances in the Chartered Banks of Canada, for five years and upwards, prior to 31st December, 1899. Presented 29th May, 1900, by Hon. W. S. Fielding.....*Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 3.

4. Report of the Superintendent of Insurance, for the year ended 31st December, 1899.
Printed for both distribution and sessional papers.

4a. Abstract of Statements of Insurance Companies in Canada, for the year ended 31st December, 1899. Presented 23rd April, 1900, by Hon. W. S. Fielding.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 4.

5. Report of the Department of Trade and Commerce, for the fiscal year ended 30th June, 1899. Presented 6th April, 1900, by Hon. J. Sutherland... *Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 5.

6. Tables of the Trade and Navigation of Canada, for the fiscal year ended 30th June, 1899. Presented 27th February, 1900, by Hon. W. Paterson.. *Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 6.

7. Inland Revenues of Canada. Excise, etc., for the fiscal year ended 30th June, 1899. Presented 26th February, 1900, by Sir Henri Joly de Lotbinière.
Printed for both distribution and sessional papers.

7a. Inspection of Weights, Measures, Gas and Electric Light, for the fiscal year ended 30th June, 1899. Presented 26th February, 1900, by Sir Henri Joly de Lotbinière.
Printed for both distribution and sessional papers.

7b. Report on Adulteration of Food, for the fiscal year ended 30th June, 1899. Presented 26th February, 1900, by Sir Henri Joly de Lotbinière..... *Printed for both distribution and sessional papers.*

8. Report of the Minister of Agriculture, for the year ended 31st October, 1899. Presented 15th May, 1900, by Hon. A. S. Fisher. ..... *Printed for both distribution and sessional papers.*

8a. Report of the Director and Officers of the Experimental Farms, for the year 1899. Presented 29th May, 1900, by Hon. S. A. Fisher..... *Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 7.

8b. Criminal Statistics for the year 1899..... *Printed for both distribution and sessional papers.*

8c. Report on Canadian Archives, 1899. Presented 1st June, 1900, by Hon. S. A. Fisher.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 8.

9. Annual Report of the Minister of Public Works, for the fiscal year ended 30th June, 1899. Presented 17th May, 1900, by Hon. W. Mulock .... *Printed for both distribution and sessional papers.*

10. Annual Report of the Department of Railways and Canals, for the fiscal year ended 30th June, 1899. Presented 2nd May, 1900, by Hon. A. G. Blair.
Printed for both distribution and sessional papers.

CONTENTS OF VOLUME 9.

11. Annual Report of the Department of Marine and Fisheries (Marine), for the fiscal year ended 30th June, 1899. Presented 7th March, 1900, by Sir Louis Davies.
Printed for both distribution and sessional papers.

11a. Annual Report of the Department of Marine and Fisheries (Fisheries), for the fiscal year ended 30th June, 1899. Presented 12th March, 1900, by Sir Louis Davies.
Printed for both distribution and sessional papers.

11b. Report of Harbour Commissiouers, etc., 1899..... *Printed for both distribution and sessional papers.*

CONTENTS OF VOLUME 10.

CONTENTS OF VOLUME 11.

CONTENTS OF VOLUME 12.

CONTENTS OF VOLUME 13.

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13--*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Continued.*

CONTENTS OF VOLUME 13—*Concluded.*

CANADA

REPORT

OF THE

MINISTER OF PUBLIC WORKS

ON THE

WORKS UNDER HIS CONTROL

FOR THE FISCAL YEAR ENDED JUNE 30, 1899

SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 36, SECTION OF THE REVISED STATUTES OF CANADA

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY
1900

[No. 9—1900.]

To His Excellency the Right Honourable Sir Gilbert John Elliot, Earl of Minto, G.C.M.G., &c., &c., &c., Governor General of Canada.

MY LORD,

I have the honour to lay before Your Excellency the Report of the Department of Public Works of Canada, for the fiscal year ended June 30, 1899.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

J. ISRAEL TARTE,

Minister of Public Works.

OTTAWA, May 14, 1900.

CONTENTS

ALPHABETICAL INDEX TO REPORT

PART I.

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE FISCAL YEAR 1898-99.

The Honourable J. ISRAEL TARTE,
Minister of Public Works.

SIR,—I have the honour herewith to submit the report of the Department of Public Works for the fiscal year ended June 30, 1899.

EXPENDITURE.

The expenditure during the year was as follows:—

Harbours, rivers, bridges &c	$ 1,344,499 02
Public Buildings	849,798 38
Telegraphs	90,450 25
Miscellaneous, including salaries, &c	115,195 29
Yukon District—unapportioned	37,336 57
	$ 2,437,279 51

The expenditure for this year shows an increase over that of previous years, as will be seen by the following table:—

Expenditure	1893-4	$ 2,315,021 67
"	1894-5	2,033,219 53
"	1895-6	1,583,409 35
"	1896-7	1,744,654 21
"	1897-8	2,243,816 87
"	1898-9	2,437,279 51

REVENUE.

The revenue of the department amounted to $106,769.68 which is less than that of last year, the difference being caused principally by a falling off of about $30,000 in slide and boom dues.

Compared with previous years :—

Revenue for	1893-4	$ 119,779 36
"	1894-5	101,846 27
"	1895-6	102,439 12
"	1896-7	109,966 01
"	1897-8	135,528 46
"	1898-9	106,769 68

The revenue is derived from the following sources :—

Slides and booms	$ 61,066 36
Graving docks	31,608 00
Locks	550 86
Telegraphs	10,472 99
Casual	3,070 87
	$ 106,769 68

As will be seen by the above comparative statement, the revenue for 1897-8 exceeded that of 1896-7 by over $25,000, while this year it is only about $3,000 less, even with the great shrinkage in slide and boom dues. On that subject I commend a careful perusal of the report made by the collector of revenue, Mr. E. T. Smith, which will be found in part six of this report.

PUBLIC BUILDINGS.

During the year the following public buildings have been completed and occupied :—

Drill Hall at Halifax, N.S., public buildings at Arnprior, Ont., and Victoria, B.C., while the public building at Windsor, N.S., which had been destroyed by fire, was thoroughly rebuilt.

Work is in progress for the construction of public buildings at Kentville, N.S., and Liverpool, N.S., drill halls at Windsor, N.S., and Kingston, Ont., while the public buildings at Rat Portage, Ont, and Ingersoll, Ont., are about completed. As the public building at New Westminster, B.C., was destroyed by fire, preparations are being made to re-construct it at an early date.

The Chief Architect, whose report will be found in part three, has control over 260 buildings, which, with the preparation of plans and specifications for new or projected buildings, require his constant care and attention in keeping in good condition the water, heating, lighting, sewer and ventilation services.

Of late years I have advised, when available, the introduction of electric light into the public buildings to replace gas or coal oil; thus not only improving the ventilation, but lessening the danger of fire which has of late years caused serious loss to the Government.

It is also the earnest wish of the Department to dispense as often as will be practicable with the use of wood and substitute iron, stone, cement, brick, terra-cotta or other fire-proof material in the construction and improvement of public buildings, not only as a better protection against fire but as an incentive to individuals and com-

panies in small cities and large towns to follow the example of the Government and have a reasonable guarantee of at least one safe place in which valuables could be kept in case of a destructive fire.

HARBOURS AND RIVERS.

The construction, repairs, renewals and improvement of piers, wharfs, &c., are detailed in part four of this report.

New works have been constructed or acquired, during the year, at the following places:—

Advocate Harbour, N.S., wharf.
North River, St. Ann, N.S., wharf.
River Hébert, N.S., wharf.
Salmon River, " "
Swims Point, " "
Upper Port Latour, N.S., wharf.
Upper Woods Harbour, N.S., wharf.
Two Rivers, N. B., wharf.
Iberville, P.Q., wharf.
L'Islet, " "
Ste. Anne de Saguenay, P.Q., wharf.
St. Nicholas, P.Q., wharf.
St. Roch des Aulnais, P.Q., wharf.
Williams Head, B.C., wharf.
Judique, N.S., breakwater.
North Wallace, N.S., ferry slip.
Anse aux Gascons, P.Q., breakwater.
Rivière Cap de Chatte, P.Q., training pier.
St. Alexis, P.Q., block, and at Richard's Landing, Ont., and Port Lewis, P.Q., wharfs were purchased.

Dredging operations have been carried on with unflagging activity, as the increasing demands of the carrying trade are introducing larger vessels of greater draught which require equal deepening of channels and berths. The departmental dredging fleet not being sufficiently large to do all the work required, it becomes necessary to hire dredges, which, to an extent, is an improvement on the contract system; especially as those hired dredges are only employed upon their agreeing to excavate a minimum number of yards per day, which ensures a fair return in work for the daily or hourly remuneration.

Detail reports on graving docks, slides and booms, roads and bridges and surveys and inspections will be found in the latter portion of part four.

The expenditure of over one million dollars on the construction and maintenance of wharfs and piers throughout the Dominion requires the greatest care in order that it be utilized to the best advantage.

Until such time as the Government is in a position to use dimension stone or concrete in the construction of permanent works which can resist the action of the sea, the crushing of the ice and destruction caused by sea-worms, the Department is compelled to use timber which should, without doubt, for works on the sea-coasts, be specially prepared by creosoting. A plant for this purpose should be constructed without delay; it would probably add 25 per cent to the cost of construction of wharfs and piers but would increase their efficiency and length of usefulness almost 100 per cent.

A review of the harbour and river works would be incomplete without calling attention to the able manner in which this service has been managed by Acting Chief Engineer Lafleur. His promptness in execution, knowledge of all requirements and careful husbanding of expenditure with the best obtainable results is a source of gratification.

TELEGRAPHS.

It affords me great pleasure to report that good progress is being made in the construction of the telegraph lines to the extreme north-west and north-east of the Dominion, and I hope to be able shortly to place the Yukon country and Labrador in direct telegraphic communication. The telegraph line to the Straits of Belle Isle will not only benefit the fishermen along the coast but will give great satisfaction to ship-owners, as, in case of accident, assistance can be summoned without delay and doubtless be the means of saving valuable lives and property.

Part five contains details of the management, working, revenue and expenditure of the Government telegraph system.

DEPARTMENTAL.

Part seven contains excerpts from the departmental law records, comparative tables and other information which, to the ordinary public, is of little value but to the initiated is an exhibit of the volume of work done by the inside service of the department. The thousand of letters, requests, petitions and reports passing through the department which require careful consideration and examination before a decision is given, often entail a great deal of investigation and research.

Without an appreciable addition to the civil government expenses and an increase, in the past few years, of ten to fifteen per cent in the business of the department, I am inclined to compliment the officers under my immediate control for their able assistance in the management of the department and have no hesitation in saying they are excelled by none in the service.

I have the honour to be, sir,

Your obedient servant,

A. GOBEIL,

Deputy Minister of Public Works.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, May 8, 1900.

PART II

STATEMENTS OF EXPENDITURE

DURING

FISCAL YEAR ENDED JUNE 30 1899

PART II—1898-99.

STATEMENT A.—Showing the Amounts Expended by the Department of Public Works of Canada, during the Fiscal Year ended June 30, 1899.

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.				
Amherst post office		1,088 65		1,088 65
Annapolis "		11 13		11 13
Antigonish "		214 82		214 82
Arichat "		117 82		117 82
Baddeck "		45 51		45 51
Dartmouth "		45 50		45 50
Halifax Assistant Receiver General's Office		16 55		16 55
" Dominion building		1,070 79		1,070 79
" " power for elevator			89 39	89 39
" drill hall	39,456 66			39,456 66
" examining warehouse		283 33		283 33
" " power for elevator			44 52	44 52
" immigrant building		210 12		210 12
" Lawlor's Island quarantine station	16,583 78	724 13		17,307 91
Kentville post office, &c	2,746 72			2,746 72
Liverpool "	5,086 85			5,086 85
Lunenburg "		241 48		241 48
Nappan Experimental Farm	2,174 24	43 12		2,217 36
New Glasgow post office		417 45		417 45
North Sydney "		88 64		88 64
Pictou custom-house		925 56		925 56
" post office		53 86		53 86
Sydney "		195 87		195 87
" Point Edward quarantine building		475 77		475 77
Truro post office		127 32		127 32
Windsor drill hall	2,994 08			2,994 08
" post office	11,037 21			11,037 21
Yarmouth "		187 64		187 64
Heating, lighting, water, &c., for all buildings in Nova Scotia (for details see page 18)			21,172 07	21,172 07
Totals, Nova Scotia	80,079 54	6,585 06	21,305 98	107,970 58
Prince Edward Island.				
Charlottetown Dominion building		350 67		350 67
Montague post office		34 58		34 58
Summerside "		68 25		68 25
Heating, lighting, water, &c., for all buildings in Prince Edward Island (for details see page 18)			4,964 51	4,964 51
Totals, Prince Edward Island		453 50	4,964 51	5,418 01
New Brunswick.				
Bathurst post office, &c		268 70		268 70
Carleton (St. John) post office, &c		7 85		7 85
Chatham post office, &c		90 20		90 20
Dalhousie "		25 30		25 30
Fredericton "		144 30		144 30
Moncton "		41 76		41 76
Newcastle "		23 32		23 32
Carried forward		601 43		601 43

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		601 43		601 43
New Brunswick—Concluded.				
Portland (St. John) post office, &c		62 18		62 18
St. John custom-house		662 68		662 68
" inland revenue office		83 76		83 76
" post office		898 65		898 65
" savings bank		32 23		32 23
St. Stephen's post office, &c		1 00		1 00
Sussex "		9 75		9 75
Tracadie lazaretto		228 09		228 09
Woodstock post office, &c		93 63		93 63
Heating, lighting, water, &c., for all buildings in New Brunswick (for details see page 18)			19,759 06	19,759 06
Totals, New Brunswick		2,673 40	19,759 06	22,432 46
Quebec.				
Aylmer post office		1,028 20		1,028 20
Berthierville "		145 19		145 19
Grosse Isle quarantine station		2,090 46		2,090 46
Hull post office		8 85		8 85
Joliette "		16 00		16 00
Lachine "		412 50		412 50
Laprairie "		3 85		3 85
Lévis "		1 25		1 25
Montreal custom house		562 81		562 81
" examining warehouse	3,098 99	2,010 81		5,109 80
" inland revenue office		1,650 71		1,650 71
" post office	7,894 52	5,921 53		13,816 05
" " power for elevators			3,518 50	3,518 50
" clerk of works office		7 60		7 60
" generally		100 95		100 95
Quebec citadel buildings (Governor General's quarters)		2,583 99		2,583 99
" clerk of works office		272 82		272 82
" culler's office		11 00		11 00
" custom house	3,376 52	1,997 23		5,373 75
" Dominion public buildings generally		50 00		50 00
" examining warehouse		859 50		859 50
" immigrant building	837 77	37 23		875 00
" inland revenue office		501 77		501 77
" observatory		726 14		726 14
" post office		5,545 20		5,545 20
" Queen's wharf building	4,070 94	3 70		4,074 64
" weights and measures office		5 50		5 50
Richmond post office		341 79		341 79
St. Thomas de Montmagny post office		35 70		35 70
Rimouski post office	118 42	38 18		156 60
Rivière du Loup (Fraserville) post office		669 90		669 90
Sherbrooke post office, &c		599 99		599 99
Sorel "		185 33		185 33
St. Hyacinthe "		224 23		224 23
St. Jerome "		40 37		40 37
St. John's "		2,283 36		2,283 36
St. Roch de Quebec post office		8 90		8 90
Three Rivers custom house		64 62		64 62
" post office		388 18		388 18
Valleyfield "		15 75		15 75
West Farnham "		36 00		36 00
Heating, lighting, water, &c., for all buildings in Quebec (for details see page 19)			47,885 19	47,885 19
Totals, Quebec	19,397 16	31,487 09	51,403 69	102,287 94

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Ontario.				
Alexandria reformatory	13,991 30			13,991 30
Almonte post office, &c.		1 00		1 00
Amherstburg post office		246 20		246 20
Arnprior post office, custom-house, &c	6,010 72			6,010 72
Belleville post office	557 00	1,242 86		1,799 86
Berlin "		34 68		34 68
Brampton post office, &c.		55 88		55 88
Brantford "		153 25		153 25
Brockville "	824 35	252 60		1,076 95
Carleton Place "		1 00		1 00
Cayuga "		280 78		280 78
Chatham "		118 27		118 27
Cobourg "		23 86		23 86
Cornwall "		56 30		56 30
Galt "		142 31		142 31
Gananoque custom house		653 54		653 54
" post office		38 05		38 05
Goderich "		54 00		54 00
Guelph "		318 35		318 35
Hamilton post office, &c.		366 75		366 75
Ingersoll post office	9,692 68	8 80		9,701 48
Kingston custom-house		452 70		452 70
" drill hall	9,738 43			9,738 43
" inland revenue office		19 30		19 30
" post office		578 41		578 41
Lindsay "		20 42		20 42
London custom house		86 83		86 83
" post office		1,200 31		1,200 31
Napanee		73 02		73 02
Niagara Falls post office		470 49		470 49
Orangeville		224 01		224 01
Orillia		147 05		147 05
Ottawa parliamentary and departmental buildings :—				
East block, new elevator	4,105 04			4,105 04
West block, new boilers	7,004 03			7,004 03
" reconstruction after fire	59,857 92			59,857 92
Langevin block, fireproof impr. to and vault	32,950 92			32,950 92
" patent office, photo establishment	6,796 25			6,796 25
" damages, S. Howell property	600 00			600 00
Repairs and furniture		82,935 97		82,935 97
Telephone service			3,999 43	3,999 43
Ottawa parliament grounds :—				
Asphalt walks and roadways	8,873 83			8,873 83
New green-house	5,011 71			5,011 71
Maintenance of grounds			5,033 91	5,033 91
Removal of snow			1,649 96	1,649 96
Major's Hill park, fence and wall	3,881 70			3,881 70
" " maintenance			3,549 24	3,549 24
Ottawa experimental farm	5,947 60	769 93		6,717 53
" geological museum		28 44		28 44
" National Art Gallery		343 25		343 25
" post office		724 75		724 75
" " power for stamping machine			16 25	16 25
" printing bureau		2,303 56		2,303 56
" Rideau Hall, repairs and furniture		14,466 38		14,466 38
" Rideau Hall grounds, $2,525.35 ; snow, $319 ; watchman, $547.50; fuel and light, $8,000.			11,391 85	11,391 85
Pembroke post office		4 75		4 75
Peterborough "		411 68		411 68
Point Edward quarantine building		123 00		123 00
Carried forward	175,843 48	109,432 73	25,640 64	310,916 85

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	175,843 48	109,432 73	25,640 64	310,916 85
Ontario—Concluded.				
Petrolea post office		37 95		37 95
Port Arthur immigration building		799 00		799 00
" post office		103 40		103 40
Port Colborne "	1,265 00	270 95		1,535 95
Port Dover, inland revenue		7 50		7 50
Port Hope, post office		121 00		121 00
Prescott "		504 39		504 39
Rat Portage, post office, &c	12,969 55			12,969 55
Smith's Falls post office		10 24		10 24
Stratford " &c		25 34		25 34
Strathroy "		71 55		71 55
St. Catherines "		202 80		202 80
St. Thomas "		57 97		57 97
Toronto custom house		1,054 30		1,054 30
" examining warehouse	511 60	1,348 49		1,860 09
" inland revenue office	465 00	1,612 34		2,077 34
" post office	300 00	1,725 54		2,025 54
" public buildings generally			95 95	95 95
Trenton post office		11 98		11 98
Walkerton "		992 89		992 89
Windsor "		532 50		532 50
Woodstock "	7,065 25			7,065 25
Heating, lighting, water, &c., for all buildings in Ontario (for details see page 19)			172,311 50	172,311 50
Totals, Ontario	198,419 88	118,922 86	198,048 09	515,390 83
Manitoba.				
Birtle immigration building		65 68		65 68
Brandon experimental farm		391 54		391 54
Brandon Dominion lands office		47 00		47 00
" immigration building		54 46		54 46
" post office		43 90		43 90
Dauphin immigration building	250 55			250 55
Portage la Prairie post office, &c	1,914 32			1,914 32
Winnipeg clerk of works office		150 90		150 90
" custom house		1,426 51		1,426 51
" Dominion lands office		14 75		14 75
" examining warehouse		53 59		53 59
" immigration building		522 82		522 82
" post office		1,336 91		1,336 91
" savings bank		2 50		2 50
Heating, lighting, water, &c., for all buildings in Manitoba (for details see page 21)			13,833 00	13,833 00
Totals, Manitoba	2,164 87	4,110 56	13,833 00	20,108 43
North-west Territories.				
Calgary court house, &c		166 10		166 10
" immigration building		1 56		1 56
" post office		80 65		80 65
Edmonton Dominion lands office		11 00		11 00
" immigration building		30 00		30 00
" registry office		32 05		32 05
Elkhorn, Indian school		232 02		232 02
Indian Head, experimental farm	220 00	71 75		291 75
Lethbridge court house		1,032 25		1,032 25
" post office		161 65		161 65
Carried forward	220 00	1,819 03		2,039 03

PART II.—STATEMENT A.—EXPENDITURE.—*Continued.*

Name of Work.	Construction and Improvements.	Repairs and Furniture.	Staff and Maintenance.	Total.
PUBLIC BUILDINGS—*Concluded.*	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	220 00	1,819 03		2,039 03
North-west Territories—Concluded.				
Macleod custom house		10 25		10 25
" court house		2 75		2 75
Medicine Hat court house	183 03			183 03
Moosomin "		157 89		157 89
Prince Albert court house	900 58	91 00		991 58
" registry office		93 58		93 58
Qu'Appelle court house		5 75		5 75
Regina court house		163 75		163 75
" immigration building		13 12		13 12
" lands titles office	1,001 70			1,001 70
" Lieut.-Governor's residence		683 25		683 25
" registry office		29 95		29 95
Yorkton immigrant building	2,569 58			2,569 58
Heating, lighting, water, &c., for all buildings in North-west territories (for details see page 21)			13,386 46	13,386 46
Totals, North-west Territories	4,874 89	3,070 32	13,386 46	21,331 67
British Columbia.				
Agassiz experimental farm	266 92	178 90		445 82
Nanaimo post office		10 20		10 20
New Westminster post office		92 25		92 25
" temporary building	2,418 31			2,418 31
" engineer's office		96 13		96 13
Vancouver drill hall	157 60			157 60
" examining warehouse		40 00		40 00
" post office		2,640 40		2,640 40
" steamboat inspection office		99 44		99 44
Victoria clerk of works office		5 00		5 00
" custom house		92 65		92 65
" drill hall		22 50		22 50
" marine hospital		6 00		6 00
" post office	19,641 53	58 60		19,700 13
" " power for elevators			227 10	227 10
" " refitting old post office		1,532 52		1,532 52
Williams Head quarantine station	342 29	3,970 85		4,313 14
Heating, lighting, water, &c., for all buildings in British Columbia (for details see page 22)			10,212 04	10,212 04
Totals, British Columbia	22,826 65	8,845 44	10,439 14	42,111 23
Public Buildings Generally.				
Printing, stationery, instruments, travelling, &c.			12,747 23	12,747 23

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs, &c.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Nova Scotia.					
Advocate Harbour Wharf		1,781 98			1,781 98
Arisaig	1,908 28		599 82		2,508 10
Barrington Passage	601 21		398 79		1,000 00
" (Sherrow's Channel)	1,494 10				1,494 10
Beaver Harbour			15 00		15 00
Belliveau Cove			1,999 99		1,999 99
Big Bras d'Or			20 43		20 43
Canada Creek Breakwater			1,037 75		1,037 75
Cheticamp			1,639 80		1,639 80
Clark's Harbour Breakwater		726 00			726 00
Coffin's Island			939 62		939 62
Cow Bay Breakwater			5,000 00		5,000 00
Cribbin's Point			390 14		390 14
Digby			403 54		403 54
East Bay, North Side			304 24		304 24
East Ragged Island Wharf		1,252 07			1,252 07
East Tracadie		2,800 62			2,800 62
Englishtown Wharf		23 36			23 36
Fox Island			200 00		200 00
Grand Etang	143 15		152 20		295 35
Halifax Graving Dock				10,000 00	10,000 00
Halifax, I. C. Ry. Terminus. $1,276 67 Less paid by Dept. of Rys. and Canals 900 00	376 67				376 67
Hall's Harbour		2,167 68			2,167 68
Hampton Pier			1,999 79		1,999 79
Harbour au Bouché	8,182 00				8,182 00
Harbours generally, N.S.				2,762 63	2,762 63
Hantsport		3,481 00			3,481 00
Irish Cove			209 31		209 31
Iona Wharf		485 66			485 66
Johnston's Harbour			10 00		10 00
Jordon Bay, East			2,348 32		2,348 32
Judique, Indian Point, new wharf		8,683 00			8,683 00
L'Ardoise			3,190 97		3,190 97
Livingston Cove		2,999 94			2,999 94
Lockport	2,207 93				2,207 93
Louis Head			590 00		590 00
Lower Woods Harbour	230 24				230 24
McNairs Cove			893 56		893 56
McNutt's Island		638 11			638 11
Mabou			289 38		289 38
Maitland (Hants County)			202 45		202 45
Margaree (extension of pier)		4,051 00	178 66		4,229 66
Merigomish Harbour		647 03			647 03
Meteghan Breakwater			1,093 74		1,093 74
Meteghan River		4,001 76			4,001 76
Monks Head			272 45		272 45
Morden			498 80		498 80
North Wallace			481 98		481 98
Ogilvie			50 00		50 00
Oyster Pond (Guysboro')		1,170 75			1,170 75
Petit de Grat		1,046 41			1,046 41
Pictou (Dwyer's Wharf)	383 02				383 02
" East "			119 19		119 19
" I. C. Ry. " $2,418 42 Less paid by Dept. Rys. and Canals 1,899 75	518 67				518 67
Pictou Island		766 85			766 85
" Landing	272 53				272 53
Carried forward	16,317 80	36,723 22	25,529 92	12,762 63	91,333 57

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	16,317 80	36,723 22	25,529 92	12,762 63	91,333 57
Nova Scotia—Concluded.					
Pictou Light		2,179 20			2,179 20
Porter's Lake			100 00		100 00
Port Hood	1,510 73		1,100 00		2,610 73
" Joli			1,195 91		1,195 91
" Latour		3,335 98			3,335 98
" Maitland (Yarmouth Co)			710 35		710 35
" Mulgrave $858 75					
Less paid by Dept. Rys. and Canals 525 00	333 75				333 75
River Hebert Village Wharf		962 80			962 80
Round Bay			50 00		50 00
St. Ann's North River		737 36			737 36
Salmon River (Halifax Co.)		1,646 89			1,646 89
Sanford or Cranberry Head		3,497 29			3,497 29
Swim's Point Wharf		2,025 18			2,025 18
Trout Cove		2,000 00	361 12		2,361 12
Upper Port Latour		2,041 88			2,041 88
Upper Woods Harbour		1,336 62			1,336 62
West Arichat			685 39		685 39
Western Head			965 79		965 79
White Point			902 26		902 26
Whycocomagh		1,040 67			1,040 67
Windsor Harbour		3,999 25			3,999 25
West Chezzetcook			1,000 09		1,000 09
Yarmouth	9,682 71		597 16		10,279 87
Totals, Nova Scotia	27,844 99	61,526 34	33,197 99	12,762 63	135,331 95
Prince Edward Island.					
Belfast		509 46			509 46
Brae Breakwater		860 73			860 73
Charlottetown, I.C.Ry. wharf	6,164 00				6,164 00
" mouth of sewer. $583 89					
Less—Paid by sewer commission 362 50	221 39				221 39
China Point		104 53			104 53
Clifton			353 11		353 11
Gaspereaux			31 00		31 00
Georgetown			399 98		399 98
Harbours generally				1,315 64	1,315 64
Hagarty's Point			134 10		134 10
Hickey's Pier			754 60		754 60
Hurd's Point	3,790 38				3,790 38
Lewis Point			60 00		60 00
Miminigash Harbour works			1,998 87		1,998 87
" breakwater		1,661 60			1,661 60
Mink River			500 10		500 10
New London			735 05		735 05
North Rustico			182 55		182 55
Red Point wharf			985 83		985 83
St. Mary's Bay pier			435 17		435 17
St. Peter's Bay pier		500 02			500 02
Souris Knight's Point		5,083 11			5,083 11
Summerside	2,138 83	39 42			2,178 25
Tignish			6,734 00		6,734 00
Vernon River			146 83		146 83
West Point wharf		6,258 00			6,258 00
Totals, Prince Edward Island	12,314 60	15,016 87	13,451 19	1,315 64	42,098 30

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
New Brunswick.					
Anderson's Hollow			121 31		121 31
Black River			450 00		450 00
Buctouche			997 38		997 38
Burntchurch		159 29			159 29
Campbellton			1,061 99		1,061 99
Cape Tormentine			4,738 63		4,738 63
Caraquet			514 69		514 69
Clifton Breakwater		500 00			500 00
Cocagne			2,989 67		2,989 67
Harbours generally				2,762 64	2,762 64
Mispec			800 00		800 00
Pointe du Chene			35 00		35 00
Richibucto			6,866 88		6,866 88
River St. John—					
Salmon River		351 52			351 52
Tobique River		577 20			577 20
Between River and Grand Lake...$1,200 30		137 26			137 26
Chipman (Queen's Co)... 942 85					
Fredericton... 2,852 54					
Grimcross Canal... 2,785 84					
Springhill... 305 77					
Equipment of Clamshell dredge (not apportioned).. 1,612 11					
	9,699 41				9,699 41
St. John Harbour...$12,867 96					
Less—Received for dredging done at private wharf 100 00					
	12,767 96				12,767 96
St. John Harbour—					
Negro Point breakwater			4,801 20		4,801 20
Hydrographic Survey		2,480 77			2,480 77
Fort Dufferin protection work			1,397 97		1,397 97
Shippegan Harbour		4,026 21	497 01		4,523 22
Stony Creek			0 50		0 50
Tracadie		76 19			76 19
Two Rivers wharf		2,151 37			2,151 37
Upper Salmon River	250 00				250 00
Totals, New Brunswick	22,717 37	10,459 81	25,272 23	2,762 64	61,212 05
Quebec.					
Anse à Beaufils		943 02			943 02
Anse à l'Eau (Tadousac)		1,489 29	670 48		2,159 77
Anse aux Gascons (Pt. Daniel East)		5,047 57			5,047 57
Anse St. Jean piers			1,000 27		1,000 27
Baie St. Paul, Cap aux Corbeaux		7,264 00			7,264 00
Berthier (en haut)	6,941 28				6,941 28
" (en bas)			385 07		385 07
Boucherville	237 95				237 95
Bic			97 11		97 11
Cacouna		3,984 93			3,984 93
Cap à l'Aigle			259 85		259 85
Carleton			55 09		55 09
Cap Santé		572 67			572 67
Cedars Wharf			1,498 96		1,498 96
Chicoutimi Wharf		1,499 27	172 03		1,671 30
Coteau Landing	8,814 40				8,814 40
Doucet's Landing	3,739 06				3,739 06
Etang du Nord			1,603 19		1,603 19
Gatineau Point			18 90		18 90
Carried forward	19,732 69	20,800 75	5,760 95		46,294 39

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	19,732 69	20,800 75	5,760 95		46,294 39
Quebec—Continued.					
Grandes Bergeronnes			401 26		401 26
Grand Pabos			422 87		422 87
Grande Rivière			773 28		773 28
Iberville Wharf		6,784 32			6,784 32
Ile Groe Bois	232 59				232 59
Isle aux Coudres			998 34		998 34
Isle Perrot		2,486 73			2,486 73
Kamouraska		5,020 22			5,020 22
Lake St. John Piers—					
Peribonka $1,299 31					
Rivière à la Pipe 1,999 86					
Roberval 80 67					
St. Felicien 1,109 19					
Generally 100 00					
		4,489 03		100 00	4,589 03
Lake St. John—placing buoys—					
Ashouapmouchouan $68 22					
Grand Discharge 5 68					
Mistassini River 142 00					
Peribonka 28 43					
				244 33	244 33
Lanoraie			588 77		588 77
Laprairie ice piers	8,161 88	1,791 27			9,953 15
Levis graving dock				7,235 88	7,235 88
Lauzon			1,029 31		1,029 31
Les Eboulements			1,500 89		1,500 89
L'Islet		1,474 00			1,474 00
Longueuil			9,986 59		9,986 59
Lotbinière			188 92		188 92
Lower St. Lawrence landing places		142 18			142 18
Magog			49 00		49 00
New Carlisle			228 50		228 50
Newport			244 48		244 48
Oak Point (Co. Bonaventure)			100 00		100 00
Papineauville	640 00				640 00
Piers below Quebec				2,543 57	2,543 57
Pointe aux Esquimaux				90 00	90 00
Pointe Claire		4,022 06			4,022 06
Pointe St. Julien			104 67		104 67
Pointe aux Trembles	660 35				660 35
Port Daniel			767 89		767 89
Port Lewis		2,494 47			2,494 47
Port au Saumon			403 36		403 36
Quebec, Queen's Wharf			636 00		636 00
Rimouski Pier			83 21		83 21
Rivière Beauport		3,998 62			3,998 62
" du Lièvre Lock			12 03	853 30	865 33
" " (claim for damages)		193 70			193 70
River Cap de Chatte Pier		3,502 08			3,502 08
" Chateauguay	4,725 00				4,725 00
" Richelieu ice piers			555 93		555 93
Rivière du Loup (en bas)			3,698 47		3,698 47
" " (en haut)	1,200 50				1,200 50
" du Sud		2,987 72			2,987 72
" Richelieu, Belœil Channel		5,496 39		120 00	5,616 39
" Ste. Anne de la Pérade			24 00		24 00
" St. Francis	2,882 17				2,882 17
" St. Lawrence Ship Channel*	315,028 35				315,028 35
" St. Louis Head Gates				152 00	152 00
" St. Maurice, Grandes Piles to Latuque	255 00				255 00
" Touladie		1,401 70			1,401 70
Carried forward	353,518 53	67,085 24	28,558 72	11,339 48	460,501 57

*This expenditure covers improvements and repairs of plant as well as working expenses.

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	353,518 53	67,085 24	28,558 72	11,339 08	460,501 57
Quebec—Concluded.					
Ste. Agathe des Monts			348 39		348 39
St. Alexis, Baie des Ha! Ha!		3,999 90			3,999 90
St. Alphonse (Bagotville)			2,000 57		2,000 57
St. Anicet		1,423 75			1,423 75
Ste. Anne de Bellevue			43 10		43 10
Ste. Anne de Sorel		5,191 05			5,191 05
Ste. Anne du Saguenay		1,099 81			1,099 81
St. Antoine	613 39				613 39
St. Croix	207 19				207 19
St. Fulgence		1,498 38			1,498 38
Ste. Genevieve			1,036 16		1,036 16
St. Irénée			5,024 56		5,024 56
St. Jean des Chaillons		4,902 62			4,902 62
St. Laurent (Island of Orleans)			2,153 81		2,153 81
St. Michel de Bellechasse	5,873 86		406 00		6,279 86
St. Nicholas	92 11	8,497 26			8,589 37
St. Johns	3,154 50				3,154 50
St. Roch des Aulnaies		183 46			183 46
Sandy Bay			5 46		5 46
Sillery Cove		5,083 57			5,083 57
Varennes	1,030 38				1,030 38
Yamaska Lock			2,278 21	615 93	2,894 14
Generally	2,135 78			4,047 12	6,182 90
Totals, Quebec	366,625 74	98,965 04	41,854 98	16,002 13	523,447 89
Ontario.					
Amherstburg	31 57				31 57
Bayfield	1,200 00		1,521 25		2,721 25
Belleville	3,664 76				3,664 76
Big Bay wharf			54 60		54 60
Bowmanville	1,297 36	2,000 00			3,297 36
Burlington Channel and bridge			1,783 91	1,798 93	3,582 84
Cobourg	1,035 87		25 00		1,060 87
Cockburn Island			414 95		414 95
Collingwood breakwater	31,430 57		150 00		31,580 57
Frenchman's Bay	498 00				498 00
Goderich		2,886 11			2,886 11
"	9,632 41				9,632 41
" South River			76 17		76 17
Hamilton	70 01				70 01
Harbours generally	3,605 67			4,843 66	8,449 33
Hilton (or Marksville)			108 73		108 73
Hawkesbury	2,994 25				2,994 25
Honora wharf (Manitoulin Island)			14 00		14 00
Jordan Harbour	2,546 99				2,546 99
Kaministiquia River	10,208 05				10,208 05
Kincardine		3,374 39	2,446 35		5,820 74
Kingston Graving Dock		46 90		5,046 70	5,093 60
" Harbour	13,323 75				13,323 75
Lakes Simcoe and Couchiching			15 00		15 00
L'Orignal		6,009 12			6,009 12
Meaford	2,781 61	2,597 47			5,379 08
Midland	2,451 06				2,451 06
Newcastle	191 11		749 94		941 05
North Bay		10,773 40			10,773 40
Oakville	740 46		3,775 37		4,515 83
Owen Sound	9,885 40				9,885 40
Carried forward	97,558 90	27,687 39	11,135 27	11,689 29	148,100 85

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	97,558 90	27,687 39	11,135 27	11,689 29	148,100 85
Ontario—Concluded.					
Owen Sound, to re-imburse town, &c	3,263 21				3,263 21
Picton	7,000 00				7,000 00
Port Albert			997 93		997 93
Port Arthur			72 32		72 32
Port Burwell	3,270 00	21,594 88			24,864 88
Port Colborne			598 43		598 43
Port Elgin		2,896 00			2,896 00
Port Hope			5,515 00		5,515 00
Port Maitland			458 05		458 05
Port Stanley (harbour improvements)		10,000 00			10,000 00
" repairs to piers and dredging	1,793 72		8,252 59		10,046 31
Rainy River		554 00			554 00
Rat Portage Dam			203 66		203 66
Richard's Landing (St. Joseph's Island)		3,023 35			3,023 35
Rockland	582 00				582 00
Rondeau Harbour			3,499 93		3,499 93
Saugeen River	4,097 50				4,097 50
Thornbury			999 99		999 99
Toronto Harbour	9,981 18	8,251 08			18,232 26
Trenton	146 80				146 80
Totals, Ontario	127,723 31	74,006 70	31,733 17	11,689 29	245,152 47
Manitoba.					
Red River, mouth	8,025 14				8,025 14
Harbours generally, Manitoba				470 35	470 35
Lake Manitoba, additional outlet		202 75			202 75
Totals, Manitoba	8,025 14	202 75		470 35	8,698 24
North-west Territories.					
Harbours, rivers and bridges				69 55	69 55
Total, North-west Territories				69 55	69 55
British Columbia.					
Columbia River, Above Golden	2,962 22				2,962 22
" Upper and Lower Arrow Lakes		4,999 39			4,999 39
" Removal of rocks above Revelstoke		1,818 67			1,818 67
" Dam at Cariboo City		1,991 43			1,991 43
Duncan River		2,946 43			2,946 43
Esquimalt Graving Dock				11,957 05	11,957 05
Fraser River, protection work		39,955 89			39,955 89
" snagging			7,431 66		7,431 66
" dredging	1,808 87				1,808 87
Thomson River 50 00			50 00		50 00
Somas " 27 00			27 00		27 00
Generally 3,433 08	754 21			3,433 08	4,187 29
Kootenay River, below Fort Steele		3,852 58			3,852 58
Nanaimo Harbour, South Channel	10,544 92				10,544 92
Nikomekel River			307 05		307 05
Skeena River			2,468 33		2,468 33
Vancouver Harbour	1,385 26				1,385 26
Williams' Head, Quarantine Station		5,040 23			5,040 23
Totals, British Columbia	17,455 48	60,604 62	10,284 04	15,390 13	103,734 27

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
HARBOURS AND RIVERS—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Yukon Provisional District.					
Stikine River, Tealin Lake, &c.		15,445 85			15,445 85
*Yukon and Lewes Rivers					
Total, Yukon		15,445 85			15,445 85
Generally.					
Harbours and rivers generally	3,162 04			5,003 83	8,165 87
DREDGES AND DREDGING PLANT.					
Maritime Provinces	†	11,014 91	6,998 16		18,013 07
Ontario and Quebec	†	59,558 43	9,814 11		69,372 54
Manitoba	†		4,069 09		4,069 09
British Columbia	†		2,768 94		2,768 94
Totals, Dredges		70,573 34	23,650 30		94,223 64
SLIDES AND BOOMS.					
St. Maurice District		2,666 99	7,220 55	13,728 78	23,616 32
Ottawa "				20,633 85	20,633 85
Ottawa River		34 30	3,587 34		3,621 64
" Chenaux boom allowance to Improvement Co			1,724 34		1,724 34
" Gatineau River, Que.			507 86		507 86
" Coulonge " "			1,398 83		1,398 83
" Black " "			915 18		915 18
" Dumoine " "			548 93		548 93
" Madawaska " Ont			2,728 86		2,728 86
" Petewawa " "			1,571 79		1,571 79
Trent (or Newcastle) District		288 29	1,783 75	1,997 50	4,069 54
Collection of slide and boom dues				3,085 93	3,085 93
Totals, Slides and Booms		2,989 58	21,987 43	39,446 06	64,423 07
ROADS AND BRIDGES.					
Quebec.					
Chambly (Yule Bridge, Richelieu River)				70 00	70 00
Ontario.					
Ottawa city bridges and streets maintained by government:—					
Chaudière Union Bridge			459 46		459 46
Chaudière minor bridges, &c.:—					
Ottawa side			1,050 11		1,050 11
Hull "			285 03		285 03
Maria Street Bridge		464 65	412 75		877 40
Sapper's Bridge		2,324 30	570 14		2,894 44
Wellington Street			4,261 76		4,261 76
Dufferin Bridge			49 73		49 73
Lighting all the above, $2,210; watering, $188.40				2,398 40	2,398 40
Carried forward		2,788 95	7,088 98	2,468 40	12,346 33

* See Statement of Expenditure not Apportioned, page 16.
† Working expenses of dredges apportioned to Harbours and Rivers above.

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
ROADS AND BRIDGES—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		2,788 95	7,088 98	2,468 40	12,346 33
North-west Territories.					
Banff Bridge (Bow River)			1,660 94		1,660 94
" " (Spray River)		2,867 79			2,867 79
Battleford Bridge (Battle River)			199 97		199 97
Edmonton Bridge (Saskatchewan River)		24,787 75			24,787 75
Standoff Bridges (Belly and Kootenay Rivers)		100 00			100 00
Trail from Edmonton toward Yukon District		233 09			233 09
Roads and bridges generally				300 00	300 00
Totals, Raads and Bridges		30,777 58	8,949 89	2,768 40	42,495 87
TELEGRAPH LINES.					
Newfoundland.					
Cape Ray line (subsidy)				250 00	250 00
Nova Scotia.					
Cape Sable line				25 00	25 00
Cheticamp "				806 63	806 63
Low Point "				50 00	50 00
Meat Cove "			2,097 06	1,800 68	3,897 74
St. Paul's Island line			500 00		500 00
Prince Edward Island.					
Prince Edward Island and Mainland Cable (subsidy)				1,946 66	1,946 66
New Brunswick.					
Escuminac line				442 24	442 24
Bay of Fundy			4,900 00	1,516 05	6,416 05
Quebec.					
Anticosti-Gaspé line			1,800 00	2,087 35	3,887 35
Grosse Isle Quarantine line				975 51	975 51
Magdalen Islands line			6,200 00	2,366 17	8,566 17
North shore St. Lawrence lines:—					
East of Bersimis		13,790 70		5,355 39	19,146 09
West "				4,988 11	4,988 11
Maritime Provinces and Gulf Generally.					
SS. *Newfield's* cable-laying plant and storage tank at Halifax				920 52	920 52
General expenses				3,128 49	3,128 49
Ontario.					
Pelee Island line			1,436 02	217 85	1,653 87
Carried forward		13,790 70	16,933 08	26,876 65	57,600 43

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
TELEGRAPH LINES—*Con.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	.....	13,790 70	16,933 08	26,876 65	57,600 43
North-west Territories.					
Generally	.....	.....	369 82	14,137 52	14,507 34
British Columbia.					
Alberni-Cape Beale line	.....	4,052 68	.....	.....	4,052 68
Ashcroft-Barkerville "	.....	.....	.....	3,198 70	3,198 70
Nanaimo-Comox "	.....	.....	.....	4,411 76	4,411 76
Kamloops-Nicola "	.....	1,209 10	.....	.....	1,209 10
Victoria-Cape Beale "	.....	.....	.....	4,332 34	4,332 34
Generally.					
Telegraph service generally	.....	.....	.....	1,137 90	1,137 90
Totals, Telegraphs	.....	19,052 48	17,302 90	54,094 87	90,450 25
MISCELLANEOUS.					
Statue of Her Majesty the Queen in commemoration of the Diamond Jubilee	.....	19 80	.....	.....	19 80
Monument to Hon. Alexander Mackenzie	.....	5,018 40	.....	.....	5,018 40
Funeral of late Sir John Thompson	.....	.....	.....	750 00	750 00
Gratuity to widow of late J. H. Marchand	.....	.....	.....	100 00	100 00
Gratuity to widow of late E. A. Mara	.....	.....	.....	190 00	190 00
" " " Wm. Byrne	.....	.....	.....	112 50	112 50
" to Aylmer fire brigade services at fire in west block	.....	.....	.....	150 00	150 00
Surveys and inspection	.....	.....	.....	16,271 06	16,271 06
Public Works agency, B. C.	.....	.....	.....	1,989 15	1,989 15
Temporary employees—					
Secretary and accountant's staff	.....	.....	.....	25,000 00	25,000 00
Chief architect's staff	.....	.....	.....	20,000 00	20,000 00
" engineer's "	.....	.....	.....	41,994 38	41,994 38
Supt. telegraph service and staff	.....	.....	.....	2,900 00	2,900 00
Deptl. photographer, one-half salary	.....	.....	.....	700 00	700 00
Totals, Miscellaneous	.....	5,038 20	.....	110,157 09	115,195 29
EXPENDITURE NOT APPORTIONED.					
The expenditure noted below, incurred in 1898-9 for the organization and commencement of various works in the Yukon district and northern British Columbia, cannot as yet be fairly apportioned to the works executed. Distribution will appear in the Annual Report of 1899-1900. The sums were charged to the following appropriations of 1898-9 :—					
Yukon and Lewes River and Telegraph Line. $24,836 57 Dredging, British Columbia. 2,500 00 Surveys and inspections. 10,000 00	.....	37,336 57	.....	.....	37,336 57
Total unapportioned	.....	37,336 57	.....	.....	37,336 57

PART II.—STATEMENT A.—EXPENDITURE—*Concluded.*

Name of Work.	Dredging.	Construction and Improvements.	Repairs.	Staff and Maintenance.	Total.
RECAPITULATION.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Totals, Public Buildings—					
Nova Scotia		80,079 54	6,585 06	21,305 98	107,970 58
Prince Edward Island			453 50	4,964 51	5,418 01
New Brunswick			2,673 40	19,759 06	22,432 46
Quebec		19,397 16	31,487 09	51,403 69	102,287 94
Ontario		198,419 88	118,922 86	198,048 09	515,390 83
Manitoba		2,164 87	4,110 56	13,833 00	20,108 43
North-west Territories		4,874 89	3,070 32	13,386 46	21,331 67
British Columbia		22,826 65	8,845 44	10,439 14	42,111 23
Public buildings generally				12,747 23	12,747 23
Totals, Harbours and Rivers—					
Nova Scotia	27,844 99	61,526 34	33,197 99	12,762 63	135,331 95
Prince Edward Island	12,314 60	15,016 87	13,451 19	1,315 64	42,098 30
New Brunswick	22,717 37	10,459 81	25,272 23	2,762 64	61,212 05
Quebec	366,625 74	98,965 04	41,854 98	16,002 13	523,447 89
Ontario	127,723 31	74,006 70	31,733 17	11,689 29	245,152 47
Manitoba	8,025 14	202 75		470 35	8,698 24
North-west Territories				69 55	69 55
British Columbia	17,455 48	60,604 62	10,284 04	15,390 13	103,734 27
Yukon Provisional District		15,445 85			15,445 85
Harbours and rivers generally	3,162 04			5,003 83	8,165 87
Totals, dredges and dredging plant		70,573 34	23,650 30		94,223 64
" slides and booms		2,989 58	21,987 43	39,446 06	64,423 07
" roads and bridges		30,777 58	8,949 89	2,768 40	42,495 87
" telegraph lines		19,052 48	17,302 90	54,094 87	90,450 25
" miscellaneous		5,038 20		110,157 09	115,195 29
" un-apportioned		37,336 57			37,336 57
	585,868 67	829,758 72	403,832 35	617,819 77	2,437,279 51

(*End of Statement A.*)

STATEMENT B.—Showing the cost of the following services for each Public Building, viz. :—

Rent; Salaries of, and Supplies for, Caretakers, Engineers, &c.; Heating; Lighting; Water; (the total for each province being carried into Statement A.)

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
Nova Scotia.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Amherst post office		454 70	211 90	289 01	20 00	975 61
Annapolis "		472 48	142 91	110 22	40 00	765 61
Antigonish "		456 49	79 28	46 26	10 00	592 03
Arichat custom-house			148 00			148 00
Baddeck post office		249 51	92 00	40 26		381 77
Dartmouth "		283 66	59 10	134 75	35 55	513 06
Halifax assistant receiver general's office	1,200 00		35 95	41 55	17 40	1,294 90
" Dominion building		2,332 30	762 15	2,929 74	250 00	6 274 19
" engineer's office	362 00					362 00
" examining warehouse	1,000 00	445 40		29 25	50 26	1,524 91
" drill shed		45 73	456 05			501 78
" immigrant shed		572 00	235 35	389 87		1,197 22
" quarantine station			39 00			39 00
Lunenburg post office		386 87	207 50	171 95	59 00	825 32
New Glasgow "		349 86	146 80	364 80	100 00	961 46
North Sydney "		400 86	116 50	319 75	22 00	859 11
Pictou custom-house		373 56	112 46	20 85		506 87
" post office		12 73	83 42	217 60	10 85	324 60
Sydney post office		406 51	136 13	296 43	20 00	859 07
Truro "		360 32	138 75	278 63		777 70
Windsor "		150 72	140 22	6 95		297 89
Yarmouth " &c		461 68	249 09	407 20	72 00	1,189 97
Totals, Nova Scotia carried to Statement A, page 3	2,562 00	8,215 38	3,592 56	6,095 07	707 06	21,172 07
Prince Edward Island.						
Charlottetown Dominion building		2,038 34	456 68	1,059 37	168 75	3,722 54
" engineer's office	200 00					200 00
Montague post office		176 81	42 89	10 31		230 01
Summerside "		472 85	233 12	105 99		811 96
Totals, P. E. Island carried to Statement A, page 3	200 00	2,688 00	732 09	1,175 67	168 75	4,964 51
New Brunswick.						
Bathurst post office, &c		509 42	308 26	23 50		841 18
Carleton, St. John, post office, &c		130 01	43 69	151 05	13 00	337 75
Chatham post office, &c		340 00	296 80	156 00		792 80
Dalhousie "		454 70	178 76	9 66		643 12
Fredericton "		455 10	253 36	485 88	48 00	1,242 34
Moncton "		489 45	194 74	328 48	134 00	1,146 67
Newcastle "		464 50	264 71	196 20		925 41
Portland, St. John, post office	130 90		38 17		12 50	181 57
St. John custom-house	22 00	2,126 20	1,279 21	332 16	522 78	4,282 35
" post office		1,550 20	499 01	2,830 89	581 23	5,461 33
" steamboat inspector's office				73 56		73 56
" savings bank			226 05		17 52	243 57
Tracadie, lazaretto		112 50	1,095 55			1,208 05
St. Stephen's post office, &c		459 15	106 98	381 90	64 00	1,012 03
Sussex post office, &c		225 40	210 58	16 56		452 54
Woodstock post office, &c		517 55	201 99	161 25	34 00	914 79
Totals, New Brunswick carried to statement A, page 4	152 90	7,834 18	5,197 86	5,147 09	1,427 03	19,759 06

SESSIONAL PAPER No. 9

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers &c.	Heating.	Lighting.	Water.	Total.
Quebec.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Aylmer post office		92 58	155 65	38 53	31 50	318 26
Coaticook "		465 86	206 23	221 30	40 00	933 39
Dundee custom-house			30 00			30 00
Hull post office, &c.		12 50	231 00	212 76	116 52	572 78
Joliette "		398 36	209 07	65 35	108 00	780 78
Lachine "		127 79	132 73	62 00	29 52	352 04
Laprairie "		64 70	105 65	31 57	40 00	241 92
Lévis immigrant building		1 36	43 70			45 06
Montreal civil service exam. office	100 00					100 00
" custom-house		1,194 43	615 00	421 68	332 71	2,563 82
" public buildings generally		1,661 65				1,661 65
" drill hall		658 28				658 28
" examining warehouse		1,619 94	1,835 50	650 36	570 09	4,675 89
" immigration office	499 98					499 98
" inland revenue office		684 00	199 50	174 30	103 79	1,161 59
" post office		5,493 84	787 70	3,507 93	702 77	10,492 24
Berthierville post office		22 58	87 51	17 25	30 06	157 34
Quebec citadel buildings				131 25		131 25
" cullers' office		615 00	320 80			935 80
" custom-house		632 47	1,013 46	90 76	800 00	2,536 69
" engineer's office	144 00					144 00
" examining warehouse		1,641 10	783 73	56 37	450 00	2,931 20
" immigrant building			501 58	90 00		591 58
" observatory					50 00	50 00
" post office		1,556 71	592 65	903 51	750 00	3,802 87
" Queen's wharf building			354 67		750 00	1,104 67
" St. Roch post office			68 20	60 74		128 94
St. Thomas de Montmagny post office		25 47	27 00	3 02		55 49
Richmond post office		199 64	178 29	131 41		509 34
Rimouski "		167 06	360 18	26 29	26 00	579 53
Rivière du Loup (Fraserville) post office		304 12	321 00	61 11		686 23
Sherbrooke post office, &c		504 54	394 49	923 96	75 00	1,897 99
Sorel "		564 57	269 75	251 00	250 00	1,335 32
St. Henri "		1 00	6 40	93 48	29 28	130 16
St. Hyacinthe "		476 35	211 53	408 12	150 00	1,251 00
St. Jérôme "		29 00	205 68	192 00	57 77	484 45
St. Johns "		405 43	53 30	250 00		708 75
St. Lin "	300 00					300 00
Three Rivers custom-house		343 00	366 10	63 63	84 00	856 73
" post office		501 62	187 75	77 13	62 00	828 50
Valleyfield "	404 70		52 00	42 40	34 20	533 00
West Farnham "		5 80	45 60	70 00	10 00	131 40
Totals Quebec, carried to statement A, page 4	1,448 68	20,470 75	10,953 40	9,329 21	5,683 15	47,885 19
Ontario.						
Almonte post office, &c.		463 15	126 00	20 37	75 00	684 52
Amherstburg post office, &c		478 48	163 50	153 15	43 75	838 88
Arnprior "		104 63	7 88			112 51
Barrie "		476 65	216 00	138 21	50 00	880 86
Belleville "		698 22	541 58	446 64	115 50	1,801 94
Berlin "		358 81	209 75	322 07	49 51	940 14
Brampton "		471 45	132 05	185 74	31 25	820 49
Brantford "		696 67	251 08	325 95	30 40	1,304 10
Brockville "		472 04	251 40	470 50	170 00	1,363 94
Carleton Place "		345 95	119 00	50 06		514 95
Cayuga "		71 05	60 88	125 00		256 93
Chatham "		432 09	107 45	214 45	40 00	793 99
Cobourg "		454 70	175 04	249 50	45 50	924 74
Carried forward		5,523 89	2,361 61	2,701 58	650 91	11,237 99

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers &c.	Heating.	Lighting.	Water.	Total.
Ontario—Continued.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		5,523 89	2,361 61	2,701 58	650 91	11,237 99
Cornwall Post Office, &c		543 17	278 35	495 85	75 00	1,392 37
Dundas "	500 00	50 00	14 46	80 62		645 08
Galt "		466 45	178 80	201 38	28 51	875 14
Gananoque custom-house			104 50	100 41		204 91
" post office			77 75	141 00		218 75
Goderich "		398 40	166 98	92 10	60 00	717 48
Guelph "		484 05	221 49	247 65	49 14	1,002 33
Hamilton drill shed		290 00				290 00
" post office		1,727 85	684 25	1,536 87	1,000 00	4,948 97
Kingston custom house		79 00	237 50	79 00	63 35	458 85
" examining warehouse			26 00		12 95	38 95
" inland revenue office				74 20	96 04	170 24
" military college		1,640 00				1,640 00
" post office		73 40	209 80	546 00	48 78	877 98
Lindsay "		457 20	146 90	82 50	20 00	706 60
London custom-house		1,098 22	493 62	576 66	175 00	2,343 50
" post office		574 00	579 90	1,700 13	100 00	2,954 03
Napanee "		429 67	152 50	144 40	69 44	796 01
Niagara Falls post office, &c		309 95	213 50	325 00	37 00	875 45
Orangeville "		379 67	112 66	144 00	25 00	661 33
Orillia "		220 60	175 50	82 20	32 50	510 80
Ottawa experimental farm			344 60	75 32		419 92
" geological museum		698 63	318 15	225 50		1,242 28
" national art gallery and fisheries museum		540 00	118 75	24 45		683 20
" North-west mounted police stores			61 75			61 75
" parliamentary and departmental buildings		26,143 96	23,997 13	19,121 96	12,777 68	82,040 73
" post office		960 00	717 25	1,450 76		3,128 01
" printing bureau		3,462 60	4,439 81	577 65		8,480 06
" supreme court		1,350 05	483 58	299 95		2,133 58
Ottawa rented buildings :—						
Bank of Ottawa (Dept of the Interior)	1,600 00			181 33	93 91	1,875 24
Boundary commission offices				40 63	24 14	64 77
Coal shed (canal basin)	400 00					400 00
Central chambers (Dept of the Interior)	100 00					100 00
Departmental photographer's office	144 00					144 00
Durie's Chambers (Militia)	84 00					84 00
Examining warehouse	850 00			12 40	36 66	899 06
French translator's office	420 00		19 00	151 65	9 16	599 81
Gas inspector's office				14 05		14 05
Geological museum annex	600 00				32 99	632 99
Molson's Bank (Marine Dept.)	1,200 00			2 73	91 54	1,294 27
Nagle Chambers (Customs Dept.)	522 38					522 38
Observatory				20 00		20 00
Slater's Chambers (model room)	1,700 00				56 82	1,756 82
" (Post Office Dept.)	90 00					90 00
Workshops and lumber yard of Dept. of Public Works	936 00	576 00	1,203 71	729 00	122 32	3,567 03
Pembroke post office		382 67	126 37	198 00		707 04
Peterboro' custom-house		78 00	103 31	84 45	50 00	315 76
" post office		437 42	137 41	430 00	75 00	1,079 83
Petrolea "		391 07	115 60	21 97	29 76	558 40
Port Arthur "		303 25	115 87	137 64		556 76
Port Colborne "		244 75		133 00	7 50	385 25
Port Hope post office		379 67	169 00	256 20		804 87
Prescott custom-house		12 60	89 80			102 40
" post office		379 67	171 65	139 20	140 00	830 52
Carried forward	9,146 38	51,085 86	39,158 81	33,679 39	16,091 10	149,161 54

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
Ontario—Concluded.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	9,146 38	51,085 86	39,158 81	33,679 39	16,091 10	149,161 54
Smith's Falls post office		292 00	121 55	122 65	85 00	621 20
Stratford "		639 20	262 43	179 44	64 67	1,145 74
Strathroy "		379 97	151 52	28 40	2 55	562 44
St. Catharines "		395 37	136 80	331 42	57 00	920 59
St. Thomas "		417 57	282 00	618 15	81 54	1,399 26
Toronto civil service examination office	45 00					45 00
" custom-house		734 15	303 40	115 74	56 39	1,209 68
" public buildings generally		1,001 25				1,001 25
" engineer's office	300 00					300 00
" examining warehouse		4,172 32	603 95	90 36	139 64	5,006 27
" inland revenue office		574 53	200 35	217 89	22 40	1,015 17
" post office		948 17	754 65	2,906 80	213 36	4,822 98
" " (Union Station)	675 60					675 60
" drill hall		804 58				804 58
Trenton post office		383 17	108 00	215 90	75 00	782 07
Walkerton post office, &c		334 80	177 31	208 00	33 25	753 36
Windsor "		774 80	424 33	758 38	96 06	2,053 57
Wolfe Island, Kingston custom house			31 20			31 20
Totals, Ontario, carried to statement A, page 6	10,166 98	62,937 74	42,716 30	39,472 52	17,017 96	172,311 50
Manitoba.						
Brandon Dominion lands office					76 00	76 00
" experimental farm			216 20			216 20
" immigrant building			121 65			121 65
" post office		594 10	660 54	565 30		1,819 94
Dauphin immigrant shed			33 00			33 00
" Dominion lands office	180 00		85 45			265 45
Minnedosa " "	180 00		116 50			296 50
Portage la Prairie post office		351 46	604 55	217 55		1,173 56
Winnipeg clerk of works office		9 00				9 00
" custom-house		75 00	630 13	212 41	48 00	965 54
" Dominion lands office			344 54	36 68	15 00	396 22
" engineer's office	327 25					327 25
" examining warehouse		17 00	348 30	8 09		373 39
" immigrant shed		21 50	825 08	358 81	62 50	1,267 89
" post office		2,484 69	2,765 58	966 14	275 00	6,491 41
Totals, Manitoba, carried to statement A, page 6	687 25	3,552 75	6,751 52	2,364 98	476 50	13,833 00
North-west Territories.						
Alameda Dominion lands office	150 00					150
Calgary court-house, &c		516 00	255 03	49 50	300 00	1,120 53
Calgary immigrant building			152 37			152 37
" land and registry office			12 00			12 00
" post office		456 00	455 17	540 60	331 05	1,782 82
Edmonton Dominion lands office	432 00		120 10			552 10
" immigrant shed			64 50			64 50
" registry office		390 27		175 30		565 57
Indian Head experimental farm			283 50			283 50
Lethbridge court-house		27 87	53 05			80 92
" post office		401 00	32 50	111 60	60 00	605 10
" customs-house			52 81			52 81
Macleod custom-house			71 25			71 25
" court-house	312 50	175 50	97 25	18 50		603 75
Carried forward	894 50	1,966 64	1,649 53	895 50	691 05	6,097

PART II.—STATEMENT B.—Showing the cost of the following services for each Public Building, &c.—*Continued.*

Name of Building.	Rents.	Salaries of Engineers, &c.	Heating.	Lighting.	Water.	Total.
North-west Territories—Con.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward	894,50	1,966 64	1,649 53	895 50	691 05	6,097 22
Moosejaw court-house		383 12	103 00	0 80		486 92
Moosomin "		521 75	230 28	12 65		764 68
Prince Albert court-house	96 00	838 71	40 00		1 00	975 71
" registry office		389 37	90 00	12 35		491 72
Red Deer Dominion lands office	133 65		69 00			202 65
Regina, clerk of works office	90 00					90 00
" court house		27 00	778 50	205 88		1,011 38
" Dominion lands office	787 69					787 69
" immigrant building			66 40			66 40
" land titles office	150 00					150 00
" post office		815 02	228 00			1,043 02
" registry office			226 00			226 00
Wetaskiwin, Dominion lands office	75 00					75 00
Wolseley court house		516 00	196 80	17 72		730 52
Yorkton, Dominion lands office	144 00		43 55			187 55
Totals, N.W. Territories carried to Statement A., page 7	2,370 84	5,457 61	3,721 06	1,144 90	692 05	13,386 46
British Columbia.						
Agassiz experimental farm			67 50			67 50
Kamloops Dominion lands office	165 00		17 50			182 50
Nanaimo post office		579 50	111 73	261 75	36 00	988 98
New Westminster engineer's office	262 33	1 05	26 75	79 70	6 00	375 83
" post office		574 00	60 50	147 04	18 28	799 82
Vancouver custom house		3 75		434 48		438 23
" drill hall			45 99			45 99
" post office		448 05	343 84	903 84	127 44	1,823 17
Victoria appraiser's office				21 45	12 00	33 45
" barracks			80 73			80 73
" custom-house			101 85	28 25	17 99	148 09
" drill hall			176 12			176 12
" military store			144 29			144 29
" post office		1,943 15	578 22	1,341 92	86 04	3,949 33
" weights and measures					12 00	12 00
William's Head quarantine station			946 01			946 01
Totals, British Columbia, carried to statement A, page 7	427 33	3,549 50	2,701 03	3,218 43	315 75	10,212 04

(End of Statement B.)

PART II—*Concluded.*

STATEMENT C.—Showing amount loaned by Government under the authority of special Acts of Parliament and upon the recommendation of the Minister of Public Works, during the fiscal year 1898–9..... *Nil.*

A. G. KINGSTON,

Accountant.

DEPARTMENT OF PUBLIC WORKS,
ACCOUNTANT'S OFFICE,
OTTAWA, April 25, 1900.

PART III

REPORT ON PUBLIC BUILDINGS

THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED JUNE 30, 1899

BY THE

CHIEF ARCHITECT

REPORT OF THE CHIEF ARCHITECT.

DEPARTMENT OF PUBLIC WORKS, CANADA,
CHIEF ARCHITECT'S OFFICE,
OTTAWA, January 10, 1900.

SIR,—I beg to submit herewith annual report on works executed under this branch during the fiscal year ended June 30, 1899.

D. EWART,
Chief Architect.

R. C. DESROCHERS, Esq.,
Asst. Secretary, Department of Public Works, Canada.

PROVINCE OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN.

PUBLIC BUILDING.

Some new heating coils were supplied and some repaired, the post office boxes were repaired and general minor repairs done inside and outside.

MONTAGUE.

POST OFFICE.

A new flagstaff was supplied.

SUMMERSIDE.

PUBLIC BUILDING.

Repairs were made to furnace, plumbing, drain and flagstaff.

PROVINCE OF NOVA SCOTIA.

AMHERST.

PUBLIC BUILDING.

Two new oaken yard gates were supplied ; the chimney and pediments were pointed in cement, new steps were provided at street crossings ; the top stones of gate piers were reset ; the roof was repaired ; fire escape ladders were put up and repairs made to woodwork.

ANNAPOLIS.

PUBLIC BUILDING.

Repairs were made to the heating furnace.

ANTIGONISH.

POST OFFICE.

Some repairs were made to heating apparatus and fence.

BADDECK.

PUBLIC BUILDING.

General repairs were made and some lamps furnished.

DARTMOUTH.

POST OFFICE.

The post office clock was repaired.

HALIFAX, N.S.

DOMINION BUILDING.

The registration and postmaster's offices, as well as the letter boxes throughout the city, were painted, the janitor's quarters were kalsomined; repairs were made to electric lights, heating, brickwork of boilers, plumbing, mail hoist, furniture, floors, post boxes, &c., and some window shades, blinds, furniture and locks supplied.

Work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax.

DRILL HALL.

The contract for the construction of the building was completed. Contracts were entered into on July 20, 1898, and August 28, 1898, respectively, for a heating and ventilating apparatus and an electric light system of wiring; the latter of which was completed.

On June 9, 1899, a contract was entered into for the fittings of the armouries. Plans, &c., prepared and work superintended by this department. Resident engineer and inspector of public buildings, Nova Scotia, C. E. W. Dodwell, Halifax, N.S. Clerk of works, Dominick Healey. Contractor for construction of building, Jno. E. Askwith, Ottawa. Contractor for heating apparatus, Jos. Lamarche, Montreal, P.Q. Contractor for electric wiring, Jno. L. Griffin, Dartmouth, N.S. Contractors for fittings, Rhodes, Curry & Co., Amherst, N.S.

EXAMINING WAREHOUSE.

The cellar was refloored and repairs were done to plumbing, floors, shelves, cases and shelving under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax, N.S.

IMMIGRATION BUILDING.

New shelving was supplied, the coal store was planked over and some pipes cased, repairs were done to windows, doors, water pipes, locks, &c, and a new watchman's clock was provided, all under the supervision of C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax, N.S.

KENTVILLE, N.S.

PUBLIC BUILDINGS.

Plans are prepared and tenders received for the construction of this buiding on the lot known as the Holden lot, or the Church lot, situated on Church street and measuring 80 feet by 80 feet. The building is to consist of a main building 48 feet 8 inches by 31 feet 8 inches, two stories, basement and attic, and a one-story adjunct 26 feet 6 inches by 23 feet 6 inches. The exterior walls are to be of brick on a stone basement, the partitions, floor and roof of wood. On the ground floor are to be the Post Office, Examining Warehouse and w.c's; on the first floor the Customs and Inland Revenue Offices, w.c's and lavatories; in the attic the caretaker's apartments, and in the basement the heating apparatus. Drainage is to be to a cesspool in yard.

LAWLOR'S ISLAND.

QUARANTINE STATION.

Extensive additions and improvements were made to the station. The following wooden buildings were erected:—

1. A third class detention building, 112 feet by 30 feet, two stories, of wood; at first erected as a temporary building, but afterwards shingled, painted and retained permanently. It was provided with 500 galvanized iron ship berths.
2. A third class temporary detention building, two stories, 100 feet by 30 feet.
3. A cookhouse, 40 feet by 20 feet, two stories, in rear of the large third class building. It is furnished with two large ranges, 9 feet and 12 feet respectively.
4. A bath room, 40 feet by 20 feet, one story, adjoining the fumigating shed on the wharf; fitted with 12 needle and shower bath and having dressing and undressing rooms for men and women.
5. A 9 foot verandah roof was constructed around the side and front of the steam disinfecting building and bath house. The fumigating building was partitioned to form closets and urinals. The second class detention building was converted into a hospital. It was partitioned to form six small and two large wards, besides rooms for doctor, nurse, dispensary, stores, pantry and three water-closets. A new kitchen, 20 feet by 22 feet, one story, was constructed in rear.

All the new buildings were provided with heating stoves.

Five wells were cleaned and their uppermost 5 feet in height, built in concrete truncated cones 9 inches thick, fitted with wooden tops with hatches and padlocks.

Four hundred feet of 7-inch sulphur blast pipe was provided and the blast apparatus thoroughly repaired and painted.

A new pump to furnish water for the mercuric-chloride tank was provided and fitted. The tank was painted inside, and hose couplings for disinfecting steamers, &c., provided.

A formaldehyde regenerator for disinfecting fur and leather was provided and fitted up.

A telephone was provided and connected with the military system, through the kindness of the Royal Engineers.

Plans, &c., prepared by this department and work supervised by C. E. W. Dodwell, resident engineer and inspector of public buildings, Nova Scotia, Halifax, N.S. Superintendent of building, J. E. Ellis, of this department, Ottawa.

LIVERPOOL.

POST OFFICE.

On January 26, 1899, a contract was entered into for the construction of this building which was described in my report of last year and the work is now in progress. Plans for a hot water heating apparatus are being prepared.

Plans, &c., for the building prepared by this department. Clerk of works, J. H. Dexter, Liverpool, N.S. Contractors, Rhodes, Curry & Co., Amherst, N.S.

LUNENBURG.

POST OFFICE, ETC., BUILDING.

The footpaths of the grounds were gravelled, the roof was made water-tight, some new window blinds were supplied, a steel mat and a wire door were supplied for vestibule, and the brickwork was painted.

NAPPAN.

EXPERIMENTAL FARM.

A poultry house, a piggery, an ice house and a woodshed were constructed.

NEW GLASGOW.

POST OFFICE, ETC., BUILDING.

Some minor repairs were made to roof and plumbing.

NORTH SYDNEY.

POST OFFICE, ETC., BUILDING.

Extensive repairs were made to the roof, new furnace grates were supplied and the floors and heating apparatus repaired.

PICTOU.

CUSTOM HOUSE.

The walls and ceilings of the long room, collector's room, lavatory, basement w.c. and the halls, landings, stairs, &c., were cleaned and kalsomined and the woodwork re-grained or repainted as formerly. Glazing and brickwork were repaired and some new window shades provided.

POST OFFICE.

The drainage of the basement was improved.

SYDNEY.

POST OFFICE, ETC., BUILDING.

Repairs were made to the roof covering.

WINDSOR.

DRILL HALL.

The original drill shed which is described in the Chief Architect's report 1868-1882, page 150, was destroyed by fire, October 14, 1897.

On June 14, 1898, a contract was entered into for the construction of a new drill shed which was completed during the fiscal year 1898-9. It is built of wood with stone foundation walls and piers, is of one story throughout and consists of a drill shed 100 feet by 80 feet and 21 feet in height from floor to underside of tie-beam of trusses, and at one end an armoury building 64 feet by 42 feet containing six armouries and two officers' rooms each 27 feet by 10, with an 8 foot wide passage across the middle giving access to all the rooms as well as the hall and an exit on the street.

Plans, &c., prepared by this department.
Clerk of works—J. H. Taylor.
Contractor—Wm. Lawrence.

PUBLIC BUILDING.

Building completed and occupied.
Plans, &c., prepared and the work superintended by this department.
Clerk of works, J. H. Ellis, from the departmental staff, Ottawa.
Contractor for heating apparatus—Jos. Lamarche, Montreal.
" " plumbing—Fred Murphy.
" " post office fittings—Wm. Curry & Sons.
" " roof covering—W. D. Hatson & Son.
" " plastering—P. Jadis.

PROVINCE OF NEW BRUNSWICK.

BATHURST.

PUBLIC BUILDING.

Repairs were made to floors, doors and customs counter.

CHATHAM.

PUBLIC BUILDING.

A force pump and hose were provided.

CARLETON (ST. JOHN), N.B.

POST OFFICE.

The chimney was repaired and furnished with a new cap. Repairs were made to water pipes, stoves, slating, flashing, &c., under the supervision of W. J. McCordock of this department, St. John, N.B.

FREDERICTION.

PUBLIC BUILDING.

The driveway from the front of the building extending from Queen Street to Carleton Street was graded, drained and gravelled, and the letter boxes were painted.

MONCTON.

PUBLIC BUILDING.

The letter boxes were lettered and painted.

NEWCASTLE.

PUBLIC BUILDING.

Extensive repairs were made to roof and some furniture was supplied.

PORTLAND, (ST. JOHN).

POST OFFICE.

A new stove and pipes were furnished, the chimneys were pointed and repairs made to water-closet, gravel roof, safe, post-office fittings, &c., under the supervision of W. J. McCordock, of this department, St. John, N.B.

ST. JOHN.

CUSTOM HOUSE.

Repairs were made to elevator inclosure, observatory ceiling, main entrance doors lobby floor, water pipes, plumbing, electric bells, roofing, furniture, boilers, &c.; a new ash-pan was put in under boilers, the boiler room whitewashed and painted ; the oak main entrance doors were scraped, filled and varnished and a new oak mantel and grate put up in resident engineers' room, north wing.

Work carried out under the supervision of W. J. McCordock, of this department, St. John, N.B.

POST OFFICE.

The Princess Street gable was repaired ; the brickwork and stonework were pointed ; repairs were done to flashings of roof, post office fittings, floors, urinals, water-closets, water and gas pipes and clock ; the wood panels in front entrance doors were removed and replaced by plate glass ; the asphalt in basement driveway was taken up and replaced by new, a new steel cable was put in hoist and the furnace room was cleaned and whitened.

Work carried out under the supervision of W. J. McCordock, of this department, St. John, N.B.

SAVINGS BANK.

The brick lining of furnace was renewed, the pump repaired, new hinges supplied and fixed to front entrance doors, the windows were re-hung with new cord and new halyards were provided under the supervision of W. J. McCordock, of this department, St. John, N.B.

SUSSEX.

PUBLIC BUILDING.

The original heating apparatus, two hot air furnaces, having given out, plans for a hot water heating apparatus are prepared.

PROVINCE OF QUEBEC.

BERTHIERVILLE.

POST OFFICE.

This building which was described in my report for 1897–98 was completed, provided with post office fittings and furniture and occupied as a post office.

COATICOOK.

PUBLIC BUILDING.

A number of the rooms on top floor were papered and painted.

FRASERVILLE.

PUBLIC BUILDING.

A wooden shed was constructed in rear, the plumbing of the main building was repaired and a clock supplied.

LACHINE.

POST OFFICE.

Minor repairs were made to the woodwork and plumbing.

MONTREAL.

CUSTOM HOUSE.

Some new tubes were provided in No. 2 boiler, a steam coil in long room was taken out and replaced by 3 'Bundy' radiators, a new check valve was supplied for one of the long room coils, 6 ball cocks were supplied and fixed, a new lavatory basin was put in caretaker's quarters, repairs were made to water mains and a new cock provided therefor, repairs were made to gas fittings, heating, fire irons and water pipes.

EXAMINING WAREHOUSE.

A part of the facing of wall of extension which had fallen out was re-built and the outside of extension wall repointed. New grate bars were provided for two boilers, an extra feed pipe was put in between header and boilers, the position of steam coil in Express office was altered, the shafting was taken down, in part, renewed and put up, a new sink with new main and waste was put in grocery department and another in east

end. Four new bolts were provided for and the lock of iron door repaired, repairs were done to the store hoist, the grocery hoist hatch and a new oak beam put in elevator gangway; three new lavatory basins were put in and repairs were made to gas mains, drains, &c.

The floors of sections three, four and five were re-laid in maple on a concrete foundation. The brick arches of sections one, two, three, four, five, were repaired and some repairs made to roof.

Work superintended by C. Desjardins, clerk of works, Montreal.

INLAND REVENUE BUILDING.

A brass coil screen was provided and 25 coils bronzed, some leaks in roof were stopped, the drains cleaned and repairs made to water-closet, water tap in basement, gas fittings and roof covering. Work done under the supervision of C. Desjardins, clerk of works, Montreal.

POST OFFICE.

The open space left by the removal of the stairs was floored, the electric switch and motor rooms were floored in tile, the tiling of post office vestibule was repaired, a new floor was laid in two of the public works offices, two rooms were fitted and furnished for the use of the local dead-letter office, the deck roof was covered with copper and a new galvanized iron deck cornice and eaves troughs put up. A large quantity of new furniture was supplied. The brick floor of safe was taken up and relaid, the floor of money order office and of railway mail clerk office was re-laid and two new box coils were put up in these offices. A set of new stand pipes, five hydrants with hose racks, hose, &c., was put in. The elevators were supplied with some new cables, shippers' ropes, balance weights, light cables, &c., some of the motors which were burnt out were taken out, rewound and re-adjusted and some new controllers were put in. Repairs were made to heating, lighting and water services, the stamping machine, painting, glazing, plastering and plumbing.

Work done under the supervision of C. Desjardins, clerk of works, Montreal.

MONTMAGNY.

POST OFFICE.

A post office screen and other post office fittings, together with 10 incandescent lamps were installed.

QUEBEC.

CITADEL, GOVERNOR GENERAL'S QUARTERS.

A new wooden building to furnish sleeping room for vice-regal household was constructed in the yard. The rooms of the quarters generally were repaired and repainted, the plumbing and water service was altered and added to and extensive general repairs made. The usual cleaning and preparations for His Excellency's visit were carried out under the supervision of Ph. Béland, clerk of works, Quebec.

MILITIA OFFICES.

New carpets were supplied.

CULLER'S OFFICE.

A number of offices and the passages leading thereto were papered and painted.

Work superintended by Ph. Béland, clerk of works, Quebec.

DRILL HALL.

The galvanized iron roof of the building was made water-tight, the chimneys were taken down and rebuilt in firebrick, the joints of the cut stone work were pointed, and the top of the cornices covered with galvanized iron.

Work superintended by Ph. Béland, clerk of works, Quebec.

CUSTOM HOUSE.

The original hot water heating furnaces and the heating mains in basement were removed and four new furnaces with new mains substituted.

The tile drain pipe, the cesspool and the battery of closets in basement were taken out and instead a battery of closets is being installed on the first floor front, with a new cast iron soil and drain pipe through building and out into sewer in street. The plumbing was generally repaired and put in order, some furniture and carpets supplied and furniture repaired.

An acetyline gas apparatus with mains and fixtures was installed. The woodwork of a large number of offices and the fireman's apartments were painted and the walls and ceilings papered.

The sidewalks and fences were repaired and in part renewed and the fence painted.

Work inspected by Ph. Béland, clerk of works, Quebec.

EXAMINING WAREHOUSE.

The walls, ceilings and woodwork, including the floors of the offices and boiler house were painted as well as the outside woodwork and fence.

Work superintended by Ph. Béland, clerk of works, Quebec.

MARINE AND IMMIGRATION AGENCY BUILDING.

The stone building used as the residence of the wharfinger was overhauled, an extra story was added, the building was divided by partitions, plastered, floored, fitted with doors, windows, stairs, water service, plumbing, &c., and painted, papered and otherwise made suitable for a residence. A wooden one-story kitchen 35′ x 13′ with chimney, double windows and door, &c., was built as an adjunct to the foregoing.

A wooden store shed was erected for the telegraph service.

Work superintended by Ph. Beland, clerk of works, Quebec.

OBSERVATORY.

The carriage road was macadamized; the interior and exterior woodwork was painted and the interior walls and ceilings papered. The boundary fences, the window sashes of the building and the woodwork and heating apparatus were repaired.

Work superintended by Ph. Béland, clerk of works, Quebec, P.Q.

POST OFFICE.

The stonework of the outside was repaired and pointed in cement; the stone footpaths were overhauled and put in thorough repair; additions, alterations and repairs were made to the electric light wiring.

The observatory gallery was extended, new storm sashes were supplied for the first floor, caretaker's rooms; the offices throughout were papered and painted; repairs were made to plumbing, water supply, galvanized work, woodwork and glazing, and some window gratings and a coil screen supplied.

Work superintended by Ph. Béland, clerk of works, Quebec, P.Q.

IMMIGRATION BUILDING, LOUISE EMBANKMENT.

A new steam pump was put in, the water service pipes and pump house were repaired; the pump house and fence were painted and repairs were made to glazing, plumbing, roof covering and woodwork generally.

Work superintended by Ph. Béland, clerk of works, Quebec, P.Q.

SHERBROOKE.

PUBLIC BUILDING.

Four rooms were papered and painted and a hall painted, repairs and renewals were made to fall pipes and the flagstaff repaired.

ST. HYACINTHE.

PUBLIC BUILDING.

The stone steps of Customs entrance were reset, a new fire-escape ladder was put up to attic, the post office fittings were renovated and general repairs to building effected.

ST. HENRI.

POST OFFICE.

The iron grilles of basement windows were repaired.

SOREL.

PUBLIC BUILDING.

A portion of the grounds was sodded.

THREE RIVERS.

POST OFFICE.

The gutter and fall pipes were repaired and in part renewed and some hose was supplied under the supervision of F. X. T. Berlinguet, resident engineer, Three Rivers.

PROVINCE OF ONTARIO.

AMHERSTBURG.

PUBLIC BUILDING.

A silex sidewalk was laid along street and to the entrances of building and some sodding done.

ARNPRIOR.

PUBLIC BUILDING.

Building completed ready for occupation.
Plans, &c., prepared by this department.
Contractors for construction of building, Fortin & Fortin, Pembroke, Ont.
Contractor for fittings, J. Wolfe, Arnprior, Ont.
Contractors for heating apparatus, P. Leclerc & Sons, Montreal, P.Q.

BELLEVILLE.

PUBLIC BUILDING.

A new letter-box screen with new brass fronts was put in to replace the original screen, alterations of the letter boxes, drawers and gas fittings were made, new letter and newspaper drop and new platforms with steps for mail, and some additional plumbing and furniture and carpets were provided.

BERLIN.

PUBLIC BUILDING.

Repairs were made to the locks, bolts, &c.

BROCKVILLE.

PUBLIC BUILDING.

The original hot water furnace was removed and replaced by two cast iron furnaces and some changes were made in the mains in basement.

Work superintended by John Cowan, of the departmental staff, Ottawa.

CHATHAM.

PUBLIC BUILDING.

The eaves were fitted with copper rain water troughs.

GALT.

PUBLIC BUILDING.

The waste and drain pipes and traps of the plumbing work were renewed and the traps vented. The 4-in. waste was taken up through the roof and out to street drain. A water-closet was put in attic for the use of the caretaker. Some linoleum was supplied to the Customs.

GODERICH.

POST OFFICE.

The postal bag rack was enlarged and some minor repairs made to building.

CAYUGA.

POST OFFICE.

A silicobarytic cement footpath was laid along the street line.

HAMILTON.

PUBLIC BUILDING.

A new desk for public was erected in lobby. Minor alterations of partitions and fittings of post office were made and repairs made to heating apparatus, roof, eaves troughs, electric bells, windows, blinds, skylight, &c., and some linoleum and a new stove supplied.

INGERSOLL, ONT.

PUBLIC BUILDING.

A contract for the construction of this building, which was described in my report 1897-8, was entered into September 19, 1898, and the works are now in progress. Plans for hot water heating apparatus and for office fittings are being prepared.

Plans, &c., prepared by this department.

Clerk of works, Wm. Waterworth.

Contractors for construction of the building, McCarroll & McKnight.

KINGSTON.

CUSTOM HOUSE.

Repairs were made to the plumbing, gas service, water service, plumbing, glazing, under the supervision of Arthur Ellis, architect, Kingston, Ont.

POST OFFICE.

Some grading with coal ashes was done in yard. A new letter box front with 120 brass box fronts was put in and repairs made to plumbing, water service, gas service, bells, glazing, woodwork, &c.

Work done under the supervision of Arthur Ellis, architect, Kingston, Ont.

DRILL HALL.

On December 3, 1898, a contract was entered into for the construction of this building on a site on Montreal Street, acquired by the Department of Militia and Defence.

The ground plan of the building measures 238 feet by 111 feet, exclusive of projection. There is to be a drill hall 175 feet by 80 feet, 26 feet 9 inches from floor to eaves and 50 feet from floor to ridge of roof, having at one end a one-story gun shed 80 feet by 32 feet, and along the entire front a two-story building 25 feet in breadth divided into armouries, harness rooms, band rooms, sergeant's mess, lecture rooms, caretaker's rooms, officers' rooms, &c. In the middle of the front is to be the principal entrance hall and stairway, 53 feet in breadth and having a projection beyond the main wall 16 feet flanked by octagonal turrets. This entrance portion is to be three stories in addition to basement, and the basement of this portion and of two bays flanking same, 10 feet by 24 feet each, will be the only excavated portion of the basement.

The walls are to be stone, the partitions brick, the roof trusses iron, the roof covering and floors wood excepting the floors of drill shed and gun shed which are to be wood blocks laid on concrete.

Plans, &c., prepared and work superintended by this department.

Resident architect, Arthur Ellis, Kingston, Ont.

Contractors, Sullivan & Langdon.

NIAGARA FALLS.

POST OFFICE.

The sewer was cleaned, overhauled and repaired, the plumbing was overhauled and in part renewed and some repairs made to roof.

LONDON.

CUSTOM HOUSE.

A new porch, platform and steps were substituted for others taken down, three new window grates were supplied and a number reset. Repairs were made to woodwork, fittings, &c.

Work superintended by H. C. McBride, architect, London, Ont.

POST OFFICE.

Alterations of, repairs and the supply of fittings and furniture to the office of the Post Office Inspector were done, and a large amount of general repairs and renewals made to the woodwork, glazing and painting. Three additional electric lamps and two additional electric bells were installed. A portion of the plumbing which was unserviceable was removed and new lavatory and closet basins, new soil waste vent and supply pipes substituted. Repairs were made to the retained portion of the original plumbing.

LINDSAY.

PUBLIC BUILDING.

The brickwork was painted.

OTTAWA.

CENTRAL EXPERIMENTAL FARM.

The laboratory building refered to in my report of last year was completed and a heating apparatus is being installed by the departmental staff of workmen. Repairs were made to the gas generator, fencing, &c.

EASTERN BLOCK—DEPARTMENTAL BUILDING.

The following lamps were added by the departmental staff:—eighteen lamps in Privy Council Chambers, four in Secretary of State Department, eight in Department of Indian Affairs, fourteen in Department of Justice, eight in Department of Finance, and ten in the Auditor's Department. Messrs. Ahearn & Soper wired 643 lamps and three 3-lamp electroliers. A wash basin was put in for Justice Department and one for Secretary of State Department. Some gas fitting was done for the Justice Department and some steam heating for the Privy Council.

Mechanical engineer of this department, Wm. King.

Clerk of works of this department, F. Breton.

GOVERNMENT HOUSE.

Plans are prepared for the construction of a two story and basement adjunct at the south east end of the Hall. This will necessitate the demolition of the greenhouse and the erection of another building elsewhere in the grounds to replace it. The adjunct will consist of a main portion fifty-two feet nine inches by thirty-five feet six inches to contain six bedrooms on each floor connected with the main building by a block twenty feet broad by ten feet long to contain the stairs, bath rooms and lavatories. The one story studio and passage next the adjunct is to have an additional story.

At the Hall the cloak room had the ceiling sheeted with wood and a glazed partition with double doors put in. The lamp room was shelved on both sides. Cupboards in His Excellency's office, the secretary's office, the entrance hall and the school-room were altered and repaired. Ten new baize covered doors were made and hung. The stage in the ball room was lowered and otherwise altered. New coils were put in entrance hall; the hot water back and cistern were repaired and the flues and fire boxes of range were rebuilt and repaired. A two flue chimney was built in cloak room. The sinks of scullery and of housemaids pantry were repaired. Some new gas fitting was done, the lamps of the theatrical stage were altered; all the lamps in the Hall were altered from a horizontal to a perpendicular position; some new pendants and brackets were supplied and some repairs made to wiring. The plastering of kitchen, basement rooms and basement passages was repaired. In a number of the rooms the walls and ceilings were kalsomined, the floors were stained and varnished and the woodwork painted. A number of the rooms had the walls painted. Six tables, sixteen chairs, three sofas, 3 cupboards and a wardrobe were provided. New carpets were laid in the corridors and stairs and in His Excellency's office and some linoleum in the domestic wing. New curtains were supplied to the drawing rooms, dining room and boudoir. A large quantity of crockery and china and some napery were provided.

At the cottage the verandah, balcony and steps were repaired and in part renewed; a new plate warmer was put in kitchen, the walls and ceilings were kalsomined, the floors stained and varnished and the wood-work painted, the range re-lined with fire-brick, a new brick hearth laid, a connection made between meter and stove, a new waste from bath put in and some carpet and furniture supplied.

At the laundry the washroom was refitted with five earthenware washtubs, two rinsing tubs and a new boiler, including all incidental works; the drying room was fitted up with poles, ropes, pulleys, &c., the ceiling of the mangle room was sheeted in wood; four bedrooms were re-floored; two clothes reels and platforms were renewed; some new ironing tables were supplied; the walls and ceilings were distempered or papered, the floors stained and varnished, other woodwork painted and some laundering utensils supplied.

At the greenhouses the plant tables were largely renewed.

The stables, cowsheds and coachhouse were shingled.

Some unserviceable sidewalk was taken up and replaced by new and a large quantity of fencing similarly treated.

The boat-house at the bay was repaired and re-fitted; the toboggan slide was overhauled and in part renewed and a large amount of minor repairs made throughout the several buildings and grounds.

The grounds, gardens, lawns and plant houses were maintained efficiently by the contractors.

The usual periodical cleaning and the packing and unpacking were done; arrangements for and attendance on entertainments were furnished and the rinks, slides, &c., &c., kept in order.

Work carried out and maintained under the supervision of this department by the departmental staff.

Clerk of works, Wm. M. Hutchison.

Contractors for the maintenance of the grounds, lawns and conservatories, Sorley & Sims, Ottawa.

Contractor for the removal of snow, Thos. Whelan, Ottawa.

GOVERNMENT PRINTING BUREAU.

A bicycle shed ninety feet by ten feet was constructed, as also a porch on the east of the building. The bindery, job printing rooms, W.C.'s. and two offices were cleaned and painted.

Repairs were made to the boilers, drains and furniture.

The steam heating pipes and coils of this building were almost entirely renewed. A wash basin and an Auer light were put in for superintendent.

Work done by the departmental staff.
Mechanical engineer of this department, Wm. King.
Clerk of works, F. Breton.

LANGEVIN BLOCK.

In order to render the attic more fireproof the exposed iron framing of the roof was protected by asbestus and magnesia laid on metallic lathing, also by terra cotta and cement.

New fireproof doors and frames were put in and a large quantity of steel shelving, drawers and files for documents were provided. Some of the offices were divided by brick partitions, a large number of the rooms of the Agriculture and Interior departments were cleaned and tinted.

A fire escape ladder was put in to accommodate clerks in eastern end of attic.

Additions were made to heating and plumbing.

Plans are prepared and a contract entered into for a steel vault on ground floor to contain postage stamps.

A large quantity of fittings and furniture was supplied.

Repairs were made to brickwork of furnaces, glazing generally, furniture, fittings, &c. The fittings, furniture, &c., of the Mounted Police Department were moved from the attic of this block to that of the western block.

The new portion of the cockloft of the middle pavillion was divided off for use as a photograph gallery by the Agriculture Department and a spiral stairway built from the attic thereto. It was supplied with rotary pump, washing tanks, electric motor, heating, water supply, electric lamps, &c.

The following electric lamps were put in by the departmental staff: six lamps and shades in the Interior Department, 15 lamps and 81 shades in the Post Office Department and 16 lamps in the Department of Agriculture. 719 electric lamps were installed by Ahearn & Soper.

Electric bells were put in between patent examiners' three rooms, and messengers room, and between quarantine director and messengers. New wash basins were put up and connected in office of private secretary to Minister of Agriculture, and in office of Dairy Commissioner.

Mechanical engineer of the department, Wm. King.
Clerk of works of the department, F. Breton.

MAJOR'S HILL PARK.

Repairs were made to the greenhouse; the roadways and footpaths were put in order, and the grounds were maintained efficently by the contractor.

Contractor for maintenance of grounds, Thos. E. Davis.

CITY POST OFFICE.

One hundred and thirty-seven electric lamps were installed by Ahearn & Soper.

PARLIAMENT BUILDING.

All the woodwork of the Senate reading-room was painted, the dining-room of the Speaker of Commons was cleaned, papered and painted, as also were the switch-room the distribution office, the rooms of the Commons and Senate, messengers, and rooms 7 8, 10, 11 and 14. The House of Commons furniture was cleaned and shellacked, severa floors were painted. The glazing of the Commons ceiling was replaced by luxfer prisms Furniture and fittings were supplied to the press rooms, the parliamentary library and

a number of offices; carpets were taken up, beaten and put down, double windows and summer blinds were taken off and put on, the attic was cleaned throughout and a large amount of general petty repairs were done to stone, wood, plaster, paint and glass throughout.

A new wash basin and a water closet was put in the apartment of the Speaker of the Commons, a new wash-basin in room No. 6; lead lined ice boxes were placed; two in the restaurant of the Commons, and one in that of the Senate, and a copper sink in Commons kitchen. Three gas meters and special gas mains to conduct gas for heating to various parts of the building were put in. Extra heating surface was put in Commons reporters porch and alteration of heating surface was made in room No. 11, and office of Commons' messengers. A set of gas logs with brass dogs was supplied to Senate. Some of the heating pipes in the sergeant at arms quarters were encased in asbestus covering. Electric bell connections were made between deputy Speaker's room and Commons.

The following electric lamps were installed by the departmental staff:—A 10-lamp pendant in room No. 6, a drop in the railway committee rooms, a desk lamp Sir Charles Tupper's room, two lamps in Commons Speaker's conservatory, three lamps in room 27, two drops in Commons smoking room, four 4-lamp clusters in restaurant hall, one drop at kitchen door, two 4-lamp clusters and a combination stand and bracket in the *Hansard* office.

The following were installed by Ahearn & Soper:—765 16 candle-power lamps installed throughout the building, a new switch in distributing room, 960 10-candle power lamps over the glass ceiling of the Commons chamber, and a switch board to control these.

Mechanical engineer, Wm. King.

Clerk of works, F. Breton.

PARLIAMENT GROUNDS.

The greenhouse described in my report of last year was completed and is fitted up with tables and a hot water heating apparatus utilizing the old furnace supplemented by one new furnace.

The snow was removed by the departmental staff of workmen. Contractor for the maintenance of the ground, J. N. Grieves, Ottawa.

REPAIRING STREETS, ETC.

A trench was excavated and an earthenware drain laid on the west side of the canal from the Dufferin Bridge to the Ottawa River. New stone crossings were made on Wellington Street at O'Connor Street corner and one on St. Patrick Street at corner of McKenzie Avenue. A new wooden sidewalk was laid on Canal Street west from Maria Street to the corner of the Collegiate Institute property. All the sidewalk about the Printing Bureau was repaired.

Wellington Street from Elgin Street to Dufferin Bridge was thoroughly repaired. Scraping, cleaning and minor repairs were done to the various roadways and streets under the control of the department. Rubbish and scrapings were removed from the east block, west block, the workshops, printing bureau, the museums and the various streets and deposited at Nepean Point; the grass at Geological Museum and Cartier Square was kept clipped and the ashes removed from the boiler houses; the roadways, sidewalks, footpaths, roofs and yards were kept clear of snow during the winter.

Work done by the departmental staff.

C. Leblanc, foreman.

WESTERN BLOCK—DEPARTMENTAL BUILDINGS.

The work of rebuilding attic is complete, and the rooms are ready for occupation. The steam heating apparatus of the building is being extended to heat the several offices.

Twelve rooms were cleaned, tinted and painted, furniture and fittings and carpets were supplied, the chimneys were cleaned, the summer blinds, porches and winter sash were taken off and put on, and general repairs were made to masonry, woodwork, plumbing, roofing, glazing, painting, plastering, &c.

The Customs laboratory was fitted up with plumbing, gas fitting and fume flues. New heating mains were run from the boiler house to the restored attic, and new radiators with valves, &c., connected therewith. Extra heating surface was put in two basement rooms and a radiator in the Militia Department ground floor. The water supply mains were extended to the restored attic and wash basins with taps, &c., provided in all the rooms. A 6-inch main was laid around the basement corridor connected to the electric pump discharge, and to this 8 3-inch vertical hydrant pipes rising to attic with hydrants and hose on each floor.

The following lamps were installed during the fiscal year by the departmental workmen: In Customs Department, twenty-seven drops and ninety-six shades were placed; in Public Works Department, four drops and three portable lamps; in the Department of Militia and Defence, five standard lamps and a portable lamp; in the Inland Revenue Department eleven drops and four other lamps, all with shades; in the Department of Railways and Canals, eleven drops and nineteen shades; in Trade and Commerce, two standard lamps; and in the Marine and Fisheries Department, nine drops.

Electric bells were put in room No 185, and the bells of the Militia Department were rearranged.

Nine hundred and eleven lamps were wired by Messrs. Ahearn & Soper.

Mechanical engineer of this department—Wm. King.

Clerk of works do F. Breton.

SUPREME AND EXCHEQUER COURT BUILDING.

Electric bell connections were provided for the clerk of the Supreme Court.

The following electric lamp installations were carried out by the departmental staff:—

One lamp in Chief Justice secretary's room, fourteen in library, and six generally. Ahearn & Soper installed 152 lamps. Boxes, step-ladders, chairs, cushions, window blinds, and one desk were supplied, and some cleaning and painting done.

Mechanical engineer, Wm. King.

Clerk of works, F. Breton.

OTTAWA BUILDINGS AND GROUNDS, GENERALLY.

In addition to the works mentioned in connection with the various buildings, the property of the government, there are similar works of repair, painting, furnishing, tinting, &c., in connection with a number of rented buildings, as well as works of a general character, such as the erection and taking down of porches, the winter boarding of outside steps, the moving of furniture, the putting up and taking down of summer blinds and winter sashes, the beating of carpets, minor repairs to glazing, painting, woodwork, furniture, &c., the supplying of packing cases, the removal of the snow from the ground buildings, roads, footpaths, which work was done this year by the departmental staff.

PORT COLBORNE.

PUBLIC BUILDING.

The pavillion roof was removed and a mansard attic story for the use of the caretaker substituted. Stairs from the front hallway and a rear gallery and stairs were provided. New footpaths in yard were laid. Alterations of the post office fittings were made and the ground floor walls and ceilings tinted.

This work was done during the fiscal year 1897-98.

Plans, &c., prepared by this department.

Contractors, Macintosh & Griffiths.

PORT HOPE.

PUBLIC BUILDING.

The stone work was re pointed, and the brickwork painted throughout and some minor repairs made to woodwork.

PRESCOTT.

POST OFFICE.

Two new hot water furnaces 'Daisy' were put in to replace the original, some repairs made to heating apparatus under the supervision of John Cowan, of this deparment.

PORT ARTHUR.

IMMIGRATION BUILDING.

This building, the upper story of which was destroyed by fire last summer was rebuilt.

Work superintended by D. Smith, clerk or works, Winnipeg.

RAT PORTAGE.

PUBLIC BUILDING.

This building which was described in a previous report, is in progress and in a fair way to be completed and occupied at an early date. Plans and specifications for fittings and hot water heating are prepared.

Plans, &c., prepared by this department and work supervised by D. Smith, clerk of works, Winnipeg, Man.

Local clerk of works, F. A. Hudson.

Contractor, Wm. Grierson.

TORONTO.

CUSTOM HOUSE

The exterior of the building was painted and some general repairs made under the superintendence of S. G. Curry, architect, Toronto.

EXAMINING WAREHOUSE.

The exterior of the building was painted, the boiler room walls and ceiling were whitewashed, a crossing was laid on Esplanade Street and the granite paving of one of the driveways carried out to the street.

Work superintended by S. G. Curry, architect, Toronto.

INLAND REVENUE.

Some new radiators and a new smoke pipe were furnished for steam heating apparatus under the supervison of W. G. Smith, engineer.

POST OFFICE.

The building was rewired for electric lighting, the dead letter department was fitted up and some general repairs were made to the buildings and furniture.

Work supervised by S. G. Curry, architect, Toronto.

WALKERTON.

PUBLIC BUILDING.

The walls and ceilings were cleaned and kalsomined, water closets, lavatories and drainage were put in and some repairs to woodwork made.

WINDSOR.

PUBLIC BUILDING.

The customs offices were fitted up and furnished.

Plans and specifications are prepared for new sanitary plumbing, W. C's. and drainage, also a new floor in basement and the taking down and re-erecting of the boundary fence.

PROVINCE OF MANITOBA.

BRANDON.

PUBLIC BUILDING.

Some filling and levelling of yard was done, the cement floor of basement was re paired, the drains were cleared and some general repairs effected.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

BRANDON.

LAND OFFICE.

Two large filing cases were supplied for the use of the office.

EAST SELKIRK.

IMMIGRATION BUILDING.

The Canadian Pacific Railway roundhouse at East Selkirk, was altered and fitted up as an immigration building, for the temporary accommodation of the Doukhobors.

The roof covering and glazing had to be entirely renewed, the building to be divided by partitions, fitted up with sleeping bunks, bake ovens, stoves, &c. The dining room and kitchen are in the centre and the turn table pit is used as a cellar,

Two artesian wells and some detached closets are provided in yard.

The work was by day labour under the superintendence of D. Smith, clerk of works, Winnipeg, Man.

ELKHORN.

WASHAKADA INDIAN INDUSTRIAL SCHOOL.

A new outbuildlng to accommodate laundry, recreation hall, workshop, also horse stables and cow stables are being constructed by day labour from plans prepared by the clerk of works in accordance with the views of the officials of the Department of Indian Affairs. The outbuilding is of wood, brick-veneered, and the stables of wood all on stone foundations.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

WINNIPEG.

CUSTOM-HOUSE.

New plumbing was put in throughout; the whole of the external woodwork, including the roof, was painted and all the windows were repaired. The ground floor was re-arranged; all the south side partitions were removed and a new long-room extending the full depth of the building has been provided and furnished with new counters, fittings, &c. The original long-room is divided by plastered partitions into statistical room and inspectors office—some new fittings were provided for the collector's room. The plaster was repaired and kalsomined throughout and all the woodwork painted.

Works superintended by D. Smith, clerk of works, Winnipeg, Man.

CROWN TIMBER OFFICE.

The basement was floored in concrete, a new floor covering was put in ground floor, a new front door and a storm door were provided; the plastering was repaired, the interior was papered and painted throughout, the exterior woodwork was painted and the blinds repaired.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

EXAMINING WAREHOUSE.

Repairs were made to the heating apparatus chimneys, &c., under the supervision of D. Smith, clerk of works, Winnipeg, Man.

IMMIGRATION HALL.

The plaster was repaired, washed and kalsomined and the woodwork painted. New outside latrines were built, some partitions were erected, a new furnace was supplied and the hot air pipes repaired throughout and added to. Repairs were made to brickwork of furnace, steps, doors, &c.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

POST OFFICE.

The lane in rear was paved, the plastering was repaired throughout, the interior walls kalsomined and the interior woodwork painted. The general delivery and the money order office were altered and extensive changes and additions made in the screens, fittings, &c., in connection therewith. To accommodate the new dead letter office a portion of the upper floor was partitioned off with glass screens and a passage formed thereto, from space surrendered therefor by the Department of Indian Affairs. New wash basins and gas fittings were put in for the Savings Bank and Dead Letter office. Repairs were made to gas service, steam boiler, hot water service, electric bells, plumbing, brickwork, vault door, &c. New filing cases were supplied to the Indian Department and a filing cabinet and some office furniture to the Public Works office.

Works superintended by D. Smith, clerk of works, Winnipeg, Man.

NORTH-WEST TERRITORIES.

INDIAN HEAD, ASSA. EAST.

EXPERIMENTAL FARM.

A windmill pump was supplied and erected.

REGINA, ASSA., WEST.

REGISTRY OFFICE.

Some metal documents filed were provided.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

GOVERNMENT HOUSE.

A new windmill pump was put up, some new furniture supplied and repairs effected to plumbing and furniture.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

IMMIGRATION HALL.

Minor repairs were done to woodwork under the supervision of D. Smith, clerk of works, Winnipeg, Man.

POST OFFICE.

Minor repairs were effected under the supervision of D. Smith, clerk of works, Winnipeg, Man.

YORKTON, ASSA., EAST.

IMMIGRATION BUILDING.

This building was constructed after the plan of that at Dauphin, Manitoba, and is situated on lots 29, 30 and 31, Block 8, Fourth street, opposite the station of the Manitoba and North Eastern Railway.

Work superintended by D. Smith, clerk of works, Winnipeg, Man.

BRITISH COLUMBIA.

AGASSIZ.

EXPERIMENTAL FARM.

An addition to one of the sheds was constructed, and general repairs were made to buildings, fences, &c.

A water service was put in and a quantity of fencing done.

NANAIMO.

POST OFFICE.

All the inside walls and ceilings were cleaned, repaired and kalsomined and the inside and outside woodwork of the building and the outbuildings and also of the fence, was painted. The building was wired and the incandescent electric light installed.

Work superintended by Wm. Henderson, clerks of works, Victoria, B.C.

NEW WESTMINSTER.

POST OFFICE.

This building was destroyed by fire on Sept. 10, 1898, and a temporary building erected to accommodate the various officials. Plans are being prepared for a new building.

VANCOUVER.

The partitions, floors and roofs which had settled owing to shrinkage of timber were raised to their proper positions and made good. A new stairs from basement to ground floor and one from basement to outside were constructed. The entire fittings of the post office were rearranged and some furniture provided for letter carriers. A part of the yard was roofed over in wood, covered with galvanized iron. The plumbing on second floor was taken out and replaced by new. Repairs were made throughout the building and to parapet wall of examining warehouse.

Work superintended by Wm. Henderson, clerk of works, Victoria, B.C.

VICTORIA.

CUSTOM-HOUSE.

All the inside walls and ceilings were cleaned, repaired and kalsomined, and the inside woodwork painted. A covering of pitch and sand was given to deck roof. All the outside platforms, steps, approaches, &c., have been renewed and the plumbing repaired.

The ground floor, formerly occupied by the Customs Department, together with one room on first floor, were refitted and furnished for the Indian Department, the remaining rooms on first floor being occupied by the Marine and Fisheries Department, and the basement by the meteorological service, the port warden and the shipping master.

Work superintended by Wm. Henderson, clerk of works, Victoria, B.C.

NEW PUBLIC BUILDING.

The works treated of in my report of last year were completed and the building is furnished and occupied.

Work superintended by Wm. Henderson, clerk of works, Victoria, B.C.

OLD POST OFFICE.

The ground floor has been altered and converted into four stores with plate glass fronts. The large room on first floor previously occupied by the Dominion Savings Bank was fitted up and let for use as offices.

Work superintended by Wm. Henderson, clerk of works, Victoria, B.C.

MARINE HOSPITAL.

Repairs were made to the plumbing, superintended by Wm. Henderson, clerk of works, Victoria, B.C.

WILLIAM'S HEAD.

QUARANTINE STATION.

Three cottages for members of the official staff of the station were erected. A coal house, 50 ft. by 28 ft. of wood containing in one end a small workshop for the engineer of the steamer *Earl* was constructed on the small wharf. About 300 yards of picket and wire fence were put up.

Work superintended by Wm. Henderson, clerk of works, Victoria, B.C.

DOMINION BUILDINGS GENERALLY.

FUEL.

Tenders were invited by public advertisement for the supply of coal to 151 of the public buildings, and coal and wood were supplied to over 200 buildings in all.

LIGHTING.

The lighting of the various Dominion buildings is under the control of this branch of the department. Of these buildings eighty-one are lighted by gas, seventy-eight by incandescent electric light, two by natural gas, one by acetylene, and the remainder by coal oil. At several of the last mentioned, the entrance is illuminated by an arc light outside. Several buildings use both gas and incandescent light.

WATER.

The water supply for the various public buildings, excepting the penitentiaries and military buildings, is controlled by this branch of the department; 128 buildings at seventy-three localities have water service connected with water supply of the local waterworks companies, the remainder being in general supplied by wells, pumps and tanks.

ENGINEERS, FIREMEN, ETC.

The various engineers, firemen and caretakers of the buildings—263 in number, including employees at Parliament and Departmental Buildings at Ottawa, and the heating apparatus of the Dominion Public Buildings, with the exception of that of the various penitentiaries and some military buildings, are under the control of this branch of the department.

GENERALLY.

Repairs and alterations have been executed and sundry articles of furniture, &c., provided, and cleaning, painting and other improvements carried out in connection with a number of buildings, not herein reported.

D. EWART,
Chief Architect.

CHIEF ARCHITECT'S OFFICE,
OTTAWA, June 30, 1899.

PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS, INCLUSIVE OF GRAVING DOCKS AND DREDGING OPERATIONS. ALSO ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION

REPORT OF THE CHIEF ENGINEER.

DEPARTMENT OF PUBLIC WORKS OF CANADA,
CHIEF ENGINEER'S OFFICE,
OTTAWA, April 24, 1900.

J. R. ROY, Esq., Acting Secretary,
Department of Public Works.

SIR,—I have the honour to submit my report on the various works under my charge during the fiscal year ended June 30, 1899.

These works comprise the construction and repair of wharfs, piers, breakwaters, dams, weirs, bank and beach protection works; the improvement of harbours and rivers by dredging; the construction, maintenance and operation of Government dredging plant; the construction and maintenance of graving docks; the construction, maintenance and working of slides and booms; the construction and maintenance of interprovincial bridges and approaches thereto, and of bridges on highways of federal importance in the North-west Territories and the maintenance of military roads; also hydrographic and ordinary surveys and examinations, inclusive of precision levelling and geodetic measurements which are required for the preparation of plans, reports and estimates, the testing of cements, &c.

I have the honour to be, sir,

Your obedient servant,

EUGÈNE D. LAFLEUR,
Acting Chief Engineer.

HARBOUR AND RIVER WORKS FOR NAVIGATION PURPOSES.

The following is a list of places by Provinces and in alphabetical order, where works of construction, renewal and repair were carried on during the fiscal year 1898-9, on piers, wharfs, breakwaters, dams and other harbour and river improvements for navigation purposes, showing the nature of the work done and the preparations made for projected works:—

NOVA SCOTIA.

Places.	Counties.	Remarks.
Advocate Harbour	Cumberland	Construction of pile wharf.
Arisaig	Antigonish	Stone talus of seaward side of pier completed.
Barrington Passage	Shelburne	Repairs to wharf.
Beaver Harbour	Halifax	Beach protection.
Belliveau's Cove	Digby	Partial reconstruction of northern breakwater.
Big Bras d'Or	Victoria	Temporary repairs to wharf.
Canada Creek	King's	Extensive renewals and repairs to pier.
Cheticamp	Inverness	Materials procured for close piling with creosoted timber, outer face of head block of pier, and enlarging central block.
Clarke's Harbour	Shelburne	Removal of rocks.
Coffin's Island	Queen's	Repairs to and extension of beach protection works.
Cow Bay	Cape Breton	Repairs to outer face works of breakwater, &c.
Cribbin's Point	Antigonish	Repairs to pier. Clearing away gravel thrown on it by sea.
Digby	Digby	Repairs to outer corner of pier, &c.
East Bay (head of bay)	Cape Breton	General repairs to wharf.
East Bay (north side)	"	Renewal of parts of wharf covering.
East Ragged Island	Shelburne	Wharf solid ballasted cribwork.
Englishtown	Victoria	Examinations and plans made of different sites proposed for wharf.
Fox Island	Halifax	Materials procured for repairs to beach protection work.
Grand Etang	Inverness	Worm-eaten piles of bridge abutments replaced.
Hall's Harbour	King's	Extension of breakwater.
Hampton	Annapolis	Thorough repairs to breakwater.
Iona	Victoria	Materials procured for constructing a creosoted pile head over worm-eaten outer block.
Ingonish (North Bay)	"	Plans and specifications prepared for projected breakwater.
Irish Cove	Cape Breton	Close piling outer block partly renewed.
Johnston's Harbour	Richmond	Slight repairs to inner end of southern face of wharf.
Jordan River	Shelburne	Breakwater widened by means of trestle bents and repaired.
Judique	Inverness	Construction of new breakwater by contract.
L'Ardoise	Richmond	Construction of concrete wall around cribwork cove of breakwater and protection slopes of extra large stones.
Livingstone's Cove	Antigonish	Materials procured for projected breakwater.
Louis Head	Shelburne	Renewal and extension of beach protection cribwork.
Margaree	Inverness	Extension of pier and repairs.
Maitland	Hants	Extension of inclined slip of ferry wharf.
McNair's Cove	Antigonish	General repairs to breakwater, using timber, &c., procured in in 1897-8.
McNutt's Island	Shelburne	Beach protected with cribwork.
Merigomish	Pictou	Materials procured for projected pile extension of wharf, &c. Contract entered into for construction of block and span wharf.
Meteghan (Cove)	Digby	Part renewal of seaward face, outer end of breakwater.
Meteghan (River)	"	Extensive works of repair and renewal at shore end, south breakwater.
Monk's Head	Antigonish	Repairs to bridge over boat channel, extension of brush and stone work on each side of channel.
Morden (French Cross)	King's	Extensive repairs and renewals to breakwater, begun in 1897-8, completed.
North River, North Arm St. Ann's Harbour.	Victoria	Construction of pile wharf at Seymour Point.

NOVA SCOTIA—*Concluded.*

Places.	Counties.	Remarks.
North Wallace	Cumberland	Construction of pile ferry slip.
Ogilvie's	King's	Light repairs to breakwater.
Oyster Pond	Guysboro'	Construction of beach protection work and improvement of entrance to pond.
Petit Degrat	Richmond	Improvement of entrance to inlet.
Pictou Island	Pictou	Repairs to east and west wharfs.
Pictou Light Beach	"	Brush and stone beach protection work built at section of one groyne, nearly completed and materials procured for another.
Porter's Lake	Halifax	Outlet of lake re-opened.
Port Hood	Inverness	Repairs to pier.
Port Joli	Queen's	Connection of isolated blocks with shore and addition of head block.
Port Latour	Shelburne	Rock embankment breakwater being built from Swain's Point north-eastwardly.
Port Maitland	Yarmouth	Extensive repairs to western breakwater, begun in 1897-8, completed.
River Hebert	Cumberland	Construction of pile wharf.
Round Bay Beach	Shelburne	Beach protection with brush and poles.
Salmon River	Halifax	Construction of wharf of cribwork with approach of stonework.
Sanford (Cranberry Head).	Yarmouth	Partial reconstruction of shoreward portion of breakwater.
Swim's Point	Shelburne	Construction of a block and span wharf.
Tracadie	Antigonish	Materials procured for projected reconstruction of breakwater.
Trout Cove	Digby	Shore end of breakwater protected with cribwork and stone.
Upper Port Latour	Shelburne	Construction of a block and span wharf with stone approach.
Upper Woods Harbour	"	Construction of a causeway and wharf, both of crib and pilework.
West Arichat	Richmond	Repairs and renewals to wharf.
West Chezzetcook	Halifax	Works of repair and renewal to make good damage done to breakwater pier by seas and ice.
Western Head	Queen's	Works of reconstruction and repair on stone breakwater.
White Point	"	Breakwater of stone-filled cribwork almost entirely rebuilt, rocks removed and rocky ledge blasted.
Whycocomagh	Inverness	Reconstruction of outer portion of wharf, chiefly pilework.
Windsor	Hants	Construction of training weir of brush mattresses and cribwork.
Yarmouth	Yarmouth	Digging channel by hand in front of wharfs to render main channel accessible.
Yarmouth Bar (Stanwood Beach.	"	Closing breach in beach protection work.

PRINCE EDWARD ISLAND.

Belfast	Queen's	Closing opening in approach to pierhead and repairs.
Brae	Prince	Extension of breakwater commenced in 1897-8 completed.
Clifton	Queen's	Repairs to pier.
Georgetown	King's	Works of reconstruction and repair on Queen's Pier.
Graham's Pond (Gaspereaux).	"	Opening entrance channel to pond.
Hickey's Pier	Queen's	Reconstruction of superstructure of pier on seaward side and repairs.
Miminigash Harbour	Prince	Addition to northern breakwater and general repairs to harbour works.
Mink River Pier	King's	Repairs to pier.
New London	Queen's	Repairs to eastern breakwater pier.
North Rustico (Robinson's Island).	"	Construction of brush hurdles to prevent opening of new channel.
Souris	King's	Part of breakwater pier raised and protected by stone slope.
St. Mary's Bay	"	Repairs to pier.
St. Peter's Harbour	"	Repairs to breakwater.

PRINCE EDWARD ISLAND—*Concluded.*

Places.	Counties.	Remarks.
Tignish	Prince	Harbour accommodation increased by extending breakwaters, &c.
Vernon River	Queen's	General repairs to pier.
West Point	Prince	Part reconstruction and extension of wharf.

NEW BRUNSWICK.

Anderson's Hollow	Albert	Repairs to break.
Black River	St. John	Repairs to top of wharf and renewal of fenders.
Buctouche	Kent	Materials procured for reconstruction of part of wharf.
Campbellton	Restigouche	Materials procured for levelling top and close-piling face of ballast wharf.
Cape Tormentine	Westmoreland	Repairs to pierhead.
Caraquet	Gloucester	Repairs to top of wharf and renewal of fenders.
Clifton	"	Repairs to top and face of wharf.
Cocagne	Kent	Reconstruction of part of wharf.
Dalhousie	Restigouche	Materials procured for reconstruction of part of wharf
Fort Dufferin (St. John Harbour).	St. John	Construction of groynes.
Mispec	"	Renewal of face timbers.
Negro Point (St. John Harbour).	"	Protection of lighthouse.
Point du Chêne	Westmoreland	Bolting fenders.
Richibucto	Kent	Reconstruction and repairs to north pier.
River St. John and Tributaries—		
Tidal Navigation	Queen's (Sunbury)	Assistance given towards construction of wharfs.
Tobique	Victoria	Excavation of channel for tow boats and completion of dam.
Shippegan Gully	Gloucester	Continuation of general repairs. Completion to protection to west beach.
Two Rivers	Albert	Completion of new wharf; removal of boulders from channel.

QUEBEC.

Anse à Beaufils	Gaspé	Improvemant of entrance to harbour.
Anse aux Gascons	Bonaventure	Breakwater completed.
Anse St. Jean	Chicoutimi and Saguenay	Pier repairs.
Baie St. Paul	Charlevoix	Extension of wharf and repairs.
Beauport	Quebec	Improvements to wharf.
Belœil	Verchères	Guard wall.
Berthier (en bas)	Montmagny	Wharf repairs.
Bic	Rimouski	"
Cacouna	Temiscouata	Extension of wharf.
Cap à l'Aigle	Charlevoix	Repairs to planking of wharf.
Cap Santé	Portneuf	Removal of boulders opposite wharf.
Carleton	Bonaventure	Repairs to planking.
Cedars	Soulanges	Repairs to wharf, &c.
Chicoutimi	Chicoutimi and Saguenay	Freight shed built on pier, &c.
Etang du Nord	Gaspé	Repairs to breakwater.
Grandes Bergeronnes	Chicoutimi and Saguenay	Removal of boulders.
Grand Pabos	Gaspé	Improvement of channel.
Grande Rivière	"	Wharf repairs.
Iberville	St. Jean and Iberville	Construction of new wharf.
Isle aux Coudres	Charlevoix	Wharf repairs.
Isle Perrot	Vaudreuil	Addition built to wharf.
Kamouraska	Kamouraska	Wharf extended and repaired.
Lake St. John	Chicoutimi	Construction and improvements of piers.
Lanoraie	Berthier	Repairs to the wharf.
Laprairie	Laprairie	Repairs to ice piers.
Lauzon	Lévis	Repairs to pontoon and construction of shed.
Les Eboulements	Charlevoix	General repairs to wharf.
L'Islet	L'Islet	New wharf built.

QUEBEC—*Concluded.*

Places.	Counties.	Remarks.
Longueuil	Chambly	Extensive repairs to wharf.
Lotbinière	Lotbinière	Replacing trestle works.
New Carlisle	Bonaventure	Repairs to buildings on the wharf.
Newport	Gaspé	Repairs to retaining wall.
Pointe à Pizeau	Quebec	Reconstruction of wharf.
Pointe à Valois	Vaudreuil	Repairs to wharf.
Pointe Claire	Jacques Cartier	"
Port au Saumon	Charlevoix	Improvement of harbour.
Port Daniel	Bonaventure	Filling under foundation of wharf.
Port Lewis	Huntingdon	Repairs to wharf.
Quebec (Queen's wharf)		"
Rivière Beauport	Quebec	Extension of wharf and repairs.
Rivière Cap de Chatte	Gaspé	Construction of a training pier.
Rivière du Loup (en bas)	Temiscouata	Wharf repairs.
Rivière du Sud	Montmagny	Extension of protection wall.
Rivière Richelieu	Chambly	Repairs to ice breakers.
Rivière Touladie	Temiscouata	Examination of waterway.
St. Agathe des Monts	Terrebonne	Removal of boulders.
St. Alexis, Baie des Ha Ha	Chicoutimi and Saguenay	Construction of isolated block.
St. Alphonse (Bagotville)	" "	Repairs to the pier.
St. Anicet	Huntingdon	Addition of wing to wharf and repairs.
Ste. Anne de Sorel	Richelieu	Construction of ice piers for the protection of property and for landing purposes.
Ste. Anne du Saguenay	Chicoutimi and Saguenay	Construction of new wharf continued.
St. Fulgence	" "	Repairs to the pier.
Ste. Geneviève	Jacques Cartier	Repairs to wharf.
St. Irénée	Charlevoix	Extension of wharf to shore and repairs.
St. Jean des Chaillons	Lotbinière	Improvement of harbour.
St. Laurent Is. of Orleans	Montmorency	Repairs to wharf.
St. Michel	Bellechasse	"
St. Nicolas	Lévis	Construction of a public wharf.
St. Roch des Aulnaies	L'Islet	Construction of a new wharf.
Sillery Cove Wharf at Pointe à Pizeau	Quebec	Reconstruction of wharf.
Tadousac	Chicoutimi and Saguenay	Construction of dam for fish hatchery.

ONTARIO.

Bayfield	Huron	Repairs to wharf and dredging.
Big Bay	Grey	Repairs to wharf.
Bowmanville	Durham	Repairs to piers.
Burlington Channel	Wentworth	"
Cobourg	Northumberland	Slight repairs.
Collingwood	Simcoe	Harbour improvements.
Goderich	Huron	Reconstruction of breakwater and repairs to piers.
Hilton	Algoma	Repairs to wharf.
Kincardine	Huron	Repairs to piers.
L'Orignal	Prescott	Reconstruction of wharf.
Meaford	Grey	Pile work and dredging.
Newcastle	Durham	Repairs to piers.
North Bay	Nipissing	Pile wharf.
Oakville	Halton	Repairs to piers.
Owen Sound	Grey	Dredging.
Port Albert	Huron	Repairs to piers.
Port Arthur	Algoma	Repairs to breakwater.
Port Burwell	Elgin	Improvement of harbour.
Port Elgin	Bruce	Dredging.
Port Hope	Durham	Repairs to piers.
Port Stanley	Elgin	Harbour improvements and repairs to piers.
Richard's Landing	Algoma	Purchase of wharf.
Rondeau Harbour	Kent	Repairs to piers.
Saugeen River	Bruce	Improvement of river.
Thornbury	Grey	Repairs to pier.
Toronto Harbour		Improvement, eastern entrance.

BRITISH COLUMBIA.

Places.	Remarks.
Columbia River	Construction of dams.
Duncan River	Removal of obstructions.
Fraser River	Protection of banks and improvements.
Kootenay River	Construction of dams.
Skeena River	Improving channel.
Stikine River	"
William's Head, Quarantine Station	Construction of wharf and repairs.
Lewes River, Yukon District	Improvements of channel.

PROVINCE OF NOVA SCOTIA.

ADVOCATE HARBOUR.

Advocate is a prosperous and thrifty town of about 700 people, situated at and around the head of Advocate Bay or harbour in the south-west end of Cumberland county, between Cape Chignecto and Cape d'Or. It is 30 miles west of the town of Parrsboro, the nearest railway station.

The business of the place besides farming, of which there is a good deal, the land being fertile and well settled, is shipbuilding, and the export of large quantities of cordwood, deals and piles. The local merchants also import coal, hay and general merchandise. The business of the place is said to be increasing and the imports double what they were eight or ten years ago.

About twenty-four years ago a public wharf was built here by local subscription, aided by a small grant from the local government. This structure is poorly built of open round log cribwork, inadequately bolted and ballasted; and now much out of repair. It is 110 feet long 28 feet wide and has 11½ feet of water at the end at high water ordinary spring tide.

There is also a private wharf 50 feet long by 40 feet wide, similarly constructed, and in the same condition.

The harbour which has no other wharf accommodation, is a safe and commodious refuge at high water, being completely protected from seas from every quarter by the gravel bar across its mouth.

With a view of providing proper shipping facilities to the business people of the locality, who are very enterprising, Parliament at its session of 1898, made an appropriation of $2,000 to be applied towards the construction of a pile wharf on the north side of the channel which separates Spencer's Island from the mainland.

When completed, the projected wharf will be 350 feet long, 20 feet wide for the first 310 feet from the shore and 40 feet wide for the outer 40 feet; it will reach a depth of about 17 feet at ordinary high water spring tides.

The structure is being built, by days' labour, of trestle bents placed 10 feet apart and thoroughly braced, bolted and waled; close piles are to be driven across its outer end and for a length of 40 feet shoreward, so as to afford shelter to vessels and boats lying on the inside.

About two-thirds of the proposed wharf was completed in 1898–9 at a total expense of $1,781.98.

ARISAIG.

Arisaig, Antigonish county, is on the Northumberland Strait, 15 miles to the eastward of Merigomish, the nearest harbour.

The works at this place consists of a pier, built by the provincial government prior to confederation, which came under the charge of the federal government in 1870; and a breakwater constructed in 1896–8.

The breakwater is 300 feet in length and 20 feet wide on top, with an L at the outer end 40 feet in length. The depth of water at its outer end, at low water springs, is 5 feet.

The pier originally consisted of an approach 245 feet in length, and an outer portion 174 feet long varying from 40 to 44 feet in width. Repairs and improvements have been made from time to time, including the construction during 1889–91 of an extension 100 feet in length. In 1896–7–8, the outer end of the seaward face of the pier was strengthened and a block 24 x 24 feet on top was placed on the seaward side of the

outer end, to strengthen the face-work and to secure and retain a proposed extension of the stone talus, in which some 250 cubic yards of large stone were placed.

The total expenditure up to and including the fiscal year 1897-8 was $30,697.73. Of this $27,913.39 was expended in the construction and maintenance of the pier and breakwater, including a refund of $541.41 made in 1887 to the Nova Scotia government and $2,784.34 in dredging.

During the fiscal year 1898-9 the sum of $599.82 was expended in completing the stone talus on the seaward side of the pier by placing 482 cubic yards of large stone, and in renewing 58 superficial feet of 5 inch plank and three fenders.

The depth of water at the outer end of the pier, at low water springs, is 10 feet. Spring tides rise 5 feet.

BARRINGTON.

Barrington, Shelburne county, is distant 45 miles to the south-east of Yarmouth, and 30 miles south-west from the town of Shelburne, and is within 10 miles of Cape Sable, the most southerly point of Nova Scotia. The settlement is a straggling one and covers a distance of about 3 miles; the upper part being known as 'the Head,' and the lower the 'Passage.' It is a port of call for the line of steamers running between Halifax and Yarmouth, and is the terminus of the steam ferry to Cape Sable Island.

There being no wharfs in the district having a greater depth than 2 or 3 feet at their outer ends at low water, and the need of greater shipping facilities being much felt, the department began the construction of the present wharf in 1888-9, completing it in 1890-1, at a cost of $7,410.97.

This wharf extends over mud flats, bare at low water to Sherrow's Channel (so called), and is 944 feet long, 20 feet wide and has 12 feet of water at its outer end at low water ordinary spring tides. The seaward end for 138 feet is built of round log, stone filled cribwork, all the remaining portion of the work being of pile bents. There is a gradual rise in the floor from the shore to the end of 3½ feet where the top of the planking is 6 feet above high water ordinary spring tides. At the outer end there is an L 32 feet wide and with a face length of 72 feet on the channel, on which stands a freight shed 35 feet by 20 feet and a drop landing.

In the fiscal year 1892-3, the sum of $673.56 was expended in constructing a triangular piece of pile wharfing, to fill up the angle between the L and the main portion of the work; the object being to afford more accommodation for the landing of goods as well as for the movement of trucks and teams. The total cost of construction was thus increased to $8,084.53.

In 1888-9-90-2 a further sum of $8,105.38 was applied in dredging a basin at the wharf, improving the approach to the same in Sherrow's Channel by removing points and deepening the channel to 11 feet, also opening a literal passage from the main channel to Sargent's wharf.

During the fiscal year 1898-9 the sum of $398.79 was expended in repairing portions of the wharf. Thirty piles were replaced at the south-west corner of the wharf and new planks, stringers and guard rails put on where found absolutely necessary. The piles were driven 15 feet in the mud, secured to the old piles and to the new stringers with screw bolts besides being well braced, and walings were placed along the whole of them.

BEAVER HARBOUR.

Beaver Harbour, Halifax county, is 90 miles east of Halifax Harbour and 3 miles west of Salmon River, the nearest port of entry, telegraph and money order office.

During the fiscal year ended June 30, 1898, a sum of $15 has been applied in protecting the beach around the basin of this harbour, at the entrance to which there a light station.

BELLIVEAU'S COVE.

Belliveau's Cove is situated on the eastern shore of St. Mary's Bay, about 4 miles south-west of Weymouth. It has a population of from 200 to 300 people, and is one of the most important shipping and fishing ports on the coast of Digby county. The harbour, which is dry at low water, is formed by two piers or breakwaters, the northern built in 1825, and the southern in 1853, both at the joint expense of the inhabitants and the provincial government. They are built of round-log, stone-filled cribwork of the usual type, and they inclose an area of about 3 acres, over the greater part of which is a depth of 13 feet of water at high water ordinary spring tides.

In 1878 the department expended the sum of $3,000 in putting this structure in proper repair, and in the construction of an additional length to the northern pier. In 1892–3 a further sum of $500 was expended in repairs to the south breakwater, the work done consisting of the rebuilding of the top of the work for a length of 360 feet and to a depth of from 3 to 6 feet; the placing of four tiers of new timber on the inner and two and three tiers on the outer face, with new cross-ties every 10 feet. Also eighty-two fender piles were driven along the inner and sixteen along the outer face; eight mooring posts were placed, and the whole work filled up with ballast and levelled with earth and gravel.

The northern breakwater is 500 feet long, with an L on the outer end 70 feet long; it is from 20 to 35 feet wide on top, and 17 feet high along the outer face of the L, where at high water ordinary spring tides there is 13 feet of water. That portion of the work which has not been renewed within the past two years is now in the last stages of decay.

The southern breakwater is 350 feet long, with an L on the outer end 35 feet long; it is from 20 to 35 feet wide and 16 feet high along the outer face of the work, where, at high water ordinary springs tides, there is about 12 feet of water. Spring tides rise 22 feet, neaps 18 feet.

In 1895–6 the sum of $500.02 was expended in taking down and rebuilding the inner or south side of the shoreward end of the north pier for 150 feet in length, 10 to 14 feet in width and 12 feet in height, and a portion also on the north or outer side 40 feet long and 5 feet high.

In 1898–9 the sum of $1,999.93 was expended in rebuilding 280 feet in length of the middle portion of the northern breakwater from 8 to 14 feet in height, the new work adjoining that built in 1895–6.

The total expenditure incurred for works at Belliveau's Cove up to June 30, 1899, inclusive of $1,120.52 refunded to provincial government in 1887–8, amounts to $7,120.47.

BIG BRAS D'OR.

Big Bras d'Or, Victoria county, is on the south side of the channel of the same name, near the entrance into the Atlantic Ocean.

With a view of enabling the residents of this locality to avail themselves of the advantages to be derived from the steamers which ply between Sydney and the terminus of the Intercolonial Railway at Port Mulgrave on the Strait of Canso, a public wharf has been built in Livingston's Cove situated on the northern side of Boularderie Island four miles from its head and opposite Kelly's Cove on the north side of the Big Bras d'Or Passage, here a mile in width.

Boularderie Island lies as it were at the northern end of Bras d'Or Lake, Cape Breton, between it and the Atlantic, and the channel on its northern side is the only one now navigable by steamers and sailing craft; the channel on its southern side, which is narrow and of intricate navigation, being practically closed by a highway bridge.

The wharf at this place was completed in 1888–9. It is a block and span structure 150 feet in length, consisting of a shore block 40 feet in length by 20 feet, and an outer block or head 60 feet in length, along the channel face, by 20 feet.

The depth at the outer end at extreme low water is 11 feet. Spring tides rise 2 feet.

The sum of $3,299.98 was expended in construction. There was no further expenditure up to the end of the fiscal year 1897-8.

The sum of $20.43 was expended in September, 1898, in temporary repairs to the covering to render the wharf safe for traffic during the season.

CANADA CREEK.

Canada Creek, King's county, also called Black Rock, is a small fishing and farming settlement of some 150 people, situated on the south side of the Bay of Fundy, 60 miles east of Digby Gut, 8 miles west of Hall's Harbour, and nearly opposite Cape d'Or on the Cumberland coast. The harbour, which is dry at low water (Springs rising 39 feet, neaps 33 feet), is formed by two piers or breakwaters built, one on either side of the mouth of a small stream. The work on the eastern side, which is entirely detached from the shore, serves merely as a breakwater, and was built by the department in 1878-9 at a cost of $3,000. It is 150 feet long, 25 feet wide on top and from 12 to 15 feet high, built throughout in a substantial manner of square timber, close-faced cribwork, well ballasted, and floored with three-inch plank.

The work on the western side, originally 248 feet long, which serves both as breakwater and loading pier, was built many years ago at the joint expense of the inhabitants and the provincial government. It is constructed of round log cribwork and the seaward face is protected by a close sheathing of flatted spars. In 1874 it was extensively repaired by the department at a cost of $2,000. In 1884-5, the work being old and shaky, this breakwater pier was again repaired, and a new block 57 feet long by 10 feet wide, built on the seaward side of the shore end at a cost of $747.08.

In 1885-6 $100 was expended in general repairs, and in 1886-7 a further sum of $672.72. In the winter of 1889-90 the outer 100 feet in length was completely wrecked, and other minor damages caused by fierce gales. In 1891-2 the sum of $250 was spent in temporary repairs to save the work from further destruction. The shortening of the structure, from the demolition of its outer end, caused the gravel to wash around and fill up the berth for vessels in the bed of the stream on the eastern side, and in 1893-94 the department built a new block of cribwork 50 feet long, 14 feet wide on top and from 8 to 11 feet high between the outer end of the existing work and the remains of the old. This piece of work is built of round-log, open-face, stone-filled cribwork and cost $431.31.

In the year 1898-9 the sum of $1,506.79 was expended in extensive repairs and renewals. The work done consists in the rebuilding of the whole eastern face of the western breakwater, the new work being 235 feet long, from 10 to 14 feet wide and of an average height of 12 feet. In addition to this work the eastern breakwater was sheathed on the outer end, and 100 tons of new ballast placed in it. Several hundred tons of rock were also removed from the creek alongside the western breakwater, so that vessels could approach and lie at it more easily. Both these breakwaters are now in better condition than they have been for many years. The total expenditure incurred by the department on these works up to June 30, 1899, amounts to $9,257.90, of which $5,500 may be said to have been laid out for construction and $2,201.11 for repairs.

CHETICAMP.

Cheticamp Harbour, Inverness county, is on the west coast of Cape Breton Island 18 miles north of Margaree. It is a secure harbour, being sheltered from the west and south by Cheticamp Island and a connecting beach. The entrance is from the north through a dredged channel.

A wharf was built on the eastern side of the harbour in 1890. It consists of an approach 125 feet in length and 30 feet in width over a distance of 60 feet from its outer end, with side walls and centre filling of stone, and an extension 80 feet in length, in two blocks with openings of 17 feet 6 inches. The outer block is 60 feet in length along the channel face, and the depth is here 11 feet at low water spring tides, which rise 3½ feet.

During the year 1891-2, a small sum was expended in placing extra fenders around the faces of the outer block; in slight repairs to the retaining wall of the approach; and in placing nine fenders on each side of the approach in place of the original posts and braces.

Up to the end of the fiscal year 1897-8 the expenditure incurred for pier work amounted to $5,240.83, of which $5,190.75 was for construction, and a further sum of $43,985.59 had been applied in dredging an entrance channel to the harbour 80 feet wide to 14 feet depth at low water between the shingle spit at Cape Cross, on the north-east extremity of Cheticamp Island and Caveau Point.

The sum of $2,000 was appropriated for expenditure during the fiscal year 1898-9, in improving the grade of the approach and in reconstructing the extension, which, having been weakened by the ravages of the teredo, had set considerably. Of the amount thus appropriated, the sum of $1,639.80 was expended in procuring materials required, including creosoted timber to be used in constructing a pile head over the outer block, and native timber and stone for reconstructing and enlarging the central block.

CLARK'S HARBOUR.

Clark's Harbour, Shelburne county, is a prosperous and important village of about 1,200 people, situated on the south-west side of Cape Sable Island, the most southerly land of Nova Scotia, separated from the mainland of Shelburne county by Barrington Passage. It is the only village of any size and importance on the island and the seat of a large and rapidly growing fishing industry; the total value of the fish industry in 1895 being $234,045. Steamers of Yarmouth and Shelburne Steam Packet Co. call here. Depth available at low tide at wharfs, 7 feet. Spring tides rise 9 feet. Neaps, 6½ feet.

Pending the construction of the projected breakwater, 1,070 feet long, extending in a southerly direction from Daly's Point, the most northerly point of Clark's Harbour, the sum of $726 was applied in 1898-9 in removing large boulders to improve the berths at some of the most important wharfs, and the approaches to the same. For this purpose the working and dredging barge *Sid* was hired for thirteen days, some 300 tons of granite boulders were removed; they were mostly embedded for about three-fourths of their depth in sand and mud and many had to be blasted.

COFFIN'S ISLAND.

Coffin's Island, Queen's county, is situated on the north-east side of the mouth of Liverpool Bay, its nearest point being about three-quarters of a mile from the mainland.

This island, which is low and flat, is about one mile long, and has a width of from one-fifth to one-third of a mile. In the eastern side near the centre of the length of the island is a small lagoon or boat harbour, protected by a shingle beach, which forms a valuable haven of refuge as well as a convenient base of operations for a numerous fleet of fishing boats. On this shingle beach is a small fishing establishment consisting of two small wharfs and several fish houses and flake yards.

This beach in 1882-3 was protected by a rough stone and boulder breakwater at the north-west point, a work which cost $2,099.95. This work proving insufficient to afford the protection required, the department had constructed in 1883-4, at an expense of $2,890.19, a stone-filled cribwork 12 feet wide on top and 7 feet high along the front and top of the beach for a length of 300 feet.

In 1884-5 the sum of $994.70 was expended in extending this cribwork a length of 200 feet. These last two works have served well the purpose for which they were undertaken, having formed a nucleus around which an accumulation of stone and gravel has taken place to the very top of the cribwork.

In 1898-9 the beach protection cribwork was thoroughly repaired and extended for a further distance of 120 feet at an expense of $939.62. The extension has a uniform width of 10 feet on top and an average height of from 6½ to 7 feet. The total expenditure incurred here for protection works up to June 30, 1899, was $6,924.46.

COW BAY.

Cow Bay, Cape Breton County, is on the eastern coast of Cape Breton Island, about eighteen miles eastward of Sydney harbour. Extensive coal mines in the vicinity make it a place of considerable importance.

The bay is 2½ miles wide at the mouth, and being open to the Atlantic from the east, affords no safe anchorage during gales from that quarter.

Prior to 1867, with some aid from the government of Nova Scotia, a breakwater was built on the north side of the bay by Messrs. Archibald & Co., proprietors of the Gowrie mines.

The breakwater is 1,386 feet in length and was originally about 44 feet in width and had a depth, at the outer end, at low water, of 17 feet. The area of the basin inclosed between it and the loading pier of the Gowrie mine is about 17 acres, 10 acres of which had originally a depth of from 9 to 17 feet at low water. Spring tides rise 5 feet.

In 1873, while repairs undertaken by the department were in progress, the breakwater was seriously damaged by the great gale of August 24. After the gale, operations were resumed, the balance of the amount appropriated being largely supplemented by Messrs. Archibald & Co.

In 1874, Messrs. Archibald & Co's interest in the breakwater was acquired by the Dominion Government, and a contract entered into in May, 1876, for repairing and strengthening the structure, was completed in July, 1877.

Extensive repairs have been made nearly every year since 1877, and the work has been strengthened by the addition of counterforts, or outer face works, and by close piling.

The breakwater, prior to the gales of February 3 and 8, 1895, consisted of an inner work extending from within 220 feet of the shore end to the outer end, and of counterforts with connecting outer face works, from within 580 feet of the shore end to within 56 of the outer end. The outer and inner works were about 22 feet apart and were connected by tie walls. The spaces between them were filled with earth and stone ballast.

During the gales referred to, a breach was made through the breakwater near the outer end and 140 feet of the outer face work (including 70 feet recently reconstructed) destroyed, and the work opposite to it was carried away, down to below low water; about 25 feet of the outer work between the two outer counterforts was also destroyed; ballast was washed out in several places and some close piling was carried away.

During the year 1895–6, the sum of $3,999.87 was expended in urgent repairs and reconstruction; close piling and reballasting portions of the outer face works; placing concrete in face chambers; reballasting and removing the covering of the two outer counterforts; slight repairs to the inner counterforts; renewing the covering of the three tie walls between outer and inner face work; and in cutting away loose timbers at the ends of the outer and inner face work next the breach.

In October, 1896, the outer portion, which withstood the gales of February, 1895, was carried away, and the seaward face, from 1,128 feet from the inner end inwards, was badly damaged.

In 1897-8 the sum of $9,988.40 was expended in urgent works of repair and reconstruction. The outer ends of the central and inner works, at 1,128 feet from the innner end of the breakwater, were bulk-headed and filled with concrete and ballast, and the damaged counterforts and outer face works were repaired or reconstructed (face chambers filled with concrete to high water, and outer faces close-piled) with the exception of 135 feet of outer work adjoining the outer counterforts.

The expenditure up to the end of the fiscal year 1897-8 amounted to $206,246.37, including $25,000 paid for acquiring Archibald & Co.'s interest in the breakwater and $1,732.97 for dredging.

In 1898-9 the sum of $5,000 was expended in completing the urgent repairs to breakwater undertaken during the preceding year, and in replacing close piling and repairing covering. The repairs effected included reconstructing 90 feet of works

(between the two counterforts) 22 feet in width and 15 feet in average height, with concrete in face chambers and outer face close-piled, and repairing, reballasting and close-piling 45 feet of adjoining works.

CRIBBIN'S POINT.

Cribbin's Point, Antigonish County, is on the west side of St. George's Bay, 8 miles to the southward of Cape George and 5 miles to the eastward of the entrance to Antigonish Harbour.

The wharf at this place, completed in 1891-2, extends 300 feet in a southerly direction from the point, and has an approach 195 feet in length. The wharf is 20 feet in width on top for a distance of 120 feet from the inner end, and 30 feet for the remaining 180 feet; the inner 50 feet being of stone, the outer 250 feet of close-faced timber work fully ballasted. The depth at extreme low water, at the outer end of the wharf, originally 11 feet, is now about 9 feet. Spring tides rise 4 feet.

The face timbers having been weakened by the ravages of the teredo, the sum of $2,999.40 was expended during the fiscal years 1896-7 and 1897-8, in strengthening and protecting the work. A talus of quarried stone was placed on the seaward side over a distance of 180 feet from the outer end; some empty face chambers were reballasted; and 80 pieces of creosoted timber were procured for close piling the outer end, of which 63 pieces were placed and secured.

The total expenditure up to the end of the fiscal year 1897-8 was $11,856.08.

During the fiscal year 1898-9, the sum of $390.14 was expended in completing the close piling, in placing additional quarried stone on the seaward side, in reballasting the remaining empty face chambers, and in removing a quantity of gravel which had been carried by the sea over the covering at the inner end of the work.

DIGBY.

Digby, the capital of the County of Digby, with a population of about 1,500, is beautifully situated at the south-western end of the Annapolis Basin. It is an important station on the Dominion Atlantic Railway, 70 miles north from Yarmouth, 150 miles from Halifax, 20 miles from Annapolis, and it is also a port of call for the daily steamer of the Dominion Atlantic Railway plying between Digby and St. John. The harbour is open at all seasons, and well protected from nearly all quarters; storms, however, from the north and north-east, drive a heavy sea against the pier and if at such times, there be much drift ice in the basin, the structure is liable to suffer damage.

The first pier was built by the Government of Nova Scotia some years before Confederation, and was nearly destroyed by the gales which swept the Bay of Fundy in 1866-7. In 1869, to aid in rebuilding the work, the sum of $2,920 was granted by parliament and transferred to be expended by the Provincial Government. The pier, as then built, was of pile-bents 12 feet apart, for 560 feet, next was a block of cribwork 80 feet long, 45 feet wide, the southern half of which was sloped to form an inclined slope rendered necessary by the great rise and fall of the tide (27 feet at springs). This incline was finished by a block 170 feet long by 22 feet wide, the northern half of this portion of the pier being all pile-bents 8 feet apart. The outer end of the pier consisted of a block 56 feet long, 45 feet wide and about 40 feet high. The whole of the northern face was close-piled, the total length of the structure being 870 feet. In 1872 the sum of $1,650 was expended by the department in completing and repairing the pier.

In 1874 a number of piles and braces were renewed, the outer block newly fendered, and new joists and planking laid for the total length, at a cost of $2,500. During the gale of February 22, 1879, a schooner loaded with produce for the West Indies, parted her cable and was swept bodily through the pier, carrying away a length of 130 feet, which was rebuilt at a cost of $2,367.73. In 1881-2 the sum of $888.57 was expended in renewing a few piles and other timbers that had been eaten away by the limnoria, making a total expenditure up to June, 1882, of $10,326.30.

In December, 1885, the outer end of the pier was destroyed by a severe gale and in 1885–6 the sum of $1,945.62 was expended in repairs. In 1886-7 a further amount of $767.62 was also spent on the same repairs. In 1887-8 the sum of $7,467.68 was expended in the construction of a block 40 x 40 feet on the site of the displaced outer block, of an inclined landing 26 feet wide and 80 feet long between the new outer block and the undestroyed inner portion of the pier) together with a road-way on pile and frame bents connecting the old work with the new outer block. In January, 1888, operations were begun towards rebuilding the pier to its original length and the departmental report for the year 1888-9 shows an expenditure of $4,498.14. Up to June 30, 1889, the new work consisted of a block 45 x 45 feet to replace the former one. It is build of round timber with double sets of face logs, and is fully ballasted ; it is 45 feet high, and connected with the older portions of the pier by a crib-work inclined landing, over the top of which a deck wharf is carried on heavy frame bents. The inclined landing and its superstructure is 25 feet wide. The inshore or pile work section was strengthened and repaired in places, and parts of the worn and decayed plank covering were renewed. In 1889-90 the sum of $392 91 was expended in driving heavy piles along both the northern and southern sides of a centre block which was shifted and damaged by the storm of December, 1885, to prevent any further movement. In 1890-1 and again in 1891-2 small expenditures were made in general repairs.

In 1890 a contract was entered into for the construction of a landing pier to be built on a new site, viz., on the north side of the 'Racquet', about a mile to the northward of the present pier and the town of Digby. For this purpose a quantity of timber and iron had been procured by the contractor. Owing, however, to numerous delays, and the death of the contractor, the intention of building this new pier was abandoned, and it was decided instead to reconstruct and repair the present pier, utilizing as much as possible the timber and iron belonging to the estate of the deceased contractor. The works of reconstruction were carried out by day labour at a cost of $15,248.15 ; they consist of the following :—

1st. The renewal of the whole of the pile work section from the shore to the head of the inclined landing, a distance of 560 feet ; the inner 430 feet being 30 feet wide on top, and the outer 110 feet, 45 feet wide. The bents are spaced 10 feet apart ; the inner portion having six and the outer eight bearing piles in each bent. Fenders or guard piles are placed on both sides of the work at each bent, and sheet piling 6 inches thick driven over the whole length of the northern face, two sets of walings each 12 inches square being placed on the inner and outer faces of the same,

2. The removal of the cribwork block forming the head of the inclined landing down to the foundations and the construction of a new block 80 feet long and of an average width of 37 feet.

3. The sheet piling of the seaward face of the inclined landing from the end of the new block outwards for its entire length, and placing of new covering and floor stringers on the incline for a length of 78 feet.

4. The removal of the old warehouse and office and erection of a new building 72 feet long and 20 feet wide, with a covered driveway along the whole south side, 15 feet wide.

In April, 1894, a length of 330 feet of the close-piling along the north side of the pier was destroyed by a violent gale, together with the caps and walings for the same distance, and about ninety of the main outside bearing or fender piles. In order to save the rest of the structure from the scouring action of the under-tow set up by the sheet piling, the rest of it was immediately cut out, the sum of $141.69 being spent in effecting this work, and in saving the sheet-piling and other timber that had been knocked adrift, and piling it up on the inner wharf. Subsequently, in May and June, 1894, the sum of $1,410.03 was expended in making good the damage done by the April storm. The sheet-piling having proved a mistake, it was not replaced, but about ninety new heavy piles were driven and thoroughly braced and bolted.

In 1895–6 the sum of $4,341.99 was applied in filling with substantial, close-piled trestle work a space or recess on the north side of the pier near its outer end, 210 feet

long by an average width of 17 feet, and in raising from two to three feet and renewing the entire floor of the outer 225 feet in length of the work.

In 1896-7 the sum of $3,132.89 was applied to the reconstruction of the southern half of the shore end of the pier for a length of 450 feet, in substantial pile work; the new work was covered with 6 inch plank and securely capped, fendered and braced.

In the year 1898-9 the sum of $579.80 was expended in the renewal and repair of the outer south corner of the pier which was damaged by being struck by the Dominion Atlantic Railway steamship *Prince Rupert* during the south-east blow in April, 1899. In addition to this 40 feet in length of the inclined slope was replanked with 6-inch plank, and a couple of new fender piles were bolted in position.

The importance of this work may be judged from the fact that the collections for wharfage during the year 1898 (January to December, inclusive), amounted to $2,221.05. In the year 1899 they will probably exceed this considerably.

The total expenditure incurred by the department in connection with Digby Pier, up to June 30, 1899, amounts to $93,569.80, which may be subdivided as follows:—

Construction, including refund of $11,632 made to Provincial Government in 1887-8	$59,864 45
Repairs	29,513 33
Dredging	4,192 02
Total	$93,569 80

EAST BAY.

East Bay, Cape Breton County, is at the head of East Bay, an arm of the Great Bras d'Or Lake.

The original wharf at this place was built by the residents aided by the provincial government; it was a block and span structure 15 feet wide, with a T head (block and span) 70 feet in length and 18 feet wide. In 1882-3 a block 71 feet 6 inches by 22 feet was added at the outer end by the Federal Government. In 1888-9 and 1891-2 the blocks of the approach were reconstructed, and during the latter year the blocks of the original T head were removed and the face and ends of the block built in 1882-3 were close piled.

The depth along the outer face of the head, at ordinary lake level, is 11 feet.

The expenditure up to the end of the fiscal year 1897-8 amounted to $3,452.80, of which $399.58 was for repairs and the balance for construction.

During the fiscal year 1898-9, the sum of $254.24 was expended in repairs and renewals. The covering, guard-rails, floor stringers and upper longitidinal timbers of the head (71 feet 6 inches x 22 feet), and the covering and floor stringers of 35 feet of the approach were renewed; and the hand rail on each side of the approach was removed and replaced by a guard rail of 9 x 9 inches squared timber.

EAST BAY—NORTH SIDE.

In 1889-90 a site was selected and a wharf constructed in Cape Breton county, on the north side of the east bay of the Great Bras d'Or Lake, 5½ miles to the westward of the head of the bay. The distance to Sydney is 17½ miles and to the nearest station on the Intercolonial Railway 10½ miles.

The wharf consists of an approach of brush and stone 50 feet in length and 20 feet in width, and a block and span cribwork extension 172 feet 7 inches in length with an L at the outer end 20 x 20 feet. The depth at the outer end is 10 feet at low, or 11 feet 3 inches at high lake level.

The cost of construction in 1889-90 was $1,999.87; there was no further expenditure up to the end of the fiscal year 1897-8.

During the fiscal year 1898-9, the sum of $50 was expended in renewing the covering of the wharf in places so as to make it available for traffic.

EAST RAGGED ISLAND.

East Ragged Island, Shelburne county, is a scattered fishing settlement situated on the east side and near the end of East Ragged Harbour, about 3¾ miles north-east of Lockport by water and 7 miles from the same town by the public road around the head of the harbour. The population of the settlement is about 200 persons, engaged in fishing and farming, but within a circle with a radius of 2 miles there are about 400 people.

With a view of affording the residents much needed facilities for procuring coal and other bulky supplies and landing and shipping their fish, &c., the department entered into a contract with J. B. McManus, Esq., of Mamramcook, N.B., for the construction of a public wharf of solid cribwork 181 feet long, 20 feet wide with a stone bank approach 21 feet long and 25 feet wide on top—and an L 25 feet by 40 feet at the outer end.

Amount of contract, $2,280.

This wharf when completed will stand 4 feet over high water at ordinery spring tide and there will be a depth of 5½ feet along its head at low water ordinary spring tide, which is considered sufficient for all vessels that are expected to call at the place.

Owing to unavoidable delays, this wharf could not be completed at the date fixed in the contract.

Total expenditure incurred in 1898-9, $1,252.07.

FOX ISLAND.

Fox Island or Laurenceton, Halifax county, is situated on the Atlantic coast of Nova Scotia, about 15 miles east of the city of Halifax and about 800 feet from the mainland. It is a very small island, being only some 3 or 4 acres in extent, and no point on it is more than 6 feet above high water of ordinary spring tide. Without permanent inhabitants, it is during the summer months used as a fishing station, being then occupied by fishermen and their families. Until 1879 it was connected with the mainland by a shingle and gravel bar, which being bare at all times of tide, was used as a road for carts hauling supplies of stores and fresh water to the fish houses on the island. Besides serving as a road, the beach with the island, formed a harbour for fishing boats.

During the early part of 1880 the sea broke through the beach, and the inroads continued until 1885 till the beach ceased to afford adequate shelter or to serve as a means of communication between the mainland and the island. To restore its usefulness the department in 1886-7 built beach protection work extending the whole length of the beach, a distance of 935 feet. This work, which was built by contract at a cost of $3,333.69, consisted of round timber cribwork battering one in four on the sides, 13 feet wide on top, from 3 to 6 feet high, and with a stone slope of 2 to 1 on each side, extending up to 2 feet below the top of the work. The whole cribwork was filled with stone to the level of the top timbers.

In 1891 a sum of $50 was applied in making repairs, and in 1892–3 the work was extended a distance of 252 feet in order to protect the main body of the island, at a cost, by days' work, of $650.98. In 1893-4 the sum of $412.96 was expended in rebuilding 120 feet in length of the old protection work at its junction with the new, and re-enforcing the toe of rip-rap with some more stone. During the year 1898-9 the sum of $200 was expended in purchasing materials for the purpose of making some much needed repairs to the work.

Total expenditure incurred 1887 to 1889, $4,647.63, of which amount $250 was laid out for repairs and the balance, $4,397.63, for works of construction and improvement.

GRAND ETANG.

Grand Etang, Inverness county, is situated on the Gulf of St. Lawrence, about midway between the harbours of Margaree and Cheticamp.

In December, 1893, a contract was entered into for the construction of works designed to improve the entrance to a large pond, and thus make it available for the use and shelter of fishing boats and small vessels.

In 1893-4 and 1894-5 two piers, placed 87 feet apart were built, except at the entrance where the distance between them is narrowed to 44 feet. Each pier consists of brush and stone work 135 feet in length; brush and stone work, with outer slope of 3 to 1, 130 feet in length; open-faced cribwork 100 feet in length, and a close-faced cribwork head 30 by 50 feet, the substructure of which is of creosoted timber. About 200 feet of the brush and stone work on each side is founded on a bottom excavated to 1 foot above extreme low water, and the remainder of the pier work on the natural bottom.

In 1894-5-6 a channel was opened between the piers to $1\frac{1}{4}$ feet below extreme low water from end to end, which gives a depth of about $4\frac{1}{2}$ feet at ordinary high water. On account of the opening of a channel across a beach which separated the waters of the gulf from a large and deep fresh water pond inside, and the construction of channel protection works to enable fishing boats and small vessels to enter the pond, the highway which crossed the beach had to be diverted, and for this purpose, during 1895-6, a bridge was constructed across the pond about 500 feet above the former crossing.

The bridge is 563 feet in length, including the east and west approaches of brush and stone with cribwork abutments, respectively 74 and 51 feet in length, and 438 feet of pile work. It is provided with a hand rail on each side, an opening for boats, and a temporary draw.

The total expenditure incurred at Grand Etang up to June 30, 1898, is $27,560.25, of which $100 for repairs, the balance or $27,460.25 being for construction of piers and bridge with approaches and opening up of channel.

During the fiscal year 1898-9 the sum of $152.20 was expended in driving 25 piles, 24 to 28 feet in length, in place of piles in bridge approaches destroyed or badly damaged by the teredo. The remaining piles are more or less worm eaten, and to ensure the safety of the bridge, all will have to be replaced with creosoted timber.

HALL'S HARBOUR.

Hall's Harbour, King's county, is situated on the south side of the Bay of Fundy, about 65 miles north-east from Digby Gut and 12 miles south-west of Scott's Bay; it is about 12 miles north-west from Kentville and county town of King's and the headquarters of the Dominion Atlantic Railway. The village has a population of some twenty families, and some years ago had a considerable shipping trade, which, however, of late years has dwindled to insignificant proportions. About the year 1839 the inhabitants, aided by the provincial government, built timber retaining walls on both sides of the harbour, which consists of a land locked basin, dry at low water of about an acre in extent, to permit vessels to lie alongside the public road. About 1844 an addition seawards to the wall on the west side was built in order to check the accumulation of gravel at the mouth of the harbour, and to serve as a breakwater. About 1885 an addition of 100 feet in length was built to this breakwater at a cost of $2,000. In 1884 it was repaired by the department at a cost of $750 and on November 6, 1884, the outer block was destroyed by a violent gale, the accompanying heavy seas having also the effect of depositing a bank of gravel which almost entirely obstructed the mouth of the harbour.

Between 1884 and 1891 the only expenditure made upon the work was a sum of $49.97 applied in sheathing the exposed and broken ends. In 1891 the sum of $500 was spent in re-building the face of the timber retaining wall on the eastern side of the harbour, 270 feet long. In November, 1893, the sum of $100.08 was spent in a few much needed repairs to the breakwater on the west side. In 1895-6 the sum of $450.83 was expended in repairs to the breakwater on the east side, and the south or shoreward end was raised from 2 to 5 feet, the whole top, 102 feet in length, was relaid with new 6 inch flatted spars with new floor stringers. Twenty-six new fenders were placed, a new piece of break was built on the north side of the shoreward end 30 feet long, 5 feet high

and 5 feet wide. The shore end was also filled with ballast and levelled up with gravel.

Hall's Harbour, though small, is one of the best between Scott's Bay and Digby Gut. Spring tides rise 39 feet, neaps 33 feet. During the year 1898–9 the sum of $199.68 was expended in repairing the old breakwater, the work done consisting of the close sheathing of several weak spots on both the outer and inner sides, the renewal of a considerable portion of the floor, and the placing of a number of new fenders and mooring posts. On January 4, 1899, a contract was entered into with J. B. MacManus for the extension of the breakwater a length of 120 feet, for the sum of $3,200. The contract stipulated that the work should be finished at the end of the fiscal year, June 30, 1899, but at that date it was only about 60 per cent completed, the expenditure amounting to $1,968. The new work is 26 feet wide on top, from 14 to 20 feet high, substantially built of round-log, stone-filled cribwork of the usual type, battering 1 in 6 and close-sheathed vertically on the outer side, and battering 1 in 12 on the inner side. The outer end is also close-sheathed, and along the seaward face is a break 4 feet 6 inches high.

The total expenditure incurred for harbour works up to June 30, 1899, amounts to $4,328.56, $2,827.97 being for construction, including a refund of $310 made to the provincial government in 1887–8, and the balance, or $1,500.59, for repairs.

HAMPTON.

Hampton, Annapolis county, formerly Chute's Cove, is situated on the south-east side of the Bay of Fundy, 27 miles north-east of Digby Gut and 6 miles north-west from Bridgetown, an important station on the Dominion Atlantic Railway. It has a population of about 200 people, engaged in fishing, farming and the export of cordwood and timber.

In 1855 and 1856 a small pier 165 feet long was built near the western side of the cove, the provincial government contributing $600 to its cost. The site was chosen by commissioners, apparently without professional advice and was objectionable on many accounts. In 1879, at a cost of $3,000, an addition of 121 feet was made by the department, and the older portions of the work strengthened, with the hope of remedying some of its defects of location.

In 1881 on further examination, it was found that the original work had been badly undermined by the sea, and that owing to the direction of the pier, the shingle was fast shoaling the water on the inside. It was therefore decided to rebuild the structure on another site about half a mile to the eastward, which was carried out at a cost of $2,300. The new pier as then completed was 246 feet long, more substantially built, and much better located than the old one, it being situated immediately to the westward of the mouth of a small brook which serves to keep the schooner berth alongside free from sand. In 1888-9, it having been found that the stream had worked under the foundation, endangering the whole structure, the department expended the sum of $750 in close-piling the entire inner face, levelling up the top of the work which had settled in places, putting in some additional ballast, and effecting general repairs to the covering and break.

In February, 1889, during a heavy freshet, the brook again gave trouble, tearing away its banks and the gravel beach and threatening to undermine the breakwater. In 1890-1 the department spent $21 in repairing the damage and in turning the brook into its original channel. In 1892-3, the breakwater being found not quite long enough to afford a convenient berth for schooners, the department applied the sum of $1,500.09 in constructing a block 40 feet long, 27 feet wide on top and 27 feet high on the outer end, and in repairing about 100 feet of the inner end of the old work, by raising the inner face, putting in new floor stringers and covering them with new planking, thus putting the work in a thorough state of repair.

In the year 1898-9 the sum of $1,999.79 was expended in thorough repair of the breakwater. The whole top of the work for the outer 185 feet in length, 20 to 26 feet in width, was raised with new work for a height of from 2 to 4 feet, rendered necessary

by the great and unequal settlement of the work caused by the scouring action of the little stream that discharges alongside and had made its way beneath it. To prevent a repetition, of this action, the inside face of the breakwater has been protected for a length of 80 feet with a puddle wall faced on the outer side with 3-inch plank. The breakwater has a total length of 270 feet, a width of from 20 to 26 feet, and a height, at the outer end, of 24 feet, where at high water ordinary spring tide, there is a depth of 21 feet of water. Spring tides rise 32 feet, neap tides 18 feet.

The outlay made by the Dominion at Hampton up to June 30, 1899, may be stated as follows :—For construction, $7,588.10 ; for repairs, $3,520.88.

IONA.

Iona, Victoria county, is on the north side of the Grand Narrows or Barra Straits, connecting the Great and Little Bras d'Or Lakes. It is a station on the Intercolonial Railway, and a landing place for the steamers of the Bras d'Or Steam Navigation Company.

A wharf, 126 feet in length and 20 feet in width, built by the provincial government, in 1867 came under the charge of the department, and was reconstructed 44 feet in 1885-6. The extension consisted of a head 60 feet in length connected with the outer block of the provincial government work by a span of 24 feet.

In 1891 it was observed that the outer block, or head, had been affected by the ravages of the teredo, and that a bank of sand and gravel had formed around its south-west corner. Latterly the head became so dilapidated and the depth of water at its north-west corner so shoal, as to render access to it impossible except during perfectly calm weather.

The expenditure up to the end of the fiscal year 1897-8 amounted to $3,246.24, including $2,449.54 expended in 1895-6, and $746.70 as a refund of amount laid out by the provincial government.

The sum of $2,000 was appropriated for expenditure during the fiscal year 1898-9 to be applied in constructing a creosoted pile head over the outer block. Of the above amount the sum of $485.66 was expended before June 30 in procuring and taking delivery of the creosoted timber required.

IRISH COVE.

Irish Cove, Cape Breton county, is on the south-east shore of the Great Bras d'Or Lake, near the entrance to East Bay. The distance to the head of East Bay is 20 miles ; to St. Peter's Canal, about 22 miles, and across the lake to Grand Narrows, 10 miles.

The wharf at this place, commenced in 1891-2 and completed the following year, is 160 feet 8 inches in length, and 20 feet in width, including a shore block 47 feet in length, a central block 20 feet 4 inches in length and an outer block 57 feet in length with an L 20 x 20 feet. The openings are respectively 17 feet 6 inches and 18 feet 10 inches. The depth at the outer end varies from 12 feet 3 inches to 13 feet at low lake level. It was strongly constructed, fully ballasted, and had the exposed face of the outer block protected by close piling.

The amount expended in construction was $3,245.94. There was no further expenditure up to the end of the fiscal year 1897-8.

During the fiscal year 1898-9 the sum of $209.31 was expended in renewing part of the close piling of the outer block, all of which had been badly damaged or destroyed by the teredo. Four corner piles and fifty-four intermediate piles were placed and secured.

JOHNSON'S HARBOUR.

Johnson's Harbour (formerly called Hay Cove), Richmond county, is an inlet of the Great Bras d'Or Lake, distant from St. Peter's Canal, 10 miles, and from the head of East Bay, 20 miles.

In 1881 the residents of the district built a wharf, 40 feet in length and 21 feet in width, at the eastern side of the harbour, near the entrance. In 1883-4, the department raised the wharf 2 feet in height, and placed a block 27 feet in length and 20 feet in width, against its southern face. In 1886-7 fender piles were driven along the side and channel faces, and the space between the south block and the shore was filled in. In 1893-4, the sum of $759.76 was expended in cutting down the outer portion of the structure for a distance of 20 feet back from the channel face ; in the construction of a cross-wall of cribwork 10 feet wide, and of pile-work extending 10 feet beyond the original channel face ; and in filling in between the cribwork cross-wall and the shore.

The depth of low lake level, at the outer face of the pile extension, varies from 8 to 10 feet, increasing to about 15 feet at a distance of 10 feet beyond the outer face.

The expenditure by the department, up to the end of the fiscal year 1897-8, amounted to $1,109,76, of which amount $859.76 may be considered to have been laid out for construction and $250 for repairs.

During the fiscal year 1898-9, the sum of $10 was expended in slight repairs to the inner end of the southern face of the wharf.

JORDAN RIVER—EAST SIDE.

Jordan River is one of the largest and most important streams in Shelburne county, flowing for a great part of its length through valuable timber country.

It empties into the Atlantic about 3 miles east of Shelburne, the county town, and its mouth forms an estuary about 4 miles long, and from a mile to a mile and a half wide, with deep water for its whole area. At the head of the bay or estuary, which is called Jordon Bay, and on its east side 9 miles west of Lockeport, and 8 miles east of Shelburne, is a thrifty settlement of some two or three hundred people engaged in farming, lumbering, fishing and general trade. Two and a half miles farther up the river is another prosperous village called Jordan River, with a population of about 700. Here, as well as farther up the stream, are important lumber mills, where large quantities of sawn lumber are prepared for export.

The bay having straight shores and being exposed to the south and south-east, affords no shelter from gales from these quarters, annd considerable risk and inconvenience was formerly experienced by the numerous large vessels that came to load lumber. In order to benefit this trade, therefore, and for the improvement of general shipping facilities, the department in 1875 constructed a breakwater on the east side of the mouth of the river, or the head of the bay, at the village of East Jordan.

This work which was substantially built of close-faced squared timber cribwork filled with stone, at a cost of $24,568.79, is 550 feet long and 30 feet wide, and at the outer end 23 feet high, when at high water ordinary spring tide, there is a depth of 19 to 20 feet of water (spring tides rise 7 feet, neaps 5½ feet).

In 1878 a quantity of heavy stone was deposited on the seaward face and end to protect the foundation from the scouring action of the waves and tidal currents.

In the spring of 1879 the upper portion of the outer end for a length of 100 feet was destroyed by a heavy gale to within 2 feet of low water mark. This damage was made good in 1882–3 by an expenditure of $5,046.12, when, owing to the settlement of the seaward or southern side of the work, the greater part of the top was rebuilt and straightened up, the seaward face, moreover, being thoroughly protected by a slope of stone reaching to high water mark. Width of breakwater at top as completed, 18 feet.

In 1883–4 slight repairs were made at a cost of $102.50.

In 1890–1 a portion of the plank covering and sheathing having been torn off during a heavy storm, it was replaced at a cost of $30.03.

In 1891–2 the inner end of the work which was damaged by a high tide and heavy sea, was repaired. The plank covering and floor stringers for a distance of 100 feet, as well as some of the face timbers, were carried away, and a considerable quantity of ballast was washed out. All this was replaced by new work, and a large amount of stone was placed along the inner end of the slope, where this had in places been washed out. The cost of these repairs was $750.

During the fiscal year 1898–9, the following works of repair were carried out at a total cost of $2,348.32, viz.: from the head or outer end shorewards; increasing the width of the breakwater 12 feet, by means of pile trestle bents placed every 5 feet, and putting on new stringers, new flooring and guard rails.

Whilst the repair work was being performed it was ascertained that the work was in a much more dilapidated state than was at first discernable, and that further repairs were required. The breakwater was, however, left in a thoroughly safe condition. The excessive piling of large quantities of timber upon the breakwater in former years subjected the work to unnecessarily heavy and injurious strains. Strict orders have been issued to the present wharfinger to prevent the recurrence of such practices in the future.

The total expenditure incurred for construction up to June 30, 1899, is $29,792.24, and for repairs, $3,230.85.

JUDIQUE.

Judique, Inverness county, is on the east side of St. George's Bay, 10 miles south from Port Hood and 16 miles north from the entrance to the Strait of Canso.

A contract was entered into in April, 1898, for the construction of a breakwater at McKay's Point, near the entrance to Judique Pond, for the sum of $14,143. The work under contract is to be of open faced, fully ballasted cribwork 725 feet in length and 20 feet in width on top, with an L at the outer end 20 feet in length, to be close-fendered at the outer end, and protected on the north side by a talus of stone; the substructure is to be of creosoted North Carolina or Virginia short leaf pine and the superstructure of native timber. The depth at the outer end, at extreme low water, will be 6 feet 3 inches. Spring tides rise 4 feet 6 inches.

Up to the close of the year 1897-8, the contractors were engaged in procuring materials, and in preparing for construction; the expenditure by the department amounting to $181.11.

During the fiscal year 1898-9, the work under contract was prosecuted vigorously. Construction commenced in August, 1898, was still in progress at the end of the fiscal year when the whole of the substructure excepting that of the outer 67 feet was in place and the superstructure over the remainder of the work approaching completion. The value of the work performed was $9,385.74, and the expenditure by the Department amounted to $8,683.00.

L'ARDOISE.

L'Ardoise, Richmond County, is situated on the eastern side of St. Peter's Bay, near its entrance from the Atlantic, and about 9 miles from the southern entrance to St. Peter's Canal.

During 1876-7, an isolated breakwater, constructed of square timber, was built off Martin's Point in from 5 to 10 feet at low water, but owing to its exposed position it met with constant damage and in 1883 was almost entirely destroyed.

A contract, entered into for the reconstruction of the work in 1891, was completed in August, 1893. The new work consisted of a timber core 400 feet in length and 20 feet in width placed on the remains of the former structure in from 1 to 4½ feet at low water, its top standing 1 foot above high water: the whole being covered with stone sloping three to one on the seaward side and ends,and two to one on the inner side. The whole of the surface of the work, above low water mark, was covered with stones of not less than 15 cubic feet in capacity, the spaces between the stones above the line of high water being filled in with cement concrete.

In 1894-5, the sum of $4,293.87, was expended in procuring the necessary plant and in effecting repairs to the breakwater; the covering stones of the seaward and outer end slope having been disturbed, during a southerly gale, shortly after the completion of the work in 1893.

The following is a statement of expenditure up to the end of the fiscal year 1897-8.

Old Work.

Construction	$ 10,330 00	
Repairs	215 69	
		$ 10,545 69

New Work.

Construction	$ 17,546 09	
Repairs	4,293 87	
Storage of plant	60 00	
		$ 21,899 96
Total expenditure		$ 32,445 65

The covering stones on the seaward and outer end slopes having again been disturbed, the sum of $3,500 was appropriated for expenditure during the fiscal year 1898-9, in making up the slopes with extra large stone; and in constructing a concrete wall over the outer face and ends of the cribwork core, 4½ feet in height and 3 feet in width on top. Repairs were commenced in April, 1899 (the large stone required having been procured during the winter), and were in progress at the end of the fiscal year, when the expenditure amounted to $3,180.97, which brings the total outlay up to June 30, 1899, to $35,626.61.

The sum expended in 1898-9 was applied in procuring 585 cubic yards of large stone, repairing and fitting up derricks and scows, procuring 210 barrels of Portland cement, and in constructing 120 feet of concrete wall and placing 285 cubic yards of large stone.

The concrete wall (20 feet at the outer end and 100 feet on the seaward side from the outer end inwards) was made 2 feet wider on top than at first proposed, and more large stone was required in the slopes near the outer end than was anticipated.

LIVINGSTON'S COVE.

Livingston's Cove, Antigonish County, is on the Northumberland Strait, a few miles to the westward of Cape George, and distant by road from McNair's Cove on St. George's Bay 3½ miles, and from Georgeville on the Northumberland Strait 4 miles. Spring tides rise 4½ feet.

For the purpose of affording shelter to the fishing boats of the district, and a landing place at high water for steamers and small vessels, the sum of $3,000 was appropriated by parliament at its session of 1898, towards the construction of a breakwater, the estimated cost of which is $6,000. The proposed work is to extend 245 feet to 7 feet at extreme low water. It is to be 18 feet in width over 80 feet from the inner end and 24 feet over the remaining 165 feet, with a return at the outer end 24 feet in length.

During the year 1898-9, $2,999.94 of the amount appropriated was expended in procuring all the timber and about one-half the stone required in the construction of the breakwater.

LOUIS HEAD.

Louis Head, Shelburne County, is a thrifty little fishing settlement of about 100 people situated on the western side of the mouth of Sable River about 17 miles east from Shelburne, the county town, and 10 miles from Lockeport.

In 1892, the department built a breakwater here for the purpose of forming a shelter for fishing boats and small vessels, and to serve also as a landing wharf for general purposes.

The work which was built close against the remains of an ancient wharf (subsequently removed) is 150 feet long, 20 feet wide, and 22 feet high at the outer end, where at H.W.O.S.T. there is a depth of 18 feet of water. (Springs rise 7¼ feet. Neaps 5¾).

The whole structure is very strongly built in order to resist the heavy seas from the S.E. to which it is much exposed. It is of close-faced square timber cribwork throughout, double fendered and full ballasted. The seaward face slopes 1 to 1 from the level of the floor to 2 feet above L.W.O.S.T., and is covered with 6 inch birch plank. The outer end as well as the seaward face is protected with a toe of heavy rip-rap. The breakwater was built by contract and cost $4,440.22.

At its session of 1898 Parliament made an appropriation of $600 for the removal of the dilapidated portions of an old pier of cribwork 235 feet long by 12 feet wide to the northward of the breakwater and the extension of the same. This old work was built by the local authorities to protect the beach that shelters a small cove or boat harbour on its inner side.

During the fiscal year 1898-9 a sum of $590 has been expended in renewing the old pier for an average height of 6 feet, and adding a pier of new cribwork 46 feet long, 10 feet wide and 8 feet high. The extension was built with the view of more effectually protecting the beach from the undertow that sweeps around the end of the work; during heavy storms this was so heavy as to threaten the entire destruction of the cribwork and beach combined.

MARGAREE.

Margaree Harbour, at the mouth of the Margaree River, Inverness County, is on the west coast of Cape Breton Island, about 30 miles north-east of Port Hood. It has a narrow and intricate channel through which the tides run at the rate of 4 knots, and its entrance is obstructed by a bar of shifting sand, over which there is at times a depth of only 5 feet at extreme low water. Spring tides rise 4 feet.

A pier constructed on the west side of the entrance to the harbour by the Provincial Government, prior to Confederation, was repaired and extended by the department in 1876, in 1879, and again in 1890; the first extension being 85 feet, the second 130 feet and the last 200 feet in length.

The expenditure up to the end of the fiscal year 1897-8 amounted to $16,554.92, of which $274.83 was a refund to the Local Government, $12,901.67 was for extending and repairing the pier and $3,378.42 for protecting the beach on the eastern side of the entrance to the harbour.

In February, 1898, a contract was entered into for the construction of a further extension of 180 feet, 20 feet wide on top over a distance of 156 feet from the inner end, and 24 feet over the remaining 24 feet, with faces battering 1 in 6.

The work was commenced early in July and completed and accepted on December 23, 1898. It is constructed of round timber, open-faced, with ties of round timber; the corners are fendered, and all the faces are close sheathed with hardwood timber. For a distance of 156 feet, the top of the covering is 4 feet, and for the remaining distance of 24 feet it is 5 feet above assumed high water.

An expenditure of $4,051 was incurred in 1898-9 in connection with the extension of the pier.

Besides the construction of the extension, the sum of $178.66 was applied during the months of October and November, 1898, by day labour, in placing 88 cubic yards of large stone in face chambers of work built in 1890, and in removing and replacing covering, and re-ballasting 44 feet of inner end of the old work, and in reconstructing the approach thereto.

MAITLAND.

The village of Maitland, Hants county, with a population of about 1,500, is situated on the west side of the mouth the Shubenacadie River, which enters Cobequid Bay on its

south side. The bay is the eastern extension of the Basin of Minas, a large and important estuary of the Bay of Fundy. A public wharf was built here by the department between 1873 and 1876 at a cost of $6,342, and a further sum of $2,142.76 has been expended for repairing this structure. Communication with Truro, the county town of Colchester county, is by public road, but the Shubenacadie River, at this point over half a mile wide, must first be crossed by means of a ferry available the year round, except for the few winter months. On the Hants county side the ferry boat has always landed on the beach, and, at low water, considerable trouble is experienced in getting passengers and teams to and from the ferry boat.

To facilitate the crossing of the river, the department expended during the year 1897–8 the sum of $996.76 in constructing a ferry wharf of cribwork, 170 feet long and 20 feet wide. In the year 1898–9, the sum of $202.45 was expended in finishing the work, or rather in extending the inclined slip a further distance of about 50 feet, so as to take it out to the level of the beach in order that the horses and teams might be driven from the beach on to the wharf. The work is partially an extension and reconstruction of an old private wharf, but its location at the foot of a public street makes it entirely a public work.

Total expenditure on ferry wharf up to June 30, 1899, $1,199.21.

MCNAIR'S COVE.

McNair's Cove, Antigonish County, is on the west side of St. George's Bay, 2 miles south of Cape George.

A breakwater 400 feet in length was built on the north side of the cove in 1872-3. Repairs were effected from time to time up to 1887-8, when the work was reconstructed over a distance of 160 feet from the outer end. During the years 1890-4, the outer end of the work reconstructed in 1887-8 was protected by close piling of creosoted timber, and its seaward side by a talus of quarried stone. In 1896-7, a small amount was expended in raising the talus which had settled so as to leave portions of the damaged face work exposed.

In 1897-8 the sum of $499.80 was expended in raising the talus on the seaward side of the work, which had again settled in places, and in reballasting face chambers on the seaward side where the ballast had gone through the damaged face works; and a further sum of $199.56 was expended in procuring timber to be used in repairs rendered necessary by damages sustained after the works of repair above referred to had been carried out.

The following is a statement of expenditure up to the end of the fiscal year 1897-8: —

Construction and repairs	$ 56,247 91
Dredging	6,751 18
Purchase of water lot	400 00
Total expenditure up to June 30, 1898	$ 63,399 09

During the fiscal year 1898-9, the sum of $893.56 was expended in effecting the following repairs, for which the timber was procured in 1897-8: 1. The damaged timber wall under the sloping face, on the seaward side, which had been partly destroyed by the teredo, was cut away, for a distance of 80 feet, back to the first tier of longitudinals and sheathed with 10 x 10 inch hardwood timbers, bolted to two longitudinals and side bolted to each other. 2. The stone slope was raised up to the top of the sheathing and sloping about 1 in 4 outwards. 3. For a distance of 100 feet, the chambers back of the damaged face were reballasted to a depth of from 4 to 10 feet. 4. The covering was refastened in places. The depth of water, at low water springs, at the outer end of the breakwater is 13 feet. Spring tides rise 4 feet.

McNUTT'S ISLAND.

McNutt's Island, Shelburne County, is situated in the mouth of Shelburne Harbour, 8½ miles on an air line south by west from the county town. It is 3 miles long and 1½ miles wide. On its southern extremity are a lighthouse and fog whistle. Projecting in a westerly direction for a distance of nearly half a mile from the northern extremity of the island is a horse-shoe shaped beach or bar of gravel and shingle, forming on its southern or concave side a valuable and much frequented harbour for fishing boats and small craft of all sorts. A few years ago a severe gale made a breach through the bar. At first this was 100 feet wide but it gradually widened increasing to about 200 feet in width in 1898.

In order to prevent the total washing away of the beach and the destruction of the only haven of refuge in Shelburne harbour available during southerly gales, the closing of the breach and protection of the beach by cribwork fully ballasted to the top was undertaken in 1898-9.

The length of cribwork built is 265 feet, the width 9 feet, and the average height 5½ feet. Besides this, the top of the beach for a farther distance of from 200 to 300 feet has been protected by cribwork from one to two logs high.

Total expenditure incurred, $638.11.

MERIGOMISH.

Merigomish Harbour, Pictou County, is on the Northumberland Strait, 10 miles to the eastward of the entrance to Pictou Harbour. The depth at low water over the bar at the entrance is 14 feet. Spring tide rises 5¼ feet, neaps 3¼ feet.

In 1880, a wharf was built by the department in a cove to the eastward of Hardwood Point, and about one mile from Merigomish Station on the Intercolonial Railway. It measures 154 feet in length and 20 feet in width and is built on flats dry at extreme low water to the outer end; consisting of an approach 70 feet in length of earth with stone side walls, and 84 feet of covered block and span work. During the years 1890-1 and 1891-2 the covering was renewed.

The expenditure up to the end of the fiscal year 1897-98 amounted to $1,140.40.

At the session of Parliament of 1898 the sum of $900 was appropriated for expenditure, during 1898-9, in extending the wharf. Of the amount appropriated the sum of $647.03 was expended, in June, 1899, in procuring materials for a proposed 100-foot pile extension, over a soft mud bottom, to the line of 1 foot depth at extreme low water, and in building the extension with the exception of placing about one-half the guard piles, guard rails, walings and braces, and constructing a work of brush and stone over the bottom to serve as an ice break.

MERIGOMISH (BIG ISLAND.)

Big Island, Merigomish, Pictou County, is about 10 miles to the eastward of the entrance into Pictou Harbour. It is 3¼ miles in length and 1⅓ miles in width and is united, at its eastern end, to the main land by a sand bar 2½ miles long, excepting during unusually high tides when the sea washes over one part into the harbour of Merigomish, the eastern end of which is within the island.

A contract was entered into in March, 1899, for the construction of a wharf on the southern side of the island nearly opposite the public wharf on the main land, for the sum of $865.

The work under contract had not been commenced at the end of the year 1898-9, but has since been completed. It consists of a road-cutting and embankment respectively 65½ and 9½ feet in length; and a block and span structure 20 feet in width extending 95 feet to 2 feet 6 inches, at extreme low water, consisting of an abutment of stone 27 feet in length and two blocks of cribwork. Spring tides rise 5½ feet.

The sum of $96.81 was expended on account of this work in 1897-8.

METEGHAN COVE.

Meteghan Cove, Digby County, is situated on the south-east side of St. Mary's Bay, twenty-five miles north of Yarmouth, twenty miles south of Weymouth, two and one-half miles from Meteghan River and forty miles from Digby, the county town. The nearest railway station on the Dominion Atlantic Railway, which runs approximately parallel to the coast and has its terminus at Yarmouth, is about seven miles distant. Ordinary springs rise about 21 feet, neaps 18 feet. The whole coast of St. Mary's Bay from Digby to Yarmouth is thickly settled and is, in fact, almost one continuous straggling village for the whole distance of sixty-five miles. Meteghan, next to Digby and Weymouth, is the largest and most important settlement on the bay shore, having a population of about 1,000 people, engaged in farming, fishing, lumbering and general trade.

The works at this place consist of a breakwater and landing pier, both of cribwork, built from forty to fifty years ago by the Provincial Government and the inhabitants. The pier is about 300 feet long by 20 feet wide; the breakwater, 20 to 26 feet wide, runs out for a distance of 925 feet from the shore, and has a return of 85 feet at the outer end, which is 24 feet wide and 30 feet high standing in from 20 to 21 feet depth at low water ordinary spring tides.

In 1875, at which date the works appear to have been taken over by the department, the breakwater was extended and repaired by the department at a cost of $1,000. In 1878 an additional length of 100 feet was built, together with a portion of the L at the outer end, at a cost of $3,000, and in 1881 the sum of $2,250 was expended in still further improving the structure by constructing an additional length of 50 feet on the L.

In 1882–83 the sum of $500 was expended in re-ballasting and close-piling portions of the work, and in other miscellaneous necessary repairs. In 1883–84 $32 was spent in securing some of the fenders and a portion of the flooring at the outer end. In 1884–85 some damage caused by the severe gale of the previous November was made good at a cost of $96.64; a breach 25 feet long and from 4 to 6 feet deep was re-filled with solid work, 40 feet of new break was added, and some new ballast put in to replace that washed out, in 1887–88 the seaward face of the breakwater was close sheathed for 700 feet in length; 575 feet on the inner face was repaired and sheathed, the work levelled and some minor repairs executed. The expenditure this year was $1,447.33; the amount being laid out with the understanding that it would be considered to be a refund to the Provincial Government on account of moneys expended by them between 1867 and 1879.

The payments for the work done in 1887–88 could only be completed in 1888–89 when a further sum of $308.75 was paid out and charged as a refund, the total amount thus refunded to the Provincial Government being increased to $1,756,08. In 1892–93 the department expended the sum of $299.72 in making some slight repairs to the breakwater, and in temporary repairs to the landing wharf. In 1893–94 the sum of $2,627.54 was expended in making thorough repairs to the landing pier and wharf, the work done consisting of the rebuilding and face fendering of the outer block 50 feet long, building a new top and back 8 feet thick to the next length of 160 feet, and thoroughly refendering and capping the remainder of the work, a length of 260 feet.

In 1897-8 the sum of $3,141.99 was expended in constructing a re-enforcing block along the whole length of the outer face of the ell of the main breakwater. This work, which was rendered necessary by the eating away of the bottom timbers by the limnoria, and the subsequent settlement of the breakwater, is 100 feet long, 12 feet wide and 22 feet high. The upper portion of the ell was also built 35 feet wide and 4 feet high, which restored it to the height of the rest of the work. The new work is thoroughly well and substantially built of round log cribwork, well fendered, ballasted and close sheathed on all exterior faces In 1898-9 the sum of $1,093.20 was expended in renewing a length of 120 feet by 8 to 10 feet in height by 8 to 10 feet in width on the lower portion of the outer end of the seaward face of the breakwater, which had been eaten away by the limnoria; the work was close-sheathed for the same distance and for

40 feet on the inner side; about 100 feet in length of flooring was also renewed. A breach 30 feet long on the seaward side, adjacent shorewards to the 120 feet above mentioned, was also rebuilt. The lower portion of the seaward face of the main breakwater to a height of some 12 feet above low water of spring tides, has been damaged by the limnoria. Within the next few years expenditures of several thousand dollars will be required for this important work if it is to be preserved. Along the inner face of the main breakwater, where vessels lie and load timber, deals, piling, &c., there is a depth of water H.W.O.S.T. of 12 to 16 feet.

On June 30, 1899, the total expenditure that may be charged to construction amounts to $20,086.41, and the cost of the repairs to $4,664.07.

METEGHAN RIVER.

Meteghan River, Digby County, empties into the Bay of Fundy at the mouth of St. Mary's Bay, almost directly opposite Grand Passage, between Long Island and Brier Island. It is 20 miles south of Weymouth, 28 miles north of Yarmouth and 2½ miles north of Meteghan or Meteghan Cove. The population of the village is about 400 people engaged in farming, fishing, lumbering and general trade. The nearest railway station on the Dominion Atlantic Railway, which runs parallel with the bay shore, is about 4 miles from the village. On the river, which is about 18 miles long, are some 20 saw mills, most of which send lumber down to the mouth of the river for export to the West Indies and the United States, the total annual output aggregating over a million feet B.M.

The works here, which were built some years before Confederation, persumably at the joint expense of the Provincial Government and the inhabitants, consist of two breakwaters, one on either side of the mouth of the river, and enclosing an area of about 3 acres, in which there is a depth of from 10 to 15 feet at H.W.O.S.T. giving ample berth accommodation and complete shelter to a large number of coasting and fishing vessels. Spring tides rise 21 feet, neaps 17 feet. The north breakwater is about 400 feet long, 24 feet wide and 13 feet high at the outer end; and the southern breakwater is about 900 feet long, 25 to 30 feet wide and 17 feet high at the outer end. They are both built of stone-filled cribwork of the usual type.

When the works came under charge of the department the older portions were much decayed and extensive repairs were needed, which were made in 1873 at a cost of $4,500. In 1881 the sum of $2,000 was expended in rebuilding and repairing parts of the breakwaters. In 1882-3 the sum of $3,000 was expended in close-piling and extending for a length of 80 feet the south breakwater, in general repairs to the northern breakwater, and in removing from the dock a quantity of rocks and boulders which was used as ballast in the new work. In 1890-1 $265.19 was expended in removing from the channel near the shore end of the south work, some more rocks and boulders that interfered with the keels of vessels lying alongside; slight repairs were also made under the same appropriations to both breakwaters.

In 1898-9 the sum of $4,001.76 was expended in extensive renewals to the shore end of the south breakwater. The work taken down and rebuilt was 400 feet long, with an average width of 29 feet and an average height of 13 feet. This length was also newly close-sheathed, and on the shoreward side of the same portion a new break was built 276 feet long and 6 feet high. Although this little harbour is only 2½ miles north of Meteghan it is much used, and should be maintained, possessing a certain measure of federal importance. The total expenditure incurred for construction up to June 30, 1899 is $13,473.96, inclusive of a refund of $3,973.96 made to the late Government in 1887-8, and that for repairs, $4,266.95.

MONK'S HEAD.

In 1894-5, a channel for boats was opened between Dunn's Lake and Antigonish Harbour, and a highway bridge was constructed over it. After the completion of these works, the current cut into the slopes and undermined the bridge abutments which settled considerably.

During the years 1896–7 the sum of $300 was expended in repairs to the bridge and abutments, and in the construction of about 60 feet of brush and stone work on each side of the channel, in continuation inwards of the brush and stone work in the bridge abutments; the superstructure of the bridge was removed and renewed after cutting back the abutments so as to increase the width of the opening from 14 to 18 feet, and facing them with five piles capped with 12-inch square timber; and five piles were driven on each side at the face of the brush and stone work, over a distance of 20 feet from the bridge.

The expenditure up to the end of the year 1897-8 amounted to $1,021.57.

During the fiscal year 1898-9 the sum of $272.45 was expended in completing the repairs to the bridge, in improving the approaches, and in extending the brush and stone protection work for a distance of about 140 feet on each side of the channel.

MORDEN.

Modern or French Cross, King's County, population 120, is situated on the south shore of the Bay of Fundy, 50 miles east of Digby Gut, and 9 miles north of Aylesford Station on the Dominion Atlantic Railway. Spring tides rise 33 feet, neaps 25 feet.

The breakwater pier at this place was begun in 1846 at the joint expense of the inhabitants and the Provincial Government. It was built of round-log cribwork filled with ballast, and close-sheathed on the seaward side and end. The work is 365 feet in length and varies in width at top, from 28 feet at the shore end to 45 feet at outer end, where it is 26 feet high. From July 1, 1867, to June 30, 1897, the Department expended upon this pier a sum of $8,583.45, of which $5,560.06 was for works of construction, and $3,023.49 for renewals and repairs.

During the year 1897–8 the sum of $1,992.75 was appropriated as follows:—(*a.*) Completing the work commenced 1896-7, of closing a gap 121 feet long that was made through the middle of the pier in February and October, 1895, by violent gales. (*b.*) Completing some minor repairs to other portions of the work. (*c.*) Removing, by hand-digging, some of the gravel on the eastern side of the work which at present obstructs vessels seeking a berth alongside.

In the year 1898-9 the sum of $498.80 was expended in completing the extensive repairs and renewals done last season, and in the excavation and removal of gravel that had accumulated on the inner side of the breakwater to the serious inconvenience of vessels berthing alongside. This work is now in first rate condition.

The total expenditure incurred by the department up to June 30, 1899, amounts to $11.075, of which $5,560.06, including $60 of a refund made to the local government, is for construction and balance for repairs.

NORTH RIVER.

North River, Victoria County, empties into the north arm of St. Ann's Harbour, a fine basin, 7 miles in length and about 2 miles in width, at the head of St. Ann's Bay on the north-eastern coast of the Island of Cape Breton.

A contract was entered into, in September, 1898, for the construction of a wharf at Seymour Point on the western side of the entrance to the river for the sum of $2,148. The contract included the construction of a road approach 64 feet in length and 16 feet in width, a block and span work 63 feet in length and 20 feet in width, and a pile extension 175 feet in length with a return of 20 feet at its outer end. The bearing piles of the extension, with the exception of those in the three inner bents, were to be of creosoted timber. Construction was commenced on June 20, 1899, and was in progress at the end of that month, when the block and span was nearly completed and all the bearing piles in the extension were driven and capped, with the exception of those in three bents at the inner end of the creosoted pile work, which could not be placed on account of a shortage in creosoted timber.

Since June 30, 1899, the work under contract has been completed. The depth at the outer end of the wharf at extreme low water is 8 feet. Spring tides rise 6 feet.

The expenditure for the fiscal year 1898-9 amounts to $737.36.

NORTH WALLACE.

Wallace Harbour, Cumberland County, is situated on the south side of the Straits of Northumberland, about midway between Pictou Harbour and Bayfield. It is at the mouth of Wallace River, and is well sheltered from all winds.

On the south side of the harbour, which is about three quarters of a mile wide, is the village of Wallace with a population of about 800 people. The industries of the place are chiefly farming and the quarrying and export of freestone, of which there are large and valuable beds in the immediate neighbourhood.

Opposite the village, on the north side of the harbour, a landing was constructed many years ago to accommodate the ferry service across the harbour, but as it was only available at and near high water, the department in 1879 dredged a channel through the mud flats from the main channel of the river to the landing, a distance of about 1,600 feet, with a width of 45 feet and a depth of 7 feet at low water of spring tides which rise here 7 feet. The expense amounted to $9,998.25. The channel having silted up to a considerable extent, owing to its being nearly at right angles to the tidal flow, the department cleared it out in 1887 at a cost of about $2,000.

To prevent the inner end of the cut from silting up, and to afford at the same time shipping facilities to the inhabitants of North Wallace and Fox Harbour, the department in 1888-9 began the construction of a wharf starting from the end of the public road and running past the remains of the old ferry landing on to eastern or seaward side of the cut, the length constructed being 165 feet, and the outlay $999.38.

In 1889-90 the sum of $2,578.41 was expended in extending the wharf a distance of 180 feet along the seaward side of the cut 20 feet wide, with an L. on the outer end 20 feet long and 20 feet wide.

The total length of the wharf is now 345 feet, of which the outer 180 feet, being along the edge of the dredged channel, can be used by small craft for the purposes of loading or unloading merchandise.

In the fiscal year 1898-9 the sum of $747.54 was expended in constructing an inclined ferry slip of pile work on the western side of the wharf. The slip is 121 feet long, 15 feet wide, thoroughly well and substantially built of pile bents spaced 10 feet apart. It has proved a great convenience to the steam ferry service recently established across the harbour.

The total expenditure incurred in connection with ferry landing at North Wallace may be shown in detail as follows:—

Dredging channel across harbour at about..... $	12,000 00
Construction of combined protection and landing pier and ferry slip.....	43,250 65

OGILVIE.

Ogilvie's breakwater-pier, King's County, is situated on the south shore of the Bay of Fundy, fifty-five miles east of Digby cut, and eleven miles north of Aylesford on the Dominion Atlantic Railway. Like other ports on the Bay of Fundy shore in King's County, its trade has greatly declined since the construction of the Dominion Atlantic Railway, being now restricted to occasional small shipments of cordwood, fish and potatoes.

The work here, which serves both as a wharf and breakwater, was built about the year 1854 at the joint expense of the inhabitants and the Provincial Government. It is 270 feet long, 38 feet wide on top and about 27 feet high at the outer end, built throughout of closed-faced, square-timber cribwork. In 1884-5-6 the department

expended the sum of $3,156.63 in strengthening the outer end by building an entirely new block 20 feet long, and by taking down and rebuilding the old break for a length of 100 feet. In 1890-91 the sum of $125 was spent in a few general repairs. In 1891-2 the sum of $500 was spent in repairing and strengthening the shoreward end 90 feet in length. The face was taken down and rebuilt, being tied into the old work with new cross-ties, and the new work well filled with ballast.

In 1897-8 the sum of $1,537.39 was expended in building a re-enforcing block on the shore end of the east side 153 feet long, 10 feet wide and to the full height of the work to support the breakwater which was leaning over and threatening to fall.

In 1898-9 the sum of $50 was expended in placing about a dozen new fenders to replace those broken and decayed, and a few other trifling repairs.

The total outlay by the department up to June 30, 1899, amounts to $5,839.02 inclusive of refund of $70.00 made to the Provincial Government in 1887-8.

OYSTER POND.

Oyster Pond, Guysboro County, is one of several large ponds on the north shore of Chedabucto Bay which form the only boat harbour between Cape Argos, on the western side of the entrance to the Strait of Canso, and Guysboro Harbour, a distance of 15 miles.

In 1876, the entrance to the pond was improved by hand dredging, and protected, on its eastern side, by the construction of a breakwater 180 feet in length. During the year 1884–5, the breakwater was extended 105 feet over a level bottom dry at low water. The width of the inner work is 14, and of the extension 16 feet. In 1896–7 the breakwater was strengthened and repaired.

Up to the time of the completion of the outer portion of the breakwater on the eastern side of the entrance in 1885, the beach on the western side was about 4 feet above high water, and formed a natural protection to the best anchorage in the pond; subsequently the beach was gradually worn away down to about half tide level, and the sand and gravel of which it was composed was carried into the pond, decreasing the depth over the anchorage from 18 to 6 feet, at low water.

To prevent further injury to the anchorage, and to confine the current to the channel and thus increase its strength over the bar, a contract was entered into in February, 1898, for the sum of $1,846 for the construction of a work designed to restore the beach to its original condition. The work was commenced June 14, 1898, and was in progress at the end of the month, when the expenditure amounted to $990.25.

The total expenditure up to the end of the fiscal year 1897–8 was $5,938.72. $5,240.27 may be charged to construction and improvements and the balance, $698.46, to repairs.

During the year 1898–9, the work under contract was completed, the expenditure amounting to $1,170.75, and the sum of $160.75 was expended in improving the entrance by hand dredging, and by the removal of several large boulders.

The beach protection work is 400 feet in length; 12 feet in width over 360 feet from the inner end and 16 feet in width over the outer 40 feet; and 8 feet in height, the top being 4 feet above extreme high water. It is of round timber cribwork fully ballasted, covered with flatted timber, and close-fendered at the outer end, and on the seaward side for a distance of 47 feet from the outer end.

The depth at extreme low water, over the bar obstructing the entrance to the pond, is about 1 foot 6 inches. Spring tides rise 6 feet.

PETIT DE GRAT.

Petit de Grat Inlet, Richmond County, lies between Petit Grat Island and the eartern extremity of Isle Madame. The main entrance for vessels is at the south end, from the Atlantic. The northern entrance is obstructed by outer and inner shingle bars through which passages for boats at ordinary low water were opened in 1879–82.

The expenditure up to the end of the fiscal year 1897–8 amounted to $3,250, $3,000 of which amount is chargeable to construction and $250 to 'repairs.'

During the year 1898–9 the sum of $1,046.41 was expended in improving the entrance. The inner channel was deepened to 1 foot 4 inches at low water spring tide over a width of 20 feet, except where ledge rock was met near the outer end, where it has a width of 15 feet; the outer channel was deepened to from 1 foot 4 inches to 1 foot 8 inches at low water spring tide, over a width of 25 feet and a protection work of round timber and stone 8 feet in width and 3 feet 6 inches in height from 1 foot 6 inches below low water spring tide, was constructed on the west side of the outer channel over a distance of 210 feet, or to within about 90 feet of the inner end.

PICTOU ISLAND.

Pictou Island, in the Strait of Northumberland, and about 10 miles north-east of the entrance to Pictou Harbour, is 5 miles long and 1½ miles in width.

There are two wharfs on the south side of the island; one near the west end, and one known as the 'east wharf,' near the centre.

The west wharf was commenced by the Provincial Government. It was repaired and strengthened by the department in 1880; extended 62 feet 6 inches in 1887–8, 50 feet in 1891–3 and 82 feet in 1892–4, and repaired in 1894–5.

The east wharf was commenced by the department in 1882–3 and has since been repaired and extended; the extensions including 100 feet built in 1887–8; 68 feet in 1891–3; and 60 feet in 1892–4.

The expenditure up to the end of the fiscal year 1897–8 in constructing, extending and repairing the two wharfs amounted to $11,560.18, which may be sub-divided into $10,692.51 for construction and improvements and $867.67 for repairs.

During the fiscal year 1898–9, $766.85 was expended in repairing and strengthening the west wharf, and $119.19 in repairing the east wharf.

The expenditure on the west wharf was made in levelling up and repairing the outer 82 foot block, the top of which had been damaged and forced out of place by ice; and in constructing a crib-work 20 x 20 feet on the east side near the outer end. The expenditure on the east wharf was made in raising, repairing and reballasting a portion of the east face of the second block from the outer end.

The depths, at extreme low water, at the outer ends of the east and west wharfs are respectively 4 feet 6 inches and 4 feet 9 inches: spring tides rise 6 feet.

PICTOU LIGHT BEACH.

The beach forming the southern side of the entrance to Pictou Harbour, known as 'Pictou Light Beach,' extends about 1 mile in a northerly direction, inclosing Moodie Cove, an inlet nearly dry at low water except in a central channel. The outer end, on which stands a light-house and keeper's dwelling, is protected by a breast-work of squared timber 450 feet in length and by a work of brush and stone extending from side to side opposite the southern extremity of the breast-work, and inclosing property under the control of the Department of Marine and Fisheries.

In 1894–5, the sum of $300 was expended in acquiring a title to a portion of the beach, 1,520 feet in length, adjoining the property of the Department of Marine and Fisheries.

The sum of $2,800 was appropriated for expenditure during 1898–9, in the construction of works to protect the beach, which was swept by the sea during the great gale of August, 1873, and had been more or less damaged by succeeding storms. The protection proposed includes a work of brush and stone 12 feet wide on top and 4 feet high, founded 1 foot above extreme high water and extending 1,030 feet from the southern end of the breast-work; and six groynes, each 60 feet in length, 5 feet in width, and 5 feet in height (the inner end to be 5 and the outer end 2 feet above high water) to be constructed by driving piles, in pairs, 5 feet apart and filling in with brush

secured by cross caps and by close piling at the outer ends. Of the amount appropriated, the sum of $2,179.20 was expended in constructing the brush and stone protection works, 250 feet of which was founded 1 foot lower than was intended, in nearly completing one groyne 70 feet in length, and in procuring the timber required in the construction of a second groyne, 60 feet in length.

PORTER'S LAKE.

Porter's Lake is a long, narrow sheet of water, lying north and south and situate about the middle of Halifax County, or about fifteen miles east of the provincial capital. The lake is about seventeen miles in length, from ¼ to ½ mile in width, and the water being of good depth for almost its entire length, it is navigable for moderate sized vessels to its extreme head. The lake, which stands at a nearly constant level of a few inches above high water ordinary neap tide, discharges directly into the Atlantic, through a beach of gravel and sand, from 100 to 200 feet wide. Up to about thirty years ago this outlet was navigable for schooners drawing 6 feet of water; and a considerable traffic was then done on the lake in the export of timber, lumber, cordwood, general farm produce and fish. Since that time, however, owing to the gradual filling up of the outlet by the sand and gravel of the beach, under the action of heavy seas, the traffic on the lake has ceased and large areas of fine timber land surrounding its head are lying practically fallow through the difficulty of access to a market. As long as the outlet was open a considerable quantity of fish, salmon, alewives and smelt, used to be taken in the lake, but this industry has also long ceased.

During the past few years the outlet has several times been so completely filled up with gravel and sand as to cause the lake waters to rise from 1 to 2 feet and sometimes even more, flooding nearly a mile of the public road along the margin of the lake, washing out numerous small bridges and culverts, and damaging considerably the hay and other crops on the low lying adjacent lands.

In consequence of this, the department has on two or three occasions during the past dozen years, made small expenditures in digging out the outlet by hand, but these small expenditures have been of only slight temporary, and of no permanent benefit, having invariably again become blocked up with sand and gravel during the first storm. The piece of public road that is occasionally flooded and injured by the raising of the lake is low, and should be raised about 3 feet at the expense of the provincial government.

During the year 1898-9 the sum of $100 was expended in temporarily re-opening the outlet of the lake. The work had the desired effect of reducing the lake to approximately its normal level, and of freeing the public road of about 2 feet of water; but the channel has again filled up and the road has become more or less flooded nearly ever since. As I have already pointed out, these periodical expenditures to clear the outlet of the lake are of no permanent utility, and being solely for the benefit of the public road, should be undertaken by the provincial government of the municipality.

The following are the expenditures made by the department on this work in procuring temporary relief from floods caused by the lake waters:

Fiscal year	1881-2	$200
"	1884-5	200
"	1889-0	200
"	1892-3	147
"	1897-8	100
"	1898-9	100
	Total	$947

PORT HOOD.

Port Hood, the shiretown of the County of Inverness, is on the west coast of Cape Breton Island, 20 miles north of the northern entrance to the Strait of Canso.

The harbour was formerly a secure one, Smith's Island, which is two miles in length and forms its western sides, having been connected with the mainland by a range

of sand hills. In 1839 the sea made a breach through this protection. The opening at first narrow, was enlarged by the tidal currents with increasing rapidity, until it was entirely swept away and its site occupied by 15 feet of water. The harbour is now unsafe during northerly gales, except in a small cove on the east side of Smith's Island.

The pier, which is on the eastern side of the harbour, was commenced by the provincial government in 1865-6. It was originally 550 feet in length and 25 in width. It came under the charge of the federal government in 1871, since which time extensive repairs and renewals have been made, including the construction of a new block 125 feet by 25 feet at the outer end, in 1873; the construction of a block 50 x 22 feet at the southern end of the L, in 1888-9, and the construction of a block 71 feet by 24 feet at the outer end in 1889-90.

During 1897-8, the sum of $440 was expended in close-piling 123 feet of the outer face over existing close-piling, in repairs to the covering and in replacing a small quantity of ballast.

The following is a statement of expenditure up to the end of the fiscal year 1897-8:

On wharf {	Chargeable to construction and improvements..	$51,302 27
	" repairs.....	3,497 10
Refund of amount expended on wharf.....		916 11
" " breakwater at Port Hood Island.....		654 47
Dredging.....		751 86
Total expenditure.....		$57,121 81

During the fiscal year 1898-9, the sum of $1,100 was expended in continuing the close-piling round the outer end for a distance of 100 feet; reballasting four empty face chambers; placing about 3,000 superficial feet of 4 inch covering at the outer end, and in removing some of the face piles at the outer end and replacing them with guard piles extending 2 feet 5 inches above the cap-timbers.

PORT JOLI.

Port Joli is a harbour six miles long, north and south, by a mile wide, situated in the southern corner of Queen's county, twelve miles west of Liverpool, the county town. Near its head is a scattered settlement with a population of about 250 people engaged chiefly in farming and lumbering. Nearly thirty years ago the provincial government built a little wharf consisting of three isolated blocks of poorly built cribwork from 15 to 20 feet square and about eight feet high. They were about 200 feet from high water mark and were of very little use; at the face of the outer block the depth is only about 9 feet at high water and spring tides rise about 7 feet.

In the year 1897-8 the department expended a sum of $300 in rebuilding these blocks with a view to the subsequent extension of the wharf to the shore. During the fiscal year 1898-9 the sum of $1,195.91 has been applied in completing this extension and adding another block 18 ft. long by 12½ wide by about 12 ft. high at the head of the wharf. This wharf built of alternate blocks of stone filled cribwork and spans bridged over and which has now a total length of 207 feet, a width of 12½ feet and an average height of 9 feet satisfies all requirements of the locality.

Total expenditure incurred by Dominion up to June 30, 1899, $1,495.91.

PORT LA TOUR.

Port La Tour, Shelburne county, is a fishing and farming village of some four or five hundred people situated on the extreme south coast of Shelburne County, 19 miles on an air line from the county town of Shelburne and 10 miles north-east from Cape Sable.

The harbour is about four miles long, north and south, by two miles wide, east and west, and has a depth of 25 to 30 feet.

Though the outer harbour is a good deal exposed to the south-east, the inner harbour used formerly to afford some measure of shelter, to the northward of the sand flats lying between Page's Island and Swain's Point, on which is from 6 to 8 feet of water at low water of ordinary spring tide. Since, however, an unusually heavy storm, some years ago, tore from the flats the thick growth of eel grass with which they were covered; the under-tow now washes over them and vessels lying at anchor are liable to go ashore, and vessels lying at anchor awaiting a cargo or a favourable wind are in danger of dragging ashore.

In order to effectually protect the anchorage, the construction of a breakwater starting from Swain's Point and running in a north-easterly direction has been undertaken.

During the fiscal year 1898 9 a sum of $3,335.98 has been applied in building a rock bank from the point for a distance of 325 feet. This bank measures 25 feet wide on top, has a slope of one horizontal to one vertical on the inside and of two to one on the outside and there is a 'break' on the outside 2 feet high and 3 feet wide. It is formed of side walls about 6 feet in thickness and a centre filling of small stones and coarse gravel.

PORT MAITLAND.

Port Maitland, Yarmouth county, is a prosperous and important fishing and farming village, with a population of about 400, situated on the south-east side of the mouth of the Bay of Fundy, 12 miles north of the county town of Yarmouth. Spring tides rise 18 feet and neaps 13 feet.

The harbour works were begun about the year 1859, by the Provincial government; they consist of an eastern and a western or main breakwater of cribwork. The former is 400 feet long and some 20 feet wide, and the latter is 500 feet long, 22 to 25 feet wide, and has a return 54 feet long, 24 feet wide and 27 feet high along which there is a depth of 19 feet at high water ordinary spring tide. These breakwaters or piers inclose between them a snug high water harbour of 2¼ acres in extent.

In 1873-4 the eastern breakwater was raised and widened for a length of 158 feet on the shore end, and an extension of 50 feet in length was built, these works costing $2,500. In 1878-9 a spur or ell 75 feet long was built on the outer end of the western breakwater at a cost of $2.000. In 1885-6 the sum of $349.92 was expended in raising the outer end of the eastern breakwater, and in repairing and partly renewing the sheathing of the outer face of the western breakwater. During the early part of the winter of 1887 8 the western breakwater was seriously damaged by a succession of storms, and a breach 86 feet in length was made directly through the middle of the work. This year the sum of $53.65 was spent in urgent repairs and in the following year, 1888-9, the wreckage was cleared away, both sides of the breach closed up, and a number of fender piles were driven along the outer face and exposed corners of the broken work at a cost of $497.33.

On June 24, 1890, a contract was made for rebuilding the destroyed section and repairing the other parts of the work. The wreckage of the old work was removed down to its foundations and the breach filled in and rebuilt entirely with new and substantital work. The rest of the seaward face, i. e. 83 feet in length outside the new work and 100 feet between it and the shore, was close-piled, the entire top including the cap, covering, floor stringers, the first set of cross-ties and the 'break' of these two sections, was rebuilt and new fenders were fitted to the inside face.

The outlay in connection with these works amounts to $6,113.67; $5,839.92 being paid in 1890-1 and the balance or $273.75 in 1893-4.

In 1891-2 the sum of $298.45 was expended in repairing the eastern breakwater; the work consisted of the removal and rebuilding of almost the entire top to a depth of 3 feet.

In 1895-6, $271.71 was spent in purchasing materials for repairs, the work done consisting of rebuilding the shore end of the north side of the western breakwater 90 feet long, 10 to 12 feet wide and 15 feet high; the labour was furnished gratis by the inhabitants. In 1896-7 the sum of $3,303.73 was expended on extensive repairs and renewals to both works. On the eastern breakwater, which also serves as a wharf for the landing and loading of general merchandise, coal, lumber, &c., the shoreward 30 feet was rebuilt on the south side 6 logs high and on the north side 3 logs, including floor stringers and covering; 22 feet in length of new covering was also laid on the outer end, and a number of new fenders were bolted into position.

On the western beeakwater a reinforcing block was built on the south side of the outer end 97 feet long, 11 feet wide and 12 to 14 feet high, or to a height of about 10 feet below the floor of the work; a reinforcing block was also begun along the whole length of the L 70 feet in length and from 10 to 12 feet wide. To obviate settlement due to soft bottom and the eating away of the bottom logs by the limnoria, which was the cause leading to the necessity of constructing this block, it was built on 147 piles driven to hard bottom and cut off level with the beach. The inner, or north side, of the shoreward end was also strengthened and rebuilt.

In 1897-8, the sum of $3,600 was expended in further repairs and renewals to both breakwaters; the reinforcing block along the ell of the western breakwater was completed to the full height of the work, and the inner face of the other end was renewed. The buttress on the outer side was extended shorewards a length of 122 feet. On the end of the eastern breakwater the T was rebuilt 50 feet long, 20 feet wide, and built on twenty-one piles driven to hard bottom and cut off level with the beach. Various miscellaneous and necessary repairs were also executed.

In 1898-9 the sum of $710.35 was expended in completing the thorough and expensive repairs to the western breakwater; 60 feet on the inner face was close-sheathed, the buttress on the seaward side 140 feet long was finished and several vacant spaces in the shoreward end were filled with ballast. The total expenditure by the department on this work up to June 30, 1899, amounts to $21,941.45, of which $12,585.33 may be charged to construction and improvements and $9,356.12 to repairs.

RIVER HEBERT.

River Hébert is a tidal stream in Cumberland county, flowing north into Chignecto Channel at the head of Cumberland Basin. At high water it is navigable during the summer season from Minudie at its mouth to the village of River Hébert, a distance of six miles, over the whole of which distance is a depth of 17 feet at H. W. O. S. T. (Spring tide rises 46 feet, neaps 38 feet.)

The village of River Hébert, situated on and near the stream, is a scattered but prosperous farming and lumbering settlement, having within a radius of a mile a population of some four or five hundred people. It is the only intermediate station on the Joggins Railway running between Maccan station on the I. C. Railway and the Joggins Mines being eight miles from the former and three from the latter.

At the head of tide water some three or four miles above the village, are two large saw miles, and in the neighbourhood several smaller ones, of which the total output has averaged nearly ten million feet of lumber yearly since about 1890, the whole of which is brought down the river on scows and landed onto schooners lying in the river at the village.

Within half a mile of the village is a small coal mine with an output (when working) of 50 tons per day, which owing to the lack of shipping facilities is exported by rail. For want of a wharf also, the five local stores, and the saw mills in the neighbourhood, import most of their general merchandise and supplies by rail, though some heavier freight, such as flour, molasses, &c, come by schooner, and is landed by means of temporary gangways laid from the schooner's deck to the top of the steep mud bank of the river, at considerable risk and inconvenience.

On February 20, 1899, the Public Works Department entered into a contract with Mr. John W. Tingley, of Nappan, to construct a public wharf on the west bank of River Hébert, that will have 16 feet depth along its outer surface at high water ordinary spring tides, for the sum of $1,195.00.

The wharf, let by contract, measures 82 feet in length and 55 feet in width and its top is 4 feet above H. W. O. S. T.; it consists of pile trestle bents thoroughly bolted and braced and connected by good substantial walings, and its end and eastern side is protected by close faced piling.

Total expenditure incurred in 1898-9, $962.80.

ROUND BAY.

Round Bay, Shelburne County, is a thriving little fishing village of some 100 population, 17 miles to the southward of the county town of Shelburne, and about 4 miles north of North East Harbour.

During the fiscal year ended June 30, 1899, a sum of $50 has been applied in erecting a kind of brush and pole fence 250 feet in length on top of the beach, which protects a small harbour on the inside, used by the fishermen as a place of shelter for their boats.

This brush fence catches the sand which was gradually being blown away, and the beach, which is the only protection the fishermen have for their boat harbour, is now regaining its original height.

SALMON RIVER.

Salmon River, Halifax county, is a thrifty village of some 500 or 600 people engaged in fishing, lobster canning and gold mining, situated at the mouth of the river of the same name that empties into the inlet known as Beaver Harbour at its north-east end. It is 65 miles in a direct line from Halifax Harbour, about 85 by high road, and about half way between Halifax harbour and Canso.

Up to 25 or 30 years ago the harbour, which though small is well sheltered, had a depth of 3 to 4 fathoms up to its extreme head, but after the establishment, about 20 years ago, of the crushing mills of the Dufferin Gold Mining Company, on the stream 3 miles inland, this depth was gradually reduced by the deposition of the refuse crushings in the form of fine sand, which were thrown into the stream until there were only 3 or 4 feet of water at low water ordinary spring tide.

The trade of the place in consequence suffered to no inconsiderable degree, and even small vessels have difficulty in approaching at low tide the lower of the two private wharfs in the upper part of the harbour. Sailing packets engaged in the coasting trade make fortnightly calls, and a steamer running between Halifax and Charlottetown, P.E.I., via intermediate coast ports, calls at the port once and sometimes twice each week.

To restore this harbour to its former usefulness, the departmental dredge *Geo. Mackenzie* operated here in 1893-4-5 deepening the channels and approaches to the wharfs and dredging turning berths, to 13 feet depth at low water ordinary spring tides, at an expense of $4,654.46.

At its session of 1898, parliament made an appropriation of $1,650 for the construction of a public wharf and a warehouse.

The construction of a pile wharf was at first contemplated, but owing to the fact that logs of suitable dimensions could not be obtained and that large business interests would not be conserved unless the structure was erected at once, it was deemed advisable to build a wharf according to the present amended plan.

The entire length of the wharf and approach is 248 feet 4 inches. The approach, which is built of a loose stone shell 6 feet thick and filled with gravel and small stones, is 106 feet in length, 35 feet in width (on top) and 4 feet in height on an average.

The wharf proper is 142 feet 4 inches in length and of a uniform width of 28 feet, except the outer 28 feet which is 56 feet wide, thus forming a good pier head for commercial purposes.

The top of the structure is at an elevation of 4 feet above high water ordinary spring tide, and its height varies from 8 feet to 20 feet.

This wharf is constructed of cribs, 7 feet square, filled up to the level of high water ordinary spring tide, with loose stone ballast. The cribs are built of alternate transverse and longitudinal tiers of doubled 3-inch deals; the deals of each tier being first spiked together then bolted to the next lower tier.

Although this structure was, to a great extent, of an experimental nature, yet the many heavy storms of last fall and winter, which did so much damage elsewhere, had no injurious effect upon this work, and there is good reason to believe that it will successfully withstand the onslaught of the much dreaded winter storms and meet the requirements of all commercial interests of the locality as well.

This public wharf promises to prove one of the most important works outside of the city of Halifax. During the first four months after its completion, some 2,500 tons of coal, much mining machinery of a heavy nature and a large quantity of miscellaneous goods were landed here.

If the present amount of business should continue, the dues collected will pay for the wharf once every four years, the total cost of which amounts to but $1,646.89.

SANDFORD (CRANBERRY HEAD).

Cranberry Head is situated on the Atlantic coast of Nova Scotia at the extreme western point of Yarmouth county, 7 miles north-west from the town of Yarmouth. The settlement in the neighbourhood, which has for some few years been known as Sandford, has a population of 300 to 400 people, engaged in fishing and farming. In 1858 a breakwater was begun by the inhabitants, aided by the provincial government. In 1876 the sum of $2,000 was expended by the department in extending the work 150 feet; in 1878-9 the sum of $1,000.08 was spent in constructing an additional length of 50 feet and in repairing the older portions. In 1880 the sum of $499.95 was expended in repairing the damage done by a storm in August, 1879. In 1883-4 $100 was expended on re-sheating the outer end, and in effecting other needed repairs. In 1885-6 some slight repairs were made to the seaward face of the breakwater at a cost of $109. In 1886-7 and 1887-8 a spur 28 feet long was built at right angles to the breakwater near its outer end to arrest the gravel that was working round it and destroying the harbour; miscellaneous repairs were also made at a total cost of $768.74. In 1888-9 a sum of $200 was laid out in removing the gravel from the dock, where it had collected previous to the construction of the spur.

In February, 1892, two serious breaches were made in the work by heavy gales, and a large quantity of gravel was driven through them into the little boat harbour inside. If repairs had been made without delay the work could probably have been saved, but nothing was done, and in the next two or three years about 300 feet in length, i.e., the whole work except the outer block, was destroyed, the remaining piece being 60 feet long, 22 feet wide and from 18 to 20 feet high. Before this date six or seven fishing schooners of 10 to 20 tons each, besides a number of smaller boats, were owned in the place and a considerable fishing business was done. Since the destruction of the breakwater, owing to lack of shelter, the schooners and most of the boats were disposed of, and the fishing industry of the locality practically ceased to exist. In 1898-9 the sum of $3,497.29 was expended in partially rebuilding the shoreward portion of the work on a new site rendered necessary by the altered configuration of the beach; the remaining outer block was also thoroughly repaired. The new work, of which a length of 200 feet was built during the year, starts from the shore at a point about 350 feet eastward of the point where the former work began, and it was built in a north-westerly direction towards the remaining outer block of the old work with which it will be connected. To complete the new work the construction of a further length of 100 feet should be undertaken in 1899-1900. Besides the portion of new breakwater built

during the year, a small boat channel about 40 feet long and 8 feet deep was excavated through the beach to give access to the salt water pond which forms a very valuable shelter for the fishing boats during heavy gales in the winter season.

The total expenditure incurred at Cranberry Head, or Sandford, up to June 30, 1899, amounts to $9,672.02, of which $8,194.34 may be considered as having been applied for works of construction and improvement and $1,477.69 for repairs.

SWIM'S POINT.

Swim's Point, Shelburne county, is a point of land on Cape Sable Island, about ⅜ of a mile distant from Clarke's Harbour, being near its lower end.

In 1898–9 the construction of a public wharf having 11 feet depth along its outer end at low water spring tides was undertaken at this place by the department to afford the residents general landing and shipping facilities.

The wharf being built is a block and span structure 188 feet in length over all and 20 feet wide, with a stone bank approach, 35 feet in length and 25 feet in width on top. The wharf proper consists of three 10-foot blocks of ballasted cribwork, three 18-foot blocks, three 13-foot spans and an L at the outer end 25 feet long by 40 feet wide and 24½ feet high, with floor 3½ feet above high water ordinary spring tides.

Work done by day labour. The total expenditure incurred in 1898–9 amounts to $2,025.18; an additional outlay of about $200 is required to complete the wharf.

TRACADIE (BIG OR EAST).

Tracadie Harbour, Antigonish county, is on the southern shore of St. George's Bay, 12 miles east from Antigonish Harbour and 11 miles west from the entrance to the Strait of Canso. It is separated from St. George's Bay by a series of islands and beaches of sand and gravel. Formerly the entrance was to the eastward of Delorey Island, by a narrow and crooked channel with 2 feet at low water. In 1863 the provincial government opened a passage on the eastern side of the harbour, through a beach connecting the mainland with Delorey Island, and constructed a breakwater on its eastern side.

In 1874–5 the department repaired and extended the breakwater, and constructed a retaining wall to the southward of it. Repairs were made from time to time up to 1884–5, when the breakwater was repaired and strengthened by close-piling, and the retaining wall, which had been destroyed, was reconstructed.

The breakwater was badly damaged in 1889, and the following year the whole of it, with the exception of a portion of the south face, 67 feet in length, was destroyed. In 1892–3 50 feet of the south face of the breakwater was repaired and strengthened by close-piling.

The following is a statement of expenditure up to the end of the fiscal year 1897–8 :—

Refund of amount expended by provincial government	$ 1,228 69
Reconstructing and repairing breakwater	16,613 05
Dredging	4,786 75
Total expenditure	$22,628 49

TRACADIE.

The destruction, in 1890, of the greater portion of the breakwater, involved the shifting of the channel at the entrance (originally carrying 6 feet at low water) 500 feet to the westward, and the wasting of the beach and consequent loss of land by erosion, to the eastward. The channel has since worked back nearly to its former position, but has a depth of only 5 feet at low water. To prevent further loss of land and to improve and protect the entrance, it was decided to reconstruct the breakwater,

and for this purpose the sum of $3,500 was appropriated for expenditure in 1898–9. The work proposed included repairing and strengthening the remaining portion of the old work; and the construction of a side extension 100 feet in length (16 feet in width on top over the inner 64 feet, and 20 feet in width on top over the remaining 36 feet) over a bottom 2 feet above low water at the inner end and 2 feet below low water at the outer end; the top of the covering to be 6 feet 6 inches above extreme high, or 11 feet above extreme low water. Of the amount appropriated, the sum of $2,800.62 was applied in procuring the materials required in the construction of the works proposed, and in placing and partially ballasting the creosoted substructure of the 100 feet extension.

TROUT COVE.

Trout cove, Digby county, is a small indentation, about 1,000 feet long and 600 feet deep, on the Bay of Fundy coast of Digby Neck. It is about midway, and has the only breakwater affording shelter to fishing boats, between Digby Gut and Petite Passage, being 18 miles south-west of the former. Spring tides rise 23 feet, and neaps 19 feet.

The settlement at and near the cove, which is called Centreville, has a population of about 300 people, engaged in fishing and farming. The fishing fleet comprises from 25 to 30 boats of 16 to 18 feet keel, two schooners of about 30 tons each, as well as one small steamer, which, during the open season, runs to and from St. John, Halfax, Lunenburg and Yarmouth with freight, fish, lumber, &c. There is a factory in the place for the canning of finnan haddies and kippered herring, which is doing a large business. Within a short distance of the cove is excellent ground for cod, haddock, hake, lobsters, &c.

A breakwater was begun in 1856 by the inhabitants, aided by the Provincial Government. It was extended by the department in 1876 a distance of 178 feet; in 1880 and 1881 extensive repairs were made to the old portion of the breakwater of which 100 feet had been destroyed in 1870. In 1882–83 general repairs were made at a cost of $249.17. In 1885–86 $1,000 was spent in repairing the inner portion, which was much weakened by heavy seas, 100 feet of new facing was built, the break renewed and strengthened, and some ballast placed in the outer end of the work. In 1887–88 140 feet of the inner portion of the seaward face of the work was rebuilt from the beach to the top of the break; part of the flooring was renewed and other necessary repairs carried out at a cost of $1,991.75. In 1888–89 the sum of $399.79 was expended in repairing the beach and inner end of the work, the beach having washed away and exposed the foundations.

About 1886, the inhabitants built a small block of cribwork 24 feet long, 15 feet wide and 9 feet high, at the shore end of the north side of the breakwater, for the purpose of protecting it and the adjoining bank on which is situated a large fish house and store.

In 1891-2 the outer end of the breakwater was repaired at a cost of $100.31. In 1894-5 the small block of cribwork on the shore end of the north side of the work was rebuilt and about 100 tons of ballast were deposited in the shore end of the breakwater to replace that washed out by the heavy winter storms. In 1896-7 the sum of $3,903.02 was expended in thorough repairs and renewals. 130 feet in length of the inner side of the shore end was taken down and rebuilt with new timber, 80 feet in length of the seaward side of the outer end was close-fendered, the whole work was refloored; the middle 100 feet in length was raised 2 feet in height to make up for settlement, the shoreward half of the inner face was close-sheathed to prevent the brook from undermining the work and the outer face was re-inforced and fendered anew.

For the purpose of increasing the usefulness of this work the department determined to lengthen it, and on April 12, 1898, a contract was awarded to Messrs Reid and Archibald for the sum of $3,896, for the construction of an additional block 100 feet long. The work was begun early in July, and, by the contract, was to have been finished October 29, 1898, but owing to the difficulty of procuring timber, as alleged

by the contractor, and other causes, the work was not completed before winter set in, and operations had to be suspended until the following summer. It was resumed on July 20, instead of early in May as it should have been, and it will probably not be finished before September 1, 1899.

The shore end of the breakwater, which had been slightly damaged by the storm in the middle of January, was moreover protected with cribwork and stone at a cost of $41.12 during the fiscal year 1898-9.

With the new extension the breakwater will have a total length of 474 feet on the north side, a width of about 30 feet on top, and a height of 28 feet at the outer end, where there will be a depth of 24 feet at high water ordinary spring tide.

Up to June 30, 1899, the department expended for construction and improvements $9,669.33 including a refund of $685 made to the Provincial Government in 1887-8, and for repairs $4,693.41, forming a total outlay of $14,372.74.

UPPER PORT LATOUR.

Upper Port Latour, Shelburne County, is a small fishing settlement about two miles from Port Latour, and nine miles from Barrington, with a population of about 250.

With a view of providing for the residents the landing and shipping accommodation prayed for, the department commenced in 1898–99 the construction, by day labour, of a public wharf reaching 7 feet depth at low water ordinary spring tides.

The new wharf is 267 feet long and 20 feet wide, exclusive of a stone bank approach 38 feet long and 25 feet wide. It is made up of nine 18-foot cribwork blocks and eight 13-foot spans; the outer block is 18 feet high, and the floor stands 3½ feet over high water mark ordinary spring tides.

The expenditure incurred in 1898–99 amounts to $2,041.88. An estimated additional outlay of $700 is needed to complete the structure.

UPPER WOODS HARBOUR.

Upper Woods Harbour, a village with about 400 of a population is situated in the south western part of Shelburne County, about 18 miles west from Barrington and forty miles south-east of Yarmouth. It is an inlet from the Atlantic about three miles in length, and ½ mile in width, dry at low water, except in a channel which runs nearly through the centre of the flats, with a depth varying from 9 to 18 feet at low tide. At the mouth or lower end of this channel there is a rapid or 'fall' as it is known locally, of about 2 feet in descent, and it is only during high water that this 'fall' can be passed, and thus the harbour is limited for the use of small vessels and open fishing boats only.

There are no wharfs in the immediate vicinity of this village at which vessels of moderate draught can call for landing freight, shipping fish, &c., the nearest being four miles to the eastward and five miles to the westward.

With a view of providing the much needed landing and shipping facilities prayed for by the residents, the department entered, on November 14, 1898, into a contract with McDonald Sutherland, of Windsor, N.S., for the construction of the following works:—

1st. On the west side of an island known as Smith's Island, a pier 77 feet long and 20 feet wide, with a return of 27 feet by 20 feet, composed of two blocks of cribwork, 11 by 20 feet, three spans of 13 feet, 7½ feet and 7½ feet respectively, and a pile trestle bent, all 20 feet wide, together with four pile bents placed at 8 feet 8 inches centres and carrying a floor supported on stringers 40 feet wide over all. 2nd. A stone bank 20 feet wide connecting this pier with the Island. 3rd. Acauseway between the island and the mainland 534 feet long, 16 feet wide, and 10 feet high, on an average, comprising trestle work of 44 pile bents, 10 feet centre to centre, two blocks of cribwork 10 feet by 16 feet, a span 13 feet long, and two rock bank approaches 20 feet wide.

At the close of the fiscal year 1898–99, about seventy per cent of the contract was finished and the total expenditure amounted to $1,336.62.

WEST ARICHAT.

West Arichat, Richmond county, is a small but safe harbour on the south side of Isle Madame, sheltered from the south and west by Chrichton Island and a breakwater between it and the mainland.

The breakwater is 1,285 feet in length and 23 feet in width. A portion of it extending 628 feet from the island was built by the Provincial Government in 1867, and the remainder by the department in 1879. It is of round timber, open-faced, and was fully ballasted. The top of the covering is 11 feet above the bottom, which dries at extreme low water except near a 25-foot opening between the old and the new work; and 6 feet above extreme high water.

In 1883–84, fenders were placed on the south face 3 to 9 inches apart for a distance of 490 feet; in 1891–2, the covering over 140 feet at the west end, and 120 feet at the east end, was renewed along the centre line.

In 1892–3, 80 feet of the south face, at the west end, was repaired and close-fendered, 92 feet of the north face at the west end was reconstructed, and all other necessary repairs were effected with the exception of renewing about 11,000 feet B. M. of covering along the side of the work and replacing 150 cubic yards of ballast.

The expenditure up to the end of the fiscal year 1897–8, amounted to $15,309.67, of which $2,000. was a refund of amount expended by the Provincial Government and $13,294.29 may be charged to construction account and $2,015.38 to repairs.

During the year 1898–9, the sum of $685.39 was expended in repairs and renewals, including placing 480 cubic yards of ballast in the seaward face chambers; renewing 15,000 feet B. M. of 3-inch covering at the sides of roadway; placing a guard rail on the north side from end to end of the covered portion, and 26 fenders on the south face near the west end; and repairing and strengthening the corners of the work on each side of the opening.

WEST CHEZZETCOOK.

Chezzetcook Inlet, Halifax county, is about 16 miles east of Halifax Harbour. It is half a mile wide at its mouth, extends 5 miles inland and receives at its head the waters of Chezzetcook and other lakes. The settlements of East and West Chezzetcook, on either side of the inlet, have a population of about 700 people engaged in farming, fishing and lumbering. The inlet itself, which has an average width of about a mile, is shallow with a bottom of sand and mud, of which, at low water, considerable areas are bare. There is, however a narrow, tortuous channel to the extreme head, having a depth of from 6 to 8 feet at low water of ordinary spring tides, which is used by a considerable number of fishing and coasting schooners and other small craft.

Owing to the gradual filling up of the entrance to the channel with accumulations of sand, a breakwater or wing-dam, having a total length of 1,100 feet, was built by the department—1892 to 1894—by contract, at a total cost of $11,988.66. This work was designed to create a scour and thus deepen and improve navigation at the entrance to the channel. It is built in a westerly direction from the foot, or southern end, of Conrad's Island, which forms the western side of the channel entering the inlet. At this point the channel is 1,500 feet wide from high water to high water; but a passage of only 600 feet is now left from the end of the breakwater dam to high water mark on the mainland and the west sides; a length of 900 feet of the wing dam having been built at right angles to the channel and 200 feet parallel to it. This great contraction of the natural channel had the effect of creating a strong current at ebb and flood tide, and the fine sand on which the work was built scoured to such an extent as to cause the whole length of the L to settle from 4 to 6 feet, and the stem of the work, or the shoreward 900 feet, from 2 to 4 feet, necessitating the placing of a substantial toe of

brush and stone along both sides of the whole work. At the southern end of the outer 200 feet, or L, is a square block 30 x 30 feet, which is closed faced with vertical sheathing 5 inches thick. All the rest of the work is of ordinary stone-filled round-log cribwork with sides battering one in five and a top width of 15 feet.

In 1895-96, the sum of $500 was expended in repairing, or rather re-building, a length of 363 feet of the top of the work that was displaced and many of the timbers which were broken by severe storms in the spring of 1895. The portion rebuilt is about the middle of the length of the stem of the work, and varies in height from one to five logs; it is filled solid with new ballast and securely bolted. During the year (1898-99) the sum of $1,000.09 was expended in repairing damages caused to the work by heavy seas and ice during the previous winter; a length of 235 feet was rebuilt from two to four logs high and a length of 288 feet was close-sheathed on the seaward side. The work, at the present time, is in fair condition, but to guard against further damage by ice, which strikes the breakwater with considerable force during southerly blows, it would be advisable to close-sheath the remainder of the lower or seaward face of the work. The effect of this work has been to deepen the channel very materially immediately abreast of it, the sand has however again deposited farther down, the breakwater would have had a better effect if it had been built in a south-west direction, making an angle with the channel instead of being square to it.

Expenditure incurred for dredging channel in 1874-5...	$ 2,593 70
Cost of construction of breakwater-dam.....	11,988 66
Expenditure for repairs to "	1,500 84
Total expenditure.....	$16,083 20

WESTERN HEAD.

Western Head is one of the most important shore fishing settlements in Queen's county. It is situated on the southern side of Liverpool Bay, about 4 miles to the south of the county town of Liverpool.

Projecting from the head is a broken rocky ledge which formed a partial shelter, enabling fishermen to land with their boats in moderate weather, but the difficulty always was that the fishermen were not only prevented from launching their boats in rough weather, but had to run great risks in effecting a landing when they were caught on the fishing grounds in sudden storms.

In 1887 the department began the construction of a stone breakwater in the rear and partly in the space sheltered by this rocky ledge. The breakwater was built of large quarried stone laid and bolted together, and when completed its length was 190 feet and its width 40 feet on top. Soon after its completion, however, a severe storm carried away 100 feet of the outer end of the work.

In 1889-90 this work was rebuilt; and owing to the depth of water inside the reef and the difficulty in securing a foundation, it was decided to rebuild on top of the reef, the whole of which uncovers at low water ordinary spring tide. The projecting points of the reef were cut away and a bed prepared for the foundation course which was bolted down to the bed rock and the interstices between the stones filled in with Portland cement concrete. Each succeeding course was laid in a similar manner, the top of the breakwater being carried up 5 feet above high water ordinary spring tide, and the surface finished smooth. Where the new work and the old join, the breakwater is 40 feet wide to 29 feet where it joins the reef. The part rebuilt is 106 feet in length, and the total cost of the above mentioned work of construction and improvements amounts to $12,025.96.

In 1898-9 the sum of $965.79 has been expended in repairing this breakwater as the constant action of the waves had gradually weakened the structure. The work done consisted in the practical reconstruction of a portion of the breakwater, 90 feet in length, 29 feet wide and of an average height of 8 feet, besides placing other portions of the work in a thorough state of repair.

WHYCOCOMAGH.

Whycocomagh, Inverness county, is a thriving village on the west side of a bay of the same name at the head of St. Patrick's Channel, an arm of the Bras d'Or Lake, and a convenient place of shipment for Lake Ainslie, Skye Glen, and other agricultural districts of central Inverness.

The wharf at this place, purchased by the department in 1897-8 together with a warehouse and a right of way to the highway for the sum of $3,000, was originally a block and span structure extending over a bottom of soft mud or silt, varying in depth from 1 foot at the inner to 19 feet at the outer end, 20 feet to 9 feet at low water level, and to within 35 feet of a channel dredged in 1884, to 12 feet 6 inches at low water. In 1889-90 144 feet was reconstructed, with side and end walls of rubble masonry and centre filling of stone; and in 1892 the outer portion, 55 feet 9 inches in length, was repaired and extended 10 feet with pile work.

The work proposed includes reconstructing the outer 60 feet with pile work, and the construction of a pile head 60 feet in length and 25 feet in width. In 1898 9 a sum of $1,040.67 has been applied in procuring nearly all the materials required and in completing the work with the exception of placing part of the covering and guard rails, and a few guard piles. Covering was laid temporarily over a portion of the work to make it available for traffic.

WHITE POINT.

White Point is a small fishing settlement on the Atlantic coast of the county of Queen's, about 6 miles south of Liverpool, the county town. At this place a breakwater was constructed over 25 years ago by the inhabitants, assisted by grants from the local government, which affords the only protection to fishing boats in the neighbourhood, and is a small structure of stone-filled crib-work 180 feet in length, from 10 to 20 feet wide and about 13 feet in height at the outer end.

In 1878 an expenditure was made by the department in lengthening the structure and in the removal of a number of large granite boulders from the area sheltered, and in 1879 the work was strengthened and repaired.

During 1882-3 the outer portion of the old work which had been completely demolished during a storm, was rebuilt and repairs were executed on other parts of the structure, and in 1884 further expenditure was made on repairs.

In 1886 it was found that the outer blocks had been carried away, and the ballast they contained, as well as a portion of the stone slope on the seaward side, had been carried into and deposited over the area sheltered by the breakwater, and the sum of $470.53 was expended in its removal and in closing in the damaged end of the work; and a further expenditure of $1,004.92 was made during the ensuing year for the same purpose.

During 1888-9 the sum of $2,499.46 was applied in excavating a dock, or landing place for boats, 100 feet in length and extending inwards 60 feet from original high water mark.

In November, 1893, the sum of $349.56 was spent in a practical rebuilding of about 10 feet in length of the outer south corner of the breakwater and refilling with ballast, placing and spiking about 12 feet in length of close sheathing on the outer side, laying a few new floor timbers and planking and placing about 70 tons of heavy rip-rap along the outer side of the work, to break the force of the heavy seas.

During the year 1898-9 the sum of $902.26 was expended in practically rebuilding the breakwater which is now 192 feet long, 14 to 25 feet wide, and 13 feet high at the outer end. Many large rocks and stones were also removed from the inner dock, and a ledge blasted with dynamite which endangered the safety of their only landing place in times of stormy weather or during heavy seas or swells. The crib-work, when stripped, proved not only to be decaying above high water, ordinary spring tide, but also below that point; the destructive little worms known as the limnoria had completely destroyed the timber, thus entailing the practical reconstruction of the entire work. As this was the only place where the fishermen of this settlement and others contiguous

thereto could land their catch, the value of this breakwater, in affording to these people convenient shelter for their boats, cannot be overestimated.

The total expenditure incurred for works at this place up to June 30, 1899, amounts to $13,868.26, of which amount $9,147.93 may be charged to construction and improvements, including a refund of $1,643.55 made to the local government, and $4,720.33 to repairs.

WINDSOR.

Windsor, the county town of Hants, with a population of about 4,500 people, is an important town situated at the head of the estuary of the River Avon, on the Dominion Atlantic Railway, 46 miles north-west from Halifax. The shipping registered at the port for the year ended December, 1896, amounted to about 131,000 tons. In the neighbourhood are extensive quarries of gypsum, which is shipped by water to the extent of 120,000 tons annually. A couple of million feeet B.M. of lumber also forms part of the exports by water.

Up to a dozen years ago the wharfs of the town were comparatively free from mud, and at high water large vessels could lie alongside to load or discharge. Within the last few years, owing partly no doubt to the construction of the new highway bridge, the mud has accumulated in front of the wharfs to such an extent that it is only at extreme high tide that moderate sized vessels can approach or leave the wharfs. Several of the leading shippers and merchants have on more than one occasion spent from two to three hundred dollars in digging and removing the mud, but it again deposited and rendered the expenditure useless.

With the object of scouring away the accumulated mud from the wharfs, the department in 1897-8, expended the sum of $3,299.71 in constructing a training weir, down stream from the corner of the Falmouth abutment of the road bridge, at an angle of 45 degrees with the bridge. The weir is constructed of brush mattresses at the bottom, with sufficient stone to keep them in place, and with crib-work on top of them. The thickness of the brush mattresses with their load of stone is from 2 to 4 feet, the average depth of the main or under crib is from 5 to 8 feet, and the uniform height of the A shaped top crib is 7 feet. The sloping sides of the top of the work are sheathed with 3-inch hardwood plank, and the crest is covered with a 6 x 6 x $\frac{3}{8}$-inch steel angle, securely bolted. The work is built on shifting quicksands, and owing to the high rise and fall of the tide, about 50 feet, and the great velocity of the current at ebb and flood tide, the work is being constructed under great difficulties.

At the close of the fiscal year 1898-9, during which the work was continued at an expenditure of $3,999.25, there was a length of 263 feet finished. For a length of 65 feet the brush mattresses and stone beds were sunk and the lower cribs put in place upon them; for a further length of 40 feet the brush mattresses with their load of stone were sunk ready for the cribs. Altogether this work in its several stages is approximately equivalent to 350 feet of finished weir and deducting the work done in 1897-8 there remains for 1898-9 a balance of 240 feet of finished weir showing that the cost of the work done during the year was approximately $17.50 per lineal foot.

In addition to the work upon the training weir a considerable quantity of the rock ledges at Smith's Point, separating the Avon and St. Croix Rivers, was removed, as well as portions of the old pier foundations of the old highway bridge. The object of the former was to induce the flood tide to work its way towards the Windsor wharfs to meet the channel being slowly formed by the scour induced by the training weir. The object of building the weir was to increase the water-way on the Windsor side so as to cause a larger volume of the ebb current to exercise its scouring action on the mud in front of the Windsor wharfs. The works carried out thus far on the training weir, and in removing the rock at Smith's Point and the old pier foundations of the former highway bridge, are undoubtedly, though slowly, effecting their intended purpose of scouring away the mud in front of the Windsor wharfs, but their complete and permanent action cannot be assured until the training weir is completed to its full length of 600 feet as originally designed.

The total expenditure incurred up to June 30, 1899, amounts to $7,627.54; $7,298.96 being paid for construction and $328.58 for repairs.

PROVINCE OF PRINCE EDWARD ISLAND.

BELFAST.

Belfast Pier, Queen's County, locally known as 'Haliday's Wharf,' is situated on the south side of Orwell Bay about one mile from the village of Eldon. This pier, constructed by the Government of Prince Edward Island previous to Confederation, was taken over by the Federal Government in 1883. Besides affording shipping facilities for the neighbourhood, it is also a port of call for the steamers of the Prince Edward Island Navigation Company plying, during the season of navigation, tri-weekly, between Charlottetown and Orwell Bay. It has a length of 600 feet and, at its outer end stands a head block forming an L which is 28 feet to 30 feet in width and 145 feet in length along the channel, where a depth of about 5 feet now obtains at low water spring tides, or 14 feet at high water.

The pier-head had originally a length of 140 feet, but when retopped in 1889 was shortened 10 feet; the result being that the submerged remains of the old work at its north-eastern end rendered this part unserviceable during low water owing to danger of vessels being damaged when approaching the pier. In 1897–8 a new block, 28 feet wide by 15 feet long and of an average height of 15 feet was added to the pier head at the eastern end so as to cover the obstructing ballast and timbers. General repairs were also made on the roadway and the expenditure incurred in the said year for these repairs and the construction of the new block amounted to $499.45.

At the close of the fiscal year (1897–8) a sum of $4,854.49 had been expended which may be charged to 'Construction and Improvements' including the refund of $4,355.04 made to the Local Government 1884–5 for their expenditure on the pier between 1873 and 1884 and a further sum of $5,165.47 had been applied for repairs undertaken at various times, to keep the pier in a passable state for traffic; the greater portion of the work above low water was rebuilt.

During the past fiscal year (1898–9) the sum of $499.46 has been expended in filling in a 'span' or opening of 24 feet in length, that existed at about 200 feet inward of the pier head or L, and by which during westerly storms drift entered and was filling in the area protected. The filling of the span is made of close laid poles (placed lengthwise and cross-wise) and having on top, for about 3 feet, close faced timber work full ballasted. Thirty new fender piles were driven on the western side of the pier and the whole of the roadway approach (400 feet in length) made up with broken stone and gravel. Two new floor stringers were put on the outer part of the approach, and the whole of the planking of the pier head was repaired as found necessary; and the outer upper corner strengthened and fender-piled.

BRAE.

Brae Harbour, Prince County, is situated at the mouth of the Brae River on the northern side of Egmont Bay, eight miles east of West Point and about six miles south of Coleman Station on the line of the Prince Edward Railway, which station is 36 miles from Summerside, the shiretown of the county. At the mouth of the river an area carrying a depth of six feet at low water is well sheltered by 'Brae Island' and would prove a good fishing station and harbour of refuge for small vessels, as well as a most convenient place of shipment for the surplus produce raised in the district, were it not that approach to it is obstructed by a sand bar, almost dry at low water, that extends completely across the entrance and which is parallel with the shore and at a distance of about 400 feet out from the eastern end of the island.

In 1890, with a view of improving this harbour the inhabitants of the surrounding district began the construction of a brush breakwater so as to contract the entrance, originally 800 feet wide, and deepen the same by the increased scour thus induced. They built a length of 350 feet wide, composed of poles, brush and some ballast with clay filling on top. To this the department added a length of 200 feet in 1891–2 and in 1895–6 repaired or, more properly, rebuilt the inner or original weak work constructed by the inhabitants.

As no benefit as regards deepening by scour had resulted from the work thus lengthened to 550 feet and a further extension of at least 500 feet, being considered necessary to attain the desired improvement in the depth, it was decided to build during the year 1897–8 an additional length of 100 feet of breakwater. Most of the materials required for this addition were procured during the early part of the winter of 1897–8, with the intention of proceeding with the construction of the lower portion of the work through the ice in March, 1898, and finishing it by the close of the said fiscal year. Owing to the serious illness of the foreman in charge at the time when the condition of the ice was favourable for carrying on such work, nothing was accomplished further than procuring the materials required. The cost of these materials together with some little labour performed in ice cutting, &c., amounts to $514.64, making with the former expenditures for the 200 feet extension and reconstruction of the 350 feet of the original work, a total expenditure of $2,505.49 up to June 30, 1898. $1,461.19 may be charged to 'Construction and Improvements' and $1,043.29 to 'Repairs.'

During the past fiscal year (1898–9) the proposed 100 feet extension has been completed. This work has a width of 24 feet and averages 13 feet in height; it is built of open faced square timber, floor stringered and planked over, well ballasted and has sides and ends well protected by fender piling driven at about 3 feet centres. Moreover, the whole of the inner 350 feet of the breakwater was repaired, the roadway being levelled up with brush, broken stone and gravel, some fender piling was also driven at the ends of the 200 feet extension. The cost of all these works amounts to $915.68, of which sum $860.73 was paid previous to June 30, 1899, making the total expenditure up to that date for the 650 in length of breakwater built, $3,366.22. All this length of breakwater has not as yet made any improvement in the depth of water. It has been of much benefit to the locality, shipments being now regularly made from the work by small vessels; it also forms a good shelter and landing for the fishermen who have been frequenting it in large numbers. In order that the depth of water may be improved, a further length of breakwater of at least 400 feet is required.

CLIFTON.

Clifton pier, Queen's county, is on the south side of the South-west River about 2½ miles from its entrance into New London Harbour, and immediately below the public road bridge crossing the river at this point. The pier is 260 feet in length and 18 to 20 feet in width for a distance of 202 feet; the remaining length, viz., the pier head, being 25 feet wide. It is constructed of alternate blocks of cribwork and sections of poles and brush work built to close openings left in the original structure; the roadway out to the outer block or pier head being formed of clay filling and that of the said outer block of planks laid on and spiked to floor stringers. The pier head, which extends out to the edge of the channel, has along it a depth of 14 feet at low spring tides or of 18 feet at high water springs, affording good shipping facilities for the largest class of vessels that enter New London Harbour. This pier is one of the Prince Edward Island piers assumed by the Dominion government in 1884, at which time a payment of $208 was made to the local government to recoup it for expenditures in connection with the work from 1873 to that date. At the close of the fiscal year 1897–8 there had been expended on repairs $276.35, hence the total cost of the pier to the Dominion up to June 30, 1898, amounts to $725.76.

During the year 1898–9 the sum of $353.11 was expended in rebuilding the whole of the seaward side of the inner 180 feet of the pier and making general repairs where required on the remainder of the work.

GEORGETOWN.

Georgetown, King's county, the terminus of the Georgetown branch of the Prince Edward Island Railway, and shiretown of King's county, is situated on the western side of the Montague River near its entrance into Cardigan Bay.

Georgetown harbour is well and favourably known as being one of the best and safest on the island, and is also the port of call for the steamer *Stanley*, plying between Pictou and the island during the winter months. Before the construction of the Prince Edward Island Railway, a large shipping business was done from this port, for the accommodation of which the local government many years before confederation constructed, at the place, the wharf since known as the 'Queen's Pier.' This pier is centrally situated on the harbour front, and has a length in all of 640 feet, and a width of from 30 to 36 feet; along the end and outer 300 feet of the sides, a depth of 12 feet obtains at low water or of 17 feet at high water springs, as these rise here about 5 feet. The shore end of the work for 340 feet in length is of close-faced timber work filled with brush, stone and clay; the latter being used to form the roadway on top while the outer length is composed of six 'blocks' and six 'spans,' with a planked roadway supported by stringers laid across the whole.

The Dominion government assumed control of the pier in 1884, paying at the same time to the local government a sum of $2,254.24 to recoup amounts expended by them from 1873 to 1884. This pier being at the time of the transfer a very old structure, and much out of repair, an expenditure of $1,000 was at once required to put it in even a passable state, and nearly every year since small outlays had to be made for renewals and repairs. At the close of the fiscal year 1897–8 the total expenditure incurred for repairs and renewals amounted to $2,292.68, making, with the sum recouped the local government, a total outlay of $4,546.92.

During the year 1898–9 the sum of $399.92 has been applied in reconstructing the top portion of the whole of the seaward side of the shore abutment or approach, putting in new mooring posts, floor stringers and planking, as required on outer portion, and making up the roadway with broken stone. The plank sidewalk and hand railing on inner side was also repaired.

GRAHAM'S POND.

Graham's Pond (Gaspereaux), King's county, is situated on the east coast of Prince Edward Island about five miles south of the entrance into Cardigan Bay and about the same distance from Murray Harbour; it has a length of about 2,000 feet and a width of from 600 to 800 feet, carrying in the body of the pond and at a short distance from its entrance, a depth of from 7 to 10 feet at the ordinary pond level which is about 5 feet above low water springs, or about 1 foot below the elevation of high water at spring tides. At the time of spring tides an entrance into the pond can generally be effected by boats of light draught and this is also the case after freshets in the spring of the year. Ordinarily, however, the entrance channel is blocked, but a small volume of water either percolating through the head or passing over it in a gradually falling, shallow and narrow stream. During the spring of 1899 the sum of $31 was applied in keeping the entrance to the pond open; the work done consisted in the removal by hand labour of sand and gravel thrown into the channel by easterly gales.

HICKEY'S PIER.

Hickey's Pier, Queen's county, is situated on the southern shore of the Hillsborough or East River about 10 miles from Charlottetown; it was constructed by the local government many years previous to confederation, and is 428 feet in length and from 22 to 28 feet in width. The work of the latter width extends inward from the outer end for a distance of 180 feet and forms the chief loading place for vessels. Some dredging was done in 1880-1-2 along this portion of the pier and a depth of about 10

feet at low water secured at a cost of $782.19. The Dominion Government assumed control of this pier in 1884, at which time they repaid the local government the sum of $1,255.27, which they had expended on it for repairs between that date and 1873. The work was, however, at the time in a dilapidated condition and expenditures had to be made nearly every year since to keep the pier in a passable state for traffic. The total expenditure incurred for repairs up to the close of the fiscal year 1897-8 amounts to $2,928.61, and by adding the sum recouped to the local government and the cost of the dredging done in 1880-1-2 the total cost of the pier to the department up to June 30, 1898, is found to be $4,966.07.

MIMINEGASH.

Miminegash Harbour, Prince county, is situated on the north-west coast, about 15 miles from North Cape and 18 miles from West Point. Previous to its improvement by the department, it was but one of the numerous ponds along the coast that empty into the Straits of Northumberland through shifting sand beaches, the channels of which often change their course and are sometimes blocked when severe storms occur. The pond at Miminegash is sheltered to a great extent by 'Miminegash Reef,' a ledge of rock nearly a mile long, which lies parallel to the shore at a distance of about half a mile; it was the one mostly sought by fishermen during stormy weather, and after an examination of the ponds on the coast, in 1878, was selected by the department for improvement, when work was commenced for the formation of a harbour. The works built at Miminegash consist of piers or breakwaters on each side of the pond to make the outlet permanent, its width being reduced to 56 feet. The breakwater on the north side has a length of 535 feet, and that on the south side a length of 350 feet, there being also inward of the latter a beach protection 270 feet long to guard against scour and the formation of a new channel or outlet back of the southern work.

The total expenditure incurred in connection with the Miminegash Harbour works up to the close of the fiscal year 1897-8 amounts to $14,379.11.

During the past year, 1898-9, general repairs had to be undertaken on many of the above works which had been greatly weakened by age, the action of the ice and the ravages of the 'teredo.'

The repairs effected consist of the following, viz.:—

1. Along the channel face, reballasting the outer 300 feet of the northern breakwater and putting in new floor stringers and covering, as required.

2. Close piling and ballasting both sides and the end of the outer 55 feet of the southern breakwater pier.

3. Redriving piling with addition of braces, and fender piles at 5 feet centres, on the beach protection on the southern side, and strengthening the protection work on the northern side by means of occasional piling. The expenditure incurred in connection with these works of repair amounts to $1,998.87, in which sum is included the cost of a quantity of piling timber and poles yet unused which was procured for use on further repairs proposed. A contract was also entered into June 11, 1899, for the construction of a new block 60 feet long by 30 feet wide at the outer end of the northern breakwater. This work was commenced March 21, and by June 30, 1899, about two-thirds completed, being built up to within 1 foot of the finished height, and requiring only floor stringers, flooring, mooring posts, portion of ballasting and sheathing and ironing of corners.

The total expenditure in connection with this contract work up to June 30, 1899, amounts to $1,661.60, which brings the total outlay by the department at Miminegash in 1898-9 to $3,660.47.

MINK RIVER.

Mink River Pier, King's County, also known as 'Murray Harbour North,' is situated on the north-east side and near the mouth of Mink River, where it enters the southern side of Murray Harbour.

The pier is 400 feet long, consisting of a shore abutment or approach of 200 feet, 'blocks' and 'spans' 20 feet wide for 130 feet, and a pier head 70 feet long by 32 feet wide; all the cribwork is constructed of close-faced timber. At the end and sides of the pier head there is a depth of 6 feet at low water or 12 feet at high water spring tides, which here rise 6 feet. This pier is one of the many works originally constructed by the local government, the control of which was assumed by the Dominion Government in 1884, when a sum of $293.25 was paid the local government to recoup sums expended by them between 1873 and 1884. Thence up to the end of the fiscal year 1897–8, expenditures for repairs amounting to $1,505.65 were found necessary to keep the work in a passable state for traffic; its cost to the department up to June 30, 1898, was therefore $1,798.90. During the year 1898–9 the sum of $500.10 has been applied in close piling the outer blocks with hardwood, putting in new span beams, guard timbers and mooring posts and effecting minor general repairs required to place the pier, for a time, in good and serviceable condition.

NEW LONDON.

New London Harbour, Queen's county, is on the northern coast of the island, about 10 miles east from the entrance into Richmond Bay.

Within its entrance, which is about 1,200 feet wide, the harbour is about 3 miles wide, and nearly as long, and receives the waters of the 'South-west,' the 'French,' the 'Stanley' and the 'Hope' rivers, which are navigable for short distances. On these rivers there are wharfs or shipping places from which a considerable export of the surplus produce, raised in the surrounding districts, is made. All these districts are thickly settled and well cultivated, and large quantities of general merchandise, coal, lumber, limestone, &c., are imported by water for the use of the inhabitants; there being no railway facilities as in many other places on the island. The harbour is largely used as a fishing station and as a harbour of refuge and is very conveniently situated, being near some of the best fishing grounds on the Gulf of St. Lawrence.

For the improvement of the entrance to the harbour, which is obstructed by a shifting sand-bar, the construction of beach protection works and breakwaters on each side of the mouth of the harbour was commenced by the department in 1878.

Pier work, having a length of 1,120 feet, was built on the eastern side, and similar work 460 feet long on the western side; the object being to preserve and extend the beaches by confining the current so as to cause increased scour and deepen the water over the bar; the result obtained is most satisfactory. The depth has been increased by as much as 6 feet, giving a depth of 12 feet at low water and making New London harbour one of the best on the coast. The works are built partly of cribwork and partly of stone, brush and piling; but in either case the outer or finishing block is of close-faced solid timber work.

The western work has never been damaged so as to require repair, but the eastern one being exposed to a strong current, at times to a heavy sea, and to the cutting action of ice, &c., has often suffered serious damage owing to the inner portion being too slight to withstand a severe storm.

At the close of the fiscal year 1897-8 the total expenditure incurred for harbour work, amounted to $23,087.14. Of this amount $6,314.60 was contributed by the local authorities, and $16,777.54 by the Dominion—$11,182.43 of which outlay may be charged to 'Construction and Improvements' and $4,590 to 'Repairs'.

During the year 1898-9 the sum of $735.05 has been applied in reconstructing about 200 feet of the beach protection, replacing sheathing on sloping face of outer blocks and refendering ends of the same.

The pier work, where rebuilt, is of a much more substantial nature than the original and withstood the winter and spring storms without injury, and it is hoped that after some more weak portions of the breakwater piers shall have been rebuilt the whole of the New London harbour works will prove of a more permanent nature.

RED POINT.

Red Point Pier, Queen's county, is situated on the eastern side of the Hillsborough or East River, about 7 miles north-easterly from Charlottetown. The pier, which was constructed by the local government many years before confederation, has a length of 650 feet, averaging 21 feet in width, and is composed of a shore abutment 310 feet long and five separate 'blocks' from 29 to 75 feet in length, with intervening 'spans' of 21 to 25 feet in width. The whole of the cribwork is of close-faced solid timber, the shore and inner blocks being filled with brush and stone, with some clay on top to form the roadway, while floor stringers are placed on the outer blocks and 'spans' and planked over. This pier is an important shipping point spring and fall for a large section of a thickly settled and well tilled district. Until 1897-8 it remained the property of the local government, to whom the sum of $4,033.31 was paid in the said year by the Dominion to recoup them for moneys expended on it for repairs, &c. Previous to the transfer being made, the department had expended in 1884-5-6-7-90-1 a sum of $1,500.66, $600 being chargeable to 'Construction and Improvements,' and $900.66 to 'Repairs.' Again in 1888-9 and 1890, a sum of $1,749.41 was laid out by the Dominion for dredging a channel 12 feet deep at low water, from the deep water in the river to the outer end of the pier and along the sides of its outer blocks, which previously only reached low water mark.

During the year 1898-9 the sum of $985.83 has been expended in levelling up and closely fender-piling the outer blocks.

RUSTICO HARBOUR, (GRAND OR NORTH RUSTICO.)

Grand or North Rustico Harbour, Queen's county, the most important fishing station on the northern coast of the Island, is situated about midway between 'East Point' and 'North Cape.' During 1881-2-3-4, a breakwater or wing dam 1,240 feet long was built on the northern side of the harbour, and a similar work 450 feet long on the southern side of its entrance, for the purpose of concentrating the current at ebb-tide and directing it upon an outer obstructing bar, to improve by scouring the depth of water. The desired scour has in a measure been induced and some 2 or 3 feet better water are now carried over the bar, giving at low water 8 to 9 feet, or at high water springs a depth of from 11 to 12 feet, which no doubt would be further improved by the extension and maintenance of the said works.

The breakwater on the northern side, is in a way, the most important work of the two, as it protects an inner low beach on which most of the fishing stages and fish houses have been erected. As already stated, it was originally 1,240 feet long; but, chiefly on account of the timbers being much weakened by the action of the teredo, suffered severely during various storms; 120 feet being carried away and 150 feet seriously damaged. In 1893-4-5-6 extensive works of restoration and repair were carried out, a head block 30 feet by 60 feet being added and the outer 140 feet widened and otherwise strengthened and secured; the total length of the breakwater was thus reduced to 1,119 feet.

The total expenditure incurred by the Dominion in connection with the maintenance and improvement of North Rustico harbour up to the close of the fiscal year 1897-8 amounts to $41,856.95; of this sum, $21,362.40 may be be charged to 'Construction and Improvements,' $5,465.59 to 'Repairs' and $15,028.96 to 'Dredging.'

During the year 1898-9 the sum of $182.55 was applied in placing a series of 'brush hurdles' on a space varying from 200 feet to 600 feet in width, at a point about 1,000 feet from the western end of Robinson's Island in Rustico harbour, where, by the action of the sea the sand hills had been carried away and the formation of a new or additional channel into the harbour appeared imminent, to the detriment of the latter.

The work done gave most satisfactory results, causing the making of new beach from 3 to 5 feet in height for a width of 200 feet, and preventing damage by storms during the spring of 1899 that would no doubt have been done to Rustico harbour, had no precautionary measures been taken in due time.

ST. MARY'S BAY.

Saint Mary's Bay Pier, King's county, is situated on the southern side of St. Mary's, which is inside Panmure Island, so called, although not properly an island, as a long gravel beach connects it with the mainland. The pier was constructed originally by the local government, and is one of those assumed by the Dominion in 1884; it is 407 feet in length; for a distance of 310 feet is 21 feet in width, the outer 97 feet are from 28 to 29 feet in width. The work comprises a shore abutment or approach and seven 'blocks' with intervening 'spans'; but four of these spans were many years ago filled with poles, brush and stone and the roadway out to the pier-head by clay and gravel filling on top.

Since the pier was taken over by the Dominion Government, the approach thereto has been much improved; the outer blocks being levelled up, close-piled, &c. In 1892–93 a channel carrying 10 feet at low water was dredged to it with a basin at the end, and loading berths on the sides of the pier 50 feet wide and 100 feet long—the whole at a cost of $4,530.51.

The total expenditure incurred by the Dominion up to June 30, 1898, for works carried out in connection with the St. Mary's Bay pier, amounts to $7,368.88, of this amount $1,336.59 was recouped to the local government for their outlay on the pier from 1873 to 1884, $1,501.78 applied in making repairs and the balance used for dredging purposes.

During the year 1898–99 a sum of $435.17 has been applied in filling in two of the outer spans, rebuilding a portion of the inner part of the approach, putting in new floor stringers and planking on the outer span; replacing fenders, guard timbers, &c., and making up the whole of the roadway with broken stone and gravel.

SOURIS.

Souris Harbour, King's county, is situated on the southern side of Prince Edward Island about 16 miles westward from East Point; it is most important both as a place of shipment and harbour of refuge, being, during the season of navigation largely used by coasters and fishermen, for the works constructed by the department afford good landing and shipping facilities in a perfectly sheltered area carrying from 12 to 20 feet at low water, of sufficient extent for a large fleet of vessels.

Souris is also the eastern terminus of the Prince Edward Island Railway, having, at the harbour, a deep water wharf from which shipments can be made later in the fall and earlier in the spring than from any other of the island harbours. The breakwater that was commenced by the department in 1877 has now a length of 1,250 feet, 270 feet of which was constructed by the local government previous to confederation. The whole work stands in deep water, exposed to the full force of the sea during southerly storms, and to the action of the ice in winter, hence, since its construction, it had to undergo extensive repairs. At times portions of the breakwater were completely carried away and had to be rebuilt, chiefly owing to the ravages of the teredo and the poor description of stone first used for ballasting; native timber being either destroyed or greatly weakened in a few years by the worms and a large portion of the stone becoming converted into sand and the whole structure thus rendered unfit to withstand the forces to which it is exposed. Both of these defects have, so far as possible, been guarded against for some years past; creosoted timber being procured for the outer block last constructed while the ballast used was imported stone of durable description.

The total cost of the Souris west breakwater-pier at Knight's Point to the Dominion, up to the close of the fiscal year 1897–98, has been $190,745.38. This amount may be subdivided into: $176,088.64 chargeable to 'Construction and Improvements,' $13,680.87 chargeable to 'Repairs' and $975.87 for 'dredging.' It covers the original construction, the reconstruction of portions carried away, general repairs effected from time to time, new facing built on seaward side for 400 feet in length, an outer block of 80 by 40 feet of creosoted timber, and a stone slope formed thence inward for a distance of 365 feet.

On August 16, 1898, a contract was entered into for repairing and raising the inner end of the 470 feet length of the breakwater-pier, inward of the work done under contract in 1893, and placing a stone slope of three horizontal to one vertical on the seaward side; at the close of the fiscal year 1898-9, these works were about two-thirds completed, the expenditure for construction and inspection amounting to $5,083.11.

ST. PETER'S HARBOUR.

St. Peter's Bay, King's county, is entered from the Gulf of St. Lawrence about 35 miles west of East Point on the north coast of the island. The bay is of considerable extent, running inland some 8 miles with a ruling depth of about 2 fathoms at low water; its entrance, however, is obstructed by a sand bar covered by from 6 to 7 feet water at low spring tides, rendering the bay available only for vessels of small size; large numbers of such vessels resort to this harbour during the fishing season.

In 1878 the department constructed a breakwater 226 feet in length on the western side of the mouth of the harbour, to afford shelter to the fishing fleet, together with a beach protection or breastwork extending from the inner end of the breakwater, 800 feet inward over the sands towards the high land so as to preserve the beach from the encroachments of the sea. After the construction of the western breakwater it was proposed to further contract the width of the entrance, thus, by increasing the current, improve the depth of the water over the bar. With this object in view, a contract was entered into February 10, 1883, for the construction of a breakwater 1,900 feet long, on the eastern side of the mouth of the harbour; but the contractor abandoned the work after being paid $1,819.32 and when less than one half of it had been built. But little now remains of this work, it having been partly destroyed by storms and buried in the sands; it proved, however, useful to a limited extent in preventing the sea from washing away the point of land on which it was built.

The beach protection inward of the western breakwater constructed of piles, brush and stone, having become weakened owing to decay and age, was destroyed by a severe storm December, 1890, nearly all the stone and brush being carried away and only the piling (driven at 10 feet centres) left standing. A contract, for the reconstruction of a portion of this protection work of round log open cribwork, 7½ feet wide, filled with brush and stone, was entered into May 23, 1892, and satisfactorily completed September 30 of the same year. A further length of 620 feet of such work was built in the following year, completing the connection between the breakwater and the 'Sand Hills.'

The cost of the whole of the works carried out on the west side of the harbour up to the close of the fiscal year 1897-8 is $8,365.24 and by adding $1,819.32 to this amount, the total expenditure incurred for St. Peter's Bay harbour works up to June 30, 1898, is found to be $10,185.16, of which sum $7,897.56 may be charged to 'Construction and Improvements,' and $2,287.60 to 'Repairs.'

For some years past, owing to age, destructive action of running ice and ravages of the teredo, the outer end of the western breakwater has been in a damaged condition, and during the spring of 1898 it had its face timbers completely carried away, so that the safety of the whole work was endangered in case a severe storm should occur or a heavy run of ice take place. With a view of strengthening the damaged portion of the breakwater, as far as was possible by the judicious application of the grant of $500 made by Parliament for 1898-9, works of repair were undertaken during the fall of 1898, consisting in the levelling up, close-piling, ballasting, covering in, &c., of the outer 26 feet, and placing for a length of 100 feet inward on the exposed side, a protection of brush and stone. Moreover, during May and June, 1899, the sum of $200 was applied in recovering, ballasting and levelling up the whole of the remaining 200 foot length of the breakwater where covering, floor stringers and top face timbers had become destroyed by age, which brings the total cost of the work done during the fiscal year 1898-9 up to $700.61; accounts amounting to $200.60 had to be held over for payment in 1899-1900.

TIGNISH.

Tignish Harbour, Prince county, is situated on the north or gulf coast of Prince Edward Island, about 6 miles southward of North Cape, and is formed by the mouth of the Tignish River which empties into the Gulf of St. Lawrence.

As on each side of the mouth of this river the coast is quite straight, gales from north-east to south-west throw in a heavy sea. When moved by such seas, the shifting sands of which the beach is composed, frequently completely blocked the mouth of the Tignish River, which would remain closed until broken through by a freshet or other abnormal disturbing cause. To keep the river permanently open and to confine the channel to one place in its bed, the Government of Prince Edward Island in 1868 commenced the construction of works on both sides of the mouth of the river to contract the stream to a width of 40 feet; the effect of this contraction has been to increase the current, and the river has not since been closed to navigation.

The north breakwater or pier was built 830 feet in length and 21 feet in width, and that on the south side 300 feet in length and 20 feet in width; the expenditure incurred up to 1873, when the island entered into confederation, being $8,149.56. Since then the department expended up to the close of the fiscal year 1897-8: (*a*) For works of construction and improvement, $20,610.40; (*b*) for repairs, $3,155.19; and (*c*) for dredging, $10,188.03, or a total of $33,953.56, which brings the total outlay of the Dominion at Tignish up to June 30, 1898, to $42,103.12.

The works carried out have proved of great benefit, both causing an increase in the business of the place and affording a safe refuge for fishing boats and small vessels. Of late years small vessels and boats resorted to the harbours in such large numbers, and the freighting from the 'run,' as it is called, was so great, that much difficulty had been experienced in accommodating all the boats and vessels desirous of using the harbour With a view of obviating this difficulty in a measure, a contract was entered into March 7, 1898, for the enlargement of the harbour by extending both the northern and southern breakwaters (inward), the former for a length of 300 feet and the latter a distance of 700 feet, both of which extensions were satisfactorily completed on November 21 last (1898), the contract price being $6,770. Under a separate agreement with the contractors, Messrs. Myrick & Co., a beach protection 850 feet long was also built, viz., from the inner end of the southern breakwater (as originally built) to the high ground to the southward. This work was also completed on November 21, 1898, at a cost of $1,700, or at the rate of $2 per lineal foot.

Total expenditure incurred during the fiscal year 1898-9 in connection with the works described, inclusive of inspection, $5,034.

VERNON RIVER BRIDGE.

The pier at Vernon River Bridge, Queen's county, is situated at the head of navigation on the Vernon River and about 2 miles above its entrance into Orwell Bay. It is built on the lower side of and distant 30 feet from the public road bridge, to which it is connected by an approach averaging 30 feet in width. The pier consists of a close faced block 120 feet long by 30 feet wide, lying parallel to the channel; along its outer face there is a depth of 9 feet at low water, or 17 feet at high water springs; it is reached by a channel of approach about 1 mile long, carrying this depth, which has been dredged to it by the department between 1877 and 1882, through oyster beds on the down stream side, at a cost of $6,326.72. This pier is one of the Prince Edward Island piers the control of which was assumed by the Dominion Government in 1884, at which time the sum of $908.66 was paid to the Island Government to recoup expenditures made upon it for repairs after confederation up to 1884.

As the pier was an old structure much out of repair at the time it was taken over by the Dominion, some expenditure had to be incurred nearly every year since, to keep it in a passable state for traffic; the outlay for 'Construction and Improvements' amounting, at the end of the fiscal year 1897-8, to $1,705.16, and that chargeable to

'Repairs' to $741.45. By adding the cost of dredging to these amounts the total expenditure incurred by the Dominion on this pier up to June 30, 1898 is found to be $8,773.33.

During the spring of 1899 a sum of $146.87 was applied in replacing floor stringers, covering, and guard timbers on the outer half of the pier, and making general repairs on the inner part; rebolting fenders, &c.

WEST POINT.

West Point Wharf, Prince county, so called from being at the most extreme western point of the island, is situated on the north side of Egmont Bay along the eastern shore of Northumberland Strait, about 14 miles west from O'Leary Station on the line of the Prince Edward Island Railway, and 35 miles by water from Summerside. A pier, one of those assumed by the department in 1883, was built previous to confederation by the local government to afford landing and shipping facilities for the district; there being at the time no wharf or harbour in existence where vessels drawing more than a few feet could call, along the whole coast between Summerside and North Cape, a distance of 60 miles. West Cape being midway between these points, was considered a favourable site for a pier, and the original work built at this point is said to have proved of great benefit up to the spring of 1884, when it was seriously damaged on the breaking up of the ice. A large field of ice was at that time driven upon it during a severe easterly storm and the entire outer portion of the pier moved out of position, the face timbers being broken and a large quantity of ballast washed out, and subsequent storms, ice shoves and drifts almost completely destroyed the structure.

The original pier proved an expensive one to keep in repair, and expenditures amounting in the aggregate to $4,226 had to be made by the local government between 1873, when Prince Edward Island entered confederation, and 1884, when full control was assumed by the Dominion, in order to maintain the structure in a passable state for traffic.

With a view of providing urgently called for and much needed improved landing and shipping facilities, the department entered into contract December 17, 1897, for: (*a*) Building up to 4 feet above high water and repairing the remaining portions of the old pier, 290 feet long and 27 feet wide. (*b*) Constructing an extension of close-faced square timber, full ballasted cribwork, 325 feet long by 30 feet wide at top, to reach to 8 feet depth a low and 11 to 12 feet at high water spring tides. The works of reconstruction and extension were commenced on March 3, and fully completed on November 10, 1898, at a total cost of $10,008.36, inclusive of inspection, &c., the contract price being $9,500.00.

Total cost of the West Point Wharf to the Dominion up to June 30, 1899, $14,234.10.

PROVINCE OF NEW BRUNSWICK.

ANDERSON'S HOLLOW.

Anderson's Hollow, Albert county, is a cove of Salisbury Bay, on the north-west side of Chignecto channel in the Bay of Fundy. Spring tides rise 40½ ft., neaps 32½ ft.

The breakwater wharf at this place was begun in 1879 by the construction of a detached block 550 feet from the shore with which it was afterwards connected. In August, 1885, the work was 290 feet in length, and three years later was carried to the shore. The structure, 25 feet wide on top, was originally 27 feet high above the bottom at the outer end, but owing to the accumulation of littoral drift is now 3 or 4 feet less

It is built of round cribwork, lightly battered on the inside, but sloped at half to one and sheathed on the weather face. The breakwater was damaged by storm on November 21, 1895, when a small lighthouse placed at the outer end was swept away, together with part of the break, while some of the top work at the head was simultaneously shaken and started. In 1895-96, a small sum was applied to bolting loosened for temporary security. During the fiscal year 1896-97, the inside face of the wharf at the outer end, which had received a heavy list in the storm of the previous year already mentioned, was taken down and rebuilt for a distance of 75 feet on the top and 44 feet on the bottom. The list was taken out, the new face being carried to a height of 15 feet in order to level the top, and new covering was laid for a length of 75 feet. Seventy feet out of 110 feet of dismantled break were reconstructed, and fenders were placed on the inside of the new face. The total expenditure to the end of 1897-98 amounted to $8,338.13 ; $7,224.04 of which amount may be charged to 'Construction and improvement,' and $1,114.09 to 'Repairs.' In 1898-99, by an expenditure of $121.31, twenty-seven pieces of new sheathing were laid and bolted to the sloping face ; a cap and face-timbers were inserted, and the gap in the break 40 feet long, left unfinished at the previous repairs, was built up with four tiers of timber strengthened with knees. Like many other works in the Bay of Fundy, Anderson's Hollow crosses the direction of the flood stream and of the prevailing winds. In consequence, an accumulation of littoral drift found on the south-west side, which (the work considered as a groyne being now fully charged) if travelling round the end, and is being deposited under the lee of the breakwater, forming a shoal which is an obstacle to vessels coming to Anderson's Hollow for cargoes of lumber.

BLACK RIVER.

At Black River, St. John's county, a small cove on the Bay of Fundy, 12 miles east of St. John, where spring tides rise about 25 feet, a breakwater or wharf of square cribwork, 155 feet long, 27 feet wide, and 30 feet in extreme height, was built by the department in 1879, for the use of coasting vessels. Between 1891 and 1893 the work received small repairs, and the total expenditure up to June 30, 1898, amounted to $4,407.92 ; $3,907.40 of which may be charged to 'Construction and improvements,' and $500.52 to 'Repairs.' During the year 1898-99, a sum of $450 was expended in replacing 36 fenders, in taking up and relaying the covering, in building ladders, &c. For some years no shipments were made at Black River; of late, lumber cut by portable mills in the neighbourhood has been loaded as this work.

BUCTOUCHE.

By a narrow and winding channel, navigable for 11 or 12 miles, and 4 to 5 fathoms deep in some places, but with a ruling depth of only 8 feet, Buctouche River flows into Northumberland Strait, about midway between Richibucto and Shediac, the embouchure being about 18 miles from each of these places.

Four miles from the sea, at the village of Buctouche, (pop. 600) in the county of Kent, a quay for local traffic was built at right angles to the bridge and parallel to the river bank in 1884–6 at a total expenditure, including approaches, of $4,259.55. The work is of round timber fendered with piles, and studs in a depth of 17 feet at L.W., or 21 feet at H.W.S.T., the length of face and width of top being respectively 300 feet and 40 feet. Some traffic in lumber and coal is carried on here, while the opening of a quarry above the railway bridge renders it probable that stone may also be shipped from this work. A siding of the Moncton and Buctouche railway is carried for a part of the way along the back of the wharf, but on an independent foundation. From 1886 to 1894 no repairs were made, but in 1894, the wharf having been partially destroyed by fire, repairs were begun though not completed. The total expenditure up to the end of the fiscal year 1897–8, amounted to $5,877.91, of which $4,259.55 is chargeable to 'Construction and Improvements' and $1,618.36 to 'Repairs.' During the year 1898–9, a sum of $978.13 was applied towards procuring materials.

CAMPBELLTON.

Campbellton, Restigouche county, a thriving town and a station of the Intercolonial railway, stands on the south bank of the River Restigouche, 14 miles above Dalhousie, and about 6 miles below the head of the tide. The Restigouche, for many miles the boundary of Quebec and New Brunswick, traverses large areas of well wooded country. By this waterway, timber is brought to the mills of Campbellton and Dalhousie, whence in the form of deals, boards, and shingles it is shipped to foreign and domestic markets. Three fathoms are found at the town, but the ruling depth given by an extensive shoal of sandy material styled 'The Traverse', a couple of miles below, is only 11 feet at L.W.S.T., spring tides rise 11 feet.

For reception of the ballast of vessels engaged in the deal trade, the department began in 1889 a detached block of square cribwork 140 feet long and 35 feet wide, in about 21 feet at low water. Three years later, this work was connected with an adjacent private wharf, upon which is laid the siding of the Intercolonial Railway, by a block similar in character to the first, but only 110 feet in length. The combined structures are used as a ballast and loading wharf. Immediately at the face of the work the depth has shoaled to 11 and 15 feet, but at a little distance out a maximum depth of 20 feet at L.W. is found. The shipments for 1898, chiefly deals, amounted to 16,249,172 spl. feet, sent principally across the Atlantic. The total expenditure incurred in connection with the ballast and loading wharf up to the end of the fiscal year 1898 amounts to $16,512.66.

There has also been laid out at Campbellton a sum of $1,286.52 for providing a safe landing with approach for the ferry steamers plying between this town and Cross Point on the Quebec or Northern shore of the River Restigouche, and a further sum of $5,663.26 for removing by dredging shoals in 'The Traverse' between the Oak Point and Campbellton lights.

During the year 1898–9, a sum of $1,661.99 was expended in procuring materials for further work required on the ballast wharf.

CAPE TORMENTINE.

Cape Tormentine, at the extreme eastern end of Westmoreland county, is the most prominent headland on Northumberland Strait and the south-western terminus of the winter ferry route between Cape Traverse or Prince Edward Island and the mainland. Spring tides rise 7¾ feet; neaps, 3¼.

Between 1886 and 1892 a breakwater-pier was constructed at this cape with a view of forming an artificial harbour for purposes of interprovincial communication, at the extremity of a peninsula which is the nearest point on the continent to Prince Edward Island. The harbour works comprise a straight pier 2,500 feet long with head and return, each 400 feet in length, inclosing a basin about four acres in area with a ruling depth of 15 feet at low water, or 22 feet 8 inches at high water spring tides. For a distance of 1,300 feet from the shore the pier is a rubble mound 20 feet wide on top with pitched slopes of 2 to 1, while the remainder of the straight portion (400 lineal yards) is built of close-faced cribwork 30 feet in width. The head and return are of similar cribwork, but are 40 feet in breadth from the base to low water, decreasing to 30 feet at the finished top (4 feet above high water spring tides) and presenting a sloping face sheathed with hardwood to the north and east. The waters of this part of Northumberland Strait are infested by the teredo. A branch line thirty-six miles long, connects the pier with the Intercolonial Railway at Sackville.

There being a storm wave at least 6 feet in height at Cape Tormentine, it was found that although the rails were secure where spiked to the covering of the cribwork, they were liable at the elevation of 4 feet above high water to be washed off the embankment or rubble mound which afforded no facilities for bolting. To prevent interruption in the traffic from this cause, the rails were raised 2 feet along the embankment in 1893-4. At the same time, a freight-shed was built and protected by a break. The tops of the cribs receiving the foot of the hardwood sheathing composing the

sloping face, having been destroyed by the teredo, the planks thus left hanging are exposed below to upward wave motion, a force found by Stevenson to be eighty-four times greater when exerted vertically than when directed against the side of the breakwater. These planks were secured in 1893-4, as far as the worm-eaten condition of the timber permitted. In the following fiscal year, 321 lineal feet of worm-eaten longitudinals supporting the sloping hardwood were replaced by new timber, a space of 90 lineal feet of new planking was laid and the remainder of the face secured wherever bolt-hold could be found in the honeycombed wood.

In 1895-6 similar temporary repairs were made, 414 lineal feet of worm-eaten longitudinals being renewed with fresh timber and 117 lineal feet of sloping face being relaid.

In 1896-7, repairs of the same kind were made for 154 lineal feet of the sloping face, in which 534 lineal feet of longitudinals were used. There being some slight difference of duration in favour of hardwood, birch longitudinals were for the most part inserted and secured with bolts. The ramp, 165 feet long, leading from the embankment to the cribwork was also covered with 3-inche plank in order to permit the passage of carts for occasional local traffic.

In the following year, new hardwood longitudinals (generally four tiers) were placed in the work and secured with screw bolts for a distance of 252 feet, to which the planks of the sloping face were secured. For a further distance of 50 feet the face timbers were partially renewed.

During the year 1898-9 the talus on the northern side, begun at the time of the construction of the work in 1890, was extended 500 feet, or to the end of the straight pier, by a deposit of 2,513 cubic yards of large stone, brought generally at the top to low water mark. About 80 cubic yards in total quantity was added to the talus, also begun nine years ago, on the inside of the pier. For 103 lineal feet, the sheathing and face timbers of the sloping face were renewed, 200 lineal feet of face timbers were inserted, and 102 close-piles were driven. The mail room in the boat house was enlarged and refitted in time for the winter service between the mainland and Prince Edward Island.

The total expenditure up to June 30, 1898, amounted to $239,476.16, $236,860.63 of which may be charged to 'Construction and Improvements,' and $2,615.53 to 'Repairs.' During the fiscal year 1898-9 a sum of $4,738.63 has been applied towards carrying out the works of repair, &c., above described.

The harbour is used during the season of navigation by vessels engaged in the deal trade with the United Kingdom, since it offers facilities for transferring deals in clean condition from train to ship without the loss of class and so of price.

On account of the prevalence of the teredo, any works built in the future in Northumberland Strait should be constructed of creosoted timber, stone or concrete. The worm-eaten condition of the Cape Tormentine works requires that the course hitherto customarily adopted in similar cases, i.e., external protection with stone, should be taken. For the quay face of the winter berth it would be best to use concrete. Although the top appears in good condition, the substructure of the cribwork of the pier has been so injured by the toredo that the upper works, notwithstanding their sound state, are liable to be sheared off the impaired foundation by ice or storm.

CARAQUET.

Caraquet, Gloucester county, is situated on the southern shore of the Baie des Chaleurs, about 42 miles to the eastward of Bathurst, the shiretown of the county.

To a block and span wharf 1,205 feet long, built by the local government, a pierhead of square timber cribwork was added by the department in 1884. The block is 100 feet long by 24 feet wide, height and breadth being equal, It is placed in 9 feet at low water, above which level spring tides rise six feet. Caraquet, a good harbour for coasting vessels and a station on the Caraquet Railway, is the headquarters of a large fishing fleet which proceeds to sea usually by way of Shippegan Gully.

No repairs were made to this work from the time of completion until 1898; the total expenditure to the end of 1897–8 amounted to $4,471.54. During the year 1898–9 a sum of $499.88 was applied as follows, viz.: the whole of the stringers and covering was renewed, two mooring posts were placed in position, and thirty-nine hard-wood fender-piles were driven round the blocks.

CLIFTON.

At Clifton, in Gloucester county, a station of the Caraquet Railway 10 miles west of Grande Anse and 7 miles east of Bathurst, a breakwater originally 425 feet long, built by private enterprise to facilitate the shipment of stone from the adjacent quarries, was acquired by the department in 1878, and was extended in the same year to the present dimensions at a cost of $9,681.75. The work, of round and square cribwork partly protected by random stone, is now 750 feet long over all, 220 feet of this length being a pier-head placed at an acute angle to the approach in order to give shelter from east to north-west.

General repairs were made in 1886-7 and in 1887-8, consisting of ballasting, sheathing, fendering and restoration of breaches in the work.

General repairs were continued from 1891 to 1893 and the foundation of a talus was placed on the outside.

In 1897-8 general repairs were again made and a slope of heavy stone averaging nearly one cubic yard each was placed for 145 feet round the angle of the work.

Formerly the deepest berth was said to give 11 to 12 feet at low water, but this depth has now been reduced by shoaling. This artificial harbour affords the only shelter for fishing boats between Caraquet and Bathurst, a distance of about 37 miles. Spring tides rise 7 feet.

The face timbers of this work, now much shaken, are protected by vertical hard-wood fenders which, as there is little bolt-hold, are frequently displaced. During the past year, twenty-seven fenders were applied to the end of the work, the covering was patched, and 20 lineal feet of break was rebuilt on the pier-head. On a part of the approach, which had been mounted by the ice last winter and considerably demaged, face-timbers were replaced, new cross-ties and covering were laid, and ballast was put in the work.

The total expenditure to the end of the fiscal year 1897-8 amounted to $13,549.09.

During the year 1898-9, the sum of $500 was applied towards repairs.

COCAGNE.

Cocagne, Kent county, on the south-west coast of Northumberland Strait, is ten miles south of Buctouche, another harbour with sandy entrance under conditions similar to those which obtain at this place, and at Miramichi and Richibucto, and has a depth of 10 feet on the bar at low water or 14 feet at high water spring tide. Inside, from 2½ to 4 fathoms are found in a narrow channel for for about ¾ of a mile. Afterwards, mud flats 1½ miles in length, covered by 4 to 6 feet at low water, extend nearly to the highway bridge, where a depth of from 2 to 2½ fathoms is found in mid-channel.

In 1881-2 the department began the construction of a cribwork quay, 400 feet long and 20 feet wide, leading from the bridge and carrying a depth of from 9 to 11 feet at the face. In 1888 the wharf having settled irregularly, was levelled up and widened for a distance of 100 feet, and in 1892 received similar attention.

The structure having become worm-eaten and settlement having taken place, were begun in 1898-9 on a part 176 feet long sufficient for local needs, and by the end of this fiscal year were almost completed with the exception of the ballasting, some stringers and the covering. The method adopted for carrying on the required repairs consisted in driving twenty-four bents of four piles each, which, secured by walings and bracing, could support the new superstructure independently of the worm-eaten cribwork.

Up to 1897-8 the total expenditure was $15,506.49, $8,265.19 of which may be charged to 'Construction and Improvements' and $7,241.30 to 'Dredging.' During 1898-9, a sum of $2,990.67 was applied to repairs.

DALHOUSIE.

Dalhousie, a seaport in the County of Restigouche, at the head of Bay Chaleur and a station of the Intercolonial Railway, possesses a secure harbour from 6 to 7 fathoms deep, which, during the season of navigation, is the best in New Brunswick. It is the only one on the gulf coast of the province suitable as a coaling station for the fleet.

For the use of vessels engaged in the deal trade, the department added in 1887–8 to the Intercolonial Railway pier a ballast wharf, 300 feet long, 23 feet wide on top, placed parallel to the shore in about 15 feet at low water, a depth now reduced by shoaling to about 5 feet in some places. Spring tides rise 10 feet.

Repairs were made in 1891–2–3 and 1895–6.

Expansion of the ice, consequent upon the cracks caused by tidal fluctuation, exerts from the shore a shearing stress against the top of this work, which was in 1897 thrust over about 10 feet, the displacement extending for about 118 feet along the work. Repairs begun in 1897–8 are still in progress.

The shipments, principally trans-Atlantic, of deals and boards for the year 1898 amounted to 28,230,563 superficial feet. The total expenditure up to the end of the fiscal year 1897–8 amounted to $9,245.14, of which $8,596.73 may be charged to 'Construction and Improvements,' and $648.41 to 'Repairs.' During the year 1898–9 materials were procured to the amount of $670.30.

FORT DUFFERIN.

Fort Dufferin (St. John Harbour), a 10-gun battery built by the British Government on a headland to command the western entrance to St. John Harbour, stands at the shore end, but much above the level of Negro Point breakwater.

In order to preserve the headland from erosion by the waves, this department began in 1882 a retaining wall of sheathed cribwork, 430 feet in length, and in the following year constructed a further length of 303 feet. The work is exposed on the one hand to the force of the waves, and on the other to land-slips. In 1886-7 it was much disturbed by the sea, and repairs were made in that and the following year, 205 feet of the original work being rebuilt. From 1887 to 1889 repairs were also made, and in 1890 the work was extended 100 feet. General repairs were made in 1893-4. The work is 7 to 14 feet wide on top and about 9 feet in mean height. The crest for almost the whole length is surrounded by a break 2½ feet high.

During the year 1896-7 a gap 81 feet long in the break was repaired, 200 lineal feet of longitudinals were renewed inside and 128 cubic yards of ballast were restored to the work, while the sheathing was patched at intervals along the face with hardwood planking. In order to raise the beach and reduce the area of timber face necessary to be repaired, towards the end of 1896 a groyne, 40 feet long, 10 feet wide, and 4 feet in mean height, was built of hardwood piles, timber and stone. In 1897 the final extension of the cribwork, a distance of 130 feet, was begun, and by the end of the year 1896-7 was brought within two tiers of the full height.

In 1897-8 the new extension was completed, ballasted and sheathed. Small repairs were also made to the sheathing of the old work

In 1898-9, four groynes, in all 232 lineal feet each, built of hardwood piles 4 feet apart, driven from 9 to 12 feet into the bottom, and planked with birch 9 inches square, securely strapped and bolted, were placed along the beach to protect the lower part of the sheathing of the breastwork; some ballast was also placed in the cribwork.

The total expenditure by the Dominion on the Fort Dufferin breastwork up to the 30th of June, 1898, amounted to $8,172.52. The expenditure on Fort Dufferin for 1898-9 amounted to $1,397.97.

MISPEC.

At Mispec, St. John County, eight miles east of St. John, to shelter the upper end of a narrow cove which receives the discharge of Mispec River, a breakwater of square cribwork strongly battered on the seaward side, 197 feet long, 25 feet in mean width, and 30 feet high at the outer end, was built by the department in 1885. Repairs were made in 1889–90 to the seaward face, and again in 1892–3. The total expenditure up to 1898 amounted to $10,289.16, which may be subdivided into $9,567.71 chargeable to 'Construction and Improvements,' and $721.45 for 'Repairs.'

In consequence of the establishment of a pulp mill at this place, repairs to the work were begun in 1898–9, when a sum of $800 was expended in replacing seven tiers of the face for a distance of 74 feet along the work with heavy birch timbers 16 inches square, secured by screw bolts ; in procuring materials, and in ballasting the work.

Spring tides rise about 26 feet. The work is dry at low water.

NEGRO POINT (ST. JOHN HARBOUR).

Negro point is a headland about sixty feet above high water mark, at the western entrance to St. John harbour, which is formed by the estuary of the River St. John on the northern side of the Bay of Fundy.

Spring tides rise 25·3 feet; neaps 20 feet.

In addition to convenience of position for distribution by rail of cargoes landed at the city of St. John, St. John harbour is remarkable principally for great tidal range and for consequent freedom from ice in the winter months. The harbour is open, broadly speaking, from south-east to south-west, but southerly waves are broken by Partridge Island and south-west waves are mitigated by Negro Point breakwater, while foul ground, a shoal tailing down from the peninsula on which the city is built, must have more or less effect in moderating the force of south-easterly seas rolling round Mispec Point.

By Partridge Island, a rocky eminence devoted to quarantine and lighthouse purposes, the entrance of St. John harbour is divided into east and west channels. In the former or main channel a minimum navigable depth of 19 feet is found on the bar at low water ordinary spring tides. Two hundred yards inside the crest of the bar, a depth of 5 fathoms is found in the narrow fairway, while higher up and between the principal wharfs on either side of the harbour (450 yards broad at that point) 12 fathoms are given in mid channel. The west channel, 10 to 14 feet deep at low water and originally 1,200 yards wide, has been contracted by the Negro Point breakwater extending 2,200 feet in a S. E. by S. direction from the headland, so styled.

The official reasons for undertaking this work are thus stated in the reports of the Minister of Public Works for 1875 and 1882 :—

'1875. This breakwater extends south-easterly from Negro Point at the western entrance of the harbour of St. John. When completed, it will extend a distance of 2,25) feet, closing up the west channel to that extent, leaving, however, a width of 1,000 feet between the outer end and Partridge Island. The object is to break the force of the seas which roll into the harbour of St. John during the north-west gales in the Bay of Fundy, and which render it dangerous and almost impossible at such times for vessels to make the harbour.'

'1882. South-westerly winds threw in a heavy sea through the western channels which rendered it difficult for vessels to make the harbour, as they were in danger of being on the foul ground on the eastern side of the channel. In the spring of 1875 a breakwater 2,250 feet long, to partially close the western channel, was begun, and in September, 1877, completed.'

Reference to the chart will show that as long as the present opening remains, the object of the breakwater has been only partially fulfilled. In dealing with reduction of the bar, a more cogent reason than improvement of shelter may be found for the extension of the work to Partridge Island.

The breakwater consisted at first of a cribwork core, 30 feet wide at the base and 15 feet wide at the top (5 feet above high water ordinary spring tides), protected on both sides by stones sloping to seaward at the rate of two horizontal to one vertical and landward at the rate of one to one. By the month of February, 1879, 1,300 lineal feet of cribwork had been swept away to a depth varying between 13 and 19 feet from the top, the stones having been raked down by wave action to a slope more nearly approaching the angle of repose of the material. In 1880, temporary repairs were made, and in 1881 a contract, completed six years afterwards, was entered into whereby the lost cribwork was replaced by heavy stones and the seaward slope made three to one. Even this flatter inclination proved too steep for stability, consequently, notwithstanding their size, the stones, though smoothly laid, were soon displaced by the sea. A length of fifty feet of the breakwater, extending at full height beyond a masonry pier built under the same contract to support a beacon, was also swept away. From 1891 to 1894 desultory repairs were made by the addition of large stones, chiefly deposited about the end to prevent the lighthouse from being undermined.

In May and June, 1895, four large blocks of concrete were placed for the same purpose in front of the pier at its base. In 1895-6, seven concrete blocks founded at about the level of low water neaps, were built *in situ* around a quadrant of the outer end, to receive the foot of a slope proposed to be laid of heavy granite blocks inclined at 4 to 1. The blocks were 59 to 91 tons each, all but the heaviest being laid in one tide. The granite pier was also re-enforced by a semi-circular skin of concrete 7 feet in average thickness and strongly battered, placed round the front and brought to the level of high water springs. The footing blocks were 15 feet long, 12 feet wide, and unless varied for the sake of foundation, 3 feet high in the face, sloping upward at the rate of 4 to 1 on the top. Each block was free to settle independently, but all were keyed together by splayed concrete joggles. Inside part of the space within the quadrant, stones of the original work, added to the small granite, were collected and grouted as far as funds permitted, in default of the heavy granite (which will require special plant) necessary for the slopes of this breakwater; but weight is the great desideratum.

Pending consideration of works necessary for deepening the entrance to the harbour, which might possibly involve the extension of the breakwater, nothing more was done during the year 1896-7, than appeared requisite to protect the unfurnished superstructure just began and to preserve the lighthouse, except the completion of a break at the shore end.

To this end, fifteen blocks of concrete forming aprons were laid in position at the outer end of the work between October 1896, and June 1897. A quantity of stone which had swept round the point of the breakwater from the seaward to the harbour side was also replaced in position. Some of this stone was laid outside the heavy footing-blocks built in the previous year and some applied to restoration of the crest of the work at the back of the lighthouse. Breaches carried below the level of high water have been made by the sea at five or six points in the rubble mound between the lighthouse and the shore. An illustration of the violence of the seas which break against the Negro Point breakwater is furnished by the removal of a stone of 5 tons a distance of 76 feet in one winter. A marine dynamometer secured to the masonry of the lighthouse records the wave-force at 4,000 pounds and upwards per square foot.

In order to retain along the seaward face of the work, for natural protection, the littoral drift formerly swept by the waves over the top into the harbour, a break of piles, brush, stone and timber 270 feet long, 8 feet wide and 4 feet high, begun in 1895, was completed in 1896-7, and extended 140 feet along the timber work during that year with good effect. As a result of the construction of the break, the foreshore has advanded seaward, while the beach has increased in height and in breadth.

A general accretion of the beach has taken place. In addition, a tongue of drift observed after the erection of the break, when near the shore, has at the foot of the talas on the seaward side travelled 200 yards or more towards the end of the breakwater. The formation of this spit, generally 10 feet wide and 2 feet high, against the work, indicates that the drifting sand, gravel, shingle, &c., which formerly went over the breakwater into the harbour, will in time afford important natural protection to the work and will reduce the length of the face to be maintained.

During the year 1897-8, as a measure of precaution, 152 yards of granite were obtained and deposited about the lighthouse for protection during the winter, while stones, previously removed by the sea, were replaced in position.

The advance of the foreshore rendered necessary the extension of the timber break, which was carried a distance of 80 feet farther along the top of the breakwater. A small groyne was also built for the purpose of obtaining some information as to the extent of the littoral drift near the shore end. To preserve the timber, the tops of the piles and the knees of the break were given two coats of pitch.

During the year 1898-9, 1,019 cubic yards of granite were supplied and laid in place, while 285 yards of the original stone of the work displaced by the sea were restored to position.

Up to June 30, 1898, the total expenditure on Negro Point breakwater and Fort Dufferin retaining wall amounted to $174,781.30. The repairs made in 1898-9 cost $801.20.

POINTE DU CHENE.

In a bight formed by an abrupt easterly trend of a coast line north and south in general direction, is situated Shediac, a natural harbour giving about 14 feet at low water or 18 feet at high water spring tide. This place, in Westmoreland County, 40 miles south of Richibucto and about the same distance west of Cape Tormentine, is a station of the Intercolonial Railway, a point of steam communication with Prince Edward Island, and a deal port.

To protect the Intercolonial Railway pier at Pointe du Chêne in Shediac harbour, a work weakened by the teredo, the department built in 1875 a detached breakwater 600 feet in length. Four years later the outer end of the breakwater was connected with the head of the railway pier by a wharf 205 feet long intended for the reception of ballast discharged by deal vessels. In 1881, another independent breakwater, similar to the first and of the same length, was built to protect the shore end of the railway pier.

The breakwater built in 1875 having become worm-eaten, notwithstanding repairs made in 1883-4 and 1888-9, was destroyed by a storm in 1891. In 1893 a contract was made for reconstruction, and by the end of the following year the work was completed. The new breakwater proper is 600 feet long and generally 27 feet wide at the base, sloping at the rate of one to one from low water to 6 feet above high water spring tide. At the northern end connection was made with the damaged ballast wharf by an additional length of 40 feet of similar work. The outside faces and cross-ties of the substructure are creosoted timber, protected by close piles and by fender piles, also creosoted. The remaining timbers and also the superstructure are untreated wood.

In 1896, the close-piling of the ballast wharf having been cut off by the teredo, repairs to the face 183 feet long were undertaken. In order to remove weight from the worm-eaten block, the superstructure was supported at the face on creosoted piles, and in the body of the work by untreated hardwood piles driven through it. This new top, 20 feet wide and 8 feet high, was faced with square timber, ballasted and well braced with short piles driven into the ship's ballast deposited behind the cribwork. The total expenditure up to 1897-8 amounted to $80,567.07 which may be subdivided into $77,284.45 for 'Construction and Improvements' and $3,281.62 for 'Repairs.' In addition to these amounts a sum of $15,245.99 has been laid out for 'Dredging.'

During the year 1898-9, the sum of $33 was applied to bolting twenty-three fenders which had started at the head from the face of the work.

RIVER ST. JOHN AND TRIBUTARIES.

The River St. John proper, 450 miles long, takes its rise from sources in the province of Quebec and state of Maine, at a reputed maximum altitude of 2,158 feet above the sea level. Entering New Brunswick at the confluence of the St. Francis, a little below the borders of Quebec, it continues to be the international boundary almost

to Grand Falls, and after flowing through the province for nearly 300 hundred miles (by way of the counties of Madawaska, Victoria, Carleton, York, Sunbury, King's and Queen's), discharges into the Bay of Fundy at St. John. Many tributaries, some being of considerable magnitude, are received by the main stream. Among them are the St. Francis, Madawaska, Green River, Grand River, Salmon River, Aroostock, Tobique, Presqu' Ile, Maduxikeag, Eel River, Nackawick, Keswick, Nashwaak, Oromocto, Jemseg (Grand Lake,) Washademoak, Belle Isle, and Kennebecasis. Except the last five, which are slightly tidal for some distances, they are fresh water streams.

The total basin from source to mouth is computed to be 26,000 square miles, an area almost equal to the whole of New Brunswick, but as a part of the watershed lies outside, only a little more than one-half the province is drained by the river. The St. John is considered navigable for vessels 15 feet in draught for a distance of more than 50 miles from the mouth, but no positive information on this point has yet been obtained. About 8 feet at low water can be carried to Fredericton, 84 miles from the sea, and 6 miles below the head of tide at Springhill. Three natural features of the river are remarkable, viz.:—The tidal falls, Grand Falls, and the annual floods. Although in summer the fresh water stream between Woodstock and Fredericton is in places 400 to 1,000 feet wide, expanding at the latter place after reaching tidal level to half a mile in breadth, yet the actual mouth of the river, a rocky gorge 400 yards long, immediately at the head of St. John harbour, measures but as many feet across at high water. Here at low water the level of the river water is from 11 to 15 feet above the sea, and as the ordinary tides flow from 23 to 27 feet, the sea level at high water is from 8 to 13 feet higher than the waters of the river. Thus there are two falls during every tide, viz :—one outward and one inward, and vessels can only pass when the waters of the ocean and river are on a level, and this occurs only for the space of about 10 minutes during each ebb and flow of the tide; at all other times it is either impassable or extremely dangerous.

At Grand Falls, 223 miles from the sea, the whole volume of the river plunges over an almost perpendicular face of limestone 60 feet high, into a deep ravine 250 feet across, somewhat similar to the narrow pass at St. John. Flanked for nearly a mile by lofty rugged cliffs, the confined current dashes from the foot of the falls with excessive strength, mining deep pot-holes in the rocky bottom of the channel in the course of a further descent estimated to be slightly less than the first. In the harbour of St. John, ordinary spring tides are considered to rise 26 feet. At the wharfs of the river steamers, a mile above the falls, while summer range is but 3 feet, the highest flood mark is given as 17 feet above extreme low water. At Oromocto, 73 miles from the sea, where the tidal range is 10 or 12 inches, the flood of 1887 reached a bridge 20 feet above low water. At Andover, 200 miles from the sea, floods attain an elevation of more than 27 feet above summer level. By contrast, the Tobique and St. Francis swell 9 and 6 feet respectively. After the first spate due to the melting of the snow in the catchment basins of the Kennebecasis, Belle Isle Bay, and Washademoak, a secondary flood occurs, caused by the back water of the main river, which is fed from sources farther north, and consequently later in thawing.

The harbour of St. John is open all the year round, but the river is ice bound from November to April, an average period of 144 days. The water usually begins to rise in April, reaching flood pitch early in May, and maintaining a high level for two or three weeks. The ice run takes place before the time of highest water. By the middle or end of July the water has fallen to summer level, a stage lasting with some variations dependent upon the rain-fall, for about 60 or 70 days.

In addition to a little coal, a considerable quantity of cordwood, and the ordinary food supplies yielded by the farms of a lengthy fertile valley, the trade of the river comprehends an abundance of valuable timber, fluctuating each season in amount, but generally at least equal to 135,000,000 superficial feet annually. Most of the logs are floated loose down the tributaries and upper river to Fredericton, some being manufactured there and shipped coastwise or to the United States. The remainder, or major part, is towed from the provincial capital to St. John in rafts, giving employment to a fleet of tugs.

For the purpose of works, three divisions may be made of the river :—

1. Tidal navigation for steamers and sailing vessels, between St. John and Fredericton, 84 miles, requiring eleven feet at low water. Principal obstructions: the Oromocto shoals, about 1½ miles, the middle ground above Oromocto Island, about 1 mile, and the shoals abreast Fredericton, rather more than ½ a mile in length.

2. Inland navigation from Fredericton to Woodstock, a distance of about 65 miles, requiring 3½ feet at low water. The obstacles to inland navigation, besides boulders in some places, and perhaps bed rock at Meductic, are shoals of material more or less coarse according to the strength of the current varying in composition from sandy gravel to stones. The chief bars are at Springhill, and Bear Island, while Knapp's, Perley's, Coac, Nackawick, Belvisor, Moore's, Bett's, Dibblee's and Bedell's Bars, with Meductic Rapids, constitute, according to present information, less obstruction. Dividing above Springhill into two main channels, and from a general width of 350 yards, opening to a stretch of 1½ miles between banks with a waterway increased by at least one-third, the river becomes dotted with eyots and shallows. Two gravel shoals known as the Russel and Chapel Bars, together about ½ a mile in length, compose the obstacle at Springhill. At Bear Island, 25 miles above Fredericton, in consequence of another division of the river into three channels aggregating 600 yards in breadth, a shoal of gravel and stones 4,400 feet long giving only twenty-one inches at low water has been formed. Besides dredging, a long training dyke will be necessary for the maintenance of this channel. After reuniting below the island, the width of waterway in the single channel is only 250 yards.

3. The upper river, including with the tributaries, all that part above Woodstock. This division is used now for the passage of timber only. On some of the tributaries beyond the reach of railways, supplies for the lumber camps are transported in tow boats, for which channels are required to be made and tow paths provided.

RIVER ST. JOHN TIDAL NAVIGATION.

During the year 1898-9, certificates were given for payment of the following sums as contributions towards the provincial government wharfs :—

To Cole's Island in Queen's County at the head of navigation of the Washademoak, a combined high and low water wharf, 135 feet long in the face, standing in about six feet at low water, $388.50.

To the high water portion of Thompson's wharf at Hampstead in Queen's County, on the main river St. John about 33 miles from St. John, $76.10. This wharf is thirty-five feet long and stands in six feet at low water.

To Oromocto wharf, Sunbury county, twelve miles below Fredericton, $208.23.

To Sewell's wharf, on the main river, fifty-four feet long in the face, in four feet at low water, nine miles below Fredericton, $276.50.

To Gerow's wharf, 50 feet long in the face, standing in five feet at low water, three miles from Thompson's wharf in Queen's county, $341.25.

To Newcastle wharf, 57 feet long in the face, on Grand Lake in Queen's, $340.20. To the high water wharf at McGowan's in Sunbury, $161.09, and to the low water wharf at the same place, $284.18. The face of this work is eighty-five feet long.

RIVER ST. JOHN UPPER TOBIQUE.

Navigation of the Tobique for tow boats was improved above Plaster Rocks, the terminus of the Tobique Valley Railway, by the construction of channels from 30 to 40 feet wide, aggregating 8,800 feet in length through thirty-six bars, and at the Forks a dam, 143 feet long, 2½ feet to 6 feet high, and from 10 to 24 feet wide at the base, begun in the previous year was completed. The dam consists of five rows of 6 to 8-in. spruce hand-piles, 220 in all, driven generally 3 feet apart through a brush mattress one foot in thickness covered with about 275 cubic yards of stone.

During the fiscal year ended June 30, 1899, a sum of $527.70 was laid out on the improvements last referred to and the total expenditure incurred in the said fiscal year in connection with improvements undertaken on the River St. John and tributaries generally amounted to $1,065.98.

SHIPPEGAN GULLY,

Fifty-six miles east of Bathurst and 2 miles from Shippegan, a station of the Caraquet railway, is a passage much used by fishing craft from the Baie des Chaleurs to the Gulf of St. Lawrence, between Shippegan Island and the mainland, called Shippegan Gully. But for a shoal, two fathoms could be carried through this channel. The obstruction of the strait lies at the southern end and consists in a bar of littoral drift, 800 yards wide, between the 12 feet contour lines, over which formerly only 3½ feet, but since the construction of the work undertaken by the department for the improvement of this passage nearly 6½ feet are found at low water, equivalent to 12·3 feet at high water spring tide.

For the fishing fleets of Shippegan, Caraquet, and other parts of Baie des Chaleurs, the outlet to the Gulf by way of Shippegan Gully is of the utmost importance, since it furnishes means of avoiding a long and hazardous voyage around Point Miscou, besides effecting a gain of two days a week in reaching and returning from the fishing banks. The mouth of the gully (lying 16 miles north of Tracadie and about the same distance east of Caraquet) is bordered by beaches of sand in some places only a little above the level of high water spring tide. The works at Shippegan are intended to preserve and deepen the channel between the sandy beaches by which access is given for the fishing boats to the sheltered waters of Shippegan Harbour. As this channel is maintained by tidal scour, it is of the utmost importance that no other opening of any kind than the navigable waterway should occur in these beaches. Broadly speaking, the works consist of a pier at the point of each beach, and of breakwaters running either continuously or intermittently along the beaches to prevent their being cut through by the sea from the outside or by the pent-up waters of Shippegan harbour from the inside.

From 1875 to 1890, the works were confined to the east side of the gully, and consisted principally of a short pier at the point and long breastworks along the face of the beach, the whole 1,220 feet in length, one third being of cribwork and the remainder of brush and piling. In addition a dam 890 feet long, also of pile and brush work, was built near the junction of the east beach with the land to prevent erosion.

In October, 1879, a storm, accompanied by an unusually high tide, seriously injured the dam; while the unfinished outer portion, 500 feet long, of the pier was destroyed and the inner part much damaged.

In 1880-1 and again in 1883, the dam was repaired, raised and strengthened, while in the latter year the pier was repaired and extended 120 feet.

General repairs were made again in 1883–4, and also in 1886-7, while in 1888-9 an additional block of 50 feet was added to the outer end.

Until 1890-2 only one pier had been built, and therefore no material improvement of the entrance could have been effected, but at that period a pile structure, 1,104 feet long ballasted with stone, was built at the point of the western beach. At the same time, a length of 137 feet of the work built in 1875 was reconstructed. On the construction of this work scour took place in consequence of the contraction of the waterway. The beaches, however, if not all over at least in places, are liable to be cut through by the water.

In 1892–3, also in the following year, repairs were continued.

In 1897–8 general repairs to the works were begun, and efforts were made to elevate the beaches by means of the natural forces to a height sufficient to exclude the sea, to promote the growth of bent grass, and to prevent further denudation by the strong winds of that locality.

The east pier having been breached by the sea in three places, the west pier-head having been damaged, and the west beach so denuded of sand by the wind as to become

completely cut through, to the danger of the channel, the extensive repairs begun in 1897 were continued until the winter of the following year. By that time the dam had been raised about 3 feet for a distance of 452 feet and had been extended a distance of 185 feet after a false channel 6 feet deep had been closed by a brush mattress 30 feet wide, and an apron of brush and stone 375 feet long had been applied to stop leaks in the original structure. On the northern side of the dam, 10 rows of stakes or hand-piles were driven in such manner as to form groynes in order to give protection to the work by arresting the drift of seawood and sand.

To prevent the traffic from wearing a cartway into a runnel and causing a false channel through the eastern beach, it became necessary to raise the beach and to confine the cartway over this elevation to a single truck. An inclined roadway 12 feet wide and 60 feet in length, raised 2½ to 3 feet above the level of the beach, was accordingly made of brush and shingle bordered with fascines. Four hurdles, 155 feet in total length, were carried to the sand dunes on each side in order to restrict the traffic to the new way. A gap made in the sand dunes near this road was closed by a work of stakes, brush and shingle, 46 feet long, 13 feet wide and 4 feet high. Near Fruing & Co's fishing establishment, an opening on the harbour side of the beech was closed by 24 bents of piles driven 5 feet apart, inclosing fascines, brush and stone. A further length of 119 feet was filled with brush and stone only.

A gap, originally 50 feet long near the inner end of the east pier, was closed by driving 22 piles to which were secured transverse caps and longitudinal walings, the whole being filled with brush and stone extending for a total distance of 63 feet. Immediately adjoining this piling, a breach in the old work, 22 feet long, was rebuilt with fascines, brush and stone. Three hundred and twenty-five feet from the eastern pier-head, a breach in the old work, 62 feet long and 14 feet wide, was closed with piles, brush and stone, and faced with fascines. Immediately adjoining, another gap in the old pier, 70 feet long, was closed in the same manner. In the eastern pier-head a gap 90 feet long was closed by a block of close-faced cribwork 45 feet long, and by pile and brush work of the same length 33½ feet wide. Some details of the pile and brush work yet remain to be finished. A block of old cribwork inside these gaps was strengthened by driving piles along the inner face connected by cross walings and close-piling on the seaward side, the cap was renewed, and the top of the work levelled with brush and stone. The eastern pier-head was protected at the angle with close-piling, and received some ballast.

On the west side of the gully, 62 piles, generally 26 feet long, were driven at the pier-head, while for 180 feet the work was refilled with brush and stone. At the shore end of the west pier the covering was laid.

In order to raise the crest of the west beach and so to prevent the sea from forming false channels, a brush breastwork, 1,669 feet long with hurdle groynes on each side at intervals of 40 feet, was carried from a point near the shore end of the west pier to the sand dunes. The work is intended to catch the sand when driven by the wind and to raise the beach high enough to allow bent grass to be planted, when further denudation will be arrested. Already this work has by collection of the sand begun to raise the beach along nearly the whole length. About 150 feet from the west end of the breastwork, a gap between the sand dunes, through which the sea entered, was closed with a work 43 feet long, 17½ feet wide, and 4½ feet high, of brush, stakes and shingle.

The total expenditure at Shippegan to June 30th, 1898 amounted to $66,512.91; $63,712.91 of which may be charged to 'Construction and Improvement' and $2,800.00 to 'Repairs,' while an additional sum of $4,496.72 was applied to the works during the year 1898–9.

TWO RIVERS.

Two Rivers is a small cove of Chignecto Bay on the shore of the county of Albert, about 6 miles from Anderson's Hollow and the same distance from Harvey. The work is dry at low water and the head stands in 14 feet at high water spring tide.

Under contract dated April 6, 1898, the construction of a wharf intended to facilitate the shipment of farm products, was begun on the 25th of the following month. The

work consists of a pier-head 40 x 35 feet, connected by stringers crossing an opening of 20 feet with a shore block 40 feet wide and 56 feet in mean length. The whole is of round cribwork approached by a ramp 35 feet long and 25 feet wide. The expenditure to the end of the fiscal year 1898 was $442.82.

The work was completed by December, 1898, at a total cost of $2,237.21. A further sum of $356.98 was expended in making beds for vessels to lie aground alongside the wharf, and in removing large boulders from the mouth of the creek. For 1898–9, the expenditure amounted to $2,151.37.

QUEBEC.

ANSE À BEAUFILS.

Anse à Beaufils is a small fishing settlement in the County of Gaspé, on the Gulf of St. Lawrence, 6 miles south of Percé. Spring tides rise 5½ feet, neap tides 3 feet. Across the mouth of the River Anse à Beaufils, which flows through the settlement, a bar has been formed by the accumulation of sand. This bar incloses a small basin which is used by the fishermen as a harbour of refuge for their boats during stormy weather. For a short time in the spring an entrance is kept open by the current of the river, but as soon as the freshets are over the entrance is closed and the fishermen have to haul their boats over the bar into the basin.

In the session of 1897 a sum of $1,600 was granted by parliament for the construction of a retaining wall from deep water in the Gulf to deep water in the basin, and for cleaning by hand of a channel through the bar, along the south face of the wall. Owing, however, to delays in procuring materials no work had been done at the end of 1898, the only expenditure incurred being $577.31 towards the purchase of timber, iron and tools.

During the last fiscal year, the work for which the materials were purchased in 1898 was completed.

The retaining wall has a length of 270 feet, 10 feet wide and a mean height of 10 feet.

The work was done by day labour at a cost of $943.02.

The total amount expended on the work is $1,520.33.

ANSE AUX GASCONS.

The village of Anse aux Gascons, in the county of Bonaventure, is situate on the north shore of Baie des Chaleurs, in the municipality of Port Daniel East, 7 miles to the eastward of Port Daniel and 42 miles west of Percé. Spring tides rise 6 feet, neap tides 3 feet. The locality is considered to be one of the best fishing stations on the Baie des Chaleurs, the fleet consisting of over 60 boats in summer and 100 in the fall. The codfish catch averages from 4,000 to 5,000 quintals every season, beside which large quantities of salmon and lobsters are also obtained. The bay is entirely open to southerly gales, against which it affords no protection. In order to inclose and protect an area with sufficient depth of water at extreme low water spring tides to accommodate the largest class of fishing boats and trading vessels of moderate draught, a sum of $5,000 was appropriated by parliament in its session of 1897 towards the construction of a breakwater 400 feet long and 20 feet wide. Tenders were called for the work, and on February 1, 1898, a contract was entered into for its construction for the bulk sum of $11,494. The work was well under way at the close of the fiscal year 1898, when a sum of $5,000 had been expended.

During the last fiscal year the work commenced in 1898 was completed.

The structure is of close-faced cribwork, sheathed over the seaside and outer end face and ten feet on return inside corner with five-inch hardwood extending down 14 feet.

The width at bottom is 24 feet, top 20 feet, height outer end corner 23 feet 10 inches to top of cap; total length outside on cap is 436 feet 6 inches (including an extra length over contract work of 36·6 feet.)

The total amount expended on construction is $10,047.57.

ANSE ST. JEAN.

Anse St. Jean is situated on the south-west shore of River Saguenay, 25 miles above its mouth.

The public landing pier at this place is 366 feet long, 26 feet wide, with the exception of the head block, which measures 50 feet along the channel face, by 40 feet in length, and is 33 feet in height.

At low water spring tides there is a depth of 7½ feet at the outer end of the pier.

Ordinary spring tides rise 17 feet, neap tides 12 feet.

During the last fiscal year a landing slip was built on the eastern side of the pier; the slip is 75 feet long at the base, 25 feet on top and 14 feet wide, filled with stone ballast.

The top planking of the pier has been renewed on a length of 200 feet.

The work was done by day labour at a cost of $1,000.27.

BAIE ST. PAUL.

The village of Baie St. Paul, in the county of Charlevoix, with a population of about 1,400, is situated on the north shore of the St. Lawrence, 60 miles east of Quebec. It is built on both sides of the River Du Gouffre, which empties into a bay one mile and a quarter deep and three miles wide at its entrance. The bay is dry at low tides with the exception of some small channels. Spring tides rise 20 feet, neap tides 13 feet. In 1874-5 an isolated block 200 feet long and 25 feet wide, with a head 60 feet long and 50 feet wide, was built in 12 feet of water at low water spring tides, on the west side of the bay at a distance of 3,000 feet from shore at high tide and 600 feet at low tide. This block was built for the accommodation of lightships when taken to or removed from their mooring in the St. Lawrence, and was also used by steamers as a landing pier. But as it was not connected with the shore the accommodation it afforded to passengers and freight was so poor that it was decided to build a landing pier on the east side of the bay, at Cap aux Corbeaux, three miles from the village.

Construction.—During the winter of 1881-2, timber was procured for the proposed structure, which was completed in 1885, at a total cost of $35,933.71. It was then 712 feet long, 30 feet wide, and its head stood in 7 feet of water at low water spring tides. In 1887, an earth embankment and cribwork approach was built at a total cost of $1,170.60 to connect its shore end to the road built by the municipality. Owing, however, to the insufficient depth of water at its head the pier could not be and was not used by steamboats, and passengers and freight were still landed on the isolated block from which they had to be conveyed in row boats or scows to shore. It was therefore decided, in 1888, to add yearly to its length until a depth of about 14 feet at low water spring tides was reached. With this end in view four extensions, aggregating 354 feet in length and 30 feet wide, were built by contract, at a total cost of $24,512.84 including superintendence. The first extension, 60 feet in length was constructed in 1889, at a cost of $4,867.92; the second, 94 feet in length, in 1890-1 at a cost of $7,327.13; the third, 100 feet in length, in 1893, at a cost of $6,372.79; and the fourth, also 109 feet in length. in 1895, at a cost of $5,945. The depth of water at the head of the pier at low water spring tides was therefore increased from 7 feet in 1885 to 8 feet in 1889, 9 feet in 1891, 10½ feet in 1893 and 11½ feet in 1895. The pier, as it now stands, is 1066 feet long, 30 feet wide throughout, and 35 feet high at its outer end. Its top

stands 4 feet above high water spring tides. It is built throughout of close-faced crib-work filled with stone ballast. The face timbers are 12x12 dimensions, and the cross ties and longitudinals are round logs 14 inches diameter at the small end.

In order to reach the proposed depth of 14 feet, and complete the pier in accordance with the scheme laid out in 1888, a contract was entered into in the fall of 1898 with Messrs. Viau, Lachance & Hamel to build a further extension of 145 feet in length and 50 feet wide, forming the head of the pier, the contract price being $12,500. At the end of the last fiscal year the sum of $4,227.41 had been paid to the contractors.

Repairs.—In 1886 some minor repairs amounting to $82.16 were effected, and in 1888 a further sum of $35.66 was expended. In 1893 the spring thaw and rains caused an extensive land slide, which completely obstructed the road leading to the pier for a length of 200 feet. Another approach has therefore been built on the continuation of the one built in 1887 and some distance out, in order that, should another landslide occur, which is very probable, the new approach would not be interfered with. The new approach, which is 268 feet long, 15 feet wide and of an average height of 9 feet, was built of crib-work filled with stone and gravel at a total cost of $898.47.

In November, 1893, a sum of $124.27 was expended in renewing 234 deals in the flooring of the old portion of the wharf. In 1895 general minor repairs were effected to the amount of $378.77. In November, 1896, the approach built in 1893 was raised 2½ feet on its total length of 268 feet, 18 toises of stone ballast were placed in it, and it was covered with three-inch deals. Thirty fenders were placed on its seaward face to strengthen the work. Part of the flooring of the pier was also renewed, 300 deals being employed. These repairs were executed by day labour at a cost of $900.42.

During the year 1897-8 the earth embankment, which constituted a portion of the approach built in 1893, was washed away and was rebuilt of crib-work filled with stone ballast on a length of 100 feet abutting against the solid rock. The width of the new work is 15 feet, and its average height is 10 feet. Two courses of face timbers and cross-ties at the shore end of the pier were renewed on a length of 550 feet and new floor stringers, floor and snubbing posts put in. Some 12 x 12 timbers in the western face of the structure at its outer end, which had been broken by ice, were renewed and this face was sheathed with 6-inch maple 15 feet long on a distance of 200 feet. The work was done by day labour at a cost of $3,505.75.

During the past fiscal year the outer end of the pier completed in 1885 and the four extensions built subsequently, which had all settled, in some places as much as 4 feet, were raised to the proper level on a length of 600 feet, the floor stringers, flooring and snubbing posts had to be for the most part renewed. The two slips on the eastern side, which had been damaged by ice, were repaired, and 16 toises of stone ballast were put in the wharf where required. The work was done by day labour at a cost of $3,036.59.

The total amount expended on this work is $74,180.24, as follows :—

Construction	$ 65,844 56
Repairs	8,963 09
Total	$ 74,807 65

BEAUPORT.

The village of Beauport, in the county of Quebec, is situated at the mouth of the river of the same name on the north shore of the River St. Lawrence, 2 miles below the city of Quebec. It contains two large flour and grist mills, nail, match, grindstone, cement, lime and cotton factories, and the building stone, of which there are extensive quarries, is in great demand, large quantities of it being annually shipped. Spring tides rise 21 feet, neap tides 13 feet. At low water spring tides, the water of the St. Lawrence recedes about 3,700 feet from the mouth of the Beauport River.

In 1888 a wharf 200 feet long, 25 feet wide and 8 feet high at its outer end, situated on the west shore of the Beauport River at its mouth, was purchased from

Mr. Edouard Caron for the sum of $800. The purchase was made subject to the structure being thoroughly repaired and raised 3 feet by the vendor. The work was completed to the satisfaction of the department in 1890, when the total amount paid out, including legal expenses, was $932.07. The wharf was then 11 feet high at its outer end, which stood in 10·80 feet of water at high water spring tides. In 1890 the filling of the wharf with stone ballast was completed, and its approach raised at a cost of $300. In order to provide increased shipping accommodation a close-faced cribwork extension, 121 feet long and 30 feet wide, was built to the old work during 1898, at a total cost of $3,352.58. The new work is 14 feet high for half its width, and from 7 to 9 feet high for the other half, and affords an increased depth of 6 inches of water at its outer end at high water spring tides. Its foundation has been carried down to a depth of 5 feet below the level of the beach in order to render dredging along its face possible should it be required.

During last fiscal year the sum of $3,998.62 was spent in extending the pier at mouth of River Beauport, or rather of enlarging what was already done. The old wharf was raised 16 inches and three tiers of face timbers put in one half of it; this portion was rough crib with one full face only on river side (200 feet long) filled with stone and gravel 20 feet wide, giving an area of 20,800 square feet of wharfage.

The whole work done this last year is built up with cedar, red spruce and white pine.

The whole contour of both old and new work is sheathed full height with white pine and red spruce deals.

The total amount expended on this work is $8,583.27,

BELŒIL (GUARD PIERS).

Belœil is a post village in Verchères county, on the north side of the Richelieu River, with a station on the Grand Trunk Railway, 21 miles north-east of Montreal. It has an express office, one store, two hotels, one saw mill and the works of the Hamilton Powder Company. Population four hundred. The Richelieu River leaves Lake Champlain at its northern extremity and after a course of 80 miles enters the St. Lawrence at Sorel. It is broader and more rapid in the former than the latter part of its course, and near its centre it expands into the Basin of Chambly. The Richelieu forms an important part of the navigation between the St. Lawrence and the Hudson River.

South of the Grand Trunk Railway bridge which crosses the river at Belœil, the government built a number of piers and booms on both sides of the channel to facilitate the passage of steamers and barges coming down the rapid current of the river and going through the narrow passage of the draw-bridge, and to prevent them from being carried out into shallow water. There are eight piers or four on each side of the channel, distant from 80 to 100 feet from one another.

From 1885 until 1888 some slight repairs were made to the booms at a cost of $353.43. In 1890-1 three of the piers were rebuilt from the water line and some slight repairs were made to the booms at a cost of $1,500.35. In 1891-2 two other piers were rebuilt from the water line at a cost of $1,193.38. In 1895-6 some slight repairs were made to the booms at a cost of $144.79.

In 1896-7 it was found that the guide piers on the west side of the river—four in number—built many years ago, were in such bad condition that they could not properly be repaired, and an entirely new line of guide works was adopted. It was decided to built a solid cribwork wall from the Grand Trunk Railway pile abutment upward, following the line of a 15° curve (about the natural curve of the shore) for a distance of 337 feet; to remove the four old piers and booms, and to dredge a wider channel for the free passage of boats. During the year some dredging was done amounting to $730.45 and $2,170.12 was expended in procuring stone, iron, &c., required for the construction of the cribwork. In 1897-8 the sum of $5,974.28 was expended in building the cribwork up to an elevation of 15 feet. This work when completed will be 337 feet long, 15 feet high.

During the fiscal year 1898-9 the cribwork wall was completed to a height of 20 feet on its whole length of 337 feet, terminated at its upper end by an ice-breaker, and the filling of the space between the guard wall and the bank of the river was commenced.

The work was done by day labour at a cost of $5,496.39.

The total amount expended on this channel since 1885, is $17,563.19 as follows :—

Repairs and reconstruction of mooring piers	$ 2,191 95
Construction of guide wall	14,371 24
Total	$17,563 19

BERTHIER, EN BAS.

The village of Berthier, in the county of Montmagny, is on the south shore of the St. Lawrence, 24 miles below Quebec. Spring tides rise 20 feet, neap tides 13 feet.

Construction.—A landing pier was completed at this place in 1853 at a cost of $37,724.14 and the sum of $1,760.00 was expended for repairs up to June 30, 1867. The pier, which was built of cribwork filled with stone ballast, was 466 feet long, of a uniform width of 32 feet, with the exception of the outer 57 feet which was 60 feet wide and 34 feet high at its outer end, standing in from 6 to 11 feet of water at low water spring tides. In 1883 an appropriation was made for the construction of an extension 100 feet long and 30 feet wide, with the outer end standing in 14 feet at low water spring tides. It was built by contract and completed in 1886 at a total cost of $11,310.39.

Repairs.—In 1877-8 the pier was thoroughly repaired ; some of the face timbers and ties which were decayed, were renewed, and the whole roadway was planked over to prevent the broken stones of which it was made, from being washed out by the heavy seas which frequently broke over the pier. The total expenditure for repairs to this work since Confederation was then $9,024.15. Owing, however, to the age of the main portion of the work, constant repairs were required, and up to 1896, a further sum of $3,656.14 was expended in renewing portions of the flooring, cap pieces, corner sheathing and moving parts, and for the reconstruction of the movable slip which was broken during the fall of 1889. In the year 1898, 250 planks were renewed in the top flooring at a cost of $98,15.

During the last fiscal year the two last courses of face timbers were renewed on a length of 125 feet at the outer end, the planking of the movable slip, the flooring on a length of 75 feet, the posts and cross beam supporting the end of the movable slip, four snubbing posts and 175 feet of capping were renewed ; a winch used for raising the slip, which was broken by ice last winter was replaced by a new one, the amount expended was $385.07.

The total amount expended at this place is $63,957.04 as follows :—

Construction and repairs prior to confederation	$39,484 14
Construction and repairs since confederation	11,310 39
Repairs	13,163 51
Total	$63,957 04

BIC.

Bic is an important village and summer resort, in the county of Rimouski, on the south shore of the St. Lawrence, 170 miles below Quebec. It contains a number of flour, saw and carding mills and two cheese factories. Spring tides rise 16 feet, neap tides 11 feet.

Construction.—In 1884 it was decided to build a landing pier to accommodate the extensive local trade of the village. The work was carried out by day labour and completed in 1887 at a cost of $15,931.08. It is situate to the eastward of a group of

islets which lie at the mouth of the Bic River, and is 1,120 feet long over all, of a uniform width of 20 feet, apart from its outer 85 feet which is 30 feet wide, and 15 feet high at its outer end, which stands in 12 feet of water at high water spring tides, and dries at low water of both spring and neap tides. The pier consists of 22 cribs placed 25 feet apart connected with platforms. The shore end crib is 35 feet long and 20 feet wide, the two outer ones, which constitute the head of the pier, are 30 feet square and the remaining nineteen are 25 feet long and 20 feet wide. An opening 50 feet wide has been left between the second and third cribs from shore, in order not to interfere with a branch channel of the river. The cribs are substantially built of close-faced cribwork, with 12 x 12-in. timber, and filled with stone ballast.

Repairs.—Minor repairs were effected to the work in 1894 at a cost of $197.50, and in 1896 a further amount of $587.22 was expended in renewing portions of the flooring, cap pieces and stringers which had become decayed. During 1898, 16,215 square feet of the flooring out a total area of 22,952 square feet were renewed with 3-inch spruce deals; also 1,500 feet of 8 x 8 inch capping. The floor stringers were raised and strengthened where required, placing upright posts under them, and a crib 9 feet long 20 feet wide and 6 feet high with vertical posts to support the flooring, was built in the centre of the 50-foot opening originally left in the shore end of the work. These repairs were effected by day labour at a cost of $1,248.85.

During the last fiscal year the sum of $90.91 was spent last fall in effecting sundry repairs to Bic wharf which consisted in putting some spruce sheathing (deals 3-in.) on some of the detached cribs and filling same with ballast.

The total expenditure on this work is $18,061.76, as follows:—

Construction	$15,931 08
Repairs	2,130 68
Total	$18,061 76

CACOUNA.

Cacouna, one of the favourite summer resorts of Canada, is an important village in the county of Témiscouata, on the south shore of the River St. Lawrence, 120 miles below Quebec. Spring tides rise 19½ feet, neap tides 9½ feet.

In order to accommodate the trade of the village and surrounding localities, it was decided in 1891 to commence the construction of a landing pier off Indian Point and to add yearly to its length until a depth of about 13 feet of water, at high water spring tides, would be reached. To more promptly provide the needed landing accommodation the construction of the pier was commenced by day labour, during the same year, at its outer end by the building of an isolated block 103 feet long, 24 feet wide at the top and 27 wide at the base, and respectively 17 feet 3 inches and 16½ feet high at the outer and inner ends. The work, which was built of openfaced cribwork, with 12 by 12 inch timber and sheathed on all its faces with 3-inch spruce deals, was completed in 1894 at a cost of $6,828.03. Its head stands in 12 feet 9 inches of water at high water spring tides, and is about midway between high and low water lines of spring tides, about 875 feet distant from the former. In 1895 an extension shorewards 60 feet long, 22 feet wide and 16 feet high at its inner end, was built in the same manner as the main block at a cost of $2,017.34.

During the year 1898 a further extension towards Indian Point, 143 feet 8 inches long, 22 feet wide and 15 feet high at its inner end, built of close-faced cribwork and sheathed on all faces with 3-inch spruce deals was added to the structure at a cost of $3.679. Materials, timber and iron, worth $1,300 were left on hand and will be used in the extension to be built next year. The work was 306 feet 8 inches long, which left a length of about 568 feet yet to be built to connect it with Indian Point.

During the fiscal year ending June 30 last, a sum of $3,984.93 was spent in extending the Cacouna isolated block some 305 feet towards the shore. The work is close-faced cribwork, the flooring is on and of 3-inch spruce deals but no capping could be

had when the work was suspended last fall. The average height of the extension is 13 feet, width on top 21 feet.

Elm fenders are placed every 30 feet on inside elevation and at return corners in shore end.

The work is now 611 feet long, which leaves a length of 190 feet yet to be built to connect it with Indian Point.

The total amount expended on the construction of the pier since it was commenced in 1891 is $17,809.30.

CAP À L'AIGLE.

Cap à l'Aigle is on the north shore of the River St. Lawrence, in the county of Charlevoix, 87 miles east of Quebec and 3 miles below Murray Bay, the place is becoming more frequented every year as a summer resort.

Spring tides rise 20 feet, neap tides 13 feet.

Construction.—During the year 1881–2 a landing pier, 160 feet long, 25 feet wide at the inner end and 35 feet wide at the outer end, with a depth of 17 feet at the outer face, at low water spring tides, was built to accommodate the local trade, at a cost of $2,946.25. In 1882–3 a combined waiting room and freight shed was erected on the pier at a cost of $250, and in 1883–4 fenders and posts were placed on the structure, the amount expended being $345. In order to meet the requirements of the fast increasing traffic of the locality, which is without railway communication, and to provide more accommodation to the steamers calling at the pier, an extension 50 feet long, 40 feet wide and of an average height of 42 feet, was built in 1897–8, on the eastern side, at a cost of $4,754.44. The pier is now 160 feet long with 85 feet of mooring face at the end, the depth of water at the outer end is 17 feet at the western corner and is 13 feet at the eastern corner. The wharf is entirely built with cribwork filled with stone ballast and sheathed with rock elm or maple 6 inches thick.

Repairs.—Owing to its exposed situation the pier has been frequently damaged by ice, and up to the end of June, 1898, the sum of $2,086.62 had been expended for repairs, of which $1,270.13 up to 1894, and $816.49 in 1897.

During the last fiscal year, after the completion of the new extension it was found necessary to repair the planking on the older part of the wharf, the work was done by day labour, in the month of July at a cost of $259.85.

The total amount expended on this work is $10,642.17, viz. :—

Construction	$8,295 70
Repairs	2,346 47
Total	$10,642 17

CAP SANTÉ.

The village of Cap Santé, the chief town of the county of Portneuf, is situated on the north shore of the St, Lawrence, 5 miles below Portneuf, and 31 miles above Quebec. Spring tides rise 14½ feet, neap tides 8½ feet. At neap tides the boats can only approach the landing pier when the water has risen to the height of 7 feet 9 inches, and even then only with danger, owing to the numerous boulders which are strewn along the foreshore of the river. The boulders form part of a reef which extends along the line of low water at a distance of about 1,100 feet from the head of the pier. The work of blasting the most dangerous boulders from the channel leading to the pier was commenced in 1889, when a sum of $252.43 was expended. The channel was further improved in 1890 at a cost of $500.85. During the year 1898 a number of other boulders was blasted at a cost of $423.49.

During the last fiscal year part of a projecting reef was blasted and the debris removed at a cost of $572.67.

The total amount expended at this place is $1,749.44.

CARLETON.

Carleton is the most flourishing parish on the Baie des Chaleurs, in the county of Bonaventure, and 12 miles by water from Dalhousie, N.B.

The village is built on the shore of the Tracadigèche Bay at the foot of a mountain over 1,800 feet high, and is one of the most picturesque sites of the coast; it is already in great repute as a watering place.

The sum of $55.09 was expended in course of last fiscal year in effecting some minor repairs to planking, sheathing of steps of Carleton pier.

The Carleton wharf, built in 1882–3, has a total length of 234 feet, including an outer end block of 39 x 39 feet, the inshore end of 195 feet is only 20 feet wide on top. The average depth of water at outer end is 10 feet at low water spring tides.

CEDARS.

Cedars is situated on the north shore of the River St. Lawrence, 15 miles east of Coteau Landing, in the county of Soulanges.

The landing wharf is 115 feet in length and 24 feet in width.

There is at the outer face 7½ feet of water at its lowest stage.

During the fiscal year 1899 the decayed upper structure was removed to 1 foot below the low water level, and rebuilt.

The timber used is hemlock, 12-inch x 12-inch.

The work was done by day labour at a total cost of $1,498.96.

CHICOUTIMI.

The town of Chicoutimi, in the county of the same name, is situated on the south shore of the Saguenay River, 71½ miles above Tadousac, and at the head of navigation. The Richelieu and Ontario Navigation Company's boats call two to six times a week at the Chicoutimi pier, during the season of navigation, with passengers, freight and mails.

At the mouth of the River Chicoutimi, about 1 mile above the pier, there is an extensive lumbering establishment belonging to the Messrs. Price who export large quantities of sawed lumber, laths, shingles, &c., to Europe and elsewhere, in ocean vessels and large schooners which ascend the Saguenay to the town. Spring tides rise 15 feet, neap tides 8 feet.

Construction.—The landing pier was commenced in 1873 by the St. Lawrence Tow Boat Company and completed by the Dominion Government, to whom it was handed over in 1874, at a cost of $14,193.40. From 1874 to 1882 inclusively, it was extended and improved at a total cost of $2,823.76. The pier was then 282 feet long, and consisted of an approach 248 feet long and 30 feet wide and of a head block 34 feet long and 127 feet wide forming two wings respectively 70 and 27 feet wide. On the upper or 70-foot wing was a combined waiting-room and office 20 feet square.

The depth of water at the end of the pier, which was originally 10 feet at low water spring tides, was then reduced to 7 feet by the accumulation of slabs and sawdust from the mills at the mouth of the Chicoutimi River.

In 1883 the shore end portion of the approach on a length of 38 feet was embedded in an embankment upon which the station and sheds of the Chicoutimi branch of the Lake St. John Railway are now erected. The length of the approach was thereby reduced to 210 feet. In 1884 the approach was widened 70-foot by filling in with slabs the whole space, 210 feet feet in length, between the upper or 70-foot wing and the shore, and a storehouse 40 feet long and 24 feet wide was erected on this extension at a total cost of $2,145.84. The filling was not, however, carried up to the level of the top of the pier until 1885, when the extension was floored in a manner similar to the rest of the work. A separate waiting-room was also erected on the lower or 27-foot wing. The amount expended was $2,042.11. In 1890 a cribwork retaining wall

14 feet wide was commenced along the slab filling built in 1884, and the flooring was repaired where required at a total cost of $1,005.81. In 1891 the cribwork retaining wall was completed, a shed 28 x 29 feet built at the southern end of the pier and the flooring was repaired at various places at a cost of $1,802.70. In 1897 the pier was again widened by the addition of cribwork 30 feet wide along its lower or eastern face, from the lower or 27-foot wing to shore, a distance of 210 feet. The cribwork was fully ballasted and floored with 3-inch tamarack planks, and twenty-five fenders were placed along its face. The pier was also sheathed for a length of 50 feet along its northern face in order to complete the sheathing all around the work. The total expenditure incurred was $4,992.96.

As now completed the pier is 245 feet long and 130 feet wide. It is 29 feet high above the bottom of the river at its outer end, which stands in about 8 feet of water at low water spring tides.

Repairs.—In 1883 and 1886 minor repairs were effected to the flooring, &c., at an aggregate cost of $288.55. In 1887 a slip was built at the outer end of the pier, the waiting-room was painted and general repairs performed at a cost of $1,390.35. In 1889 the flooring of the pier was almost entirely renewed and six fenders, 14 inches square, were placed along its outer face at a cost of $1,631.65. In 1892 and 1893 the flooring of the pier was again completely renewed on a length of 210 feet and a width of 110 feet, with red spruce planks 5 inches in thickness; the east side of the structure was raised 18 inches; the waiting-room was painted both inside and outside, and two mooring posts were renewed. The expenditure incurred during the two years was $3,024.04. In 1894 a sum of $1,999.60 was expended for the construction of a movable slip and the purchase of two crab winches to raise it. During the years 1895 and 1896 a portion of the outer face and the whole of the eastern face of the structure were resheathed with red spruce six inches in thickness, and the portion of the flooring not completed in 1893 was laid. Expenditure during the two years $3,991.88. During the year 1898 a sum of $239.79 was expended on minor repairs to the flooring, sheds and waiting-room.

During the last fiscal year a freight shed 60 x 30 feet was constructed on the south side of the pier for the storage of butter and cheese. Part of the top planking has been renewed.

The work was done by day labour at a cost of $1,499.27.

The total expenditure on this work is $43,071.71, and may be sub-divided as follows:—

Construction, including freight shed	$30,505 85
Repairs	12,565 86
Total	$43,071 71

ETANG DU NORD.

Etang du Nord is at the western end of Grindstone Island, one of the Magdeleine Islands, in the Gulf of St. Lawrence and in the county of Gaspé.

During the last fiscal year, the outer face of the breakwater at this place, having sustained considerable damage, was repaired.

The face timbers and sheeting were renewed on a length of 100 feet, and stone ballast was put in the breakwater where required, other trifling repairs were effected.

The work was done by day labour at a cost of $1,528.44.

GRANDES BERGERONNES.

At Grandes Bergeronnes, 18 miles below Tadousac, in the county of Chicoutimi and Saguenay, boulders were removed from the bed of the river for a distance of one mile, to facilitate the navigation of the same.

The work was done by day labour at a cost of $401.26.

GRAND PABOS.

The harbour of Grand Pabos, in the county of Gaspé, is situate at the mouth of the river of the same name on the north shore of Baie des Chaleurs, 30 miles west of Percé, and about midway between Cape Despair and Pointe Maquereau.

In 1885 the department commenced the improvement of the harbour, which lies within the mouth of the river, by the removal of dangerous rocks which obstructed its entrance. This work was continued in 1887 and 1889, when a sum of $2,582.93 was expended. In 1890 a combined training pier and breakwater of close-faced cribwork, 215 feet wide and about 10 feet high along its western face, was built on a reef which extends in an easterly direction off the west shore of the river into the bay. The amount expended was $2,906.95. In 1893-4 the pier was extended to shore, the dimensions of the new work being: length 120 feet, width 21 feet, average height 11 feet. It was built of close-faced cribwork and completed during the year with the exception of the flooring, outside sheathing and some ballasting, at a cost of $1,999.53. Work was resumed on the extension in 1894-5 and the portions unfinished were completed. Some dangerous rocks lying in mid-channel of the river and along the face of the work were also removed, the amount expended being $1,558.99.

The training pier, which is now 335 feet long, has confined the river waters into one channel about 75 feet wide, 7 feet deep at low water spring tides, and practically clear of all obstructions. A few jutting points of rock will, however, have to be removed to make it perfectly safe at all times of tide.

Repairs.—In 1896–7 a sum of $500 was applied in sheathing with spruce flatted to 10 inches in thickness, a length of 200 feet of the inner face of the training pier which has been damaged by ice. The repairs commenced in 1896–7 were completed during the year 1898 at a cost of $799.15. The seaward face of the pier for a length of 309 feet and its outer end were sheathed with spruce flatted to 8 inches in thickness and from 10½ to 15 feet in length. The outer end of the work on a length of 150 feet was raised about 15 inches, and new stringers and flooring put in. During the last fiscal year the sum of $422.87 was expended in removing a shoal of rock 20 feet diameter, 3½ to 4½ feet in height. The work was done by day labour in the months of August and September.

The total amount expended on this work since it was undertaken in 1885 is $10,770.42, as follows:—

Improvement of channel	$ 3,005 80
Construction of training pier	6,465 47
Repairs to "	1,299 15
Total	$ 10,770 42

GRANDE RIVIÈRE.

Grande Rivière, in the county of Gaspé, is situated on the Baie des Chaleurs, 21 miles south-west from Percé, and about 30 miles north-east of Port Daniel. Spring tides rise 6 feet 6 inches.

During the last fiscal year the following repairs were effected to the wharf at this place: the sides were sheathed on a length of 556 feet with birch and hemlock timbers 8 inches and 5 inches thick respectively, birch fenders were placed on both inside and outside faces of the three landing stairs; the old sheathing was further secured on a length of 180 feet, the mooring posts were capped with galvanized iron and painted, and the top planking was levelled and partly renewed.

The work was done by day labour at a cost of $773.28.

IBERVILLE.

The town of Iberville, the *chef lieu* of the county of the same name, is situated on the eastern shore of River Richelieu, opposite the town of St. John, to which it is connected by a bridge for pedestrians and carriages. Population about 2,000.

In 1897 the Government decided to build a wharf to facilitate the trade by water way.

The structure commenced in March, 1899, is situated at the foot of Market Street, and consists of the following, viz.:—

a. A stone embankment 130 feet long and 24 feet wide with slopes of 1 to 1.

b. A trestle approach 150 feet long by a width of 24 feet.

c. A head of pile work 150 feet long, parallel to the channel, by a width of 40 feet, with two slips, a storehouse 20 by 24 feet. The outer face of the wharf is 15 feet above the bottom of the river, and stands 3 feet above high water and 9 feet above low water levels.

The work was done by day labour and was not completed at the end of the fiscal year.

Amount expended, $6,784.32.

ILE AUX COUDRES.

Ile aux Coudres, with a population of about 1,500, is in the county of Charlevoix, 62 miles east of Quebec and 1½ miles from the north shore of the St. Lawrence, the upper end being opposite Baie St. Paul. The island is 9 miles long and 3 miles broad. It is divided into sixty-five farms, from which potatoes are the main produce. Spring tides rise 20 feet, neap tides 13 feet.

Construction.—In November, 1880, a contract was entered into with a large number of the inhabitants of the island on behalf of the municipality, which had voted $4,000, to supplement a like amount voted by parliament for the construction of a landing pier on the north shore of the island. The pier was commenced in 1881 and completed in 1882, the amount expended being $3,718. The structure is 272 feet long and 20 feet wide, with the exception of a length of 74 feet at the outer end, which is 32 feet wide. It is 40 feet high at the outer end, where a depth of 16 feet is available at low water spring tides. In 1883 a freight shed was constructed at the inner end of the pier at a cost of $250. In 1884 the outer end of the pier having sunk considerably and the outer face being damaged by ice, repairs were commenced and completed in 1885 at a cost of $1,298.51. In 1888 the sum of $249.94 was expended in repairing fenders broken by ice. In 1890 two spans between inner piers were filled with cribwork to prevent a strong current running across the pier, at a cost of $861.92. In 1893 and 1894 general repairs were effected; the outer end was raised 3 feet on a length of 50 feet, part of the planking was renewed and ballast put in, the amounts expended being $252.46 and $1,199.44 respectively in each year. In 1896 the broken timbers at the end were replaced and sheathed over, 100 feet of floor stringers were renewed and ten toise of stone ballast was put in at a cost of $359.02. In 1897 trifling repairs to the corner sheathing were done at a cost of $147.66.

During the last fiscal year the top of the pier was entirely renewed on a length of 125 feet, 4 feet high. The face timbers which had been broken by ice at the outer end were renewed on a height of 6 feet and a length of 10 feet, with short pieces of ties put in. The sheathing on the outer end and 20 feet on each side, making a total of 70 feet, was renewed with maple timber 6 inches thick. The 3-inch sheathing on each side was repaired as well as the outer slip. The work was done by day labour at a cost of of $998.34. The total amount expended on this work is $9,335.29, of which $3,968 was for construction and $5,367.29 for repairs.

ILE PERROT.

Ile Perrot is in the St. Lawrence, south-west of the island of Montreal, between Lake of Two Mountains and Lake St. Louis. The island is about 7 miles long, and is in the county of Vaudreuil.

In 1897–8 a small wharf with a right of way on the north side of the island was purchased from Mr. Joseph Leduc for the purpose of providing a convenient landing on the Ottawa River shore. This right of way is 400 feet long and extends from the

public road to the wharf, the first 355 feet having a width of 30 feet, and the remainder near the river a width of 100 feet. The wharf is close to and parallel with the shore, and is 20 feet wide by 52 feet long, at the head, being inadequate to the requirements of the traffic and in a dilapidated condition. An outer block was built close to the old wharf with a landing face of 80 feet and a width of 20 feet. This work, done by day labour, was commenced in June, 1898, and was not completed at the end of the fiscal year. It is built of close-faced timbers to a height of 19 feet and is sunk in 13 feet water.

A good road on the site of the right of way was also built from the public road to the wharf.

Amount expended, $841.98.

During the last fiscal year the wharf commenced in 1898 was completed by day labour at a cost of $2,486.73.

Total amount expended is $3,328.71.

KAMOURASKA.

The village of Kamouraska is a favourite summer resort, situated on the south shore of the St. Lawrence, in the county of Kamouraska, 90 miles below Quebec. Spring tides rise 19 feet, neap tides, 12 feet.

Construction.—In 1887, a landing pier 190 feet long, 35 feet wide and 15 feet high at its outer end, was purchased for the sum of $1,000.00, thoroughly repaired, and portions of it were rebuilt at a cost of $2,818.37. In 1890 a close-faced cribwork extension 109 feet long, 25 feet wide, and 19½ feet high at its outer end, was built at a cost of $2,855.99. The pier is dry at low water, but at high water of ordinary spring tides, a depth of 16 feet is available along the end and sides of the extension built in 1890. The top of the work stands 3½ feet above ordinary high water spring tides. During the last fiscal year an extension 150 feet long and 25 feet wide was partly constructed but not completed, at the end of the fiscal year there still remained 9 feet in height to be built, the amount expended was $5,020.22.

Repairs.—In 1891, the outer portion of the eastern face of the old work purchased in 1884 was demolished and rebuilt with an inclined slip 76 feet long and 10 feet wide at a cost of $898.63. In 1897 the whole western face of the same work, 180 feet in length, was taken down and rebuilt for a width of 12 feet. The work was performed by day labour at a cost of $995.62. In the year 1898 the inner portion of the eastern face of the old work, 110 feet in length, not rebuilt in 1891, was taken down and rebuilt for a height of 5 feet, the floor stringers and flooring were renewed on a length of 80 feet, both faces of the structure were sheathed with 3-inch deals on a total length of 190 feet, 48 cubic yards of stone ballast were placed in the slip, three snubbing posts were renewed and four ladders were placed, two on each side of the structure. The work was done by day labour at a cost of $743.63.

The total amount expended is as follows:—

Purchase of the work	$ 1,000 00
Construction and improvements	10,694 58
Repairs	2,637 88
	$14,332 46

LAKE ST. JOHN—WHARFS.

Lake St. John lies between the parallels of 48 deg. 27 min. and 48 deg. 51 min. N. latitude, and the meridians of 71 deg. 35 min. and 72 deg. 10 min. W. longitude, about 120 miles north of Quebec. Its general shape is circular, and its circumference about 100 miles. It lies in an immense valley, and is the reservoir into which numerous large rivers and streams empty, many of which rise in the highlands that separate the North-

west Territories from Quebec. The principal of these rivers is the Mistassini, Peribonka, Kocuatien, Rivière à la Pipe on the north, the Ashouapmouchouan and Ouiatchouanish on the west, the Ouiatchouan on the south-west, and the Metabetshuan, Kushpahiganish and Belle Rivière on the south. By means of some of these rivers and their lakes and tributaries, communication from Lake St. John may be had through the St. Maurice with the St. Lawrence, and through the Gatineau with the Ottawa. This great lake has its outlet into the Saguenay by the Grande and Petite Décharges, which lie on its east side. The lake contains a number of beautiful islands and its shores abound with inexhaustible quarries of limestone and extensive beds of fine marl.

During the last fiscal year buoys were placed on the River Mistassini at Roberval, Grande Décharge, River Ashouapmouchouan and Peribonka.

These rivers flow into Lake St. John. The total amount expended being $250.

Peribonka.—Peribonka is a small village situated at the mouth of the river of the same name on the northern side of Lake St. John.

During the last fiscal year a new wharf was constructed at this place, consisting of a crib 25 by 30 feet and 22 feet high, with a depth of 5 feet at low water at the outer end.

The amount expended during the year was $1,299.31.

Rivière à la Pipe.—A small village situated on the north shore of Lake St. John at the mouth of the river of the same name, 7 miles north of Grande Décharge.

It contains a Roman Catholic church, two saw mills, one blacksmith shop and three stores. Population 400.

The wharf in course of construction is situated at a point on lot No. 118, township Taillon, about 1 mile to the westward of Rivière à la Pipe. It is being built in a southerly direction about 75 feet from shore for a length of 200 feet and a width of 25 feet and extends to 8 feet depth at the mean summer level of the lake. It was built of close-faced cribwork up to 18 feet during the year 1897-8 and will stand 25 feet high when completed.

The wharf will facilitate communication between the northern and southern shores of the lake which are rendered difficult, not only on account of the distances being great by land, but by the state of the roads, or the entire absence of such. The large rivers which flow through the township and territories around Lake St. John also intercept all means of communication and prevent to a certain extent settlement of the lands.

The Quebec Government has built a good road from the public road to the present wharf, a distance of 2 miles. The amount expended at the end of the year 1897-8 was $3,998.21.

During the last fiscal year an addition 50 feet long by 30 feet wide was built at the outer end of the wharf to facilitate the approach.

The work was done by day labour at a cost of $1,999.86.

St. Felicien.—A post village in Chicoutimi county, on the Assametquagan River, 15 miles from Roberval, on the Quebec and Lake St. John Railway. It contains one Catholic church, five stores, one hotel, and four saw and grist mills. Population 1,000.

During the year 1895-6 a wharf was built to accommodate the local trade. It is 70 feet in length, 26 feet in width and 22 feet high at the outer end, at which vessels drawing 8 feet can lie at low water. A shed 20 feet square was erected on the wharf at its inner end.

During the last fiscal year an addition 90 feet long, parallel with the channel, and 40 feet wide was constructed at right angles to the wharf at its outer end.

The work was done by day labour at a cost of $1,109.19.

LANORAIE.

The village of Lanoraie is situated on the north shore of the St. Lawrence, in the county of Berthier, 46 miles below Montreal. It has considerable trade in flour, grain and cordwood.

Construction.—In 1884 the construction of an isolated block, 70 x 30 feet at the bottom and 54 x 27 feet on top, was commenced at a distance of 240 feet from shore;

the work was completed in 1885 at a cost of $5,032.01. In 1885 and 1886 the block was connected to shore by an approach 240 feet long, 25 feet wide, and of an average height of 12 feet, at a cost of $6,886.36. The upper or western side of this approach, for a height of 6 feet from the top, was built on a slope of 6 inches per foot and sheathed with 4-inch tamarack planks, and the top of the approach was built on a grade of 4 feet per hundred. The depth of water at the head of the pier is 11 feet at extreme low water.

Repairs.—During the winter of 1887 the approach was damaged by an ice shove, which curved it slightly towards the east. In April, 1891, it was again moved to the eastward by another ice shove, which increased the pitch of the curve to 4 feet at a distance of 80 feet from the head block, and removed two courses of face timber on a length of 42 feet, and five fenders, on its lower or its eastern side. Repairs were commenced on November 5, 1891, and completed on the 28th of the same month, at a cost of $416.04. The missing face timbers and fenders were replaced, and fender piles were driven 10 feet apart along both faces of the approach.

General repairs were effected to the pier in 1896-7 at a cost of $1,008.27. The face timbers, fenders and cap pieces were renewed wherever broken or decayed, and the sloping faces of the head block and of the approach were resheathed. During the year 1898 the flooring of the pier was completely renewed with 3-inch hemlock deals, and general repairs were effected, at a cost of $531.30.

The total amount expended on this work is $13,873.98, $11,918.37 being for construction, and $1,955.61 for repairs.

During the last fiscal year, the stone 'talus' in front of the wharf, which had been carried away by ice, was rebuilt.

The work was done by day labour, at a cost of $588.77.

LAPRAIRIE.

Laprairie is the chief town of the county of the same name and is situated on the south shore of the River St. Lawrence, 7 miles above Montreal. It contains churches for the Episcopalians and Roman Catholics, a convent, an orphans' home, a foundry, a saw and carding mill, a brickyard, telegraph office, eight hotels and about twenty stores. A steam ferry runs between Laprairie and Montreal, making several trips a day. The population is about 2,500. It is a beautiful spot, near Lachine Rapids, much frequented in the summer.

The Government has undertaken to protect Laprairie from the disastrous effects of the spring floods and ice shoves of the St. Lawrence by constructing ice breaking piers, a revetment wall of cribwork some 1,650 feet long and 20 feet wide along the shore of the river in front of the town, and an earth embankment 1,600 feet long at its upper limit. These works, commenced in 1886-7 and continued every year since, are about completed, and are certainly a good protection to the town.

In 1886-7 two ice piers were built about 250 feet apart at the upper end of the town facing the St. Lawrence River, to prevent damage being done to property during the breaking up of the ice in the spring. The piers have proved very effective and cost $6,736.19. In 1887-8, to prevent a repetition of the past disastrous floods, an earth embankment was constructed inward from the shore for a length of 1,600 feet at the western limit of the town. A cribwork retaining wall was also built for a length of 480 feet half way between the eastern ice breaker and the Richelieu Co.'s wharf. This wall is 20 feet wide, 10 feet high from low water mark and is filled principally with stone, and cost $4,989.75. In 1888-9 another cribwork retaining wall 335 feet in length from the Richelieu wharf, westward, was commenced and completed to a height of 16 feet above low water mark during the year 1889-90, at a cost of $7,560.52. It is built of open work, 20 feet in width, with a batter of one in twelve on the outer face. In 1890-1, some general work was done in sheathing the walls previously built, at a cost of $658.58. In 1891-2 the retaining wall at the lower end of the town adjoining the Richelieu wharf, was extended a further distance of 131 feet at a cost of $2,495.10. In 1892-3 a further extension to the wall 420 feet long was built, to a height of 8 feet

above low water mark, at a cost of $2,589.51. In 1893-4 the remaining portion of the wall built between the eastern ice breaker and the Richelieu wharf, 284 feet in length, was completed to a height of 10 feet, at a cost of $2,387.39. In 1895-6 the sum of $2,015.51 was expended in constructing a stone protection work between the two ice breakers, the distance being 250 feet, and raising a portion of the retaining wall to an elevation of 16 feet above low water mark. In 1896-7 387 feet in length of cribwork wall was raised to the level of 16 feet, at a cost of $4,400.36. In 1897-8 the revetment wall was completed to a height of 12 feet above low water mark, at a cost of $5,640.64. The whole of this work is built of round logs and filled with stone, and sheathed with 3-inch pine planks. During May and June, 1899, the earth embankment, at the south-west of the village, in connection with the protection wall, has been raised from one to two feet to the level of the said protection wall, on a distance of 1,000 feet; the rip-rap from the ice breaker to the embankment, which was badly damaged, has been renewed and put in good condition. The work was done by day labour at a cost o $1,659.86.

The total cost of this work is $41,133.41, as follows :—

During the fiscal year	1886-7	$ 6,736 19
" "	1887-8	4,989 75
" "	1888-9	7,560 52
" "	1890-1	658 58
" "	1891-2	2,495 10
" "	1892-3	2,589 51
" "	1893-4	2,387 39
" "	1894-6	2,015 51
" "	1896-7	4,400 36
" "	1897-8	5,640 64
" "	1898-9	1,659 86
	Total	$41,133 41

LAUZON.

The village of Lauzon is situated on the south shore of the St. Lawrence, in the county of Levis, 2 miles below the town of Levis, a ferry boat calls at the place several times daily during the season of navigation.

During the last fiscal year a shed was constructed on the pontoon of the wharf, to protect the freights from inclemencies of the weather. The shed is 55 x 25 feet, built on posts 8 x 8 inches, covered with sheet iron roof and painted two coats. The deck of the pontoon was also renewed with 3-inch pine planks.

The amount expended was $1,000.

LES EBOULEMENTS.

The village of Les Eboulements, in the county of Charlevoix, with a population of about 900, is situated on the north shore of the St. Lawrence, 72 miles east of Quebec; the place is somewhat frequented as a summer resort. Spring tides rise 20 feet, neap tides, 13 feet.

Construction.—In order to accommodate the passenger and freight traffic of the locality, which is without railway communication, a landing pier was built 3 miles from the village, in 1853, at a cost of $65,531.52. The pier was built 890 feet long, 30 feet wide throughout, with its head in 10 feet of water at low water spring tides, it has, however, considerably filled, at the present time a depth of only 8 feet is found at low water spring tides. The pier is built with close-face timber and stone ballast; it has a landing slip on each side and at the end.

In 1875 a wing 50 feet long and 42 feet wide was constructed on the eastern side of the head, in order to give a longer mooring face, at a cost of $5,773.97.

In 1883 an open shed was built at the end of the pier over the slip, at a cost of $250.

In 1885 a triangular crib was built inside of the wing built in 1875, to give more room for passengers and freight, a movable slip was also constructed during the same year; the amount expended being $2,198.56.

Repairs.—The cost of repairs effected to the structure, since its construction in 1853 until 1882, inclusive, was $9,676.34. Since then, owing to the strong action of the ice and the wear and tear due to heavy traffic, annual repairs have been required and executed up to 1898, inclusively, for an amount of $6,861.33.

During the last fiscal year, the work of renewing the top part of the pier, for a height of 4 feet was commenced, the shore end was renewed on a length of 490 feet, including face-timbers, cross and longitudinal ties, stringers and planking; the movable slip was repaired and four tiers of timber on the side of the slip were renewed, as well as three maple fenders, 12 x 12, on the outer face; the western side, outer end, has been sheathed with 6-inch maple, on a length of 148 feet, and 7 snubbing posts have been renewed.

The work was done by day labour, at a cost of $1,502.94.

The total amount expended on this work is $91,792.61, as follows:—

Construction before confederation	$ 65,531 52
Extension and improvements since Confederation	8,222 53
Repairs	18,038 56
Total	$ 91,792 61

L'ISLET.

The village of l'Islet, in the county of the same name, is on the south shore of the St. Lawrence, 47 miles below Quebec. Spring tides rise 20 feet, neap tides 13 feet.

Construction.—In order to accommodate the extensive lumber trade and traffic in general merchandise of the locality, a landing pier was completed in 1855 at a cost of $113,343.27. The structure is 1,082 feet long and 31 feet wide, with a head block 56 feet long, 116 feet wide and 34 feet high. The depth of water along the outer face of the block is 8 feet at low water spring tides. During the last fiscal year, in order to facilitate the unloading of schooners safely under shelter from all winds, a small pier was constructed in the bay on the west side of the shore end of the main pier; the length of the new work is 150 feet, in a western direction, from the stone wall forming the side of the road leading to the main pier, the western end is 15 feet wide for a length of 60 feet, and for the remaining length of 90 feet the width extends to the high rock on the north side, it has a height of 13 feet from the bottom at the outer end and 10 feet at the inner end; the depth of water along the southern face is 9 feet at high water spring tides. The pier is built with open-faced flatted timbers, 10 inches thick, which, for a height of 8 feet on top, consist of cedar. The southern face is sheathed with 3-inch spruce deals, and birch fenders, 6 x 10 inches, are placed every 10 feet, the corners are protected with 6 x 10 inches birch sheathing, it is entirely filled with stone ballast and planked over with 3-inch deals. The work was done by contract in the month of June, 1899, at a cost, including superintendence and purchase of land, of $1,474.

Repairs.—The repairs effected to the main structure, before and up to 1875, amounted to $3,590.85. In 1876 a complete restoration of the pier was commenced and completed in 1879, the amount expended being $21,613.36. The superstructure for six or seven courses was taken down and rebuilt with new face timbers, cross ties and longitudinals, and completely filled with stone ballast where required. The shore end of the structure, which was lower than its head and over which heavy seas would break, rendering it dangerous, was raised. Two sidewalks, each 6 feet wide, were laid from end to end of the pier, and the slips put in good order. From 1880 to 1883 sundry

repairs were made to the face timbers, &c., at a cost of $1,361.23. In 1893 the sum of $6,190.34 was expended in renewing the floor stringers, flooring, cap timbers, fenders, &c., over the whole structure, and in general repairs to the slip and stairways. In 1894 and 1897 the sums of $21.55 and $396.80 respectively were expended for sundry repairs. In 1898 the face of the slip was sheathed with spruce 8 inches in thickness, the stairway on the western side of head block was repaired, 100 planks in the sidewalk were renewed, and the roadway was levelled with sand and gravel. The work was done at a cost of $211.63.

The total amount expended on the work is $148,203.03, as follows:—

Construction before confederation	$113,343 27
Improvements and reconstruction of superstructure	23,087 36
Repairs	11,772 40
Total	$148,203 03

LONGUEUIL.

The town of Longueuil, the *chef lieu* of the county of Chambly, is situated on the south shore of the River St. Lawrence, nearly opposite the eastern end of the city of Montreal.

Construction.—The Richelieu and Ontario Company own a wharf at the upper end of the town, but its long distance from the business or centre portion and the increasing trade demanded new wharfing accommodation. At the request of the town council, the department therefore decided in 1886 to build a landing pier at the foot of Alexander Street. In November, 1886, a contract was entered into for the construction of the outer portion of the pier, which was commenced at a distance of 675 feet from shore. It consisted of a close-faced cribwork stucture, 430 feet long and of a uniform width of 20 feet, apart from its outer 90 feet, which was 30 feet wide. It was completed in 1888 at a cost of $12,491.66. In October, 1889, another contract was entered into for the construction of a block 40 feet long and 50 feet wide along the lower face of the existing pier at its outer end, and of a close-faced cribwork extension to shore, 675 feet long and 20 feet wide, with six buttresses 10 feet wide along its lower face. The work was completed in 1891 at a cost of $16,248.30. The landing pier was then 1,105 feet in length, including the block at the outer end, which was 40 feet long and 80 feet wide; the first 90 feet of the pier adjoining the block was 30 feet wide, and the remaining 975 feet to shore, 20 feet wide. The outer face of the block was 16½ feet high above the bottom of the river, and stood in seven feet of water at extreme low water level.

Repairs.—The portion of the pier completed in 1888 was damaged by ice in the spring of 1889, which necessitated an expenditure of $1,517.77 for repairs. In 1892 the departmental dredge *St. Louis* commenced work at the head of the pier, but found the material too hard for her machinery, and after removing 45 cubic yards of hard-pan, at a cost of $24, she ceased work. During the spring of 1892 the head of the pier was damaged, and the block 40 by 50 feet built in 1890 was carried 10 feet down stream. The opening was filled with cribwork and the plank covering was removed and replaced with stone and gravel at a cost of $2,196.63. In the spring of 1893 the head of the pier with the adjoining 180 feet was moved bodily 13 feet down stream by the ice. In order to give additional weight to that portion of the pier, which is the most exposed to the action of drift ice, it was decided to widen it by means of cribwork built at an angle with the approach, and on a line from the lower inner corner of the head block to the outer corner of the first buttress, a distance of 354 feet, and to fill with earth and stones the area thus inclosed. A portion of this work was carried out in 1894, when a crib 250 feet long, 12 feet wide and of an average height of 13 feet, was built in the position above described, and the area between it and the original structure filled level with the top of the pier. The work was done by day labour at a cost of $2,948.70. In 1895 the remaining portion, 104 feet in length, of the work commenced in 1894 was completed, and the spaces between the buttresses were filled with close-faced cribwork

in order to better enable the work to resist the action of the ice. The expenditure incurred was $4,214.19. In 1896 some necessary repairs were performed to the sheathing and face timbers of the upper face of the pier at its outer end, and a gravel roadway 12 feet wide was laid from end to end of the structure, at a cost of $284.11. Minor repairs were effected to the roadway in 1897 at a cost of $284.56, and during 1897-8 the roadway was again repaired at a cost of $160.66. The pier is now 1,105 feet long and reaches a depth of 7 feet at the lowest stage of the St. Lawrence. It is 30 feet wide for the first 700 feet from shore and from 30 to 90 feet wide for the remaining 405 feet, which constitutes the head of the structure. Extensive repairs were required to the upper face of the work at its outer end, which had been almost completely broken up by the ice.

During the fiscal year 1898–9 extensive repairs were performed to the upper face of the wharf at its outer end, which had been almost completely broken up by ice. The damaged portion was removed and rebuilt with close-faced timber 220 feet long, 20 feet wide and 18 feet high. A wing 50 feet long, 20 feet wide, terminated at its upper end by an ice-breaker 26 feet high, was built on the western side of the wharf at its outer end and at right angles with it. The structure is of close-faced cribwork, filled with stone ballast.

As the whole structure had unevenly settled, it was raised 1 to 3 feet, and the filling with stone and gravel was not completed at the end of the fiscal year.

The work was done by day labour at a cost of $9,986.59.

The total amount expended on this work is $50,657.17, as follows:—

Construction	$28,739 96
Reconstruction of outer end	9,986 59
Repairs	11,930 62
Total	$50,657 17

LOTBINIÈRE.

The village of Lotbinière, in the county of the same name, is situated on the south shore of the St. Lawrence, about 40 miles above Quebec. It has no railway communication and entirely depends for exchange of supplies on bateaux and market steamers from Quebec. Spring tides rise 14½ feet; neap tides, 8½ feet. A landing pier was built at this place in 1865 by the municipality, but it was soon destroyed by the heavy ice shoves. Since that time a dangerous and inconvenient trestle structure, removable in winter, has been maintained by the steamboat company. In order to provide more suitable and permanent landing facilities, an isolated block was built during the last year at a distance of 500 feet from high water line. The work was done by contract at a cost, including superintendence, of $5,284.60, and was completed in October, 1897. It is a solid close-faced cribwork structure, 75 feet long, 25 feet wide at the top, and 96 feet 4 inches wide at the base. Its upstream end and inner face are built on a slope of 1 in 1, and its outer and lower faces are battered 1 in 12. The top of the upstream end of the work, for a length of 15 feet, stands 19 feet above the level of extreme low water spring tides, the height of the remaining 60 feet being 16 feet above the same level. The depth of water along the outer face of the work is 1½ feet at extreme low water spring tides. The work was substantially built of 12 by 12 inch timber, sheathed on its slope with 9-inch hemlock, on its two outer faces with the same kind of timber 4 inches in thickness, and filled with stone ballast. It has successfully withstood the action of the ice shoves. The block is connected to the shore by trestle work which has to be removed in the fall and replaced in the spring; in the month of May last, the trestles were placed at a cost of $188.92.

The total amount expended on this work is $5,473.52, of which $5,284.60 for the construction, and $188.92 for maintenance.

NEW CARLISLE.

New Carlisle is the *chef lieu* of the county of Bonaventure, and is on the north shore of the Baie des Chaleurs, 65 miles from Campbellton, N.B.

During the last fiscal year the sum of $228.50 was expended in repairing the building on the south end of the wharf for the accommodation of passengers and freight.

The floors were renewed, the ceiling and walls were sheathed with 1 inch boards the doors and windows were repaired.

The work was done by day labour in the month of April.

NEWPORT.

The village of Newport, in the county of Gaspé, is situated at the mouth of the river of the same name, on the north shore of the Baie des Chaleurs, 88 miles east of Campbellton, N.B., and 50 miles west of Caplan. Spring tides rise 4½ feet; neap tides, 2½ feet. The population of the village is extensively engaged in fishing, which is carried on almost to the exclusion of all other pursuits.

Construction.—In order to provide a harbour of refuge for fishing boats, and affording them easy access into the river and up to the bridge on the public highway, it was decided, in 1884, to improve the mouth of the river by excavating and the construction of suitable works. The works were not, however, completed until 1887, when a sum of $2,778.79 was expended. They consisted of two parallel piers placed 20 feet apart; the west pier was 75 feet long, 12 feet wide, and of an average height of 8 feet; the east pier which was originally 140 feet long, 12 feet wide, and 10 feet high, was extended 90 feet and widened to 20 feet on its whole length, in 1889 and 1890, at a cost of $3,672.03.

Repairs.—In 1891 general repairs were effected to the piers at a cost of $450. During the year 1898 the sum of $26.53 was expended for minor repairs.

During the last fiscal year ended June 30, the sum of $244.48 was spent in some small repairs to enable the fishermen to get through the season's fishing (1898).

The total amount expended on these works is $7,171.83, as follows:—

Construction	$6,450 82
Repairs	721 01
	$7,171 83

POINTE À PIZEAU.

Two miles west of the city of Quebec, on the north shore of the St. Lawrence, a high bluff, called Pointe à Pizeau, projects into the river. On top of this bluff, at an altitude of about 200 feet, are built the church and convent of Sillery, in the village of Sillery.

Construction.—In order to facilitate the landing of passengers and freight from the ferry boat, which, in former years, were landed on a wharf used for piling lumber, the municipal council of Sillery transferred over to the Dominion Government a certain beach property on which a pier had been built many years ago, on the condition that the pier be repaired; the transfer was effected in 1898, the pier had a length of 404 feet, 24 feet wide at the inner end and 32 feet wide for a length of 104 feet at the outer end, built of open-faced timber cribwork, filled with stone ballast; at low water spring tides there is a depth of 21 feet at the outer face.

During the last fiscal year, an angular block of cribwork, 49 feet wide, of a mean length of 58 feet and 43 feet high, was built on the western side of the outer end, in 21 feet of water at low water spring tides, the top part of the old pier was rebuilt for a height of 6 feet, with pine and cedar timber, on a length of 100 feet from the outer face, and has since been completed; the pier is now 444 feet long, 24 feet wide at the inner

end, and the outer end, for a length of 39 feet, is 71 feet wide; it has a movable slip supported by a pontoon.

At the end of the fiscal year the sum of $5,083.57 had been expended; the repairs have since been completed.

The total amount expended up to June 30, 1899, is $5,083.57.

POINTE À VALOIS.

Pointe à Valois is on the south shore of Lake of Two Mountains, in the county of Vaudreuil, 4½ miles from Vaudreuil, which is the nearest railway station.

A wharf was built at this place in the years 1890 and 1891. It consists of a block 75 feet by 25 feet, with an approach of 110 feet, 20 feet in width. There is a depth of 6 feet of water at its outer end, and the total height of cribwork is 17 feet.

During the last fiscal year the sum of $104.67 was applied in effecting general repairs.

POINTE CLAIRE.

Pointe Claire, the *chef lieu* of the county of Jacques Cartier, is a summer resort on the north shore of Lake St. Louis, 14 miles west of Montreal.

On October 26, 1898, the Government entered into an agreement with the Grand Trunk Railway Co. of Canada, for a lease, for a yeriod of 20 years, of the company's wharf, which is a solid embankment of stone and earth 1,000 feet long, of an average width of 45 feet, situated at the foot of Grand Trunk Avenue.

During the last fiscal year a block of close-faced cribwork, 124 feet long, 24 feet wide and 16 feet high, was built at the end of this wharf and at right angles to it, forming a T; the western end of the block is built on a slope to act as an ice breaker.

The work was done by day labour at a cost of $4,022.06.

PORT AU SAUMON.

Port au Saumon is situated in the county of Charlevoix, on the north shore of the river St. Lawrence, 12 miles east of Murray Bay. Spring tides rise 20 feet, neap tides 13 feet.

The harbour is frequented by a number of small vessels which, for want of railway communication, carry the whole trade of the locality. Its entrance being obstructed by large boulders, which rendered navigation difficult, and in order to make it easier of access at half tides, a sum of $462.08 was expended in the year 1882–3 in blasting and removing some of the most dangerous boulders, and the work was continued in the year 1883–4, when a further sum of $499.59 was expended. During the year 1897–8 part of a shoal which rendered the turning of schooners difficult, at the inner end of the harbour, and 40 large boulders were removed, at a cost of $294.79.

During the past year the inner shoal was further reduced by a length of 75 x 90 feet, to a depth of one foot below low water in the stream, thus affording more facility in grounding and loading schooners; a number of boulders were also blasted and and removed.

The work was done by day labour in the month of July, at a cost of $403.36.

The total expenditure at this place is $1,659.82.

PORT DANIEL.

The village of Port Daniel is on the north shore of the Baie des Chaleurs, in the county of Bonaventure, about 75 miles east of Campbellton, N.B., and 45 miles west of Percé. Spring tides rise 6 feet; neap tides, 3 feet.

Construction.—During the session of 1886 an appropriation was granted for the construction of a landing pier. The work was executed by contract and completed in 1889, at a cost of $20,487.58. It was 350 feet long from end to end, 20 feet wide for the first 200 feet, 30 feet wide for the next 100 feet, with a block 50 feet square and 26 feet high at its outer end, which stood in 13 feet of water at low water spring tides. On November 15, 1889, a contract was entered into for the construction of an extension 75 feet long, 50 feet wide and 27 feet high at its outer end, reaching to a depth of 13 feet at low water spring tides; the work was completed in October, 1890, at a cost of $12,586.44. The pier is 425 feet long, is built throughout of close-faced cribwork with timber 12 x 12 inch dimensions; the cross ties and longitudinals are round logs, not less than 14 inches in diameter at the small end.

Repairs.—The extension built in 1890 having settled bodily about 3½ feet, it was found necessary in 1895 to lift up the flooring, some cross ties and longitudinals and to rebuild the structure to the height of the main body of the pier. The work was done by day labour, at a cost of $998.54.

Repairs and rebuilding of a similar character had to be effected in 1897 to the main body of the pier, which had settled in places about 3½ feet for a total length of 277 feet. The freight and shelter shed was also removed from its position at the outer end of the original work to the outer end of the extension, and a portion of it was partitioned off and fitted out as a waiting room. The amount expended was $1,992.75.

During 1898 it was found expedient to complete the levelling up of the shore end of the pier for a length of 82 feet. The work was done by day labour, at a cost of $170.51.

During the last fiscal year the sum of $767.89 was expended in filling with stone the undermined portions of the foundation of the wharf, in repairing the south-east outer corner and in renewing a portion of the planking at the outer end.

The total amount expended on the work since it was commenced in 1887 is $37,003.71, as follows:—

Construction	$33,074 02
Repairs	3,929 69
Total	$37,003 71

PORT LEWIS.

Port Lewis, in the county of Huntingdon, is situated 51 miles south-west of Montreal, on the south shore of Lake St. Francis.

During the fiscal year a right of way together with an old wharf were bought from Mr. S. Carson for the sum of $150.

The upper structure of the old wharf, which was entirely dilapidated, was removed to the low water level and rebuilt in solid cribwork for a height of 6 feet. The wharf has a length of 100 feet, parallel with the channel, by a width of 34 feet for 58 feet of its length, and a width of 20 feet for the remaining 42 feet. The depth of water at the outer face is 8 feet. The approach from shore to the wharf is a solid embankment of stone of 75 feet long and 20 feet wide with slopes of one in one on the sides. There has been erected at the angle of the upstream portion of the wharf and the approach a storehouse 20 x 24 feet.

The work was done by day labour, at a total cost, including the price of purchase of the right of way, of $2,494.47.

QUEBEC (QUEEN'S WHARF).

During the last fiscal year the sum of $636 was expended in renewing part of the sheathing on the face of the wharf with elm timber and doing other trifling repairs.

RIVIÈRE CAP DE CHATTE.

Cap de Chatte, situated on the St. Lawrence, at the extreme western end of the county of Gaspé. During the last fiscal year a training pier was constructed along the upper side of the channel followed by the River Cap de Chatte across the foreshore of the Gulf of St. Lawrence.

The object of this pier is to facilitate the passage of vessels to and from the basin inside the mouth of the river, and to prolong the time of the vessels remaining afloat in the basin and engaged in loading and unloading, by inducing a scour which will deepen the river channel near its outlet into the gulf, where its bed stands considerably higher than farther inland. This pier was commenced on May 1 last, and at close of fiscal year was well under way and the appropriation all spent.

Its general dimensions are, total length 368 feet, average height 14 feet, average width 21 feet, width on top 20 feet.

The west elevation stands on dry ground at low water while the side facing on river is in water 300 feet. The structure is completely finished of close-faced cribwork of 12 inch x 12 inch spruce and cedar in upper works, filled with stone ballast.

The work was done by day labour, at a cost of $3,502.08.

RIVIÈRE DU LOUP (EN BAS).

The village of Rivière du Loup, now called Fraserville, is the *chef lieu* of the county of Témiscouata, and is situated on the south shore of the St. Lawrence, 114 miles below Quebec. Spring tides rise 19 feet, neap tides 12 feet.

Construction.—In 1855 a pier built of close-faced timber cribwork, filled with stone ballast, was completed at the extremity of a point of land called Pointe de la Rivière du Loup, about one mile distant from the village, at a total cost of $170,129.35. It was 1,641 feet long and of a uniform width of 30 feet, with the exception of the outer 50 feet, which was 124 feet wide. Its head was 42 feet high above the bottom of the river, and stood in 16 feet of water at low water spring tides. In 1884 and 1885 an extension to the head of the pier, 100 feet long, 50 feet wide, and 42 feet high, was built by contract at a cost of $24,158.94. In 1877 a combined waiting room and freight shed was erected on the head of the pier, and some repairs were effected to the hand rail and flooring, at a cost of $3,169.79. In 1891 a hand railing was constructed on the whole length of the pier along its east side, and some repairs were effected to the flooring at a cost of $740.40.

Repairs.—During the first ten years of confederation $1,861.86 were expended on minor repairs. In 1879 thorough repairs were commenced on the pier and were completed in 1883 at a cost of $15,282.93. The structure having sunk to such an extent that the waves washed over it, was raised 3 feet, and a berth for vessels was dredged along its western face to a depth of 16 feet at low water spring tides. The pier was severely damaged by ice in the spring of 1885, necessitating extensive repairs, which were performed in 1886 at a cost of $9,222.78. Sundry repairs to the face timber, flooring, floor stringers, hand railings and slips were effected every year from 1888 to 1897, inclusive, at a total cost of $2,756. During the year 1898 the flooring and part of the floor stringers have been renewed on a length of 1,150 feet and a width of 30 feet, the portion of the structure under the railway track has been strengthened, 500 feet of capping were renewed, 16 new snubbing posts were put in, painted and covered with zinc caps, two ladders were placed, and part of the old sheathing was bolted. The work was done by day labour at a cost of $2,982.23. During the past fiscal year the cribwork forming the angle of the pier, near the shore end, was renewed in a substantial manner on a length of 180 feet, 12 feet wide and 19 feet high, the renewal of the top planking, which was commenced the previous year, was continued and a further length of 340 feet was done, the slip on the north-eastern side, which was considerably damaged by a storm of October 15, 1898, was repaired, four snubbing posts were renewed. The work was done by day labour at a cost of $3,698.47.

The total expenditure on this work has been $234,003.09, as follows :

Construction before confederation	$ 170,129 35
" since "	28,069 13
Repairs	35,804 61
	$ 234,003 09

RIVIÈRE DU SUD.

The town of Montmagny, in the county of the same name, is situated on the south shore of the St. Lawrence, on the Intercolonial Railway, 40 miles below Quebec. The town is divided into two portions by the Rivière du Sud, whose banks, owing to the united action of the ice and the swift current, were considerably eroded, especially on the eastern side, where the public road was partly washed away.

Construction.—To prevent further damage, a contract was entered into for the construction of protection work, which was commenced in December, 1894, and completed in May, 1895, at a cost of $5,105.96. The work consisted of a dry masonry retaining wall 830 feet long, 7 feet wide at the base, tapering to 5 feet at the top, and having a mean height of 7 feet. The back filling was done with broken stone, and two box culverts were constructed to allow the water from the adjoining lands to flow into the river. The retaining wall was built from the Intercolonial Railway bridge in a southwardly direction, parallel to and along the eastern shore of the river. During the spring freshets in 1896, the upper courses of the wall were disturbed by the ice which was carried over the wall into the road, rendering it impassable for several weeks. It therefore became necessary to repair the damaged portion of the wall by relaying the disturbed courses in cement, and to increase the height of the whole work 2 feet in order to prevent the ice from being again carried over it. The work was performed by day labour during the year 1896–7 at a cost of $3,993.08.

During the last fiscal year the wall was further continued a distance of 125 feet, the two top courses being laid in cement, and the laying in cement of the top course of the old work was continued, the stone was drawn during the months of February and March, and the masonry built in May and June. The amount expended being $2,987.72.

Repairs.—During the year 1897–8 minor repairs were effected to the retaining wall, at a cost of $9.76.

The total amount expended on this work was $12,096.56.

RIVER RICHELIEU.

During the last fiscal year the three ice breakers in the Richelieu, above the South Shore Railway bridge, were repaired. The top courses of timber, which were found damaged, were removed and renewed, and the sheathing repaired.

The work was done by day labour, at a cost of $555 93.

RIVIÈRE TOULADIE.

Rivière Touladie, in the county of Témiscouata, takes its source in the Touladie lakes and discharges into Lake Témiscouata—the distance between the lakes being 4½ miles.

During the fall of 1898 a complete examination of the river was made between the lakes above mentioned, in view of removing obstructions from its bed and rendering it navigable for boats of light draught.

The cost of the work was $1,401.70.

RIVER YAMASKA.

This river takes its rise in the township of Bolton, in the county of Brome. It forms an outlet for several large lakes, and has a course of about 90 miles. It flows through the counties of Brome, Missisquoi, Rouville, Bagot and St. Hyacinthe, Richelieu and Yamaska, and empties into the head of Lake St. Peter on its southern side, 8 miles below Sorel.

A contract for the construction of a lift lock and dam at Ile à Cardin, one mile and three-quarters below the village of St. Michel de Yamaska, and about four and a half miles from the mouth of the river, was entered into in 1881. This work was completed in 1886 ; it gives a rise of 5¾ feet.

By the construction of these works, and by dredging done subsequently on the shoal below the lock, the river has been rendered navigable for vessels of moderate draught up to Belle Point, or Rapide de la Grosse Roche, a distance of 20 miles.

When 170 feet of the dam was carried away in 1890, the broken portion was renewed and built 2 feet lower than the remaining part of the dam so as to prevent the lock from being immerged at each freshet.

During the last fiscal year the dam was raised to a uniform height, and 345 feet of the planking were renewed with 4-inch tamarack.

Stone ballast was put in the work where necessary.

The total amount expended during the year is $2,894.14, as follows :—

Repairs	$2,278 21
Staff and maintenance	615 93
	$2,894 14

STE. AGATHE DES MONTS.

The village of Ste. Agathe des Monts, in the county of Terrebonne, is situated on the west shore of the Rivière du Nord, about 30 miles north-west from St. Jerôme.

At equal distances of about 3 miles from the village are two lakes, Lac des Sables, in the township of Beresford, and Lac des Castors, in the township of Howard. These lakes are connected by a small stream called Rivière aux Castors. The river is not navigable, but is used for the floating of logs. During the year 1898 the channel of the river was improved at a cost of $298 by the removal of ledges of rock and boulders.

During the last fiscal year the sum of $348.39 was expended at this place in further improving the channel by removing boulders and other obstructions from the Rivière aux Castors.

The total expenditure at this place was $646.39.

ST. ALEXIS.

St. Alexis is on the south side of Ha Ha Bay, River Saguenay, about 63 miles from its mouth.

In order to accommodate the increasing traffic of the locality and afford landing facilities at this place for steamers frequenting the River Saguenay, the sum of $4,000 was appropriated at the last session of parliament for the construction of an isolated pier at a short distance from the shore. The pier is 60 feet long, 30 feet wide and 39 feet high, the outer end being in 13 feet of water at low water spring tides ; the outer end is at a distance of 700 feet from the shore.

The pier is built of square timber, filled with stone ballast and sheathed with 5-inch tamarack timber.

The work was done by day labour, at a cost of $3,999.90.

ST. ALPHONSE.

St. Alphonse is at the head of Ha Ha Bay, River Saguenay, about 66 miles above its mouth.

During the last fiscal year, the planking and stringers have been completed on a length of 275 feet, and the north-east side of the pier was sheathed with 5-inch tamarack over a length of 275 feet.

The work was done by day labour, at a cost of $2,000.57.

STE. ANNE DU SAGUENAY.

The parish of Ste. Anne du Saguenay is situated on the north shore of the Saguenay River, 72¼ miles above Tadousac, and opposite the town of Chicoutimi. Its population in 1897 was over 2,000. Besides the church and post office, the parish contains seven stores, four cheese factories, a lime-kiln, a brickyard and a pottery. The only market for the produce of the farms of this section of the north shore of the river is Chicoutimi. Spring tides rise 15 feet; neap tides 8 feet.

Construction.—As early as 1879 the Dominion Government was urged to construct a landing pier for the accommodation of the inhabitants of the district. The request was not, however, considered until 1888, when a portion of the timber required for the proposed structure was purchased at a cost of $2,100. In 1889 the pier was commenced from shore outward, and at the close of the year 1888-9, a portion 77 feet long and 39 feet wide, including a slip 12 feet wide on its lower or eastern face, had been completed at a cost of $2,109.69. It was built of close-faced cribwork, filled with stone ballast. In 1890 this shore block was extended 87 feet on a width of 27 feet, at a cost of $2,045.50, and in 1891 a further length of 50 feet of similar cribwork, 27 feet wide, was added, at a cost of $2,498.96. In 1892 a head block 30 feet long, 60 feet wide and 20 feet high was built at a distance of 250 feet out from the end of the work completed the previous year, at a cost of $2,262.11, and in 1896 this block was raised 8½ feet and put on the same level as that of the work built out from shore, viz., 6 feet above ordinary high water spring tides. With a view of completing the pier to shore, a sum of $5,573.25 was expended in 1897 for the construction of two cribs, each 87½ feet long and 25 feet wide, placed 25 feet apart and 25 feet from both the head and shore blocks. During the year 1898 the three 25 foot openings left in the work were spanned, the flooring was laid and the structure completed to shore, at a cost of $746.70. The pier is now 494 feet long, 39 feet wide for the first 95 feet from shore, 27 feet wide for the following 119 feet, 25 feet wide for the next 250 feet, and finally 60 feet wide for the last 30 feet. It is 28½ feet high above the bottom of the river, at its outer end, and stands in 7½ feet of water at low water spring tides. It is substantially built throughout of close-faced cribwork filled with stone ballast. Some boulders were removed in 1894 from the vicinity of the head of the pier at a cost of $99.30. During the whole season of navigation a steamboat performs a regular ferry service every hour from Ste. Anne to Chicoutimi.

During the last fiscal year, the planking of the part of the pier constructed in 1888 was renewed over a length of 250 feet, the sides of the cribs built in 1897 were sheathed on a length of 200 feet and fenders were placed at the angles.

The work was done by day labour, at a cost of $1,099.81

The total amount expended in connection with the construction of this work is $19,534.18.

STE. ANNE DE SOREL.

The village of Ste. Anne de Sorel, in the county of Richelieu, is situate at the head of Lake St. Peter, on the south shore of the St. Lawrence, 2 miles below the town of Sorel. During the spring freshets of the St. Lawrence a considerable portion of the parish of Ste. Anne and of the islands opposite, are flooded. In order to prevent the ice

from being carried by the floods over the low-lying lands along the shore, ten ice piers were built between 1881 and 1890 at or in the vicinity of the village.

Construction.—The two first ice piers were built in 1881-2 in the Chenal du Moine, one of the channels of the St. Lawrence, and about 2 miles below the village of Ste. Anne. They were 30 feet square and fully answered the purpose for which they were intended. Their total cost was $1,957.97. At the end of the year 1882-3 the construction of two additional piers was commenced in the same channel. They were completed during the winter of 1883-4, at a cost of $3,536.38. Another pier was built in 1885 at the head of Chenal du Moine, at a cost of $1,176.53, and repairs amounting to $7.20 were effected to the piers built in 1884. The sixth pier was built in 1886 at a cost of $1,321.86, which amount also included the cost of repairs effected to the piers built in 1884. In order to afford further protection against ice shoves a seventh pier was built in 1887, a short distance below the one built in 1885. Its cost was $836.66. The eighth pier was built in 1888 on the property of Bruno Peloquin, and one of the piers built in 1884 was raised 3 feet 4 inches, at a cost of $947.67. In 1889 another pier was built at the entrance of Chenal du Moine, about 11½ miles below the village. It was 30 feet long, 24 feet wide and 21½ feet high and cost $2,708.28. In 1890 the necessary materials for the construction of another pier, opposite the church, were procured at a cost of $2,497.11, and in 1891 the structure was carried up to a height of 5 feet above low water level, at a cost of $1,696.25. The pier measures 60 feet by 25 feet at the bottom and 56 feet by 24 feet on the top. It stands in 7 feet of water and has a height of 12 feet. During the year 1898 three new piers were built for the protection of properties which were not guarded by the old ones and one of the latter was strengthened and repaired. The new piers measure 24 feet by 20 feet and are from 12 to 14 feet in height. Their total cost amounted to $3,514.68.

The total expenditure on ice piers at Ste. Anne and along the Chenal du Moine is $21,876.96, which amount includes cost of repairs to the old works as well as that of construction of the new ones.

During the last fiscal year three additional ice piers were constructed, one opposite the town of Sorel, one about 1,500 feet above the wharf of Ste. Anne de Sorel, and the third one about 1½ miles below the same.

These ice breakers were built of the same materials (wood, sound hemlock) and in the same manner and description as those built the preceding year, base 24 feet and 20 feet and of a height varying from 12 to 18 feet, according to the locality and level of the ground.

The work began July 16, and was completed December 4 at a cost of $3,594.18.

In the beginning of October, the construction of a landing pier in connection with the wharf at Ste. Anne de Sorel was commenced. The landing pier consisted of a crib 100 feet long, 18 feet at the base and 14 feet wide of flooring, the height varying from 2 feet to 7 feet to suit the ground. Ten-inch square and round hemlock was used in the construction, also 6-inch sheathing on the breakwaters and 3-inch flooring. The entire crib was filled with stone. At the landing about 5 toises of stone were properly put in place to render the access to the wharf easy for landing. These works were completed on November 3, at a total cost of $1,596.87.

The amount expended during the year was $5,191.05.

ST. ANICET.

St. Anicet is a post village in Huntingdon county, 10½ miles from White Station on the Grand Trunk Railway (Montreal and Champlain division), and 56 miles south-west of Montreal, on the south shore of Lake St. Francis. It contains one Roman Catholic church, three stores, two hotels and one telegraph office. Population, 250. This pier was built in 1862, at a cost of $1,920, and stands 5 feet 3 inches above low water. It is 300 feet in length, the width of the 200 feet nearest to the shore, or approach, is 13 feet, and the other 100 feet, or outer block, 35 feet. The shore abutment consists of a solid crib 47 feet long and the remaining 153 feet of the approach is supported on four cribs, 12 by 13 feet long, united by timber spans of stringers and planking. In 1889-90

some slight repairs were made, amounting to $48.67. In 1890-1 the entire approach, 200 feet long, was rebuilt from the water line, at a cost of $635.10. In 1892-3 small repairs were made, amounting to $25.88. In 1893-4 the outer block 100 feet by 35, which is of solid cribwork, was rebuilt from the low water line by Mr. L. N. Masson, contractor, at a cost of $1,500. A shed, for the accommodation of passengers and freight, was also built on the wharf the same year, at a cost of $225.35. In 1897-8 the sum of $2,197.95 was expended for the addition of a wing or return 60 feet long by 30 feet wide at the outer end and 40 feet wide at the inner end, on the upstream side of the wharf, the object being to enable vessels to lie at the front of the wharf instead of along its sides, where it is very difficult to land during rough weather caused by westerly winds. This addition was built of close-faced cribwork, but was not completed at the end of the fiscal year.

During the fiscal year 1898-9 the sum of $1,423.75 was expended to complete the construction of the above mentioned addition and to make general repairs to the old wharf. The work was done by day labour.

The total amount expended on this work is $7,976.70 as follows :—

The construction	$5,541 70
Reconstruction	2,360 45
Repairs	74 55
Total	$7,976 70

ST. FULGENCE.

St. Fulgence (otherwise called l'Anse aux Foins) is a small village in Chicoutimi county, on the north shore of the Saguenay River, 10 miles from Chicoutimi. It contains one Roman Catholic church, four stores and two saw-mills. Population of parish 1,000.

In 1897-8 the department commenced the construction of an isolated block of close-faced cribwork to enable schooners and steamers of the Richelieu and Ontario Navigation Co. to land and ship freight and passengers at all times. This block is 60 feet long and 30 feet wide, and was built during the year to an elevation of 20 feet from the bed of the river. It is proposed to complete this work to an elevation of 36 feet in the near future. The block is sunk in 10 feet of water at low water spring tides at a distance of about 2,500 feet out from the shore at high water mark. Spring tides rise 20 feet; neaps 13 feet. The amount expended on this work during the year was $2,998.04.

During the last fiscal year the pier was raised 5 feet and the sides sheathed over a length of 90 feet, and 15 toises of stone ballast were placed in the pier. The amount expended was $1,498.38.

The total amount expended on this work is $4,496.42.

STE. GENEVIÈVE.

Ste. Geneviève, in the county of Jacques Cartier, is situated 15 miles west of Montreal, 3 miles north of Beaconsfield, a station of the Canadian Pacific and Grand Trunk railways, on the south shore of Rivière des Prairies.

During the fiscal year 1898-9, the sum of $1,036.16 was expended in repairing the wharf. The sheathing was renewed a total length of 120 feet, 16 feet high with 8-inch tamarack timber; four of the piers were raised from 1 to 3 feet and the stringers partly renewed.

The work was done by day labour.

ST. IRÉNÉE.

St. Irénée is on the north shore of St. Lawrence, in the county of Charlevoix, 78 miles below Quebec and 6 miles west of Murray Bay. It contains a cheese factory, a grist mill and two saw mills. Spring tides rise 20 feet, neap tides 13 feet.

Construction.—In September, 1886, a contract was entered into for the removal of a block 80 feet long, 30 feet wide and 18 feet high, from Les Eboulements to this place. It was sunk in 12 feet of water at low water spring tides, at a distance of about 555 feet from high water mark. The cost of the work done during the year was $3,284.87. In the years 1887-8 and 1888-9, the block was raised 19 feet, thoroughly repaired and floored at a cost of $5,689.48. In 1895-6, a close face cribwork extension, 60 feet long and 22 feet wide, of an average height of 30 feet, was built shoreward on a line with the east side of the block, at a cost of $2,128.68. A portion of this extension was carried away by an ice shove in January, 1897, it was rebuilt in May and June the same year and made 32 feet wide, at a cost of $3,588.31, which amount also included the cost of necessary repairs to the block. During 1897-8 a further close-face work extension 185 feet long, 22 feet wide and of an average height of 23 feet, was built shoreward, at a cost of $4,000.94.

During the last fiscal year the wharf has been nearly completed to the shore, the fenders and cap pieces only remaining to be added, and the amount expended was $5,024.56.

The wharf is now 655 feet long with an outer mooring face of 80 feet, there is a depth of 12 feet at low water spring tides at the end.

Repairs.—Sundry repairs were effected to the block in 1894 and 1895, when the sums of $79.99 and $21.50 respectively were expended. In 1896, a sum of $781.20 was expended for general repairs.

Improvements to the mouth of the River.—The pier is built about one-third of a mile to the westward of a small river. In 1890 a sum of $501.73 was expended in removing boulders from the mouth of the river so as to allow schooners to winter safely therein. With the boulders removed a small breakwater was built to further protect the entrance to this harbour from north-east winds.

The total amount expended at St. Irénée is $25,101.26, as follows:—

Construction of landing pier and improvements	$23,716 84
Repairs	882 69
Improvements at mouth of river	501 73
	$25,101 26

ST. JEAN DES CHAILLONS.

St. Jean des Chaillons is an important village in the county of Lotbinière, on the south side of the River St. Lawrence, 108 miles below Montreal. The chief industry of the village is the manufacture of bricks, about ten millions of which are made annually. About twenty-five bateaux and over 200 men are exclusively employed during the season of navigation in shipping these bricks to Montreal. The freight charges to Montreal were quite high, owing to the extremely dangerous nature of the river bed near the shore, and loaded vessels had to regulate their departure, during the low water season, by the spring tides, which was the cause of many vexatious delays. The attention of the department was, therefore, called to the necessity of dredging and removing rock obstructions in the river bed, in front of the brick sheds, with a view of affording better loading and landing facilities to bateaux frequenting the locality. In 1896-7 the sum of $483.55 was expended in removing the most dangerous obstructions in from 3 to 8 feet depth at low water. In 1897, between May 4 and June 30, the dredge *Nithsdale* was employed in dredging a channel leading to the brickyard wharfs, as well as in front of them to a depth of 9 feet at low water level. Four adjoining cuts of 1,750, 1,019, 950 and 850 feet long were made, having each a width of 25 feet, removing a total of 47,705 cubic yards of clay and boulders. Stone Lifter No. 1 was also engaged from September 5 to October 8 and from June 1 to June 30, in removing huge boulders from the channel, which had been loosened by the dredge, the quantity taken out being 281 cubic yards.

The amount expended during the year was $4,998.35.

During the last fiscal year the dredge *Nithsdale* was employed in further deepening the channel in front of the brickyard wharfs.

The amount expended being $4,902.62.

The total amount expended on the work is as follows :—

During the year 1896-7	$ 483 55
" 1897-8	4,998 35
" 1898-9	4,902 62
Total	$10,384 62

ST. LAURENT.

St. Laurent, in the county of Montmorency, is situated on the south shore of the Island of Orleans, 10 miles east of Quebec ; the place is somewhat frequented as a summer resort. Spring tides rise 20 feet, neap tides 13 feet.

Construction.—An isolated block, 104 feet long and 32 feet wide, on which a lighthouse was to be erected, was commenced here in 1866, the outer end of the pier was placed in 7 feet of water at low water spring tides ; in that year, the sum of $8,416.58 was expended on the structure ; the pier and lighthouse were completed in 1868 with a further expenditure of $7,208.96. It being found that the pier was too light to resist the pressure of the ice, it was decided to continue it to the shore. With that end in view, in 1869 and 1870 the sums of $7,492 and $1,326.25 respectively were expended in each year. The total amount expended between 1867 and 1882, including repairs, was $17,245.83. The pier was then 600 feet long and 20 feet wide, with the exception of the outer 104 feet, which were 32 feet wide, and there was 7 feet of water at the end at low water spring tides. In 1888 the approach road was built and the slip completed, at a cost of $413.24. In order to obtain a depth of 9 feet at the end of the pier, a contract was given in 1890, for the construction of an extension outward, 60 feet long, 60 feet wide at the outer end and 50 feet wide at its junction with the old pier ; the work was completed in 1891, at a cost of $7,841.87. The pier is now 660 feet long, 20 feet wide at the shore end, 32 feet wide on a length of 104 feet and 60 feet wide at the outer end, with 9 feet of water at low water spring tides.

Repairs.—In 1887 general repairs to the main body of the pier were effected, at a cost of $1,304.67 ; in 1889 the roadway was repaired and partly renewed at a cost of $369.28 ; in 1892 the sum of $206.60 was expended in repairing the landing slip, broken during a storm of August 1891. In 1893, the pontoon under the slip having broken away, it was decided to raise and lower the landing slip by means of winches, chains and tackle, which were purchased and placed in position, and small repairs were done to the top planking, at a cost of $250.65. In 1894, an open shed with a small freight shed and waiting room, were built at the head of the pier ; the whole structure is 40 feet long, 25 feet wide, with a sheet iron roof ; the cost was $665.47. The top planking was partly renewed in 1895–6 ; the sums of $56 and $179.17, in each respective year were expended.

During the last fiscal year, the top part of the old pier, having been found in a dangerous state of decay, for a height of 6 feet, the work of renewing was commenced and the pier was rebuilt 2 feet higher than it was originally, with pine and cedar timber, on a length of 200 feet, at a cost of $2,008.99 ; at the present time, the work is being continued. On the October 15, 1898, during a heavy storm, the stringers of the movable slip were broken, the repairs being urgent, the sum of $144.82 was expended and the damage made good ; the amount expended during the year, was $2,153.81.

The total amount expended on this pier is $39,103.20, as follows :—

Before Confederation, construction	$ 8,416 58
Extensions and improvements since Confederation	25,753 17
Repairs	4,933 43
Total	$ 39,103 18

ST. MICHEL DE BELLECHASSE.

St. Michel de Bellechasse is on the south shore of the St. Lawrence, 15 miles below Quebec, in the county of Bellechasse. The place is somewhat frequented as a summer resort. Spring tides rise 20 feet, neap tides 13 feet.

Construction.—A pier was built here many years ago by the municipality, it is 1,090 feet in length, 30 feet wide, with the exception of a block 75 feet long at the outer end, which is 52 feet wide, with landing steps on each side and a slip at the end, the depth of water at the outer end is 2 feet at low water spring tides, and the market steamer which calls here daily during the season of navigation, cannot come alongside the pier at low water, and freight and passengers, at such times, have to be landed from a bateau, at a great disadvantage. The pier is built with 9 inch opening between each face timber of 12 inches square and filled with stone ballast. In 1882 the sum of $262.66 was expended in removing boulders which obstructed the approach to the pier. In 1886 the department assumed the pier, and owing to its dilapidated state various amounts were expended nearly every year until 1893, inclusive, when the amount of $6,621.06 had been expended in repairs. In 1894 the north-east side was sheathed on a length of 485 feet with 3-inch planks, to prevent the top planking being damaged by the effects of the waves, and $509.78 were expended. In 1895 the sheathing commenced the year previous was continued on a further length of 270 feet and the planking and stringers were renewed on a length of 326 feet at a cost of $802.23. In 1897 an open shed 40 x 22 feet, part of which is occupied by a combined freight shed and waiting room, was built by contract at a cost of $690. The eastern and western sides are clapboarded and the roof covered with sheet iron, the slip was partly covered with 3-inch planks, the top planking was renewed on a length of 500 feet and a pathway 3 planks wide was laid on the middle of the pier, the amount expended being $1,034.82.

During the last fiscal year the capping was renewed on a length of 1,100 feet as well as 750 planks in the top planking and an oak fender was placed at the outer western corner, at a cost of $406. The total amount expended in repairs and improvements on this pier was $8,324.54.

ST. NICHOLAS.

St. Nicholas is a prosperous village on the south shore of the St. Lawrence, 14 miles above Quebec, in the county of Lévis. For many years a small steamer has called at this place for the considerable traffic in farm produce derived from the surrounding fertile country. The steamer landed at a private pier, the outer end of which was carried away by ice in the spring of 1896. The owner being unable to repair it in a suitable manner, it could only be approached at high tide and with great inconvenience, the inhabitants of the place therefore requested the government to purchase the pier and place it in a serviceable condition. Spring tides rise 19 feet; neap tides, 12 feet.

Construction.—During the last fiscal year the pier was purchased by the Dominion Government, and the reconstruction of the top part was commenced in the month of July. The head was entirely rebuilt from the bottom on a length of 20 feet, 45 feet wide and 33 feet high, with 12 by 12 inch timbers, which were jointed to the timbers of the old pier, the top of which was rebuilt on a height of 6 feet, 21 feet wide on a length of 312 feet, a movable slip, raised and lowered by means of winches and chains, was built at the outer end, the outer face and 20 feet on each side were sheathed with elm timber 7 inches thick, elm fenders were placed every 10 feet on both sides and sheathed between with 3-inch pine planks reaching to within 5 feet of the top, the old approach was entirely rebuilt from the bottom, on a length of 125 feet and average width of 20 feet, the whole pier was covered with 3-inch pine planks. The pier is now 332 feet long, outside of the approach, 21 feet wide, and for a length of 96 feet it tapers out to a width of 45 feet at the outer end, the top is 4 feet above high water ordinary spring tides, and the outer end stands in 10 feet of water at low water spring tides.

The total amount expended on reconstruction is $8,497.26.

ST. ROCH DES AULNAIES.

St. Roch des Aulnaies is situated on the south shore of the St. Lawrence, in the county of L'Islet, 70 miles below Quebec. Spring tides rise 20 feet; neap tides, 13 feet.

In order to facilitate the loading and unloading of schooners carrying the freight of the locality, a sum of $5,000 was voted at the last session of parliament for the construction of a pier at this place. A contract was entered into with Messrs. Viau, Lachance & Hamel, of Ottawa, for its construction, the contract price being $6,087.

The pier will have a length of 250 feet in a northerly direction, consisting of stone filling 15 feet wide at the top, of a mean height of 10 feet, thence in a westerly direction, a length of 187 feet 6 inches, built of timber cribwork 20 feet wide on top of a mean height of 17 feet, thus affording shelter for schooners inside the bay.

At the end of the fiscal year the work had not yet been started; the sum of $183.46 had been expended for advertising, &c.

TADOUSAC.

Tadousac, or Anse à l'Eau, is at the mouth of the River Saguenay on the north bank.

A combined waiting room and shed (freight), 50 feet by 30 feet, has been built on the wharf at this place, a movable slip, raised and lowered by means of winches and chains, has been erected, and the top of the wharf was levelled and the planking renewed.

The work was done by day labour at a cost of $1,489.29.

An old wharf in the fish hatchery was removed and a dam was built; cost $670.48.

ONTARIO.

BAYFIELD.

The village of Bayfield, in the county of Huron, is situated at the mouth of the river of the same name which empties into Lake Huron, 12 miles south of the town of Goderich. It contains one grist and saw-mill.

Construction.—The harbour of Bayfield was originally formed by the municipality of the township of Stanley, and in 1874 when the Dominion Government took the work in hand, it consisted of two piers, 618 and 620 feet in length, 200 feet apart at the outer end and 330 feet apart at the inner or land end. No statement of the expenditure made by the municipality can be given. In 1874, an appropriation of $34,000 was made by Parliament for the improvement of this harbour, the municipality of Stanley contributing $10,000. The work was placed under contract in November, 1874, and proceeded with during the seasons of 1875-6 and 1877, the total expenditure from 1874 to 1882 being $61,517.55.

The improvements as then completed consisted of a prolongation of the northern pier 105 feet on the outside, with an arm of 156 feet, turned to the south-west; of a pier on the south side generally parallel to the main line of the opposite pier 180 feet distant from it, and 553 feet in length, with a return towards the coast line of 153 feet, all the cribwork being 20 and 30 feet wide. The depth of water at the entrance, which was originally 11 feet, was reduced to about 6 feet in 1894, due to the formation of sand bars.

Repairs.—During the years 1884, 1885, 1886 and 1887 repairs were made to the piers, especially to the northern pier which was close-piled on both sides. The small

crib at the west end was also repaired, the expenditure of these years being $6,157. In 1897-8 the sum of $2,231.36 was expended in the reconstruction of a portion of the northern pier 245 feet in length, and repairing the outer end of the same structure. The whole of the repairs contemplated were not completed at the close of the year, and a further sum of $1,550 was appropriated, and the work completed during the past year at a cost of $1,521.23. Dredging also was performed in the harbour by Messrs. Bowman and Porter's plant, which worked 130 hours and removed 5,460 cubic yards of material at a cost of $1,200, including inspector's wages.

The amount expended during the past fiscal year was as follows:—

Repairs	$1,521 25
Dredging	1,200 00
Total	$2,721 25

The total expenditure on this work is $73,151.96, and may be subdivided as follows:—

Construction	$61,517 55
Repairs and reconstruction	10,434 43
Dredging	1,200 00
Total	$73,151 98

BIG BAY.

Big Bay is situated in the county of Grey, at the entrance to Colpoy's Bay, on the Georgian Bay, about 15 miles north of Owen Sound Harbour. There is a small village at this place and the trade is a limited one of timber, cordwood and poles.

The landing pier was constructed in 1877 by the municipality, at a cost of $933. towards which the government granted $400. The pier was then 335 feet in length and reached out to 6½ feet of water. In 1881 the pier was extended 117 feet into 11½ feet of water, at a cost of $1,121.41, of which sum the Government paid $500.

In 1891 the department repaired the pier, rebuilding where required, the whole of the cribwork blocks from low water level to flooring, and replanking the whole of the superstructure, and constructed a crib 25 by 25 feet, placing same inside the space between the outer crib and the adjoining one, thus giving a solid block of cribwork 90 feet long on the east side and 65 on the west. The above work cost $2,065.

During last year necessary repairs to the flooring and stringers were made at a cost of $54.60.

The total amount expended on this work up to date is $4,225.40.

BOWMANVILLE.

Bowmanville, or Port Darlington, is situate on the north shore of Lake Ontario, county of Durham, 43 miles from Toronto by rail on the Grand Trunk division of the main line between Toronto and Montreal. Population, 3,500.

Construction.—This harbour, which was built by the municipality, consists of two parallel piers built at the mouth of a small creek. The western jetty is built of cribwork 1,180 feet in length and 20 feet in width, excepting at the outer end, where the width is 60 feet for the last 240 feet. On this enlarged portion stand a storehouse and a lighthouse. The top of the piers is 7 feet above extreme low water level. At the outer end there is about 11 feet of water, the total height of the work being about 19 feet. No statement is obtainable as to the amount expended by the municipality in connection with this harbour. Up to 1897 no construction work was done by the department, but the entrance channel and inner harbour having a tendency to silt up, were maintained by dredging by the Dominion Government.

Repairs.—In 1897-8 the eastern pier was repaired and some 500 feet of pile protection work was built on the harbour side to prevent the constant filling in of sand in the channel, and the outer end of the western pier having been destroyed by storms was rebuilt. During the past fiscal year the whole of the east pier has been replanked and where necessary new stringers have been placed in; the face timbers of the north end of the east pier have been renewed where required. To perform this work some 83,569 feet, board measure, lumber, and 1,575 pounds of iron were used, costing with labour $2,000.

The total expenditure on this work, not including dredging, is as follows:—

Repairs and reconstruction $5,999.99.

BURLINGTON CHANNEL.

Burlington Channel, in the county of Wentworth, is simply a cut through a piece of low land which partly separates Lake Ontario from a large sheet of deep water called Burlington Bay, enabling vessels to reach the wharfs at the city of Hamilton. Both sides of the canal are lined with piers.

Construction.—The work was commenced under commissioners in 1825. It was opened for the passage of vessels in 1830, and completed as originally undertaken in 1832, at a cost of $124,356.08. The works were afterwards extended, improved and partly reconstructed by the provincial government at an outlay of $308,328.32, previous to Confederation. From 1867 to 1882, inclusively, the superstructure of the piers having been partly destroyed by fire, was renewed by the Government at a cost of $30,426.89. It was maintained by the Railways and Canals Department till 1885, when it was placed under the control of the Department of Public Works. The general form of the canal has not since been changed, and consists of a cut through a sand bar about 2,700 feet in length, with an average depth of 14 feet at low water, both sides of the cut being lined with vertical-faced cribwork piers. The northern pier has a total length of 2,307 feet and a general width of 20 feet, excepting at the outer and inner ends where there are blocks 30 and 35 feet wide. The southern pier has a total length of 2,710 feet and a general width of 20 feet, excepting at the outer end where there is a cribwork block 30 feet wide for a distance of 30 feet, and at the inner end, where the cribwork is of irregular form and the width, varies from 25 to 45 feet for a distance of 590 feet. The piers are 103 feet apart at their inner ends and 174 at their outer ends. The top of the piers is 5½ feet above ordinary low water. The southern pier carries a lighthouse; above the centre of the piers, at the crest line of the sand bank, recesses were left in the cribwork on both sides for a ferry scow running across the channel. There is also a traffic swing bridge built by the Dominion Government close to the railway bridge opening on the south side. In 1895 the traffic over the channel had increased to such an extent that it was found impossible to accommodate the public, and this department prepared plans and specifications for the erection of an iron swing bridge. The contract for the masonry of this bridge was let to Mr. Geo. F. Webb, of Hamilton, in August, 1895, for the bulk sum of $15,799. The masonry work was completed ready for the iron superstructure in April, 1896. On January 28, 1896, another contract was awarded to the Dominion Bridge Co., of Montreal, for supplying and erecting the iron superstructure, &c., for the sum of $15,290. All the works in these contracts have been satisfactorily completed. A further sum of $1,500 was paid to the Dominion Bridge Company for supplying and installing, by special agreement, an electrical apparatus for operating the swing span; power is supplied by the Hamilton Electrical Radial Railway Company.

In 1897-8 automatic gates to regulate the traffic at the approaches have been erected. Telephone communication has been made with the 'power house,' and a 'power indicator,' for the information of the man in charge, has been placed in the bridge house. Extensive repairs were also made to the piers, which consisted in placing new face timbers, some planking and earth filling. The whole of the repairs were completed at the beginning of the last fiscal year, and the sum of $1,366.75 expended

STATEMENT of Expenditure since work is under control of the Department of Public Works.

Years.	Construction.	Repairs.	Staff and Maintenance.	Totals.	Description.
		$ cts.	$ cts.	$ cts.	
1885-6		210 50	3 20	213 70	Putting in good order ferry landing and procuring new lines for ferry.
1886-7		295 79	512 19	807 98	Minor repairs and maintenance.
1887-8		128 25	595 13	723 38	" "
1888-9		115 22	702 04	817 26	" "
1889-90		842 78	577 88	1,420 66	" "
1890-1			702 04	702 04	Maintenance.
1891-2		310 00	639 96	949 96	Providing channel with a life line and two life buoys. In November the water was so low that it was found impossible to float the scows close to the landings. Temporary pontoons were built and used until the water rose.
1892-3		301 70	714 69	1,016 39	General repairs to piers and ferry approaches.
1893-4		1,563 52	692 71	2,256 23	New scow built, which was shortly afterwards lost during storm. The old scow was then again repaired at a cost of $434.80. Extensive repairs to stringers and flooring of the piers were also made.
1893-4	Bridge, $1,416.38			1,416 38	Surveys, plans, &c., for proposed bridge.
1894-5		800 02	699 96	1,499 98	Repairs made to east pier.
1895-6			820 96	820 96	Staff and maintenance.

COBOURG.

Cobourg is an incorporated town of Ontario, in Northumberland county, situate on the north shore of Lake Ontario, on the Grand Trunk Railway, 92 miles west by south of Kingston, 69 miles north-east of Toronto, and is a port of entry. It has several mills, foundries, breweries, and a car factory. Population, 5,000.

Construction.—The work of forming a harbour at Cobourg was commeneed by a company organized under an Act of Parliament in 1829. In 1842 the works were assumed by the government and held until May 27, 1850, when they were sold to the town council of Cobourg for the sum of $16,000. Prior to the union of the provinces in 1841, the government had spent $20,010.72 on this harbour; and after the union the sum of $41,999.98 was advanced as a perpetual loan at 6 per cent interest. At the time of confederation, the work consisted of two piers, the united length of which was 2,047 feet. They were 190 feet apart at the entrance of the harbour, the depth at the outer end of the eastern pier being 14 feet, decreasing from 7 to 8 feet in the centre of the basin. In 1873, an agreement was entered into with the harbour commissioners for the construction of a pier 1,500 feet long, the commissioners to pay one-third of the cost and the government two-thirds. Under this agreement the total expenditure was $79,569.68, of which the harbour commissioners contributed $25.507.49. In 1881-2 an arm 150 feet in length, in a south-easterly direction, was commenced, and an expenditure of $8,291.20 was made. The total expenditure by the department since confederation up to 1882 was $92,161.89. In 1882-3, 1883-4 and 1884-5, the piers were further extended, especially the eastern pier, and some of the cribwork raised owing to a sinking in soft bottom. The expenditure during these three years was $47,525.73. In 1885-6 and 1886-7 the sum of $10,208.01 was expended in building a crib 100 feet in length at the outer end of the eastern pier, and the next 300 feet shorewards, which had settled on an average of 8½ feet, was built up to its proper height; repairs were also made to the western pier. In 1887-8 a contract was entered into for rebuilding a portion of the western pier, which was completed in 1888-9 at a

cost of $9,871.53, out of which about $2,000 were for repairs to the western pier of the original harbour. From 1889 up to June 30, 1897, the east and west piers were alternately repaired and some portion renewed, at an expenditure for these years of $13,525.59. Some extensive dredging was also done in the harbour, but the expenditure is not included in this report. In 1897-8 repairs were again made to the shore end of the western pier, and its approach, and the walings and planking on the eastern pier renewed. The expenditure was $2,999.86. Some slight repairs were made during the last year amounting to $25.

The harbour as constituted consists of three main piers, the eastern, central and western piers. The eastern and central piers form the old harbour proper. The eastern pier which is built of cribwork with some enlargements of pile work and gravel filling, is 1,490 feet in length and is built from the shore in a southerly direction, with a return L 140 feet long in a south-west direction. The width, which is very irregular, is 30 feet at the outer end and 60 feet generally at the shore end. The front of this old harbour is lined with cribwork 800 feet long. About 380 feet from this front wall, and from the eastern pier, starts a small pier 305 feet long and from 18 to 35 feet wide, running in a westerly direction towards the central pier. The area inclosed between this short spur, the shore portion of the eastern pier, the front wall and the central pier, is called the inner harbour. The depth of water there is from 6 to 13 feet at low water. The central jetty is in very bad repair. It is 1,160 feet long including the approach, and the width is from 30 to 35 feet. The inner and outer ends are respectively 780 feet and 160 feet west of the eastern pier. The western pier, which was built by the Dominion Government, is located about 1,200 feet west of the eastern pier, has a total length of 1,660 feet, and a regular width of 30 feet. It runs from the shore in a southerly direction with a return L towards the eastern pier, 150 feet in length. The depth of water in this enlarged harbour varies generally from 6 to 15 feet at low water. The top of the cribwork above low water level is from 6 to 8 feet. On the eastern pier there is a lighthouse and some store sheds.

The total expenditure made by this department on this work is $176,752.58, and may be subdivided as follows :—

Construction	$ 155,767 16
Repairs	20,985 42
Total	$ 176,752 58

COLLINGWOOD.

Collingwood is situated on the south side of the Georgian Bay, township of Nottawasaga, county of Simcoe, 94 miles by railway from Toronto. It is the terminus of the Northern and Hamilton and North-western railways. There is an extensive trade in grain and lumber, and it is the starting point of steamers for Owen Sound, Sault Ste. Marie, Parry Sound, Port Arthur, Duluth, &c. Population, 9,000.

Construction.—Prior to confederation a pier and lighthouse was erected, but it was completely swept away by a storm in 1872. In 1873 the work of reconstruction was commenced and was completed in 1874 at a cost of $57,468.43, one-half of which was paid by the department, one-quarter by the Northern Railway Company, and one-quarter by the town of Collingwood. This breakwater is of unusual strength. It is 700 feet in length and finishes, at the deep water end, in a broad pier head 60 feet long by 80 feet wide, on which a lighthouse has been erected. The width at the base of the cribwork is 24 feet, receding to 19 feet 6 inches at water line. The portion above water is carried up to the height of 6 feet, terminating at 12 feet 6 inches in width. The depth of water in the harbour was 11 feet; but as the size of the vessels navigating Lake Superior increased, this depth was found insufficient, and during the season of 1879 and following years dredging was commenced for the purpose of increasing the depth to 14 feet at low water. The total expenditure since confederation up to 1882 was $84,636.32, being $57,468.43 for construction and $27,167.89 for dredging. In

1882 a contract was entered into with Mr. J. D. Silcox (who subsequently assigned his contract to Messrs. Fleming, Lindsay & Burdett), for the construction of a length of 600 feet of a breakwater, extending northwardly from the north wharf, or Grand Trunk Railway wharfs. This contract was completed in 1883. In November of the same year another contract was entered into with Mr. Robt. Reed for the sum of $18,613 for a further extension of 600 feet, which was completed in 1884. In 1884 the work of dredging the channel at the entrance of the harbour was continued and the deepening of a basin at the southern end of the harbour was commenced. In 1885 a new contract was passed with Mr. E. Murphy for another extension of this breakwater for the sum of $19,000. The expenditure during 1883, 1884, 1885 and 1886, on account of construction, was $100,919.58. In 1887–8 a contract was entered into for the construction of stone rip-rap work to close the opening between an old slab wharf and the western end of the outer breakwater. It was completed in 1889 at a cost of $12,285.35; some boulders, logs, &c., were removed from the entrance channel in 1889 at a cost of $3,808.09. Since 1889 dredging has been carried on by the department almost every year, deepening the water in the harbour generally as well as at the many wharfs. On April 29, 1897, a contract was let to Messrs. Boon & Armstrong, of Toronto, to deepen and dredge the harbour. On July 3, 1897, operations were commenced and have been continued during the working seasons, but owing to the hardness of the material removed and many breakdowns in the dredging machinery, the work has not progressed as fast as was expected.

The amounts expended in dredging on this contract are:

1897–8	$31,472 39
1898–9	31,430 57
	$62,902 96

Repairs.—In 1884-5 repairs were made to the outer breakwater at a cost of $4,214.71, and from 1893 up to 1898 the sum of $3,013.21 was expended in minor repairs to the breakwaters and the foundations of the lighthouses. Some slight repairs were made to the breakwater last year, costing $150. As constituted now the harbour is very large and commodious, being protected on the north and east side by extensive breakwaters, 1,500 feet and 3,600 feet in length. Several small wharfs belonging to the town or companies, are built inside the area inclosed by these breakwaters.

The total expenditure on this harbour since confederation is:

Construction and improvements	$170,673 36
Dredging and deepening	101,766 48
Repairs	7,377 92
Total	$279,817 76

GODERICH.

Goderich, in the county of Huron, is situate on the east shore of Lake Huron at the mouth of the Maitland River, about 68 miles from Sarnia and 60 miles from London. It is the terminus of the Buffalo branch of the Grand Trunk Railway, and is a place of considerable importance, partly on account of large deposits of salt found in its vicinity.

Construction.—The construction of a harbour at this place was first undertaken in 1835, by the Canada Company, who held the right under a lease from the Crown, although a considerable expenditure was made on the works, they were allowed to fall into decay. In 1859 the Canada Company transferred their claim on the harbour to the Buffalo and Lake Huron Railway Company (now part of the Grand Trunk system), who in 1862 were granted a new lease from the Crown, under which the company erected extensive harbour works. When it was determined by the government to establish

harbours of refuge on Lake Huron, Goderich was one of the points selected as most suitable, and a survey was made and plans prepared for creating a safe and commodious harbour. The plan adopted may be briefly described as being that of changing the entrance to the harbour by cutting a new channel through the beach and protecting it by cribwork built out to a depth of 17 feet at low water; of considerably increasing the area of the harbour by dredging, and of diverting the channel of the River Maitland by the erection of an artificial bank, so that the river should discharge into Lake Huron through the north beach and not flow into the harbour at all. These works were commenced in 1872 and completed in 1877, the cost being $465,715.81. In 1881 and 1882 dredging to the extent of $1,748 was done, and in 1882 $2,387.06 was spent in protection work at the beach between the northern pier and the breakwater, which was gradually being washed away. The total expenditure up to 1882, since confederation, was $471,531.16 on account of construction and dredging.

In 1882-3 the sum of $22,500 was awarded by the official arbitrators, and paid to Mr. S. Platt for damage to his property in connection with the harbour works. On account of the contractor for the construction of beach protection works abandoning his contract, the government was obliged to assume and proceed with the work, the expenditure during the year on account of construction being $4,034.04. This beach protection work was completed in 1884 at an expenditure of $2,860.16. In 1892-3 a contract was entered into with Messrs. Brewder & McNaughton, of Ottawa, to extend the northern pier 410 feet, and the southern pier 100 feet in length and to dredge berths for the same. This work was commenced in March, 1894, and the work completed in November, 1895. In March, 1897, a contract was let to Luke Madigan, for a bulk sum of $50,999 to reconstruct the whole of the breakwater superstructure, a length of 2,490 feet, and rebuild six cribs 30 x 20 feet, and nine cribs 20 x 20 feet; the former to be 2 feet high and the latter 17 feet high. After a series of delays, on the part of the contractor, an order in council was passed setting aside the contract on April 25, 1898, and authorizing the calling of new public tenders for the completion of the work. The late contractor during the last year stripped and exposed about 870 feet of the superstructure at the east end of the breakwater, rebuilding a portion of same 12 feet high. The finished height is 18 feet.

On August 11, 1898, the contract to rebuild the superstructure of the breakwater, at this place, was re-let to Messrs. Smeeth & McGillicuddy, of Goderich, for the sum of $56,700. Nothing but a long series of delays has taken place since the date of signing this contract. At the end of the last fiscal year the sum of $2,886.11 had been paid on the contract.

On September 12 last the Marlton Dredging Company was employed to do certain dredging in the harbour and channel approach, and work was commenced on the 14th of the same month. Operations were continued until November 22, and were continued in the spring of 1899 until the end of the fiscal year, when the sum of $9,632.41 had been expended, including superintendence, during which time the plant worked $418\frac{5}{6}$ hours, which, at $8 per hour, cost $3,350.66.

On October 11 last orders were given to make some slight repairs to the south pier at a cost not to exceed $84. The work was at once done, the labour costing $45.20 and the material $30.97; total, $76.17.

The expenditure for the past fiscal year was as follows:—

Dredging	$9,632 41
Rebuilding superstructure of breakwater	2,886 11
Repairs, south pier	76 17
Total	$12,594 69

Repairs.—In 1883 and 1884 the breakwater and southern pier were repaired at a cost of $6,000. These repairs consisted in renewing some planking and guard timber and placing some ballast stone in some of the cribs. From 1884 up to 1897 minor repairs to the breakwater and piers were made almost yearly, consisting generally in renewing timbers. The expenditure during these years on account of repairs was $7,690.23.

Description.—The harbour at the present time comprises an inner basin about 25 acres in extent and two parallel jetties forming the entrance from the lake. The northern side of the basin is formed by an artificial bank 2,500 feet in length, composed of very strong cribwork on the Maitland River side and of a pile work on the harbour side, the space between the two being filled in and bearing a spur track. The line of cribwork serves as a training wall to prevent the Maitland River from discharging into the harbour. The cribwork is sunk generally in 17 feet of water, and its height above low water level is 18 feet. The north entrance jetty is 1,700 feet in length, the width varying from 20 to 30 feet, with a block 40 by 45 feet at the head. The south jetty starting from the end of the curve formed by the basin is 1,600 feet in length and the width varies from 20 to 40 feet. The jetties are parallel and 200 feet apart, excepting at the outer end of the southern jetty, where the entrance is 265 feet wide. The inner angle of the harbour for about 900 feet in length is considerably shoaled up, the average depth of water in the rest of the basin is 14 feet, and in the entrance channel it varies from 13 to 15 feet. This channel is proposed to be dredged to a depth of 20 feet including the southern portion of the basin.

The total expenditure in connection with this harbour is $602,906.35 and may be subdivided as follows :—

Construction, including some dredging before 1882	$536,825 45
Reconstruction of superstructure (breakwater).....	10,517 32
Repairs	13,766 40
Dredging since 1882	41,797 18
Total	$602,906 35

HILTON (otherwise called Marksville).

Hilton, a small village in the county of Algoma, is situated on the north shore of St. Joseph's Island in the north passage of Lake Huron, 5 miles from Stobie, on the Canadian Pacific Railway. It contains three churches, two stores, one hotel and two saw-mills. Population, 300.

The wharf at this place was originally a cribwork structure built by the municipality. It fell into a dilapidated state, and was at last completely destroyed by the vessels mooring to it. It 1884 the remains were sold to Bowker & Co., who rebuilt it on piles. It was later on resold to Mr. A. G. Duncan. This wharf was built at the end of a road in Hilton village, it being 270 feet long over all; the approach varying in width from 18 to 20 feet, the head pier being 90 by 100 feet. The depth at the outer end of the original wharf was 16 feet 9 inches.

Construction.—During the years 1886-7 and 1887-8, the department built an addition to this wharf, consisting of a block of cribwork 200 feet long by 30 feet wide, at a cost of $10,460.30. The Hilton wharf was private property, but strong representations were made to the department in a petition dated December 27, 1884, that owing to the difficulty of navigation by night in the River Ste. Marie, steamers going to Sault Ste. Marie had to lay over night at Hilton; that the wharf at that place was too limited in extent to afford sufficient shelter to those boats and that the anchorage was not good, the water in the vicinity being deep and the rocks dangerous; and further, that private owners were not in a position and did not need to extend the wharf for their business, especially as no charges were made to vessels lying at the dock.' For these reasons the department constructed the extension already described.

In 1897 representations having been made that the owner of the original wharf extended by the department as above stated, exacted exorbitant tolls for the use of the wharf; that the settlers on St. Joseph's Island were labouring under very great disadvantage on account of the extortionate charges, made on their produce, &c., landing at the wharf, it was decided, in order to secure to them fair and just terms, to purchase that portion of the wharf, which was still private property, so that the whole of the work could be under government management. In 1897-8, the sum of $5,000 was

paid over to Mr. A. G. Duncan for the transfer of his wharf, the storehouse standing thereon and the right of way (to the said wharf from the main road) to the department.

During the past year the sum of $108.73 was expended in making necessary repairs to the planking on the deck of the wharf.

The total amount expended on this work is $15,569.03.

KINCARDINE.

Kincardine, in the county of Huron, is situate at the mouth of the Penetangore River, which empties into Lake Huron 31 miles south of Southampton; it is the terminus of the Wellington, Grey and Bruce division of the Grand Trunk Railway. Extensive salt deposits are found.

Construction.—In 1856 two parallel lines of piers were built, 100 feet apart, the northern pier being 540 feet in length, and the southern one 290 feet. In 1868, the sum of $4,500 was granted to assist the municipality in completing the southern pier. A considerable sum of money was also expended by the municipality in improving the harbour, the amount being placed at about $23,000. The depth of water being found insufficient in the harbour, in 1872 dredging was commenced and continued until 1877, when the whole of the inner basin, about 4 acres in extent, had been dredged to 12 feet and the entrance to 13 feet. Up to 1882 further dredging was done, giving 14 feet in the basin and 15 feet at the entrance. The entrance piers were also further extended, the direction changed and the entrance widened from 130 feet to 200 feet so as to afford greater facility for entering the harbour. In November, 1881, a contract was let for the construction of 790 feet of pile protection work on the south side of the southern pier. At the close of the year 1881-2 the total expenditure by the department on this work was $78,049.68, out of which about $5,000 were for repairs, and a large amount for dredging.

The pile protection work was completed in October, 1882.

Repairs and Renewals.—In 1876 the northern pier having been damaged by a storm, was repaired, and the superstructure raised at a cost of $5,000. During the years 1883 and 1884 repairs were made to the end of the northern pier which had been damaged by a schooner; the face of the northern pier was close-piled a distance of 665 feet, and sheathing was placed on its north side for a distance of 200 feet, to prevent the influx of sand into the channel. The expenditure in this connection was $6,971.52. A further sum of $6,155.80 was expended in 1884-5 and 1886-7 in repairing the north and south piers generally, and raising the superstructure. In 1887-8 sheet piling was commenced along the north face of the south pier to prevent its falling into the channel. In 1888-9 this sheet piling was continued on the south and east side of the basin, and pile work protection on the inside of the northern pier was extended a distance of 200 feet northwardly. The expenditure on this sheet piling protection was $15,000.59. From 1890 to 1896 minor repairs were made to the piers, at an expenditure of $1,848.78. In 1896-7 the outer end of the south pier was reconstructed at a cost of $2,265.42. In March, 1897, a contract was let to Messrs. Bowman, Bowman & Porter, contractors of Southampton, for a bulk sum of $11,264.39 to renew the superstructure of the outer end of the northorn pier and strengthen the same with sheet piling on the harbour face. The superstructure was completed in November, and the sheet piling in June, 1898. Repairs were also made at the same time to the north and south pier at a cost of $438.12.

On July 16, 1898, orders were given to expend a sum not to exceed $2,500 in making some necessary repairs to the piers, the same to be done by day labour. Work was commenced early in September, and completed in June last. Over 80,000 ft. b. m. of lumber, 4,500 pounds iron were used in these repairs and 19 new mooring posts were replaced.

The amount expended on the above work for the fiscal year ending June 30, was $2,491.05.

Description.—The harbour at present comprises an inner basin into which flows the Penetangore River, and two jetties, 90 feet apart at the inner end and 180 at the outer end.

The east, south and west sides of the basin are built of pile work, strongly braced to anchor piles, and a platform 12 to 16 feet wide resting on walings. This line of piling starts from the bridge over the Penetangore River, on the south side of the river and runs north-west for a distance of 57 feet. It then turns at an acute angle almost south for a distance of 463 feet, forming the shore wall of the basin; then 253 feet in a direction north-west. It then returns northward towards the north jetty a distance of 440 feet, where the south jetty properly starts in a direction almost due west. This jetty is 840 feet in length and is partly composed of pile work and crib-work. The width is very irregular and varies from 12 to 30 feet. The north jetty, 1,470 feet in length from the bridge, is also partly built of pile and cribwork. The width of the pile work is generally 12 feet, and the cribwork 30 feet. The whole of the crib-work has been pile sheathed. The height of the pier is generally 10 feet above low water level; the depth in the entrance channel was at the end of the year 11 feet at low water, and in the basin from 0 to 13 feet. There are two range lighthouses on the north pier.

The total expenditure since confederation is $148,858.94, and may be subdivided as follows:—

Construction including some dredging before 1882..	$	78,049 68
Repairs and reconstruction		48,608 77
Dredging since 1882		22,460 18
Total	$	149,118 63

L'ORIGNAL.

L'Orignal, a post village in Prescott county, on the south shore of the Ottawa River, 3 miles across the river from Calumet station on the Canadian Pacific Railway and 66 miles west of Montreal. It contains, besides the county buildings, four churches, one telegraph office, several insurance agencies, grist and saw-mills, three stores and three hotels. Two weekly newspapers are published in L'Orignal. Population, 1,000.

This wharf is the most important on the river between Ottawa and Grenville, and is the only landing for the freight and passenger traffic of the village and of a large extent of the county. It is used also by the large number of tourists and others visiting the Caledonia Springs. It was built a length of 534 feet, under commissioners of the provincial government, prior to the union, February 10, 1841. In 1886-7 it was found necessary, owing to the filling up of the bay, to extend it 800 feet, or to a total length of 1,354 feet, including the outer block, which is 30 feet long and 120 feet wide. The long approach to this outer block was built 22 feet wide, consisting of cribs 10 feet by 22 feet, united by platforms of an average span of 34 feet. The work was done by the municipality, aided by a grant of $2,000 from the provincial government.

In the spring of 1884 part of the superstructure was carried away by the ice, and was rebuilt by this department during the years 1883-4-5 and 1886 at a cost of $7,266.49. The vote of 1883-4 was supplemented by a grant of $1,000 from the municipality. The above amount also covers the expense of dredging made by the *Nipissing* in front of the pier during the seasons of 1884 and 1885.

In 1896-7 an examination of the wharf was made at a cost of $191.15. It was found that the approach was in a dilapidated condition and could not long stand the constant travelling of heavy loads over its uneven roadway and that unless it was rebuilt this landing would have to be abandoned. Ten of the shore cribs had also been moved bodily below their original positions for distances varying from 3 to 22 feet; and parts of eight others were shifted from their foundation and partly demolished. It was

therefore decided to rebuild the whole approach 1,323 feet long, from the shore to the outer block, along the lower side of the old approach. Plans and specifications were prepared and tenders called. In June, 1897, the contract was awarded to Messrs. J. N. Munroe and W. Murray, contractors, for the sum of $13,417.12. The works included in this contract consisted of :—1. A stone and earth embankment 623 feet long and 25 feet wide at the top, with side slopes of 1 in 1 and built up to an elevation of 19¼ feet above extreme low water. 2. A trestle approach 700 feet long and 20 feet wide, with bents 12 feet apart and composed of six piles driven 15 feet in the bottom, and covered with 4-inch planks well secured to the floor stringers.

At the end of the year 1897-8, the contract work was not quite completed, there being a number of braces yet to be laid and secured on each side of the bents.

The amount of $13,850.27 expended on this work, also covers the purchase of materials for the reconstruction of the outer block (120 feet by 30 feet) from the low water level.

During the last fiscal year, the contract work of 1898 was completed as described above, the outer block, 120 feet long by 30 feet wide was renewed from low water level for a height of 19 feet, a freight shed 40 x 20 feet and a waiting room 20 x 16 feet were built on the wharf, and a pathway, 3 feet wide, of 3-inch pine deal, was placed on a length of 700 feet. The railing of the approach, 1,360 feet long, has been painted. The work was done by day labour at a cost of $6,009.12.

The total amount expended on this work by the department is $27,317.03, as follows :—

Fiscal year	1883-4	reconstruction	$ 5,331 90
"	1884-5	"	909 69
"	1885-6	"	1,024 90
"	1896-7	"	191 15
"	1897-8	"	13,850 27
"	1898-9	"	6,009 12
		Total	$27,317 03

MEAFORD.

Meaford is an incorporated town in the county of Grey, and is situate on the west side of the Georgian Bay, 18 miles west of Collingwood, and 20 miles to the eastward of Owen Sound. It is the terminus of the Northern division of the Grand Trunk Railway. Population, 2,500.

Construction.—Prior to confederation a pier 500 feet long, and having 14 feet of water at its outer end, was built by the local authorities, aided by a grant of $6,000 from the government. This pier, which is on the west bank of the Big Head River, emptying into the harbour, was extended during 1874 and 1875 160 feet, and an arm 200 feet long was built in a north-easterly direction, in order to afford protection against north-east winds. A breakwater 410 feet long was also built on the east side of the river. The cost of these works was $22,899.29, of which three-fifths was paid by the government and two-fifths by the municipality of St. Vincent. In 1878 the sum of $250 was expended in dredging; and in 1880 and 1881 $2,564.94 was spent by the department in dredging to 12 feet inside the western pier, deepening the channel to the inner harbour and dredging a portion of it to 11 feet. In 1884 and 1886 further dredging was done, and in 1887–8 the town contributed $3,000 and the government $5,000 to complete the dredging in the inner harbour to 13 feet, and to dredge a 100-foot channel, 14 feet deep, to it from the outside. In August, 1889, a contract was entered into for the construction of the following works :—

1. Cribwork, 80 feet in length and 20 feet in width, at the north end of the eastern breakwater. 2. Cribwork, 160 feet in length and 20 feet in width, at the south end of the eastern breakwater. 3. Sheet-piling, 200 feet long, at the east side of the entrance to the inner harbour. This work was satisfactorily completed in May, 1890, at a cost

of $4,987.84, and a space between the breakwater and the shore was also filled with stone. A portion of the harbour was also dredged to 12 and 13 feet in 1895 and 1896.

Repairs.—In 1882 a contract was entered into with Mr. Robert Reed for repairing the inshore portion of the west pier, which consisted principally in sheet-piling about 850 feet of the old cribwork. This was completed in 1883 at a cost of $12,612.23. In 1892 and 1893 an expenditure of $5,492.42 was made in repairing and rebuilding about 560 feet in length of pile protection work.

Description.—The harbour may be subdivided into two distinct portions, the inner and outer harbour. The inner harbour, which is established in the Big Head River, is about 800 feet long and from 150 to 260 feet wide, having a total area of about 4 acres. The depth of water varies from 4 to 11 feet at low water. The west side is formed and protected by a line of pile work, 1,170 feet in length, starting from the highway bridge across the river, and adjoining the west pier at a point 250 feet distant from its shore end. The east side is not protected by pile work, excepting at the entrance to the inner basin, where there are about 200 feet of piling built in connection with fish houses. The outside harbour is formed by two cribwork jetties, one on each side of the river, about 500 feet apart at their shore ends, with an entrance from the lake 170 feet wide. The east jetty is 635 feet long and 20 feet wide. The west jetty is 600 feet long with an extension to the east toward the east jetty 220 feet long, making a total length of 820 feet. Its width is from 25 to 28 feet. There is a lighthouse at the end of the extension. The head of the jetty is in 12 feet of water.

On April 20, 1898, a contract was let to Mr. James Sparling, of Meaford, to construct a pile protection work on the west side of the harbour, a length of 340 feet, for the sum of $2,761.18. Work was commenced on July 22, and completed on October 4 last. The government dredge *Challenge* worked in the harbour at this place, and, besides deepening the same deposited some of the dredged material behind the pile work, the amount expended in dredging being $2,597.47.

The total expenditure in connection with this harbour is $73,919.80 (out of which $10,000 was contributed by the municipality of St. Vincent), which may be subdivided as follows:—

Construction	$34,119 56
Repairs and rebuilding	18,104 68
Dredging	21,695 56
Total	$73,919 80

NEWCASTLE.

Newcastle is situated in the county of Durham on the north side of Lake Ontario, 47 miles east from Toronto. Population about 1,000. It contains large woollen mills, a tannery and implement factory.

This harbour was constructed by the municipality and is owned by a harbour trust. It is formed by a pier on the east side 900, feet in length, and a breakwater on the west side of the entrance, 600 feet in length, and the above portion on the west side by pile revetment work 730 feet long.

In 1877 the local harbour trust having expended a large sum of money on the structures on the western side, and dredged the harbour to a depth of 10 feet, they were granted the sum of $5,000 by parliament.

In 1883–5 the piers were repaired by this department at a cost of $17,928.51. Dredging has been performed during the past few years giving a depth of 11 feet of water.

During the past fiscal year repairs were made to the shore end of the east pier renewing same with plank and stringers at a cost of $941.05. In performing the work some 35,000 feet board measure lumber and 450 pounds of iron were used.

The total expenditure at this harbour up to date is $24,621.83.

NORTH BAY.

North Bay, a town in the county of Nipissing, and district of Algoma, is situated at the upper or west end of Lake Nipissing. It is the terminus of the Grand Trunk Railway, at this point connecting with the Canadian Pacific Railway, 227 miles north of Toronto. The town is of considerable importance and is growing very fast. Population about 2,000.

On November 18, 1898, a contract was let to Messrs Lindsay & Burdett, of Collingwood, to construct a wharf at this place, for the sum of $16,387, consisting of an approach of 780 feet of trestle work 25 feet wide, and 500 feet of crib work, of the same width, with continuous superstructure on top. The work to be completed on or before September 30, 1899.

Good progress has been made by the contractors and up to June 30 last, seven-tenths of the work had been completed. The water in Lake Nipissing being very high this year some delay may be experienced with the work of progress, as the cribs are so submerged that they cannot be worked upon.

The total amount expended on this work up to date is $10,000 paid the contractor, and $773.40 for supervision and inspections. Total $10,773.40.

OAKVILLE.

Oakville is situated on the north shore of Lake Ontario, in the county of Halton, 22 miles west of Toronto. Population about 2,000. It contains several mills and factories and a ship-yard. The trade of the place is local. It is a station of the Hamilton branch of the Grand Trunk Railway.

The work of forming a harbour at this place was commenced in 1829 and at the date of the union of the provinces in 1841 the amount expended upon the two piers was $14,361.08. The east pier was built 640 feet and the west pier 500 feet out into the lake ; revetment work inside 422 feet in length.

The eastern pier having become decayed and wrecked it was found necessary to rebuild the outer end, a length of 360 feet, and the old portion of the pier connected with the new. This work was done by the department in 1887-8 and in 1888-9 the western pier was rebuilt from low water level.

The harbour is formed by the piers extending from the shore into the lake and by a dredged area and the creek.

During the past fiscal year extensive repairs were started to the east pier, the shore end of which for nearly 200 feet was carried away by storms and a portion of the west and east piers having settled have to be levelled up, in some places, over 2 feet. About 225,000 feet board measure of lumber and 8,710 pounds of iron have been purchased for the repairs. The expenditure on above was $4,465.94.

The total expenditure at this harbour to date is $43,105.55.

OWEN SOUND.

Owen Sound, in the county of Grey, is situated at the mouth of the Sydenham River which flows into the head of Owen Sound, an arm of the Georgian Bay. The town is the centre of an extensive agricultural district, and is the terminus of the Grand Trunk Railway branch of the Georgian Bay and Lake Erie division, also of the Canadian Pacific Railway, Toronto, Grey and Bruce division. There are several lines of steamers running to and from Owen Sound. Population, 6,500.

Construction.—Prior to Confederation the harbour was formed by the municipality of Owen Sound, and in 1856 and 1866 grants were made by the government to assist in improving the channel of the Sydenham River, from its mouth up to the town of Owen Sound. These grants amounted to $1,300. In 1874 a survey of the river was

made, with a view to improving the channel, and in 1874–5 the sum of $10,367.55 was expended by the department in making a generally straight channel, 150 feet wide, from the wharf at the foot of Peel Street to the outer light, a distance of three-quarters of a mile. The depth of water obtained was 10 feet at low water. In 1876–7 a channel was dredged from the dry dock to a short distance outside of the outer light, a length of about 2,000 feet, The channel was about 150 feet wide and had a depth of 12 feet. Cost, $6,589.77. In 1879 a further sum of $1,951.30 was spent in dredging a narrow channel 65 feet wide to a depth of 14 feet.

The growing trade of the place demanding greater harbour accommodation, and the increased size of the steamers navigating the lakes requiring a greater depth of water in the harbours, it was decided to make considerable improvements in this harbour, and the town of Owen Sound agreed to contribute $13,000 towards the cost. These works consisted in the building of two parallel rows of pile work, 200 feet apart, extending from the shore a distance of 600 feet, together with about 1,000 feet of bank protection, and the dredging of the channel of the river Sydenham, from the upper end of the steamboat wharf to its mouth, and thence to 14 feet at low water, a distance of 5,000 feet.

The expenditure in connection with this pile protection work was, in 1881–2, $29,942.57.

In 1882–3 the pile work on each side of the entrance was strengthened by the placing of brush and stone, and a length of 3,000 feet of the channel, from a point below the outer light to the southern end of the pile work, at the entrance, was dredged to a depth of 16 feet. The dredging was continued in 1883 at a cost of $6,583.05, but in March, 1884, owing to the shifting nature of the bottom, soundings showed an average depth of only 14 feet over the channel opened.

In 1884–5 a depth of 16 feet was obtained at a cost of $9,596.60. The foundations of the inner lighthouse were also protected with large stones at an expenditure of $237.50. Dredging was continued from year to year at a large expenditure, in the inner harbour, and on a new channel approach to the harbour. The material taken from the bed of Owen Sound harbour, both in the river and at the approach, is a fine alluvium earth and still finer sand. The material runs into the cuttings made by dredging and continues to do so until the sides of the cuttings form a natural slope. This accounts for the large amount of dredging done at this place, and the comparatively small results.

In 1890–1–2 a large amount of protection pile work was done in the river. In 1894 a contract was entered into with Messrs. Porter & Canan, of Wiarton, for the construction of sheet pile revetment work in front of the esplanade, on the west side of the harbour, a distance of 1,550 feet. This work was completed at the end of 1895. In 1896 Messrs. Canan, Sadlier & Co.'s plant was engaged dredging the harbour to 19½ feet depth at low water where most required.

During the past two seasons the largest vessels sailing the lakes have been able to use the harbour of Owen Sound. Protection work on the west side of the entrance channel is required to prevent the filling in of material brought down by the Pottawatamie River.

During the past year the 'Owen Sound Dredging and Construction Company' continued the dredging of the harbour and channel. The expenditure during the year on this account was $9,885.40, and the corporation of Owen Sound was paid the sum of $3,263.21 for dredging performed in the spring of 1896, making an amount of $13,148.61 expended during the year.

The total expenditure made by the department in connection with this harbour is $267,515.63, and may be subdivided as follows:—

Construction and reconstruction	$123,377 27
Dredging	144,138 36
	$267,515 63

PORT ALBERT.

Port Albert is situated at the mouth of Nine-Mile Creek, on the east shore of Lake Huron, 11 miles north of Goderich, in the county of Huron, township of Ashfield.

There is no railway communication with the place.

In 1874-5 a breakwater was built here and the northern pier extended, and in 1881-2 a considerable sum of money was expended in dredging and pile protection work, costing $9,521.31.

In 1893 this department let a contract to Mr. Patrick Navin to extend the north and south pier a distance of 200 feet each by means of cribwork and continuous superstructure 20 feet wide, out into the lake for the sum of $10,497.

In 1894, the contractor having failed to proceed with his work in a satisfactory manner, it was taken from him, and in 1894-5 the extension of the north pier was completed by day labour at a cost of $5,689.93. Contractor was paid for the work performed, $1,304.35, and also allowed for dredging, $3,441.25.

During last year repairs were made to the north pier and the pile protection work, costing $997.93. Some 33,766 feet, board measure, lumber, 16 cords stone and 1,670 lbs. iron were used in these repairs.

The population is small, being only a post village; and the trade is only in local farm produce and small quantities of lumber.

The harbour proper is formed by the two piers extending out into the lake, and pile protection work inside the mouth of the creek, to keep the banks from falling in.

The total expenditure in connection with this harbour up to date is $28,797.13.

PORT ARTHUR.

Port Arthur is situated in the county of Algoma, on Thunder Bay, at the northern end of Lake Superior. It is an important station on the Canadian Pacific Railway. A long breakwater, built in front of the town, forms a harbour and protects the wharf on shore.

Construction.—In 1884, 2,000 feet in length of the above-mentioned breakwater was commenced and carried to completion in February, 1886, at a cost of $155,661.60. In February, 1887, the construction of a further length of 1,600 feet, in addition to the work completed in the previous year, was commenced, and finished in November, 1888; and a talus of stone was placed against the outside of the work, adding very much to the strength of the structure. In October, 1888, a contract was entered into with Messrs. Kirby & Stewart for the construction of a further length of 1,500 feet of breakwater, with block piers at each end, and to the westward of the work already completed; an opening of 350 feet in width being left between the old work and the new, to permit vessels to enter the port. This work was commenced in May, 1889, and completed in 1890. The talus of stone commenced in 1888 was also continued along the front of the work built under the first contract, it having been found that the bottom was eroding under the action of the seas, during heavy gales. The two above-mentioned extensions, including the stone talus, were completed at an expenditure of $315,641.87. From 1889 to 1898 an expenditure of $15,445.24 was made in dredging the opening left in the breakwater to 18 and 19 feet at low water, and giving a depth of 16 feet of water in the harbour in front of some of the docks.

Repairs.—In 1890-1 the ends of the blocks were covered with sheet-piling, and other parts of the breakwater, where it had been damaged by an ice-shove the previous winter, and by a vessel named the *Yuma* running into the superstructure. Work was commenced in April and completed in June, at an expenditure of $1,000.

Some boiler plates, which were washed off the breakwater and have since been picked out of the water, have been replaced during the past year at a cost of $72.32.

Description.—The construction of the breakwater has converted what was formerly a dangerous and exposed roadstead to a safe and commodious harbour. There are three entrances to the harbour. The western entrance is about 1,800 feet in width, with a

depth of water of 12 to 18 feet at low water. The middle entrance is 350 feet in width, and has a depth of water of 17 feet. The eastern entrance has a depth of 17 feet and a clear width of 250 feet. The depth of water in the basin varies from 14 to 18 feet. The total length of the cribwork in the breakwater is 5,250 feet, including the return blocks at the middle entrance and at the western end of the breakwater. The width is 30 feet, and the total height 25 and 26 feet. It is sunk generally in 17 and 18 feet of water.

On the lake side the cribwork is made vertical up to about low water line, and from there up to the top it is finished with a slope of one in one, strongly sheathed and the angles protected with boiler plates. The lake side of the breakwater has successfully withstood the force of breaking seas driven by gales travelling at the rate of 54 miles an hour and ice-shoves from the outer bay, when the ice has been pushed completely over the structure and left remaining thereon to a height of 19 feet.

The total expenditure in connection with the harbour may be summarized as follows :—

Construction	$471,303 47
Repairs	6,633 93
Dredging	15,445 24
Total	$493,382 64

In 1872, in connection with the 'Dawson Route,' a wharf 600 feet long with a wing 200 feet long was also built at Port Arthur, then 'Prince Arthur's Landing,' but its cost was included in the 'Dawson Road' expenditure.

PORT BURWELL.

Port Burwell lies on the north shore of Lake Erie, about 90 miles above Port Colborne.

This harbour was formed by a company, incorparated in 1832, which received a loan of £3,000 from the Government. In 1840, the works were surrendered to the government; and in 1860, the deed of surrender was annulled.

The only expenditure made by the Government after the union of the provinces, was $546 for surveys.

A thorough survey was made in 1874, up to which time the company claimed that it had expended $100,100 on the harbour.

In 1876-7 the sum of $10,055.37 was expended in repairing the breakwater, and in dredging the harbour to a depth of 10 feet.

During the last fiscal year extensive repairs and improvements were commenced in the harbour; old cribwork has been removed on a length of 100 feet and rebuilt 20 feet high and 24 feet wide; 300 feet of old sheet-piling has been removed and replaced by oak and maple pile, 25 to 35 feet long; and the deepening of the harbour was commenced. The amount expended during the year was $24,864.88.

PORT ELGIN.

Port Elgin is in the electoral division of the southern portion of the county of Bruce, on the eastern shore of Lake Huron, about 24 miles north of Kincardine, and 4 miles south of Southampton. It is a station of the Wellington, Grey and Bruce division of the Grand Trunk Railway. There is no track from the railway to the harbour. Population, 2,000.

A block of cribwork was placed about 1,500 feet out in the lake from the shore in 1857, and a small pier built for shipping purposes in 1857-8 by a local company, aided with a government grant of $4,000. The total cost of the above was $7,180.

In 1881–2 this department built a breakwater 600 feet in length in front of the landing pier, and in 1884-6, the breakwater was extended 950 feet in length, in a northerly direction, joining the shore at the northerly end so as to inclose a basin, or harbour, making a total length of 1,550 feet. The structure is formed of cribwork and continuous superstructure, above low water.

The harbour is formed by the breakwater extending from the mainland in a southerly direction. Shipments are made from the landing pier.

The trade of the place consists of bark, brick, flour, grain, fish, lumber and farm produce. The only manufactories are a brush and rake factory.

During last year Messrs. Bowman & Porter's plant dredged out the channel approach and a portion of the harbour, working 362 hours. The amount expended, including superintendence, was $2,896.

The total expenditure at this place up to date has been $80,652,37.

The municipality has expended about $16,000 in improving the harbour.

PORT HOPE.

Port Hope is situated in the county of Durham, on the north shore of Lake Ontario, 63 miles east of Toronto, on the Grand Trunk Railway, and has a population of about 8,000. Chief trade is in lumber and grain.

The first harbour works were constructed by a company in 1832, afterwards vested in commissioners in 1853. In 1875-7 piers were extended and a considerable amount of dredging done. Additional dredging and extension of east pier was made in 1882–3.

During the past fiscal year repairs were made to the southern end of the west pier and a sand fence 550 feet in length has been built on the west side of the west pier to prevent the sand from drifting over into the harbour. On the east pier, 100 feet of the old work has been entirely rebuilt up from low water level and the shore end of this pier for some 300 feet in length has been renewed with stringers and planking. To make the above repairs some 229,000 feet B.M. lumber and 1,500 pounds of iron were used, as well as eleven new mooring posts placed in the work. The cost of above for materials and labour was $5,515.

The total expenditure at this place up to date is $156,170.87.

PORT STANLEY.

Port Stanley is on the north shore of Lake Erie, at the mouth of Kettle Creek, in the county of Elgin, about 85 miles west from the entrance of the Welland Canal and 8 miles south from the city of St. Thomas, and is the terminus of the Lake Erie and Detroit River Railway. The population is about 1,000.

In 1827 an Act was passed by the Parliament of Upper Canada, appointing commissioners to make a harbour, and appropriating £3,000 for this purpose; which snm was further supplemented by grants of £3,500 and £2,000. After the union of the provinces, very extensive repairs and improvements were made. The total sum expended up to confederation amounting to $230,531.88. By an order in council, dated September 1, 1859, the harbour was transferred to the London and Port Stanley Railway Company on condition that the tolls collected should be applied to the maintenance of the works.

In 1870, when an extensive survey of the harbour was made, the works consisted of two lines of piers placed 86 feet apart at the outer and 82 feet apart at the inner end. The western pier was 1,456 feet in length with a width of 20 feet for 548 of the shore end and 30 wide for the remainder of its length. The eastern pier was 1,150 feet in length and 30 feet wide. From the inner side of the western pier a dock 11½ feet in width was continued on the same line northward for 882 feet, in which there was a recess 90 feet long by 53 feet deep. This docking formed the west side of the harbour. From the inner end of the eastern pier a line of pile-docking formed the eastern side of

the harbour. The inner basin was about 850 feet long by an average width of 280 feet, containing nearly 5½ acres, a small portion of which had a depth of water from 7 to 11 feet but the greater part—over four acres—had only a depth of from 1 to 5 feet.

In 1876-7 an extension was built to the western pier 85 feet in length by 30 feet wide at a cost of $8,158, and in 1882 the outer end of this pier, which had settled, was raised to its original height, at a cost of $600, for the purpose of placing a lighthouse upon it.

The trade of the place chiefly is fish, cordwood and farm produce, and since the Lake Erie and Detroit River Railway have owned the line from London, the Lake Ferry steamers now call and deliver coal on the cars at this place. There is a regular steamboat line between this port and Cleveland on the south side of Lake Erie.

The municipality has not expended any money on improving the harbour.

As a harbour of refuge this place is well situated, being about half way between Long Point and Rondeau.

The harbour is formed by the two piers extending out into the lake and by an inner harbour dredged out at the mouth of the creek. It is well sheltered inside and the entrance is not difficult.

During the past year the sum of $8,105.93 was expended in repairs to the west pier, 770 feet in length, of which was entirely renewed from low water level. In doing this work some 281,307 feet B. M. of lumber and 18,450 pounds of iron was used.

Dredging was also carried on in the harbour for the amount of $1,940.38.

By order in council dated February 14, 1898, the sum of $10,000 was granted to the Lake Erie and Detroit River Railway Company as assistance in carrying out extensive improvements in the harbour undertaken by the above named company.

The amount expended during the year being $20,046.31.

The total expenditure on this harbour to date is $298,808.36.

RICHARD'S LANDING.

Richard's Landing is situated at the north-eastern portion of St. Joseph Island, in the district of Algoma.

During the last fiscal year the purchase of a wharf was authorized by order in council dated July 19, 1898, from Mr. W. J. Smith, for the sum of $3,023.35. The original wharf was built in 1878 and was 90 feet long parallel with the channel. In 1893–4 an addition of 60 feet by 56 feet wide was built with a gangway or approach 225 feet long from the shore in cribs of 16 x 16 feet. The wharf has a frontage of 150 feet with 17 feet of water at outer end. It is built of tamarack, hemlock and cedar logs, fully ballasted and in fair condition.

RONDEADU.

Rondeau is situated in the county of Kent, at Point aux Pins, on the north shore of Lake Erie, about 140 miles west of Port Colborne, the Lake Erie entrance to the Welland Canal. It is a harbour of refuge and a very important one on this side of the lake. Of late years the beach at Rondeau has become a much frequented summer resort and many cottages have been erected here. The Erie and Huron Railway have constructed their line this far and are also establishing a dock for Lake Ferry to deliver coal in cars from the other side.

Point Aux Pins projects out into the lake and incloses a natural basin of over 6,000 acres in extent. The communication between the basin and the lake is over a sand bank, some parts of which are above the level of the water. In 1844 a breakwater was built here by the government, and in 1851 the harbour was sold to the Rondeau Harbour Company for $8,000, upon condition that the company would keep the work in an efficient state of preservation; but the stipulation being wholly neglected, possession was resumed by the government in July, 1856, when the works were repaired.

In 1869 it was found that all the works were in a ruinous condition; the rapid current had scoured out the channel between the piers and undermined them causing

them to fall inwards while some 350 feet of the outer end of both piers had entirely disappeared.

In 1871 the piers were rebuilt, the channel and basin enlarged and all necessary work done to form a harbour of refuge. The work consisted of two parallel piers 783 feet in length, 250 feet apart and 15 feet of water between them; a breakwater 225 feet in length and dredging an area of 10 acres in the inner basin to 15 feet deep.

In 1881-2 this department constructed 2,000 feet of pile protection work on the beach to the westward of the entrance. This work cost $197,890.76.

During the past year repairs have been made to the piers costing $3,499.93. Work was commenced in August 1898 and finished in May last. Some 250 feet of the northeren end of the west pier have been rebuilt up from low water level, and considerable repairs made to other portions of the piers. In doing the above work 63,748 f. b. m. of lumber and 6,787 lbs. iron were used.

The following is the expenditure at this place up to date:—

Before confederation	$ 74,437 70
Since confederation	227,398 88
Total	$ 301,836 58

STATEMENT of Expenditure since Work is under Control of the Department of Public Works.

Years.	Construction.	Repairs.	Staff and Maintenance.	Totals.	Description.
	$ cts.	$ cts.	$ cts.		
1895-6	Bridge, $3,816 25	.....	.....	3,816 25	A road approach 400 feet in length was constructed to connect the swing bridge with the public road. On south side of channel a crib 70 x 20 feet was built with superstructure to fill in approaches of the ferry landing.
1895-6	Bridge, $19,937 13	.....	.....	19,937 13	Bridge masonry, &c.
1896-7	.....	1,454 24	.....	1,454 24	Repairing piers, retaining walls, fences, &c.,
1896-7	Bridge, $16,520 92	.....	1,556 87	18,077 79	Bridge.
1897-8	.....	3,525 37	.....	3,525 37	Repairs to piers.
1897-8	.....	.....	2,520 58	2,520 58	Bridge staff and maintenance.
1898-9	.....	1,366 75	2,868 59	4,235 34	Bridge staff. Repairs and maintenance.
Totals.	$41,690 68	10,914 14	13,606 80	66,211 62	

SAUGEEN RIVER.

Saugeen River runs into Lake Huron 143 miles above Sarnia, passing through the village of Southampton, situated on the shore of this lake in the north riding of Bruce.

In 1858 the government constructed a breakwater on the north side of the river. The local authorities repaired it in 1868, receiving a grant from the government of $3,500 The above work cost $18,795.99.

The mouth of the river affords a harbour to small craft, such as tug steamers and fishing boats, and is extensively used for the purpose of packing and shipping fish.

During last year Messrs. Bowman & Porter's plant dredged on the bar at the entrance and in the channel, working 488 hours; the amount expended, including superintendence, was $4,097.50.

The total amount expended at this place up to date is $32,757.82.

THORNBURY.

Thornbury, an incorporated village in Grey county, is situate at the mouth of the Beaver River, which empties into Georgian Bay; on the Meaford branch, of the Grand Trunk Railway, eight miles from Meaford and 19 miles from Collingwood. It contains four churches, twenty stores, two hotels, two grist, one saw, one woollen and one planing mill, two printing offices issuing weekly newspapers, and telegraph and express offices. Population 900.

Many years ago a pier was constructed at this place by the residents of the locality, but it was allowed to fall out of repair and become useless.

Construction.—During the session of 1881, the sum of $7,000 was voted to construct a pier on the western outlet of the Beaver River, and to dredge a basin 100 feet in width to 10 feet depth on its eastern side. This grant was supplemented by the sum of $7,000 furnished by the town of Thornbury, and the work was placed under contract. The pier was built of solid cribwork, for a length of 425 feet out from the shore into Georgian Bay; the outer portion or landing block is 145 feet in length and 35 feet in width, and the remaining portion of 280 feet comprising the approach is 18 feet in width. This work was completed during the year 1882-3, at a cost of $14.136.37. In 1883-4-5, the sum of $8,085.09 was expended in the construction of protection works on the eastern side of the basin. The work consisted in the construction of a close pile jetty extending 400 feet out from the beach into the lake, forming an artificial harbour. During the year 1886-7, a row of piling was driven from the inner end of the landing pier, in a south-westerly direction, for a distance of 280 feet on the western shore of the Beaver River, at a cost of $1,818.48, to prevent the beach being cut through by the seas. In 1892-3, a sum of $2,981.27 was expended in the construction of 150 feet in length of pile protection work, and in forming a slip in the landing pier. In 1897-8, it was decided to build a small breakwater in the harbour in order to shelter small craft. The breakwater is 190 feet long and 16 feet wide and was built at a cost of $978.06.

Dredging.—The dredge *Challenge* in 1886, opened 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. During the year 1887-8-9 and 1891-2, some extensive dredging was done to improve the harbour and make it easier of access, at a cost of $7,265.23.

Repairs.—In 1891-2, repairs were made to the approach of the landing pier. The work consisted in removing the wreck of 100 feet of old pile protection work, on the inside of the approach to the pier, building the same with new material and making up the embankment with gravel. The work was done by day labour at a cost of $624.99. The landing pier, which was much in need of repair, was still further damaged in May, 1893, when an unprecedented rain-storm of two days duration caused a heavy flood in the Beaver River, carrying away all the mill-dams in the vicinity of Thornbury. The debris brought down by the stream and current undermined the shore end of the landing pier and the structure, for a distance of 160 feet out, sank and fell in towards the harbour. During the years 1893-4 and 1894-5, $6,387.18 were expended to put the landing pier in a complete state of repair. In 1895-6 and 7, an expenditure of $46.05 was made for slight repairs.

During the past year the sum of $999.99 was expended in completing certain repairs on the pier and its approaches.

The total expenditure incurred on this harbour may be summarized as follows:—

Construction (including $7,000 furnished by the town of Thornbury)	$27,999 27
Dredging	8,450 78
Repairs	8,058 21
Total	$44,508 26

TORONTO HARBOUR.

The harbour of Toronto is situated on the north shore of Lake Ontario, and is formed by a large circular bay about 1½ miles in diameter, separate from the lake by a

low island (formerly a peninsula), about six miles long, making a safe and well sheltered harbour capable of containing a large number of vessels.

In 1788, the harbour was described to be nearly two miles in length, from the entrance on the west to the isthmus between it and a large morass to the eastward. The breadth of the entrance was about half a mile, but the navigable channel for vessels was only 1,500 feet, having a depth of from 18 to 21 feet of water. In 1832, Bouchette stated that the peninsula, now Toronto island, was a narrow slip of land, in several places not more than 180 feet in breadth, but widening towards its western extremity to nearly a mile. In 1833, changes in the state of the harbour were apparent, and the necessity for its preservation engaged the attention of those interested; no action, however, was taken at the time. In 1850, the harbour was put in commission, and early in 1852, it was reported that from observations made and soundings taken during twenty years, it was ascertaind that the navigable channel had narrowed down to about 200 feet. In 1853, an opening was made during a storm through the narrow beach at the eastern end of the harbour, which closed again in a short time afterward, although attempts were made to give permanence to the beach, the whole was swept away and the eastern entrance was formed.

In 1859, the harbour master reported a depth of eight feet of water in the eastern channel. In 1860, the western channel was dredged to a width of 400 feet, and an average depth of 12 feet. In 1862, the eastern entrance had increased to half a mile in width, and a bar had formed which had shoaled the water. Between 1874 and 1880, the sum of $49,120.90 had been expended principally in increasing the width and depth of the western entrance, and a certain amount of blasting for the removal of solid rock was executed.

In 1881, an examination of the harbour was made by Mr. Jas. B. Eads, C.E., who submitted a carefully prepared report, in which he advised the closing of the eastern entrance, to obtain and maintain a depth of 18 feet at low water. Before any action could be taken on these suggestions, the marshes bounding the eastern side of the harbour, and the whole of the southern shore of the island were damaged to such an extent as to necessitate a complete departure from the plans prepared by Mr. Eads. As attention had to be paid to the protection of the eastern side of the harbour, and the preservation of the eastern portion of the island, where it was the narrowest, and through which several breaches had been made, in 1882, work for the protection of the harbour, extending from the Don southwardly to Fisherman's Island, and for the protection of the island, over a length of 6,500 feet, was commenced, and was brought to completion in 1885.

In 1889, a contract was entered into for improving the eastern entrance and the continuation and completion of the harbour protection. These works consisted in building 1,650 feet of cribwork, to partially close the eastern gap from Fisherman's Island up to the new eastern channel; in protcting and maintaining the channel by the construction of two rows of cribwork, respectively 2,420 feet and 2,280 feet in length, 400 feet apart, and by dredging between these two rows of cribwork to a depth of 16 feet at low water. It was also decided to rip-rap with heavy stone the breakwater at the island, this last work being done by day labour, under direct charge of the department. All the above mentioned works, outside of the dredging, were practically completed in 1896 only.

During the winter of 1896-7, severe storms caused the settlement of the north and south ends of both west and east piers. The north end of the west pier having settled below lake level, it was found necessary to take down and rebuild some 120 feet of the superstructure, and to place brush mattrasses and large stones around the end and channel face to protect it from further scouring. This was also done to the north and south ends of the east pier. Settlement having also taken place along the channel side, an extra course of timber was put on and the waling taken off and replaced to proper level. During the year 1897-8, the north end of the east pier having again settled considerably out of line, it was found necessary to take down 200 lineal feet of the superstructure and rebuild it, after the pier had settled back into place by excavating a seat for it with the city's pumping dredge. Brush mattresses, 32 feet in width, were

sunk along the face of the pier on the channel side, for 210 feet in length to protect it from scouring, and no settlement of the pier was noticeable at the end of the year.

Repairs to the breakwater were also commenced and are now being carried out. A bar, formed during the winter, south of the west pier, contracting the channel to a little over 100 feet, was removed, and some shallow portions of the channel deepened. There is now a channel 190 feet in width, having a depth of 16 feet below zero of the gauge, from the end of the west pier outward. At the end of the year the dredge was employed in deepening the channel between the piers to 16 feet below zero. Three groynes composed of layers of brush mattresses and sunk with stones, were also constructed on the south shore of the island, west of the breatwork to protect the beach. These groynes withstood last winter's storms and made considerable land in their immediate neighbourhood, but they are too far apart to be of much service, as the sea did much havoc to the shore line lying between them, washing away a strip of beach, and uprooting several trees, besides doing damage to the sidewalk. They demonstrate clearly, however, the importance of others being put down closer together if the beach is to be retained. The sum expended on these works during the year is $18,442.76.

During the last fiscal year, the dredging operations commenced in 1898 were continued in the eastern entrance in order to obtain a depth of 16 feet at low water. The amount expended was $18,232.26.

The total amount expended by the department on this harbour is $1,133,573.54.

BRITISH COLUMBIA.

COLUMBIA RIVER.

The headwaters of the Columbia River are a series of small lakes lying between the Rocky Mountains and the Selkirk Range, a little south of the 50th parallel of north latitude. The upper lake is separated from the Kootenay River, which takes its rise in the heart of the Rocky Mountains, but a few miles north of the 51st parallel—by a low sand and gravel divide, 2,700 feet above sea level, a mile and a half wide. The Kootenay at this point, at an ordinary stage of water, is about 9 feet or so above the level of the Upper Columbia Lake. While the Kootenay flows in a south-easterly course to the boundary line, the water of the Columbia takes an entirely opposite direction towards the Canadian Pacific Railway at Golden, about 130 miles north-west of Canal Flat.

This portion has been known as the 'Columbia River above Golden,' and is navigable now for steamers of light draught as long as the river is free of ice.

From Golden the Columbia follows on—about the same course—the line of the railway on the south side, to Donald, where it crosses to the north side of the railway and continues to follow it down to Beaver. Steamers can, it is believed, run down from Golden to Donald, but not to Beaver. Leaving the railway at the latter place the river continues the same course to the Big Bend; here it doubles and takes a southerly course to Revelstoke, where it again meets the Canadian Pacific Railway. The distance from Beaver round the Big Bend is about 174¼ miles.

About 30 miles below Revelstoke the river debouches into Upper Arrow Lake, over a fan-like bar of moving sand. After passing through the lake—which is about 43 miles long—the river is entered again; thence it continues to flow for about 18 miles down to the Lower Arrow Lake; and extends southward 48 miles, more or less past this lake. The river between the lakes is called 'The Narrows.' Both of these lakes hardly exceed 4 miles in width in the widest part. From the Lower Arrow Lake to Kootenay Rapids—21 miles—the river is deep and wide, with no very acute bends, but a strong current. This portion is known as the 'Columbia River below Revelstoke.'

Continuing through the rapids, passing the mouth of the Kootenay River on the left, the Columbia continues a wide and swift river, with many sharp bends divided in one or two places by rock islands, to the international boundary below Fort Sheppard, a distance of 32 miles from the head of the rapids. The general direction is due south. This part of the river is known as the 'Columbia River below Kootenay.'

The valley of the river from the 'Big Bend' south lies between two ranges of mountains, the Selkirks to the left and the Gold Range to the right. The mountains lose to a great extent their rugged appearance as the lakes are reached.

The banks and bed of the river are generally gravel and sand, thickly timbered, with an occasional rock bluff intervening.

Improvements above Golden.—During the last fiscal year the work done under the appropriation consisted chiefly in repairing and extending existing dams on the Columbia River, between Lake Windermere and Golden, in order to confine the river to the main channel.

The expenditure in connection with the dredge 'Muskrat' during the fiscal year was as follows :—

Wages	$2,200 20
Provisions	469 23
Fuel	33 15
Material	9 39
Equipment	30 65
Boat hire	21 00
Contingencies	198 60
Total	$2,962 22

Removal of rock above Revelstoke.

The work of improving the cañon of the Columbia River above Revelstoke consisted of blasting rocks and boulders which were a source of danger to navigation.

The following are the details of the expenditure in connection with this appropriation :—

Wages	$1,594 00
Material	175 17
Boat hire	27 00
Contingencies	22 50
Total	$1,818 67

Improvement between the Arrow Lakes.

The work done in this locality consisted in building four dams.

The 1st dam is 380 feet long, 20 feet wide at the base, and is built of brush and rock. The 2nd dam is 180 feet long and is built in the same manner as the first These two dams were constructed to confine the water, during its lowest stages, to the main channel.

The 3rd dam is 160 feet long and about 20 feet wide. It is built of brush weighted with gravel placed in bags and laid on top, no rock being available on this side of the river. The river, during the higher stages of the water, has a tendency to cut through at this point and it was considered necessary to build this dam to check the cutting.

The 4th dam is 880 feet long, 15 feet wide at the top and 3 feet high. Piles were driven 8 feet apart along the lower side of the dam, which consists of three layers of brush each a foot thick, the top and bottom layers being laid longitudinally, and the

centre layer across, all securely wired together with galvanized iron wire. 6 inches of gravel was laid on the top of the dam and ore sacks filled with gravel on top of that.

The details of the expenditure are as follows:—

Wages	$4,441 35
Material	365 02
Boat hire	15 00
Contingencies	178 02
Total	$4,999 39

DUNCAN RIVER.

The Duncan River rises in a meadow or depression lying about the centre of the Selkirk Range, a few miles south of the Canadian Pacific Railway.

From this depression flows also: (1) the Beaver northward to join the Columbia River at a point where the railway leaves it to climb the eastern slope of the mountains, and, (2) the north fork of the Spillamacheen south-eastwardly to join the Columbia 40 miles or so, in the latter direction, from Golden, a station on the Canadian Pacific Railway, at the junction of the Kicking Horse and Columbia.

Following a tortuous course for 50 to 60 miles through a narrow alluvial valley, from three-quaters to one mile wide, bearing one point east of true south, the mountains on both side rising precipitously from the plain, the Duncan widens out into Upper Kootenay Lake, 10½ miles long by from three-quaters of a mile to a mile wide. 2 miles from the lower end of this lake, the Lardo—a rapid and unnavigable affluent from the north-west, joins the Duncan at an acute angle, and 7 miles further on, the combined waters enter Kootenay Lake about 21 miles from Kaslo, a town situated on the west shore. Below the confluence of the two streams the river has been called the Lardo, notwithstanding the fact that the Duncan, being very much the larger, is properly the main river. To prevent confusion, the river will be referred to hereafter as the Duncan, the Lardo being treated as the tributary.

Kootenay Lake, 1,730 feet above the sea, is about 72 miles long by about an average width of 1¾ miles. It is the natural and, at present, the only available route by which the trade of the great southern central valley of the Selkirk Mountains, north of the boundary line, can be carried. There are two points on the lake waters at which transfers can be exchanged with the great railway lines. The first is Nelson, situated on the west arm or outlet of the lake, 36 miles from Kaslo, where freight and passengers are transferred in connection (1) with the Nelson and Fort Sheppard Railway and the Spokane Railway in the state of Washington, and (2), partly by rail and partly by boat, with the Canadian Pacific Railway at Revelstoke. The second is Bonner's Ferry, a small town in the state of Idaho, on the banks of the Kootenay River, about 50 miles south-east, by the river, of the boundary line, where connection is made with the Great Northern Railway line.

To accommodate the lake traffic there are three steamboat lines giving a daily service between points north of the line, with a bi-weekly service in summer, reduced to a weekly in winter, to Bonner's Ferry.

At Kaslo, a small line of railway called the Kaslo and Slocan, 3 feet gauge, said to be in the interest of the Great Northern, has been constructed to tap the Slocan country, lying west of Kootenay Lake, in competition with the Canadian Pacific Railway now operating a line, to the same interior points, called the Nakusp and Slocan, 4 feet 8½ inch gauge. Nakusp, being situated on the east side of the Upper Avon Lake, connection is made by water thence with the Canadian Pacific Railway at the head of the lake. If an amicable arrangement could be arrived at between these rival lines, of which there is a remote possibility, the Duncan River country would be in closer connection with the Canadian markets.

To meet the requirements of the increasing outputs of these mines conveniently situated within easy transportation distance of the lake, two large smelters have been

erected; one by American capital at Pilot Bay on the east shore of the lake, opposite the west arm or outlet; and the other at Nelson, by the Hall Mines Company, an English corporation, which has been built primarily to treat the ores from their own property lying on Toad Mountain south of Nelson, and also for the purpose of custom smelting.

It is contended that the Duncan country is as rich in minerals as any other part of the district, but, owing to the difficulties and dangers attending the transportation of freight, it is deprived of the advantages of reasonable freight rates, and its development is retarded. To mitigate the difficulties under which this section labours, it is proposed that the Duncan River, from the Kootenay Lake, be made navigable as far as practicable.

All the above claims are simply prospects, no development work having been done.

At the mouth of the Duncan River, on Kootenay River, there are extensive sand bars, through which by many channels the river finds the lake, the main channel being close to a rock bluff on the west side. There was not, on September 7, 1895, more than 2 feet of water in the deepest channel. Upon entering the river the low land bordering the banks is fouud to be of alluvial character, covered at first with alders and willows, which afterwards give place to larger and merchantable timber. The current varies from 2 to 6 miles an hour and cuts the banks rapidly on the convex curve of the river. At intervals, up to the mouth of Cooper Creek, sharp, short pitches or riffles, where the river splits, are met with; the difference in level varying from 10 inches to 2 feet. The most serious of these riffles and splits, which will always, at low water, unless ameliorated, prove obstacles to navigation, occur below the mouth of Cooper Creek.

The difference in level between the lake and the mouth of the Lardo, a distance of 7½ miles, is estimated to be approximately 28 feet.

Duncan City, consisting of three houses with no permanent inhabitants, is situated about 1½ mile from the outlet of Upper Lake on its west shore.

Between the mouth of the Lardo and the Upper Lake, there are two places where the channel is split by island, rocks and gravel bars.

The drop, or difference in level, from the crest of the riffle to comparatively still water below, is in both instances not less than 2 feet. The depth of water in the shoalest parts was found not to exceed 24 inches.

The approximate elevation of the Upper Lake above Kootenay Lake is assumed to be not more than 36 feet. Allowing the distance between the lakes to be 9 miles, the average water slope would be 4 feet per mile. As will be inferred, however, the slope is not uniform, the river being a series of shallow riffles, in some instances short and sharp, with comparatively deep pools of water between, flowing with moderate velocity.

It is at these riffles—met with either at the mouths of tributaries or where the channel is divided, that the greatest difficulties to navigation will have to be overcome.

Throughout the entire course of this portion of the river, which may be termed the Lower Duncan, erosion is constant wherever the current strikes the bank. The consequence is that trees are either constantly falling into the stream, or overhang the banks sometimes partially submerged. These latter are called sweepers, and especially in bends are dangerous to boatmen. There are also to be found in every reach of low velocity, a number of sunken or partially sunken snags, and on the upper ends of islands and bars accumulations of drift timber.

Duncan City is laid out on a gravel beach, the highest point being 195 feet above the lake, which appears to have been formed by the detritus deposited at the mouth of an old channel of the Lardo River, now flowing south-east about 1½ mile to the westward. This old channel, it is assumed, discharged into the Upper Lake through a narrow rocky gorge or caffon, now a pass, in a low spin or ridge of the mountains.

By careful barometric readings, it was ascertained that the water level of the Lardo 1½ mile to the west of Duncan City, was about 60 feet above the lake. Allowing 6 feet as the fall from the lake to the confluence of the Duncan and Lardo, the latter falls 63½ feet in 3½ miles. This settles at once the question of the navigability of the Lardo.

At the upper end of Upper Kootenay Lake, about 8 miles long, the Upper Duncan River enters the lake. The mouth here is similar in character to that of the lower river. There are the same extensive sand bars through which the river enters the lake by three channels, the principal one, however, being in this instance on the east, instead of on the west side, along a rock bluff.

Continuing up the river on the east bank, 8 miles from the mouth, what is called Two-Mile Creek is reached.

The river over this portion passes with a sluggish current from side to side of the valley, three-quarters to a mile wide, sometimes skirting the foot of the mountains. The width varies from 200 to 400 feet. When the latter width exists, the current being further retarded, the depth is shallow, and numerous sand bars to some extent obstruct the channel. There are also present the usual snags, drift timber and overhanging trees or sweepers.

From Two-Mile Creek to Bear Creek the features remain the same, though the width is generally less, the current in places is greater, and there is a larger number of snags obstructing the channel. About two miles above the creek there is a big log jam over 150 feet long. Above this jam the river is comparatively clear for about a mile, when a rapid formed by a large number of snags and drift timber is encountered. This is evidently the remains of a large timber jam. Another such rapid has to be passed before Bear Creek, twelve miles from the mouth, the terminus of boating on the river, is reached.

It may be mentioned here that those who have prospected in the country, and freighted on the river, are of the opinion that above Bear Creek all freighting must be done by land trail or wagon road.

For reference the following recapitulation of distances is given :—

Kootenay Lake to mouth of Lardo River	7 miles.
Lardo River to Duncan City	3 "
Duncan City to Upper Kootenay Lake	8½ "
Upper Kootenay Lake to Bear Creek	12 "
Total	30½ "

The alluvial land on either side of the river up to the foot of the mountains would, no doubt, prove valuable for farming purpose, if cleared and provided overflow were prevented. The timber is of fair size and consists of cedar, fir, spruce, cottonwood and alder.

The Duncan River, fed mainly by glacier and snow field streams, is highly charged with sediment during freshets.

The waters of the Upper Duncan, however, find a settling basin in the Upper Lake, thus relieving the Lower Duncan of its contribution. The finer sediment of the latter is deposited at the outlet forming the bar already refered to.

The watershed, or catchment basin, of the Duncan is of limited area, and in consequence of the deep shore, and comparatively bare mountain slopes, the ice and snow within its narrow bounds disappear rapidly when the weather is warm. To this may be attributed the short duration, and intermittent character of the high water season, in those years when the freshet is not abnormal, and the weather variable. When, however, the freshet is unusual—such as prevailed in 1894—there is but a slight difference in level between the upper and lower lakes, the whole valley between being submerged during the highest of the flood.

Continual rain does not seem to have any effect on the river, for what is rain in the valley is snow during the same season on the mountains. The water in the lower lake fell fully twelve inches between September 7 and 19, 1895, notwithstanding it had been raining almost continuously since the 2nd of that month.

The obstructions to navigation in this river consist, first, of snags, drift timber, and overhanging trees or sweepers, almost throughout its entire course, except in the Upper Kootenay Lake, and secondly, of bars at the mouths of the river in the upper and lower lakes, and of bars, splits in the channel, and rock in the channel between the lakes.

The river as far up as Bear Creek, in round numbers 30 miles from Kootenay Lake, can be made safe and passable, at high water only, for moderately large and powerful stern wheel steamboats, by the removal of all the snags, drift wood and sweepers from the channel, at a moderate cost. But to attempt to train the river and deepen the bars at the mouth, to make navigation possible at low water stage, would entail an expenditure larger than the present developments would justify.

The work of clearing the Duncan River, from Kootenay Lake, of snags, over-hanging trees and other obstructions to safe navigation, was resumed in the month of January, 1898, and continued until the month of April. The work was done in a most satisfactory manner and steamers were enabled to run in the spring through to the upper end of Howser Lake. It is now intended to improve the upper Duncan River.

The expenditure in connection with this service for the year ended June 30, 1898, was $2,956.75.

During the last fiscal year the sum of $2,946.43 was expended in clearing the Upper Duncan River from Howser Lake to Hall's Landing, of snags, over-hanging trees, log jams, and other obstructions to safe navigation.

The work was done in a most satisfactory manner, and it enabled steamers to run this summer to Hall's Landing, a distance of 18 miles from Howser Lake.

The following are the details of the expenditure in connection with this service, during the year 1899 :—

Wages	$2,537 00
Materials	252 08
Boat hire	107 00
Contingencies	50 35
Total	$2,946 43

FRASER RIVER.

The Fraser River is one of the largest besides being the most important of the many rivers of the Pacific province. It traverses or rather penetrates, a country most diversified in its productions and undeveloped resources, both as regards the precious and other metals, as well as the products of the forest and soil. It has been well known since the early fifties, if not before, therefore there is no need, for the purpose of this report, to give a very extended description, except in the direction of those natural features which bear directly upon the works undertaken, or upon those contemplated, for the training of the channel with the view to prevent erosion and overflow ; and for the conservation, in a permanent and stable manner, of the ship channel from the city to New Westminster to deep sea water in the Gulf of Georgia.

The topographical characteristics of the Fraser throughout its entire course are in many respects similar to those of the Columbia River, lying to the south. Like it, the Fraser takes its rises in small lakes at the western base of the Rocky Mountains, and, keeping close thereto for some distance, flows in a north-westerly direction before it bends to the west, and eventually turns south. The headwaters are at an elevation of about 3,000 feet above the sea, in the vicinity of the Yellow Head Pass, through which it was at first the intention to build the Canadian Pacific Railway ; lying a little to the south of the 53rd parallel of north latitude, between the 118th and 119th meridians of west longitude and but a short distance from Canoe River, which flows southward to join the Columbia at the Big Bend. The most northerly point of the stream is about 16 miles north of the 54th parallel on or about the 122nd meridian, whence its course is west for about 10 miles. Thence leaving the summit waters of the Peace River, which flow to the north, 5 miles or so to the right, the Fraser takes a general direction a little east of south as far as a place called Hope, situated on the left bank about 15 miles below Yale, which is the highest point of practical steamboat navigation and about 25 miles north of the 49th parallel, the international boundary line. From this point the stream gradually changes its direction, eventually taking a general course

through the arable lands of the Fraser Valley, almost due west down to the Gulf of Georgia, into which it empties about 8 miles north of the boundary and 6 miles west of the 123rd meridian. Allowing for the many bends and the frequent traverses of the valley, it is a close approximation to say that the length of the Fraser from its source to the gulf is not less than 900 miles.

Throughout this distance the river passes between and pierces many ranges of lofty mountains, on the sides and summits of which glaciers and snow fields abound, and among which, at the higher elevations, the snow measured as it fell, has been known to attain, in one winter, the great depth of 50 feet.

The lowest water occurs in the Fraser for a short period after the ice goes out, it then rises gradually by reason of the early spring rains; but it is not until the beginning of May, when the sun shines hotly, melting the mountain snow, that the settlers below Hope begin to anxiously watch the river. The first rise usually takes place in May, when the snow on the mountains along the lower reaches melts and seeks its natural outlet. This is generally followed by another and greater rise about June, or early in July, when the water of the melting snow and glaciers of the upper Fraser comes down. This is the time most dreaded, but strange to say, in 1895-6, contrary to past experience, the unprecedented high water, which has proved so disastrous to the lower Fraser Valley, was caused by the waters of the Thompson. Fortunately the first rise receded before the great bulk of the Rocky Mountain water arrived. Had both come simultaneously it is impossible to say to what greater extent the destruction of lands and changes of river bed would have been carried.

Previous to the commencement of railway construction, the high water of 1876 was the highest known and was accepted as the extreme. In 1882, however, the river rose higher, and this was similarly accepted as the extreme limit. This confidence was rudely dispelled in 1895-6. In one direction at least, the occurence of this freshet may be considered as not altogether an unfortunate one, not unmixed with good. Had all the dyking and reclamation schemes proposed, based upon the high water of 1882, been completed, the destruction and loss of property from Hope to the Gulf of Georgia, would have been incalculable. The result will now be that all works undertaken, likely to be affected by another high water, will be designed to meet a flood of still greater height. It is not probable, but possible, that a combination of all conditions necessary to ensure the coming together of all the waters from the melting snows and glaciers over the whole area of the watershed of the Fraser, may happen. Such a contingency, though it may be considered by some remote, must be guarded against.

The erosion of the shores and bed of the channel, where it passes through or over easily disintegrated material, is constant, but of course is least during low water. As the river rises, the erosive energy of the current increases rapidly until the maximum is reached at the highest stage of water. The result of this constant and increasing eating away of the shores and bed, is that an immense amount of material is carried down stream in suspension; the quantity being augmented by every tributary large and small, until, in the lower reaches, the water is in such a turbid state, so charged with sediment, that it more closely resembles a thick pea soup than anything else it can be compared to. The extent of the sedimentation that must occur every year, at the mouth of the river or elsewhere, where the current is at all retarded, as for instance where the banks are overflowed, or where the inflowing tide meets the river current, may be easily magined.

Another source of sediment is the hydraulic mining operations now being carried on, with every prospect of being extended, along the Fraser and all its branches. Should the expectations of those interested, even only in part, be realized, it will be necessary to take steps to supervise operations, and insist upon reservoirs being constructed at the points where such precautions are or may be considered necessary, for the purpose of impounding the material and preventing it being carried down stream in great quantities and deposited on any valuable land that may be overflowed, to its total destruction, or on bars in the river channel to the detriment of navigation. Such has happened in California, and it is stated by those familiar with both countries, that the available paying hydraulic properties on the Fraser River are much in excess of those in California.

Below the cañon at Yale, the bars and bed are chiefly coarse gravel and sand, the former becoming finer and finally disappearing below Miller's Landing. Thence outwards to the extreme limit of the Sand Heads in the Gulf of Georgia, the material composing the bars and the sides of the channel, for the most part, is a very fine, flaky silt, which when dry has a pearly or semi-metallic lustre. It is probably the result of the attrition of mica or talcose slate.

The destructive energy and capabilities of this surcharged freshet water are added to by the enormous quantities of drift timber borne along by the current. This drift comprises trees and timber of all sizes and descriptions, ranging from a cottonwood, cedar or fir, 150 to 200 feet long, with roots from 15 to 20 feet in diameter, and branches intact, to the ordinary saw-log or tree top. It may be either green timber recently fallen in, where the bank has been undermined, previously stranded timber or part of log-jams floated off by a higher water. The drift sometimes gathers in large rafts, and it is not difficult to realize the inherent destructive power of such a mass carried along by a current of great velocity, and the damage it will inflict when driven against a friable bank, dyke, bank protection, mattress work, wharf or bridge piers.

The river flow is affected by the inflowing tide, that is backed up to Chilliwhack, about 48 miles above New Westminster, or 65 miles from its mouth. The diurnal fluctuation at Miller's Landing has been observed to vary between 12 and 30 inches in winter time.

At New Westminster, the range is for ordinary spring tides about five feet, but during freshet time, the water seldom falls more than a foot or 18 inches.

There is no surface movement up stream except during low fresh water stages.

At the rock wharf, inside the mouth of the river, the greatest range of one tide is 11 feet, though the extreme range, that is the difference between the highest and lowest observed tide waters is 11 feet. The greatest tidal range recorded by the automatic tide gauge put up in the channel through the Sand Islands, 2 miles from shore, is 14 feet; this occurred on January 11, 1894, at full moon, though the difference of level between the lowest and highest tide waters known is only 14·7 feet.

For the purpose of ascertaining the surface slope of the river during the freshet at all stages of the tide between New Westminster and the tide gauge on the Sand Heads, a distance of 18¾ miles, and between intermediate points, simultaneous tide gauge observations were taken on June 21, 1896, all the gauges being referred to one datum. The following table gives the condensed information thus obtained:—

River stretches.	Distance in Miles	Difference of level at H. W. in feet.	Surface slope in feet per mile.	Difference of level at L. W. in feet.	Surface slope in feet per mile.
New Westminster to Ewen's Cannery..	5·8	2·08	0·39	3·70	0·65
Ewen's to Laidlaw's Cannery.....	4·0	1·58	0·395	2·67	0·6675
Laidlaw's to Stone Wharf.....	5·0	0·92	0·185	3·37	0·674
Stone Wharf to Tide Gauge.....	3·9	0·75	0·192	3·71	0·95
Totals.....	18·7	5·33	.....	13·45	.....

From the above it will be seen that the greatest surface slope between New Westminster and the gulf, therefore the swiftest current, is between the last mentioned points in above table, and it is in the vicinity of the wharf, both up and down stream, that the greatest cutting of the banks has taken place.

The motive for the foregoing, perhaps rather extended description of the physical characteristics of the Fraser Valley, is the desire to convey a clear impression of the magnitude of those elements or factors which enter so largely into the solution of all problems connected with the regulation of river channels, in the direction either of preventing erosion of the banks or of improving navigation.

A suggestion has been thrown out that perhaps the main river might be permanently relieved of some of the surplus flood water by diverting the sources of some of its many feeders into the head-waters of other rivers, to which in many instances they are in very close proximity. The practicability of such a scheme can only be determined by examination and correct levels. It may be added that such a proposition, however, appears to be, if anywhere, only possible with the branch streams above Lytton, and cannot seriously be considered with regard to the Thompson waters.

The work done in connection with this service may be classified as follows :—

1. Mattrass protection of Westham Island.
2. Dam across channel through sand bar opposite Ewen's Slough.
3. Mattrass protection of bank of river below Garry Point.

1. Eight hundred feet of protection work on the north shore of Westham Island was done, being a continuation of the work performed during the previous fiscal year. This work consisted in laying mattrasses 100 x 25 x 2½ feet, made up of alternate cross layers of brush laid on timbers which are bolted to a second set of timbers laid on top of the mattrass, the whole being bound together with No. 6, galvanized iron wire. Four of these mattrasses are fastened together with strong timbers into sections 100 feet square. These sections are then placed so that one rests on the edge of the bank and the other end floats in the stream. They are then loaded with rock and sunk in that position. All gaps due to the irregularities of the river bank are filled in with fascines and rock. In some places, where the size of the gaps will permit, smaller mattrasses are built to fit in behind the larger ones and are sunk in the same manner.

The total area of bank protected was 80,000 square feet, making 200,000 cubic feet of mattrass work and fascines, equal to 37 mattrasses. The total cost of this work was $8,434.30.

The cost per mattrass sunk in place was $227.91.

The cost per cubic foot was ·0421 cents.

It was found necessary to close two sloughs and repair some of the work done the previous year where the bank had caved in and the old work had sunk slightly. This work was equal to 21 mattrasses or 131,250 cubic feet, the cost being $4,254.18.

2. The dam across the channel through the sand bar opposite Ewen's Slough was extended 700 feet and the part of the dam that was built during the previous year was raised to a height, in some places, of ten feet. This was necessary as the dam had subsided where the current had scoured out the bed of the river underneath it. The cost of this work was $7,164.06, there being 264,400 cubic feet of brush and rock.

3. The balance of the appropriation available was used in continuing the protection of the bank of the river below Garry Point, 1,200 feet in length. This was done with mattrasses, built and sunk in a similar manner to those described above at Westham Island, at a cost of $12,847.80, including $1,300. for extra fascines and 800 tons of rock, this being necessary on account of the work being exposed to the heavyseas of the Gulf of Georgia.

The details of the cost of this work are as follows :—

Wages	$ 18,450.09
Tide gauges and observatory	526.95
Superintendence	1,412.65
Material	7,379.32
Tug hire	4,788.07
Coal	422.90
Provisions	5,150.07
Plant	1,566.80
Contingencies	259.04
Total	$ 39,955.89

KOOTENAY RIVER.

The Kootenay River takes its rise in the heart of the Rocky Mountains a little north of the 51st parallel, 16½ miles north-east of Leancoil, a station on the line of the

Canadian Pacific Railway. It flows for some distance in a south-easterly direction, and then changing to the south-west, it passes within a mile and a half of the head waters of the Columbia River. At Canal Flat it again changes direction, and pursues generally a direction a little east of south to the international boundary line, which it crosses at Tobacco Plains, about 6 miles west of the 115th meridian. The Kootenay enters Canada again at Beddlington about 20 miles east of the 117th meridian. Thence flowing a northerly course it enlarges into the Kootenay lakes, 72 miles in length, 28 miles by river from the boundary line. The outlet of the lake is on the west side about 30 miles north of the inlet, whence it flows in a south-westerly direction, joining the Columbia River about 21 miles north of the boundary line.

During the last fiscal year two dams were built across sloughs on the Kootenay River to confine the water to the main channel through the gravel bars below the mouth of Wild Horse Creek. The dams were built of alternate layers of rock and brush laid between two rows of piles, the sides being sloped with gravel and faced with heavy rock.

This work was undertaken with the object of improving the navigation of this river between Fort Steele and Wardner, the latter being the point at which the Crow's Nest Branch of the C.P.R. crosses the Kootenay River.

The details of the expenditure in connection with this work are as follows:—

Wages	$	3,395 91
Material		354 38
Contingencies		102 29
Total	$	3,852 58

SKEENA RIVER.

The Skeena River lies in the north-western portion of British Columbia. It derives its source from lakes and glaciers situate between the 56th and 57th parallels of north latitude and between the 126th and 128th degrees of west longitude. It flows generally in a south-westerly direction and empties into the waters of the Pacific Ocean by way of North Skeena, Telegraph, and Malaca passages, Chatham Sound, &c., at a point a little north of the 54th parallel of north latitude, and a few miles west of the 130th degree of west longitude, and about 650 miles, by the inner passage, north-west of Victoria. The principal post office and port on the Skeena is Port Essington, lying on the south shore of the estuary, at the confluence of the Skeena and Oxtail rivers, 13 miles east or inland of the entrance passages. It is navigable by light draught steamers, when the water is not too high, from May to the end of September, as far up as Hazelton, a Hudson's Bay company post, established on the south bank at a distance of about 173 miles from the mouth of the river. This post is the distributing point for the mining and grazing country lying to the north and west towards the Rocky Mountains and Peace River country, and to some distance to the south.

During the last fiscal year the appropriation made for the improvement of the Skeena River was expended, as shown by the details below, in ameliorating the condition of the salmon fishing grounds in the tidal waters of the estuary, which extends inland from the mouth about twenty-five miles, by removing from the bars and channels sunken snags and drift-wood which are deposited yearly thereon by the freshet and prove very destructive to the salmon drift nets.

The details of this expenditure are:—

Wages	$	1,072 50
Material		75 03
Tug hire		1,312 00
Contingencies		8 80
Total	$	2,468 33

STIKINE RIVER.

(Route to Yukon.)

On March 10, 1898, orders were issued by the department for an examination of a water route from the Pacific coast to the Yukon district all through Canadian territory, via the Stikine River Teslin Lake, and the Hootalinqua, Lewes and Yukon Rivers. With a view of rendering this route immediately available, as far as practicable, for the transportation of miners and settlers, desirous of reaching the newly discovered Klondike gold fields with their outfits and provisions, authority was also given to carry on such preliminary work as might be found urgently needed to improve navigation over the most obstructed and dangerous rapids and reaches of the chain of rivers and lakes just named, either by snagging, removing rocks, &c., or otherwise. At the close of the year ended June 30, 1898, this examination was in progress, and the work of snagging, &c., as will be described below, had been commenced on the Stikine River.

The Stikine River has its source in the southern part of Cassiar district, and runs a distance of nearly 130 miles up to the 58th parallel, where it suddenly makes a sharp bend then turns almost due south to within twenty miles of its mouth, a distance of 150 miles. From that point it runs in a westerly direction and empties into the Stikine Strait (Pacific Ocean) between the islands of Wrangel and Mitkof. The total length of the river is approximately 300 miles. The mouth of the Stikine proper is situated ten miles from the port of Wrangel, between Point Rothsay and Farm Island, where it has a width of 2½ miles. It is subjected to high tides varying from 18 to 26 feet (neaps 18 feet, springs 26 feet) which affect the river as far up as the Ka-te-té River, a small tributary which empties into the Stikine, 25 miles from its mouth.

At lowest water the estuary of the river is for about two hours, and for a distance of about five miles from the sea, a sand flat through which the stream winds its course, being about 20 inches deep; but owing to the great range of the tides this part of the river is easily navigable, and as soon as the flood has risen 4 or 5 feet, there is abundance of water for any river boat. The width of the river for the first twenty-five miles varies from two and a-half miles to 500 feet, although in some places islands divide it into several channels, the largest of which is about 200 feet in width. In the lower reach of the Stikine River the main obstructions to navigation were found to consist of snags and large trees overhanging the banks of the river, and in March, 1898, the snag boat *Samson*, doing service on the Fraser River, was commissioned for work on this river. This snag boat had first to be laid up for necessary repairs and alterations at New Westminster. These repairs and alterations consisted of renewing a number of planks and keelsons, which proved to be decayed, and putting in eleven water-tight compartments which had the effect of strengthening her considerably. The boiler and steam pipes were also newly covered and the boat was completely repainted. Many minor repairs to her machinery, &c., were also made, and the boat was equipped with new ropes, four new row boats, a set of new snagging chains, a new outfit of tools, and two large Benton head-lights; provisions and supplies were procured for a seven months' cruise.

The *Samson* arrived at Wrangel only at the end of April, having been delayed by gales at different places. The boat proceeded up the river as far as the 75th mile, but there, the river proving too rapid to allow the boat to go farther, instructions were given to commence the removal of snags and other obstructions at that point, and work down stream as far as the 50th mile, comprising the worst portion of the river for snags between Glenora and the mouth. A party of eight men was also organized to remove snags and other obstructions from the channel between the 80th mile and a point about ten miles below Glenora. This work consisted chiefly of blasting snags with dynamite, and cutting down overhanging trees and sweepers from the banks.

The total expediture in this connection up to June 30, 1898, amounts to about $14,000.

During the last fiscal year the work of improving the channel of the river was continued.

The snag boat *Samson* was employed in removing snags and obstructions, and a party of eight men, under Messrs. Lemoine and Jarmin, were engaged in removing snags and other obstructions from the channel between the 80th mile and a point about 10 miles below Glenora. This work consisted chiefly of blasting out snags, &c., and cutting down overhanging trees and sweepers from the banks.

The total amount expended during the year in connection with this work is $15,445.85.

WILLIAM'S HEAD QUARANTINE STATION.

The British Columbia quarantine station at William's Head is situated about eight miles south-east of the city of Victoria, and covers an area of about 60 acres. In the spring of 1892, a deep water pile wharf was built in connection with this quarantine station, the government supplying the Muntz metal required for covering the piles, to prevent them from being destroyed by sea worms. The wharf is situated at Parry Bay, which opens towards the north and Victoria on the west side of William's Head. It is 480 feet long by 40 feet wide, and has an approach 320 feet on the south side leading to the hospital residence and first-class passenger shelter houses, and another on the north side leading to the disinfecting apparatus and to the Chinese and Japanese shelter houses.

During the last fiscal year the expenditure in connection with this service amounted to $5,040.23, a classification of which will be fond below :—

Wages	$ 1,593 11
Material	3,401 57
Superintendence	45 55
Total	$ 5,040 23

(*a.*) Repairs to main wharf—

The sills of the bents in the approaches to the main wharf having been eaten away by teredos, it was necessary to remove them, and new sills, covered with copper, were put in. Some repairs were also made to the trestle on the outside of the disinfecting shed.

(*b.*) New wharf for steamer *Earle*—

The work on this wharf consisted in building a shed to store the coal, &c., for the steamer *Earle*.

(*c.*) Water service—

This work consisted in building a house over the filter, which was put up last year; and providing fire protectien by laying a 2-inch pipe from the large main, connected with nineteen hydrants, supplying thirteen lengths (50 feet) of fire hose, one length at each building, and providing small sheds to protect the hose from the weather The 2-inch pipe on the main wharf was repaired in places where the frost had burst it and it was boxed in and covered with sawdust.

LEWES RIVER (YUKON DISTRICT).

Lewes River is on the principal route to the Yukon district. The river is generally crooked in its course and obstructed at certain places by boulders.

During the last fiscal year an examination of the river was made in view of improving the channel and work was commenced. At Caribou Crossing a dam 400 feet long, 12 feet wide and 10 feet high was constructed. Two lifting barges were built for the removal of boulders from the Six Mile and Thirty Mile rivers; the work on Thirty Mile River was completed. At Rink Rapids, two guide piers are being constructed, which will greatly improve the navigation at this part of the river.

The amount expended during the last fiscal year for surveys and improvements of the river is $24,836.57.

DREDGING OPERATIONS.

During the fiscal year ended June 30, 1899, dredging operations were carried on in the undermentioned localities, chiefly by the government dredging fleet; but in some instances with hired dredging plant. The limited number of dredge vessels owned by the Public Works Department is far from being sufficient to carry on satisfactorily the extensive operations which the federal government is from year to year called upon to undertake, owing to the steady increase in the tonnage and draught of vessels generally and the pressing need of deepening harbours on the sea coasts, so that they may be easy of access and afford fairly good accommodation for shipping, landing and sheltering purposes to both steam and sailing vessels at all stages of the tide, improving existing highways of navigation, opening new routes and harbours on inland waters, &c.

PROVINCE OF NOVA SCOTIA.

Arisaig—Antigonish County.
Barrington Passage—Shelburne County.
" Sherrow's Channel and Public Wharf—Shelburne County.
Grand Etang—Iverness County.
Halifax I. C. Ry. wharf—Halifax County.
Harbour au Bouche—Antigonish "
Lockeport—Shelburne County.
Pictou I. C. Ry. wharf—Pictou County.
" Dwyer's wharf— " "
" Landing— " "
Port Hood—Iverness County.
Port Mulgrave—Guysboro County.
Woods Harbour—Shelburne County.
Yarmouth—Yarmouth County.

PROVINCE OF PRINCE EDWARD ISLAND.

Charlottetown, Railway wharf—Queen's County.
" Sewerage— " "
Hurd's Point Pier—Prince County.
Summerside— " "

PROVINCE OF NEW BRUNSWICK.

Chipman—Queen's County.
Fredericton—York County.
Gagetown Canal—Queen's County.
Jemseg—Queen's County.
Purvus, Murchie Mill—St. John County.
Springhill—York County.
St. John, N.B., Winter berths—St. John County.
" Harbour Channel—St. John County.

PROVINCE OF QUEBEC.

River St. Lawrence ship channel between Montreal and Quebec.
Berthier (en haut)—Berthier County.
Boucherville—Chambly County.
Chateauguay—River St. Lawrence, south shore.
Coteau Landing—Soulanges County.
Doucet's Landing—Nicolet County.
Isle Gros Bois—River St. Lawrence, below Montreal.
Laprairie—Laprairie County.
Papineauville—Ottawa County.
Rivière du Loup (en haut)—Maskinongé County.
Rivière St. Maurice—Champlain County.
River St. Francis—Affluent River St. Lawrence, south shore.
St. John's, P.Q.—Richelieu River, Iberville County.
St. Jean des Chaillons—Lotbinière County.
St. Michel—Bellechasse County.
St. Nicholas—Lévis County.
Varennes—Verchères County.

PROVINCE OF ONTARIO.

Adolphustown—Bay of Quinté.
Bayfield—Huron County
Belleville—Bay of Quinté.
Bowmanville—Durham County.
Coburg—Northumberland County.
Desoronto—Hastings County.
Frenchman's Bay or Pickering Harbour—Ontario Count .
Goderich—Lake Huron.
Hamilton—Burlington Bay.
Hawkesbury—River Ottawa.
Jordan Harbour—Lincoln County.
Kaministiquia River—Lake Superior.
Kingston Harbour—Lake Ontario.
Meaford—Georgian Bay.
Midland— "
Oakville—Lake Ontario.
Owen Sound—Georgian Bay.
Picton—Prince Edward County.
Port Stanley—Lake Erie.
Rockland—Ottawa River.
Trenton—Bay of Quinté.

PROVINCE OF NOVA SCOTIA.

DREDGING AT ARISAIG.

Arisaig, Anitgonish county, is a village on the gulf of St. Lawrence, 3½ miles north-east of New Glasgow, with about 150 inhabitants.

A small steamer calls here when weather permits.

Spring tides rise 5¼ feet, neaps 3¼ feet.

Its small cove cannot be called a harbour and is dangerous, especially with winds north to west. Considerable effort has been made to improve this place. Part of an old breakwater was removed, iron ore that was left from a sunken vessel in the approach, and sand and rock, and a channel dredged towards shore 8 feet deep, 150 feet wide along inside the breakwater to where but 4 feet could be got on account of ledge rock.

During July 1 to 30, this fiscal year, further work was performed here by the dredge *Geo. McKenzie* in completing channel and 2,845 cubic yards more were removed, of sand, stone, boulders and logs. The distance to deposit about ¾ mile. The number of yards does not present an adequate idea of the work performed, which was exceptionally difficult and at times dangerous.

DREDGING AT BARRINGTON PASSAGE, SHERROW'S CHANNEL AND PUBLIC WHARF, SHELBURNE COUNTY, N. S.

This seaport of Shelburne county Nova Scotia, is 4 miles west of Barrington and 165 miles south-west of Halifax with a population of about 500.

The place has had the attention of the department previously and again during the present year when the dredge *Canada* operated here between July 9 and 23, alternating with work at Sherrow's channel and wharf at Barrington, as conditions required.

The deepening and improving of the channel through the bar to 10 feet low water spring tide by the removal of 3,420 cubic yards of mud and sand and depositing the spoil about 3 miles away, made much improvement in the navigation of the place. Steamers from Yarmouth and Halifax call here. There are several stores, two hotels, bank, express, telegraph, &c.

The improvement of the navigation of the harbour by dredging Sherrow's channel and at Steamboat wharf had the attention of the department this year again, the dredge

Canada operating from July 1 to August 17, except times when it was more suitable to work at Barrington passage in the vicinity. The dredging was to 10 feet low water spring tide, the material removed mud, and deposited at a distance of about 3 miles; 9,090 cubic yards were excavated. Spring tides rise 8½ feet, neaps 6½ feet.

DREDGING AT GRAND ETANG.

This is a small settlement in Inverness county, about eight miles from Margaree, with a population of about sixty. The place, on the Gulf of St. Lawrence, is exposed and dangerous except in the pond, which affords secure shelter for small vessels, but the entrance is very shoal and narrow. To improve this the dredge *Geo. McKenzie* was taken there this year and commenced operations June 27, digging to 5 feet low water spring tides in the pond and entrance. The material removed, mud, stone and gravel, was deposited in the pond at a distance of ¾ mile.

The work was progressing at the end of the year, when 425 cubic yards had been excavated.

DREDGING AT INTERCOLONIAL RAILWAY WHARFS, HALIFAX, N.S.

This important terminal of the Intercolonial Railway at Halifax, the capital of Nova Scotia, had the services of the dredge *St. Lawrence* as arranged for by the Department of Railways and Canals and paid for by the same. The dredge left Yarmouth for Halifax on October 19. After its arrival there delay was caused up to the end of the month on account of the docks being full of timber for piers under construction and moorings were not laid till November 1. The material dredged was such sticky mud that difficulty and delay were caused in discharging it. The depth of the dredging was to 28 feet low water spring tide. The work was at north dock and pier No. 4, then south dock. On November 19 the dredging was completed and 8,400 cubic yards had been removed to a place of deposit about three miles distant. Much improvement was made to the terminal facilities. Pier No. 4 was found to be mostly ledge rock and there little could be done.

At Halifax, spring tides rise 6 feet, neaps 5 feet.

DREDGING AT HARBOUR AU BOUCHE.

This settlement, in Antigonish county, is about 30 miles east of Antigonish, on George's Bay. It is an extensive fishing station with a population of about 750. There are here hotels, stores, lobster factory, express and telegraph offices. The harbour is small but convenient for schooners. The department in the past has given this place the benefit of the dredging service, and during the present fiscal year—August 1 to November 14—the dredge *George McKenzie* worked here deepening the channel of the harbour to 12 feet, the approach to and at the wharf to 12 feet, and the outer entrance to 14 feet low water spring tide. The removal of 25,155 cubic yards of mud, stone, gravel and sand was accomplished in the time and deposited at a distance of about ¾ mile.

DREDGING AT LOCKEPORT, SHELBURNE COUNTY, N.S.

This seaport town, on Ragged Island harbour, is about 37 miles from Shelburne. The population of the settlement is about 1,500. Considerable trade is done. Connection is made by steamer with Shelburne, Halifax and Yarmouth, N.S. Within the harbour the anchorage is good. Tides rise, springs, 7½ feet; neaps, 5 feet.

During the present year further dredging was done here by the *Canada* between August 27 and October 14, 1898, deepening to 10 feet along the wharfs, and removing 13,140 cubic yards of mud, &c., to a distance of 3 miles, making much improvement in the navigation of the place.

DREDGING AT THE INTERCOLONIAL RAILWAY WHARFS, PICTOU, N. S.

One of the termini of the Intercolonial Railway at Pictou, N.S., an important seaport town, on Northumberland Strait. Here the services of the dredge *St. Lawrence* was arranged for by the Department of Railways, to deepen to and at the piers, making berths for ocean steamers, &c.

Dredging was commenced here May 15, 1899, and concluded June 21. The depth was to 22 feet, low water spring tides, except where, on account of ledge rock, but 15 feet could be obtained. The material removed was mud and had to be carried for deposit a distance of from 6 to 11 miles. Good work was done although the distance was so far and tides and gales also caused detention. 19,250 cubic yards were removed. At Pictou tides rise: springs, 6 feet; neaps, 4 feet.

DREDGING AT DWYER'S WHARF, PICTOU.

This important wharf in the harbour of Pictou, Pictou county, N.S., had the services of the dredge *St. Lawrence* from June 22 to 27, 1899, deepening for berths and approach thereto, 3,150 cubic yards of mud were removed and deposited 11 miles away. The depth was to 25 feet low water spring tides. The steamship *Campana* running between Montreal and Pictou, N.S., lands passengers and freight here.

DREDGING AT PICTOU LANDING, PICTOU, N.S.

On the south side of Pictou harbour and connected with the town of Pictou by a steam ferry, is a station of the Intercolonial Railway.

Dredging was done at the wharfs here for the Intercolonial Railway and paid for by that department, June 28–30. Two thousand one hundred cubic yards were removed this year, and the work was in progress at the beginning of the new year. The material removed was mud deposited 11 miles distant. The depth dredged was to 25 feet low water spring tides.

DREDGING AT PORT HOOD, INVERNESS COUNTY, N.S.

This is a seaport town of about 800 population, and the capital of the county. There are rich coal mines in the vicinity. The harbour is safe and has good anchorage and is a rendezvous for fishermen. It is in the Gulf of St. Lawrence, and about 28 miles from Port Hastings. Dredging has been done here in the past, and this year the dredge *Geo. McKenzie* deepened to 14 and 8 feet, removing stone and sand from along the face of the pier and the end and approach thereto. The place of deposit of the spoil was about 3 miles distant, and 2,800 cubic yards were excavated.

DREDGING AT PORT MULGRAVE, GUYSBORO COUNTY, N.S.

This seaport town, on the Gut of Canso, is the eastern terminus of the Intercolonial Railway, and about 73 miles from New Glasgow. It is an important fishing station, with a population of about 500, some ten stores, four hotels, &c.

Dredging has been done here at different localities. This year at the station or railway wharf, the dredge *Geo. McKenzie* was employed deepening to 8 and 12 feet low water spring tides to improve the berth and approach. The material removed was hard pan, stones and boulders, and was difficult; 815 cubic yards were removed and deposited at a distance of ½ mile. The work consumed time from May 10 to 17.

DREDGING AT WOODS HARBOUR.

This settlement, in Shelburne county, is about 35 miles from Shelburne. It contains three stores, two hotels, two lobster factories, express office, &c. It was desired

to deepen and widen the approach to and at the wharf here to 10 feet low water spring tides and the dredge *Canada* was sent, operating between August 18 and 24, 1898. The quantity of 1,170 cubic yards of clay and gravel was removed and deposited about 1½ miles distant.

DREDGING AT YARMOUTH.

The seaport town of Yarmouth, Yarmouth county, is of considerable extent, being over 2 miles in length. The population is 6,000, and the town does a large trade in products of the fisheries and in manufactured articles. Yarmouth is the terminus of the Dominion Atlantic Railway and of a line of steamers to Boston, owned by the Yarmouth Steamship Company, &c.

Spring tides rise at Yarmouth 16 feet, neaps 13 feet.

The channel leading to the wharfs is narrow and circuitous but well marked with buoys. The anchorage within Bunker Island is safe from all winds. The channel has repeatedly been dredged since 1875.

The dredging operations were continued this fiscal year that have been in progress for a number of years, with some intermission. The work comprises the widening, deepening and otherwise improving the channel from along the town water front to deep water in the sound, and a large amount has been done, generally to a depth of 17 feet, opposite the Dominion Atlantic Railway wharfs to 16 feet, and the navigation of the harbour has been greatly improved. The total dredged area covers a length of over 1,400 yards, with a width of 20 to 115 yards, some of which has been gone over twice. The dredging has been attended with difficulties and interruptions by vessels getting in the way, the difficulty of turning the dredge in the narrow channel at low tide, the long run of 6 miles to deposit, foggy weather, &c. Spring tides rise here 16 feet, neaps 15. During the fiscal year 1898-99 the dredges *St. Lawrence* and *Canada* operated here. The *St. Lawrence* from July 1 to October 18, removing 37,890 cubic yards mud, sand, ashes, rocks and old timber, and the *Canada* from October 17 to December 31, and April 11 to June 21 removing, 26,220 cubic yards mud, sand, &c., making a total of 64,110 cubic yards for the year.

PROVINCE OF PRINCE EDWARD ISLAND.

DREDGING AT RAILWAY WHARF, CHARLOTTETOWN.

Charlottetown, Queen's county, is the terminus of the Prince Edward Island Railway. It is the capital of the province and a city of increasing importance, with a population of about 11,000. At the railway wharf better facilities for the approach and berthing of larger ocean steamers and vessels were necessary for the growing trade, and the dredge *Prince Edward* has this year been engaged in deepening, to 25 feet low water spring tide, channel and berths along the wharf, making very much improvement in the navigation and loading of vessels there. The dredging operations were conducted from September 28 to November 12, November 29 to December 12, 1898, and May 23 to June 30, 1899, and 19,630 cubic yards of sand, &c., were removed and deposited at a distance of 1¼ miles.

DREDGING, CITY SEWERAGE, CHARLOTTETOWN.

In the extension and improvement of the sewerage system of this city the services of the dredge *Prince Edward* were arranged for and from November 14 to 28, 1898, it operated at Pownal slip, excavating a trench 6 feet deep low water spring tide, and removing 2,800 cubic yards of mud and sand, depositing it about 1½ miles distant.

DREDGING AT HURD'S POINT PIER.

Hurd's Point, Prince county, on Bedeque Bay, about 3 miles from Summerside, is situated in a flourishing farming district and from it is exported large quantities of agricultural produce. This place has had the attention of the department in the past in deepening and improving the loading facilities and approach, and during the present year 1898-9 the dredge *Prince Edward* was again employed in the work from August 1 to September 14, deepening to 10 feet and removing clay and mud to a distance for deposit of ½ mile ; 18,225 cubic yards were excavated in this time and the work brought to a close.

DREDGING AT SUMMERSIDE.

This important town of Prince Edward Island, in the county of Prince, and on Northumberland Strait, has an excellent harbour, and its position has much to do with its increasing importance. There is anchorage for the largest vessels land locked. The population numbers about 3,000, and there is a considerable export trade in produce, horses, cattle sheep, oysters, &c. Several wharfs extend from the town, the principal of which is the terminus of the Prince Edward Railway and steamboat line, and Queen's and Holman's wharfs.

During this fiscal year the dredge *Prince Edward* was concluding the work ordered at Summerside which had been in progress the past year. From July 1 to 31 it was engaged completing the channel towards wharfs to 14 feet low water spring tides. The material removed was sand, mud, &c., and the distance 1½ mile. The quantity of 10,305 cubic yards excavated in the time mentioned, and the dredge was then ordered to work at Hurd's Point wharf.

PROVINCE OF NEW BRUNSWICK.

DREDGING AT CHIPMAN.

Chipman is situated on the Salmon River, Queen's county. There are here extensive coal beds. Two new churches, two stores, saw mills, hotels, express company, &c., a population of about 200, and it is a place of some importance as a shipping centre and summer resort The fine side-wheel steamer *May Queen* connects it with St. John twice each week during open navigation. Chipman is the present terminus of the New Brunswick Central Railway. The dredge *New Dominion* was ordered here to deepen the channel where shoals existed in the river and to facilitate the navigation and lumber and produce shipment.

The work commenced June 15 and was in progress at end of year. By that time 6,175 cubic yards of mud, sand, &c., had been removed and deposited about 200 yards distant, leaving a depth of 9 feet at low water summer level.

DREDGING AT FREDERICTON.

Fredericton, York county, the capital of the province of New Brunswick, is situated on the St. John River and about 65 miles from St. John city, The river is navigable for sea-going vessels to Fredericton, and is a trade and manufacturing centre of some importance. Considerable lumber, produce, and manufactures are shipped. The river opposite the city is over half a mile wide. Fredericton has a population of over 7,000. It has received the attention of the department in the past in the dredging and improving the approach to and at the wharfs and in the channel;

and during the present fiscal year. The dredge *New Dominion* was employed August 30 to October 24 in the work, deepening to 11 feet low water summer level, the material was sand and gravel, and removed about two miles to deposit. In the time mentioned the quantity of 20,375 cubic yards were excavated, making very considerable improvement in the facilities for navigation of the locality.

DREDGING, GAGETOWN CANAL.

Gagetown, Queen's county, on the St. John River, about 50 miles from the city of St. John, is the shipping place for a considerable farming district. The river steamers call regularly. The dredging in the canal here is with a view of saving several miles in the navigation of the river.

The dredge *New Dominion* continued the work this year from July 1 to August 29, deepening to 10 feet and removing 20,625 cubic yards of clay, mud, sand and gravel, depositing about 1 mile away.

DREDGING AT JEMSEG.

The Jemseg, Queen's county, is an important affluent of the St. John River from Grand Lake, one of the most important waterways in the province. It enters the river about 49 miles above the city of St. John and has on it considerable navigation of steam and sailing vessels. The villages of Upper and Lower Jemseg on its bank are places of shipment of considerable produce. Much has been done by the department in deepening and improving the channel here, in the vicinity of its entrance to the St. John, and during the present year the dredge *New Dominion* operated here from October 25 to November 11, 1898, and June 6 to 14, 1899, deepening and straightening the channel and over shoals to 10 feet low water summer level and removing in that time 6,000 cubic yards of fine sand, and mud and depositing it at a distance of about two miles.

DREDGING AT MURCHIES MILL, ST. JOHN, N.B.

Murchies Mill is situated at St. John West, in proximity to the river, with an extensive lumber shipping wharf thereon. Application was made for the services of the dredge *New Dominion* to deepen and improve the loading facilities of the place.

Two days were occupied in the work, May 31 and June 1. The proprietors provided tug service and paid for the dredge work. Two hundred and seventy-five cubic yards of clay were removed, deepening to 20 feet at high water and leaving a level bottom. The material, clay, was deposited about $2\frac{1}{2}$ miles away.

DREDGING AT SPRINGHILL.

On the St. John River, about 7 miles above Fredericton, in York county and opposite Springhill, the channel shoals had the attention of the department in accordance with plan and survey made and the new clam shell dredge was sent here to operate. Arriving June 21, it got to work to deepen to $3\frac{1}{2}$ feet at low water summer level. The bottom was hard, packed gravel silt and fine sand and was difficult work, with the heavy current and the rafts of logs coming down river making the work dangerous. By June 30, when year closed, 700 cubic yards had been excavated and deposited at a distance of $\frac{5}{8}$ miles. The work is progressing.

DREDGING, WINTER PORT BERTHS, ST. JOHN, N.B.

At the eastern terminus of the Canadian Pacific Railway at West St. John, extensive and improved facilities for loading ocean steamers at deep water berths, from the

large grain elevators or with lumber, &c., have been provided and continue to be added to this important part of the harbour of St John.

Considerable dredging has been done here by the department, and during the present fical year a further amount by the dredge *Cape Breton*, deepening for berths and increased dockage by removal of old wharf, boulders, logs, &c. This work is hard at times and trying on the machinery. The depth required was 28 feet and the material was removed, to deposit, a distance of two miles to two and a half.

The dredge operated here from July 1 to 31, September 9 to November 20, 1898 (less 7 days in channel work), May 8 to May 18, and June 24 to 30, 1899, removing in this time 46,695 cubic yards. The work at the end of year still progressing.

DREDGING, HARBOUR CHANNEL, ST. JOHN, N.B.

This had the attention of the department with regard to a shoal place in it and the dredge *Cape Breton* made the attempt to dredge here, but the swell and undertow prevented work, the dredge not being of the kind for work of this nature. Between November 3, 1898, and January 8, 1899, several attempts were made alternating with work at winter port berths. Three thousand four hundred and thirteen cubic yards gravel were removed and deposited three-quarters of a mile distant; depth dredged 25 feet.

DREDGING—MARITIME PROVINCES.

CLASSIFICATION OF DISBURSEMENTS of Dredges operated by the Public Works Department, during the Year ended June 30, 1899.

DREDGE "ST. LAWRENCE."

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	483 33	483 33	498 95	498 12	472 30	483 33	482 99	792 38	273 33	273 33	435 24	483 33	5,659 96
Coal	165 92		493 16	243 05	137 95						297 75	220 80	1,558 63
Provisions	84 51	158 28	167 90	131 68	89 09	53 19	64 85	80 97	24 18	54 04	174 28	108 60	1,191 57
Stores		44 82				5 50				15 65	17 96	56 90	140 83
Equipment		11 00	10 00	43 05							19 20		83 25
Water		11 88		3 96	6 00						35 25	8 00	65 09
Repairs		117 74		208 16	4 79	297 85	219 82	123 93	18 53	107 99		872 60	1,971 41
Pilotage	52 00	54 00	52 00	73 00	66 00						70 00	65 00	432 00
Wharfage								506 84			138 00		644 84
Contingencies		60 00	14 23			11 21			13 35		7 00	19 73	125 52
Totals	785 76	941 05	1,236 24	1,201 02	776 13	851 08	767 66	1,504 12	329 39	451 01	1,194 68	1,834 96	11,873 10
Working expenses	785 76	823 31	1,236 24	992 86	771 34	553 23	12 78		310 86	343 02	1,194 68	962 36	7,986 44
Repairs, ordinary		117 74		208 16	4 79	297 85	114 28		18 53	11 10		712 53	1,484 98
D. V. repairs and wintering							640 60	1,504 12		96 89		160 07	2,401 68
Totals	785 76	941 05	1,236 24	1,201 02	776 13	851 08	767 66	1,504 12	329 39	451 01	1,194 68	1,834 96	11,873 10

DREDGE 'CANADA.'

Wages	403 00	403 00	403 00	401 01	394 78	409 42	393 94	206 67	187 00	356 21	455 00	403 00	4,416 03
Coal	85 00	48 00	102 02	230 57	162 01	44 40	95 84			30 46	205 48	347 68	1,351 46
Provisions	76 41	78 98	36 86	153 47	96 64	51 61	106 26				70 83	167 84	838 90
Stores			3 90	5 79	9 03	22 34	6 99			18 68	71 80	37 23	175 76
Equipment		10 00	11 30		23 38		22 06				21 08	79 42	167 24
Water		5 05		5 00	1 40		6 66						18 11
Repairs	4 15	22 46	34 26	47 71		222 14	201 87	148 57	272 63	315 14		300 11	1,569 04

Pilotage	52 00	58 00	52 00	67 00	52 00	54 00				26 00		52 00	413 00
Towage													
Wharfage			20 00	8 00			174 00						202 00
Contingencies	3 25	2 15	1 39	2 46	2 29	6 62	8 09		11 64		3 21	12 96	54 06
Totals	623 81	627 64	664 73	921 01	741 53	810 53	1,015 71	355 24	471 27	746 49	827 40	1,400 24	9,205 60
Working expenses	619 66	605 18	630 47	873 30	741 53	588 39	150 75	Nil.	198 64	431 35	827 40	1,100 13	6,766 80
Repairs, ordinary	4 15	22 46	34 26	47 71	Nil.	224 14	Nil.	Nil.	Nil.	315 14	Nil.	300 11	945 97
D. V. repairs and wintering	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	864 96	355 24	272 63	Nil.	Nil.	Nil.	1,492 83
Totals	623 81	627 64	664 73	921 01	741 53	810 53	1,015 71	355 24	471 27	746 49	827 40	1,400 24	9,205 60

DREDGE "NEW DOMINION."

Wages	370 00	370 00	370 00	370 00	291 05	101 35	95 00	181 25	396 89	383 13	158 14	372 15	3,458 96
Coal				72 00	12 83					10 71	120 40	107 63	323 57
Provisions	56 88	73 21	61 51	68 69							71 36	65 00	396 65
Stores			70		15 75						40 02	18 83	75 30
Equipment							35 30		10 89		27 58	18 26	92 03
Water											16 00	55 73	71 73
Repairs	4 72	100 28		29 71	51 44		6 49		201 54	167 50	114 22	383 56	1,059 46
Pilotage													
Towage	375 00	330 00	440 00	390 00	270 00						83 00	350 00	2,238 00
Wharfage													
Contingencies					3 22	10 43			2 94			12 74	29 33
Totals	806 60	873 49	872 21	930 40	644 29	111 78	136 79	181 25	612 26	561 34	630 72	1,383 90	7,745 03
Working expenses	801 88	773 21	872 21	900 69	592 85	111 78			410 72	393 84	516 50	1,000 34	6,374 02
Repairs, ordinary	4 72	100 28		29 71	51 44				31 79	167 50	114 22	383 56	883 22
D. V. repairs and wintering							136 79	181 25	169 75				487 79
Totals	806 60	873 49	872 21	930 40	644 29	111 78	136 79	181 25	612 26	561 34	630 72	1,383 90	7,745 03

DREDGING—MARITIME PROVINCES—*Continued.*

CLASSIFICATION OF DISBURSEMENTS of the Dredges operated by the Public Works Department during the Year ended June 30, 1899,—*Continued.*

DREDGE "PRINCE EDWARD."

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	369 11	367 88	366 50	363 76	366 50	269 40	149 21	135 00	233 25	189 34	303 92	391 50	3,505 37
Coal				347 48	120 11				5 27			155 85	623 44
Provisions	37 34	37 56	128 31	64 12	81 33	31 07	37 68				39 87	135 34	597 89
Stores	2 11		12 47	58 09		50 16	4 65					2 11	129 59
Equipment				60 44			3 85		11 00		76 90	360 30	512 49
Water	25 00	25 00	25 00	93 05	25 00	13 15					20 92		227 12
Repairs	9 34		73 68	155 49		210 66	15 16		42 97	10 60	172 62	1,471 60	2,162 12
Towage	721 25	675 00	150 00		1,650 00		275 00					1,050 00	4,521 25
Wharfage											51 68	1 00	52 68
Contingencies	3 73			27 66	7 50	1 57	27 65				2 00	17 18	87 29
Total	1,167 88	1,105 44	755 96	1,170 09	2,250 44	576 01	513 20	135 00	292 49	199 94	667 91	3,584 88	12,419 24
Working expenses	1,158 54	1,105 44	682 28	1,014 60	2,250 44	365 35	354 19		249 52	189 34	447 69	2,113 28	9,930 67
Repairs, ordinary	9 34		73 68	155 49		210 66	15 16			10 60	3 37	1,320 00	1,798 30
D. V. repairs and wintering							143 85	135 00	42 97		216 85	151 60	690 27
Total	1,167 88	1,105 44	755 96	1,170 09	2,250 44	576 01	513 20	135 00	292 49	199 94	667 91	3,584 88	12,419 24

DREDGE "GEO. McKENZIE."

Wages	367 75	384 25	381 15	381 50	367 64	170 25	140 00	135 00	566 00	735 25	376 35	384 00	4,389 14
Coal	27 60		189 00		1 50						4 00	72 80	294 90
Provisions	42 64	77 39	104 23	101 68	46 54						139 06	171 28	682 82
Stores		5 48			1 52		3 48				0 67	39 42	50 57
Equipment	243 96	27 44	6 00				19 00				190 90	280 20	767 50
Water	47 50	69 00	72 00	78 00									266 50
Repairs		132 73	23 29	2 00	4 85		15 49	20 50	67 52	18 09	121 25	1,389 48	1,795 20

Towage	575 00	825 00	695 00	660 00	421 68	16 00					625 00	915 00	4,732 68
Wharfage											38 75		38 75
Contingencies		7 74	18 29	6 61	14 82	11 34	42 17	2 10	10 28		15 71	17 64	146 70
Total	1,304 45	1,529 03	1,488 96	1,229 79	858 55	197 59	220 14	157 60	643 80	753 34	1,511 69	3,269 82	13,164 76
Working expenses	1,304 45	1,396 30	1,465 67	1,227 79	853 70	197 59	45 65		10 28	735 25	1,351 69	1,880 34	10,468 71
Repairs, ordinary		132 73	23 29	2 00	4 85		3 39			18 09	121 25	890 48	1,196 08
D. V. repairs and wintering							171 10	157 60	633 52		38 75	499 00	1,499 97
Total	1,304 45	1,529 03	1,488 96	1,229 79	858 55	197 59	220 14	157 60	643 80	753 34	1,511 69	3,269 82	13,164 76

DREDGE "CAPE BRETON."

Wages	450 00	423 38	419 72	452 47	499 84	523 51	307 19	180 00	208 92	262 41	416 59	441 63	4,585 66
Coal	150 31	56 70	88 34		96 08	53 55					87 50	104 48	636 96
Provisions	70 31	79 07	52 24	113 85		50 82	90 68				53 71	95 35	597 03
Stores	1 60		96 40	122 07	91 69		17 70				70 29	12 25	412 00
Equipment	27 00		31 50	95 10	115 38	220 03				8 00		8 75	505 76
Water						10 00				40 00			50 00
Repairs	934 42	711 08	1,082 70	43 55	64 12	105 98	83 64	125 60	613 32	198 86	43 50	913 15	4,919 92
Pilotage													
Towage		10 50		8 00	393 00	62 00	46 00				2 00	10 00	531 50
Wharfage							28 00						28 00
Contingencies				5 13		2 64		3 38				2 01	13 16
Totals	1,633 64	1,271 73	1,770 90	840 17	1,260 11	1,028 53	573 21	308 98	822 24	509 27	673 59	1,587 62	12,279 99
Working expenses	699 22	560 65	680 20	796 62	1,195 99	922 55	473 57		208 92	310 41	630 09	674 47	7,160 69
Repairs, ordinary	934 42	711 08	1,082 70	43 55	64 12	105 98	5 50		613 32	198 86	21 00	913 15	4,693 68
D.V. repairs and wintering							94 14	308 98			22 50		425 62
Totals	1,633 64	1,271 74	1,770 90	840 17	1,260 11	1,028 53	573 21	308 98	822 24	509 27	673 59	1,587 62	12,2 9 99

DREDGING—MARITIME PROVINCES—*Continued.*

CLASSIFICATION OF DISBURSEMENTS of the Dredges operated by the Public Works Department during the Year ended June 30, 1899—*Continued.*

DREDGE "CLAM SHELL DREDGE."

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages					58 50	46 50	46 50	42 00	46 50	45 00	61 20	188 06	534 26
Coal					17 50							32 83	50 33
Provisions												50 17	50 17
Stores					17 03						83 90	45 35	146 28
Equipment					31 02	60 62	21 80				207 83	440 01	761 28
Repairs					4 96							15 32	20 28
Towage						60 00						128 00	188 00
Contingencies					8 10						8 43	7 95	24 48
Totals					137 11	167 12	68 30	42 00	46 50	45 00	361 36	907 69	1,775 08
Working expenses					132 15	167 12	68 30	42 00	46 50	45 00	361 36	892 37	1,754 80
Repairs, ordinary					4 96							15 32	20 28
Totals					137 11	167 12	68 30	42 00	46 50	45 00	361 36	907 69	1,775 08

DREDGING—MARITIME PROVINCES—*Continued.*

CLASSIFICATION AND QUANTITIES of Material removed by Dredges operated by the Public Works Department, during the Year ended June 30, 1899.

DREDGE "ST. LAWRENCE."

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.
Hard-pan	90												90
Clay and gravel	5,600	5,600		1,750									12,950
Mud and stone			2,100										2,100
Mud	7,000	7,000	8,400	350	8,400						8,750	15,750	55,650
Totals	12,690	12,600	10,500	2,100	8,400						8,750	15,750	70,790

DREDGE "CANADA."

Mud and shells					4,230	3,420				4,410	6,840	4,350	23,250
Mud and sand	990		8,550	3,690									13,230
Clay and gravel		1,170											1,170
Mud and slate				810									810
Mud	6,480	5,940		990	1,170								14,580
Totals	7,470	7,110	8,550	5,490	5,400	3,420				4,410	6,840	4,350	53,040

DREDGE "NEW DOMINION."

Sand					1,150							2,750	3,900
Clay	8,800	9,475									175	100	18,550
Sand and gravel		100	12,600	7,675									20,375
Sand and sawdust				1,600	2,025								3,625
Mud and sand	2,300	50										5,250	7,600
Totals	11,100	9,625	12,600	9,275	3,175						175	8,100	54,050

DREDGING—MARITIME PROVINCES—*Concluded.*

CLASSIFICATION AND QUANTITIES of Material removed by Dredges operated by the Public Works Department, during the Year ended June 30, 1899.

DREDGE "PRINCE EDWARD."

Description of material dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c, yds.	c. yds.	c. yds.	c. yds.
Hard-pan						1,327							1,327
Sand and stone						698						1,000	1,698
Sand				1,147	518								1,665
Clay and mud		11,880	3,240										15,120
Sand, stone and mud					2,250								2,250
Mud and sand	10,305		3,105	1,643	2,247						1,845	4,051	23,196
Mud				3,982	1,802								5,784
Totals	10,305	11,880	6,345	6,772	6,817	2,025					1,845	5,051	51,040

DREDGE "GEO. McKENZIE."

Hard-pan	135										300	255	690
Boulders, stone and logs	1,450										485	250	2,185
Gravel, mud and stone		5,470	3,790	6,165	1,140								16,565
Clay		620	500										1,120
Sand, ordinary	810	2,000										1,550	4,360
Sand and rock	90										700	500	1,290
Mud		670	3,200	320	1,280								5,470
Totals	2,485	8,760	7,490	6,485	2,420						1,485	2,255	31,680

DREDGE "CAPE BRETON."

Boulders, rock and clay				1,810	735						5,665	1,000	9,210
Gravel and sand					2,783	630							3,413
Mud			2,490		210						3,000	1,980	7,680
Logs				1,420									1,420
Mud, edgings and logs	15,245		10,570	2,770									28,585
Totals	15,245		13,060	6,000	3,728	630					8,665	2,980	50,308

DREDGE "CLAM SHELL."

Gravel and hard-pan												700	700
Totals												700	700

DREDGING—MARITIME PROVINCES—*Continued.*

Details of Dredging Operations for Fiscal Year ended June 30, 1899.

Dredge.	Locality.	Dates.	Time, actual Dredging.		Quantity, Cubic Yards	Expenditure at Locality.	Wintering, repairs, equip't and superintendence, *pro rata.*†	Total Cost.	Rate per cubic yard based on Total Expenditure
			H'rs.	Min's.		$	$	$	$ cts.
St. Lawrence	Yarmouth, Yarmouth Co., N.S.	July 1 to Oct. 18, 1898...	199	40	37,890	3,187 65	3,683 53	6,871 18	0 18·13
"	Halifax, I. C. Ry. docks, N.S.	Oct. 19 to Nov. 19, 1898..	43	20	8,400	1,033 67	1,194 46	2,228 13	0 26·52
"	Pictou Railway wharf, N.S.	May 15 to June 21, 1899.	82	5	19,250	1,367 52	1,580 22	2,947 74	0 15·31
"	Dwyer's wharf, Pictou, N.S.	June 22 to 27, 1899	13	..	3,150	192 50	222 44	414 94	0 13·17
"	Pictou Landing, N.S.	" 28 to 30, 1899	9	15	2,100	110 22	127 36	237 58	0 11·32
Canada	Barrington Passage, Shelburne Co., N.S.	Bet. July 1 & 23 1898, alternately	42	38	3,420	390 53	208 35	598 88	0 23·04
"	Sherrow's channel and steamboat wharf, N.S.	Bet. July 1 & Aug. 17,'98	105	58	9,090	700 37	373 65	1,074 02	0 17·51
"	Wood's Harbour & steamboat wharf, N.S.	Aug. 18 to 24, 1898	16	20	1,170	160 06	85 39	245 45	0 11·81
"	Lockeport steamboat wharf, N.S.	Aug. 27 to Oct. 14, 1898.	156	36	13,140	1,231 82	657 19	1,889 01	0 20·98
"	Yarmouth, Yarmouth Co., N.S.	Oct. 17 to Dec. 31, 1898, & April 11 to June 21,'99	269	29	26,220	3,939 12	2,101 66	6,040 78	0 14·37
New Dominion	Grimross Canal, Gagetown, Queen's Co., N.B.	July 1 to Aug. 29, 1898..	376	..	20,625	1,677 71	1,110 40	2,788 11	0 13·51
"	Fredericton, York Co., N.B.	Aug. 30 to Oct. 24, 1898..	385	..	20,375	1,644 22	1,088 22	2,732 44	0 13·41
"	Jemseg, Queen's Co., N.B.	Oct. 25 to Nov. 11, 1898, & June 6 to 14, 1899...	162	..	6,600	902 73	597 47	1,500 20	0 24·24
			8	..	275	*53 50	35 40	88 90	0 32·32
"	Murchie Mill, St. John, N.B.	May 31 to June 1, 1899..							
"	Chipman, Queen's Co., N.B.	June 15 to 30, 1899.....	127	15	6,175	706 72	467 77	1,174 49	0 19·02
Prince Edward	Summerside, Prince Co., P.E.I.	July 1 to 31, 1899.....	177	..	10,305	1,206 17	1,932 65	3,138 82	0 30·46
"	Hurd's Point pier	Aug. 1 to Sept. 14, 1898.	313	40	18,225	1,776 90	2,847 14	4,624 04	0 25·37
"	Charlottetown, P.E.I., railway wharf..	Sept. 28 to Nov. 12, Nov. 29 to Dec. 12, May 23 to June 30, 1899.....	510	6	19,630	1,860 56	2,981 17	4,841 73	0 24·66
"	" sewerage...	Nov. 14 to 28, 1898.....	48	20	2,880	*260 97	418 15	679 12	0 23·58
Geo. McKenzie	Arisaig, Antigonish Co., N.S.	July 1 to 30, 1898.....	120	..	2,485	1,039 21	804 25	1,843 46	0 74·18
"	Harbour au Bouche, N.S.	July 31 to Nov. 14, 1898.	514	30	25,155	4,453 31	3,446 47	7,899 78	0 31·40
"	Mulgrave Station, Guysboro Co., N.S.	May 9 to 17, 1899.....	54	..	815	420 00	325 03	745 03	0 91·41
"	Port Hood, Inverness Co., N.S.	May 22 to June 19, 1899.	95	..	2,800	1,330 89	1,030 00	2,360 89	0 84·31
"	Grand Etang, Inverness Co., N.S.	June 27 to 30, 1899.....	9	..	425	694 48	537 46	1,231 94	2 89·86
Cape Breton	St. John Harbour, winter berths, N.B.	July 1 to 31, Sept. 29 to Nov. 20, less 7 days on harbour channel, May 8 to 18 and June 24 to 30, 1899.....	383	30	46,895	*2,635 50	5,435 37	8,070 87	0 17·21

"	"	channel, N.B.	Bet. Nov. 3 and Jan. 8 (time divided with wr. berths)	25	30	3,413	†1,653 60	3,410 32	5,063 92	1 48·37
Clam Shell	Springhill, St. John River, York Co., N.B.		June 21 to 30, 1899	46	..	700	255 77	50 00	305 77	0 43·68
"	Equipment								1,591 12	
						311,608			73,228 34	0 23·50

* Tug hire not included; not provided by department. † Two tugs employed by department.

DREDGING—MARITIME PROVINCES—*Continued.*

EXPENDITURE FOR DREDGING in Nova Scotia for the twenty-seven Years ended June 30, 1899.

County.	Locality.	Total for the twenty-six Years ended June 30, 1899.			For the Year 1898-9.			Total Quantity.	Total Cost.	Total cost for each County.
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.			
		c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.
Antigonish	Antigonish	22,025	3,649 15					22,025	3,649 15	
	Harbour au Bouche	10,568	2,498 48		25,155	7,899 78		35,723	10,398 26	
	Tracadie	12,245	5,530 29					12,245	5,530 29	
	McNair's Cove	11,265	10,035 68					11,265	10,035 68	
	Bayfield	12,871	9,505 79					12,871	9,505 79	
	Arisaig	5,745	5,608 80	36,828 19	2,485	1,843 46	9,743 24	8,230	7,452 26	46,571 43
Annapolis	Annapolis	2,825	1,635 68	1,635 68				2,825	1,635 68	1,635 68
Cape Breton	Lingan	22,267	9,275 56					22,267	9,275 56	
	Sydney	54,600	17,781 54					54,600	17,781 54	
	Little Glace Bay	46,450	16,936 02					46,450	16,936 02	
	Port Caledonia	17,413	8,242 21					17,413	8,242 21	
	Benacadie Pond	20,860	5,993 90					20,860	5,993 90	
	Christmas Island	19,045	3,364 98					19,045	3,364 98	
	Cow Bay	3,255	1,892 32					3,255	1,892 32	
	Main à Dieu	4,680	2,720 76	66,207 29				4,680	2,720 76	66,207 29
Colchester	Tatamagouche	65,480	20,373 07	20,373 07				65,480	20,373 07	20,373 07
Cumberland	Parrsboro'	42,595	12,804 68					42,595	12,804 68	
	Wallace	93,865	24,140 37	36,945 05				93,865	24,140 37	36,945 05
Digby	Digby	12,585	5,056 29					12,585	5,056 29	
	Weymouth	88	28 62	5,084 91				88	28 62	5,084 91
Guysboro'	Guysboro'	5,400	1,413 53					5,400	1,413 53	
	Larry's River	47,655	16,519 85					47,655	16,519 85	
	Port Mulgrave	3,532	1,749 78		815	745 03		4,347	2,494 81	
	Sherbrooke	1,260	496 49	20,179 65			745 03	1,260	496 49	20,924 68
Halifax	Chezzetcook	3,920	2,593 71					3,920	2,593 71	
	Halifax Ferry	6,177	2,063 38					6,177	2,063 38	
	Herring Cove	26,101	12,049 68					26,101	12,049 68	
	Ketch Harbour	4,227	1,690 53					4,227	1,690 53	
	Richmond wharf	792	182 53					792	182 53	
	Roche's wharf	1,750	620 28					1,750	620 28	
	Halifax Railway, terminus	19,290	6,187 38		8,400	2,228 13		27,690	8,415 51	
	Jeddore	21,515	4,958 56					21,515	4,958 56	
	North-west Arm	7,350	2,970 39					7,350	2,970 39	
	Cunard's wharf	1,400	530 04					1,400	530 04	
	Salmon River	14,288	5,962 93					14,288	5,962 93	
	Spry Bay	10,665	3 075 72					10,665	3,075 72	

	Eastern Passage	2,070	596 97					2,070	596 97	
	Sambro	4,815	1,388 61	44,870 71			2,228 13	4,815	1,388 61	47,098 84
Inverness	Whycocomagh	19,760	3,491 31					19,760	3,491 31	
	Campbell's Pond	4,940	872 83					4,940	872 83	
	Port Hastings	270	190 37					270	190 37	
	Cheticamp	170,740	52,863 40					170,740	52,863 40	
	Mabou	128,347	49,126 92					128,347	49,126 92	
	Port Hood	4,353	1,258 92	107,803 75	2,800	2,360 89		7,153	3,619 81	
	Grand Etang				425	1,231 94	3,592 83	425	1,231 94	111,396 58
Lunenburg	Lunenburg	70,510	22,194 57					70,510	22,194 57	
	Mahone Bay	21,844	5,958 65					21,844	5,958 65	
	Vogler's Cove	11,610	5,075 53	33,228 75				11,610	5,075 53	33,228 75
Pictou	Acadia Coal Co. wharf	12,310	4,093 81					12,310	4,093 81	
	Albion Mines	9,475	2,181 25					9,475	2,181 25	
	East River	144,407	47,696 43					144,407	47,696 43	
	Halifax Coal Co. wharf	1,650	359 90					1,650	359 90	
	Pictou public wharf	7,020	1,634 82					7,020	1,634 82	
	" market wharf	78,250	21,687 04					78,250	21,687 04	
	" railway wharf	32,164	9,959 34		19,250	2,947 74		51,414	12,907 08	
	" landing wharf	7,345	2,880 01		2,100	237 58		9,445	3,117 59	
	" Steam Ferry Co. slip	720	246 18					720	246 18	
	Vale Colliery	1,395	682 15					1,395	682 15	
	River John	85,173	22,243 98					85,173	22,243 98	
	Granton	25,110	10,707 59					25,110	10,707 59	
	New Glasgow	35,445	11,795 79					35,445	11,795 79	
	Middle River	15,060	4,984 40					15,060	4,984 40	
	C. Dwyer's wharf	2,250	672 72		3,150	414 94		5,400	1,087 66	
	" Berth for ss. *Campana*	5,850	2,000 22					5,850	2,000 22	
	Dwyer & Co.'s wharf	360	123 09	143,948 72			3,600 26	360	123 09	147,548 98
Queens	Liverpool	33,730	9,960 70					33,730	9,960 70	
	Port Mouton	10,620	2,283 77	12,244 47				10,620	2,283 77	12,244 47
Richmond	D'Escousse	23,650	10,052 76					23,650	10,052 76	
	St. Peter's Canal	90,830	27,435 95					90,830	27,435 95	
	St. Peter's	7,150	2,407 41					7,150	2,407 41	
	Grand Goulet	23,584	5,570 49					23,584	5,570 49	
	River Bourgeois	18,920	4,468 87					18,920	4,468 87	
	Marine slip	320	56 53					320	56 53	
	Poulement	10,080	2,566 14					10,080	2,566 14	
	Fourchu Harbour	16,875	9,454 94	62,013 09				16,875	9,454 94	62,013 09
Shelburne	Lockeport	62,218	16,137 85		13,140	1,889 01		75,358	18,026 86	
	Barrington Pass	37,360	12,524 43		3,420	598 88		40,780	13,123 31	
	Osborne	990	145 31	28,807 59				990	145 31	
	Wood's Harbour				1,170	245 45		1,170	245 45	
	Barrington Pass and Sherrows Channel				9,090	1,074 02	3,807 36	9,090	1,074 02	32,614 95
Yarmouth	Yarmouth	259,477	73,179 34	73,179 34	64,110	12,911 96	12,911 96	323,587	86,091 30	86,091 30
Hants	Windsor	5,450	1,627 60	1,627 60				5,450	1,627 60	1,627 60
Victoria	Aspey Bay	3,820	1,569 95	1,569 95				3,820	1,569 95	1,569 95
Dredge *C. B.* losses			762 98	762 98					762 98	762 98
		2,164,366	697,310 79	697,310 79	155,510	36,628 81	36,628 81	2,319,876	733,939 60	733,939 60

DREDGING—MARITIME PROVINCES—*Continued.*

EXPENDITURE FOR DREDGING in Prince Edward Island for the twenty-seven Years ended June 30, 1899.

County.	Locality.	For the twenty-six Years ended June 30, 1898.			For the Year 1898-9.			Total Quantity.	Total Cost.	Cost for each County.
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.			
		c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.
King's	Grand River	76,170	15,304 04					76,170	15,304 04	
	Montague River	132,480	22,819 11					132,480	22,819 11	
	Murray Harbour, south	99,453	17,638 73					99,453	17,638 73	
	Sturgeon	16,026	6,066 27					16,026	6,066 27	
	St. Mary's wharf	21,963	4,752 55					21,963	4,752 55	
	Georgetown Railway wharf	1,002	408 32					1,002	408 32	
	Cardigan bridge	35,955	8,619 36					35,955	8,619 36	
	Newport	3,240	917 82					3,240	917 82	
	Souris	3,825	1,083 53	77,609 73				3,825	1,083 53	77,609 73
Queen's	Charlottetown Railway wharf	60,018	16,159 82		19,630	4,841 73		79,648	21,001 55	
	" Pownal wharf	14,193	2,963 50					14,193	2,963 50	
	" Ferry	10,075	2,006 99					10,075	2,006 99	
	" Steam Nav. Co.	13,113	5,491 77					13,113	5,491 77	
	" Connolly wharf	9,978	4,409 68					9,978	4,409 68	
	" Peake Bros.	12,195	5,362 46					12,195	5,362 46	
	" Queen Street slip	3,915	1,109 03					3,915	1,109 03	
	" Geo. Peake's wharf	5,805	1,644 42					5,805	1,644 42	
	" Poole's wharf	6,435	1,405 95					6,435	1,405 95	
	" McMillan's wharf	6,165	1,320 13					6,165	1,320 13	
	" Dom. building sewer	5,355	1,146 68					5,355	1,146 68	
	Webster's Corner, East River	203	43 47					203	43 47	
	Crapaud, Victoria	109,652	31,747 99					109,652	31,747 99	
	Pownal Bay	33,610	6,536 20					33,610	6,536 20	
	Rocky Point	82,920	13,426 13					82,920	13,426 13	
	Vernon River	17,860	6,326 72					17,860	6,326 72	
	Wood Islands	2,780	548 00					2,780	548 00	
	Nine-Mile Creek	31,650	6,286 46					31,650	6,286 46	
	Hickey wharf	750	150 51					750	150 51	
	Carr's Point	12,165	2,441 28					12,165	2,441 28	
	Pinette	3,825	756 24					3,825	756 24	
	Fort Augustus	3,195	631 68					3,195	631 68	
	Southport Ferry	45,300	7,508 75					45,300	7,508 75	
	Red Point	7,161	3,879 60					7,161	3,879 60	
	North Rustico	13,536	4,775 38					13,536	4,775 38	

	South Rustico	*11,649*	*4,109 67*					*11,649*	*4,109 67*		
	Gauthier's Creek	*17,847*	*8,305 50*	*140,494 01*				*17,847*	*8,305 50*		
	Charlottetown public sewerage				2,880	679 12	5,520 85	2,880	679 12	146,014 86	
Prince	Summerside	46,181	14,273 97		10,305	3,138 82		56,486	17,412 79		
	Hurd's Point pier	41,070	7,289 95		18,225	4,624 04		59,295	11,913 99		
	Tignish	11,387	13,005 45					11,387	13,005 45		
	Cascumpec	1,157	538 42					1,157	538 42		
	Cape Traverse	16,740	5,105 89					16,740	5,105 89		
	Holman's wharf	9,585	1,269 21	41,482 89			7,762 86	9,585	1,269 21	49,245 75	
		1,057,584	259,586 63	259,586 63	51,040	13,283 71	13,283 71	1,108,624	272,870 34	272,870 34	

DREDGING—MARITIME PROVINCES—*Continued.*

EXPENDITURE FOR DREDGING in New Brunswick for the twenty-seven Years ended June 30, 1899.

County.	Locality.	For the twenty-six Years ended June 30, 1898.			For the Year 1898-9.			Total Quantity.	Total Cost.	Cost for each County.
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.			
		c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.
Gloucester	Bathurst	98,637	29,095 79	29,095 79				98,637	29,095 79	29,095 79
Kent	Richibucto	140,228	44,001 19					140,228	44,001 19	
	Cocagne	27,180	9,601 45					27,180	9,601 45	
	Buctouche	13,005	4,934 24					3,005	4,934 24	
	" Priest's Point	3,510	1,110 70					3,510	1,110 70	
	" Chapel Point	4,140	1,310 07					4,140	1,310 07	
	" Robertson's Wharf	45	14 23	60,971 88				45	14 23	60,971 88
Kings	Bellisle Point	60,170	8,156 76					60,170	8,156 76	
	Kennebecasis River	116,270	20,081 83					116,270	20,081 83	
	Moss Glen	10,200	1,924 47	30,163 06				10,200	1,924 47	30,163 06
Northumberland	Horse Shoe, Miramichi	208,892	55,058 36					208,892	55,058 36	
	Outer Bar "	29,935	7,965 31					29,935	7,965 31	
	Grand Dune "	37,975	10,121 67					37,975	10,121 67	
	Gordon Flats "	22,425	4,403 95	77,549 29				22,425	4,403 95	77,549 29
Queens	Grand Lake	93,555	16,372 96					93,555	16,372 96	
	" McManus' Cove	20,440	4,522 82					20,440	4,522 82	
	Jemseg	76,430	14,791 76		6,600	1,500 20		83,030	16,291 96	
	Washademoak	48,975	6,340 83					48,975	6,340 83	
	Grimross, Mid-ground	12,040	3,274 99					12,040	3,274 99	
	Gagetown Creek Canal	12,965	3,180 88		20,625	2,788 11		33,590	5,968 99	
	Spoon Island	3,000	402 51	48,886 75				3,000	402 51	
	Chipman				6,175	1,174 49	5,462 80	6,175	1,174 49	54,349 55
Restigouche	Dalhousie	22,301	6,543 08					22,301	6,543 08	
	Traverse	110,810	21,415 93	27,959 01				110,810	21,415 93	27,959 01
St. John	Intercolonial Railway terminus	159,472	41,553 75					159,472	41,553 75	
	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	1,615	192 83					1,615	192 83	
	Long wharf	7,137	2,680 24					7,137	2,680 24	
	Miller & Woodman's	9,275	1,090 42					9,275	1,090 42	
	Hayford & Stetson	8,015	942 29					8,015	942 29	
	International wharf	450	52 90					450	52 90	
	Adams' wharf	7,513	3,247 29					7,513	3,247 29	

	Anchor Line wharf	4,695	996 81					4,695	996 81	
	Dominion Atlantic Railway wharf	15,525	4,484 72					15,525	4,484 72	
	St. John Winter Berths	193,318	29,455 26		46,895	8,070 87		240,213	37,526 13	
	" harbour channel				3,413	5,063 92		3,413	5,063 92	
	Purvus-Murchie Mill	400	53 67		275	88 90		675	142 57	
	McAvity wharf	2,640	270 98					2,640	270 98	
	Lawton's "	570	101 46					570	101 46	
	Thorne "	1,980	249 02					1,980	249 02	
	Maritime Nail Co. wharf	1,425	224 52					1,425	224 52	
	Cushing Mill	20,850	1,222 86	103,931 86			13,223 69	20,850	1,222 86	117,155 55
Sunbury	Oromocto	287,873	55,775 79					287,873	55,775 79	
	McLean's wharf	625	181 59	55,957 38				625	181 59	55,957 38
Westmorland	Point du Chêne	92,925	27,599 90	27,599 90				92,925	27,599 90	27,599 90
York	Fredericton	94,695	16,918 89		20,375	2,732 44		115,070	19,651 33	
	St. Mary's Ferry	15,570	6,827 36					15,570	6,827 36	
	Gibson	30,395	4,379 52					30,395	4,379 52	
	Naashwaak	1,600	435 22					1,600	435 22	
	Fisher & Chestnut Shoals	8,200	1,547 12					8,200	1,547 12	
	Canada Eastern Railway wharf	3,250	938 82	31,046 93				3,250	938 82	
	Springhill				700	305 77		700	305 77	
	Clam Shell dredge, equipment					1,591 12	4,629 33		1,591 12	35,676 26
		2,222,240	493,161 85	493,161 85	105,058	23,315 82	23,315 82	2,327,298	516,477 67	516,477 67

Expenditure for Dredging in Quebec for the twenty-seven Years ended June 30, 1899.

From Appropriations, Maritime Provinces.

County.	Locality	For the twenty-seven Years ended June 30, 1898.			For the Year 1898-9.			Total Quantity.	Total Cost.	Cost for each County.
		Quantity.	Cost.	Cost for County.	Quantity.	Cost.	Cost for County.			
		c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.
Magdalen Islands, Co. Gaspé	House Harbour	6,800	2,392 92		Nil	Nil	Nil	6,800	2,392 92	
	Amherst Harbour	495	242 05	2,634 97	"	"	"	495	242 05	2,634 97
Temiscouata	River du Loup	2,587	825 47	825 47	"	"	"	2,587	825 47	825 47
Rimouski	Rimouski	8,123	3,997 59	3,997 59	"	"	"	8,123	3,997 59	3,997 59
		18,005	7,458 03	7,458 03				18,005	7,458 03	7,458 03

STATEMENT showing Quantities of Material removed and Cost of Work done in each Province, for the twenty-seven Years ended June 30, 1899.

FISCAL YEAR.	NOVA SCOTIA.		PRINCE EDWARD ISLAND.		NEW BRUNSWICK.		QUEBEC.		Total Quantity.	Total Expenditure	Cost per Cubic Yard.
	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.			
	c. yds.	$ cts.	c. yds.	$ cts.	c. yds.	$ cts.	c. yds.	$ cts.	c. yds.	$ cts.	$ cts.
1872-3	23,260	8,422 70	.....	.....	38,060	13,240 50	.....	.....	61,320	21,663 20	0 35·328
1873-4	18,600	6,545 61	.....	.....	57,725	14,395 57	6,800	2,392 92	83,125	23,334 10	0 28·071
1874-5	24,416	13,238 83	18,655	9,892 89	78,223	17,325 05	.....	.....	121,294	40,456 77	0 33·354
1875-6	91,974	21,885 90	58,283	10,891 80	79,935	17,040 52	.....	.....	230,192	49,818 22	0 21·642
1876-7	127,785	34,846 74	74,460	12,758 27	97,690	23,161 90	.....	.....	299,935	70,766 91	0 23·594
1877-8	106,857	29,607 94	82,860	12,011 18	81,070	23,323 92	.....	.....	270,787	64,943 04	0 23·983
1878-9	116,307	28,267 59	46,490	9,164 07	132,555	27,400 22	.....	.....	295,352	64,831 88	0 21·951
1879-80	127,684	34,765 84	36,390	12,674 98	63,540	16,581 79	765	374 08	228,379	64,396 69	0 28·197
1880-1	87,118	23,061 64	46,335	9,298 53	44,315	12,385 85	2,317	693 44	180,085	45,439 46	0 25·232
1881-2	89,566	33,363 71	47,325	9,356 57	79,640	18,626 87	.....	.....	216,531	61,347 15	0 28·331
1882-3	143,616	42,996 93	68,535	11,080 37	48,565	13,422 70	.....	.....	260,716	67,500 00	0 25·890
1883-4	157,560	49,050 58	79,750	13,355 05	47,058	17,103 38	.....	.....	284,368	79,509 01	0 27·959
1884-5	76,164	25,250 73	55,075	8,668 01	128,997	24,460 35	8,123	3,997 59	268,359	62,376 68	0 23·242
1885-6	56,790	21,482 05	17,137	10,349 66	68,505	14,874 63	.....	.....	142,432	46,706 34	0 32·792
1886-7	53,400	25,621 19	6,137	6,214 74	69,440	11,452 86	.....	.....	128,977	43,288 79	0 33·56
1887-8	84,175	29,847 60	3,775	5,899 90	50,152	9,252 50	.....	.....	138,102	45,000 00	0 32·58
1888-9	56,910	32,697 00	24,240	15,502 95	63,633	16,598 08	.....	.....	144,783	64,798 03	0 27·29
1889-90	59,783	22,821 55	31,422	11,085 39	86,068	20,544 93	.....	.....	177,273	54,451 87	0 30·71
1890-1	61,698	24,386 57	19,004	8,843 92	96,588	20,375 06	.....	.....	177,290	53,605 55	0 30·23
1891-2	81,993	27,376 08	31,382	12,788 34	75,023	20,592 85	.....	.....	188,398	60,757 27	0 32·249
1892-3	40,834	18,125 58	66,585	15,112 83	108,035	23,742 26	.....	.....	215,454	56,980 67	0 26·44
1893-4	59,581	28,664 99	61,536	12,269 24	77,505	21,564 27	.....	.....	198,622	62,498 50	0 31·46
1894-5	105,463	32,202 70	48,060	10,428 90	59,715	13,630 11	.....	.....	213,238	56,261 71	0 26·38
1895-6	36,428	15,828 89	36,360	10,299 93	98,905	21,352 63	.....	.....	171,693	47,481 45	0 27·65
1896-7	84,735	22,080 46	51,078	10,937 62	203,975	34,050 86	.....	.....	339,788	67,068 94	0 19·73
1897-8	147,085	31,497 57	46,710	10,701 49	187,325	27,611 17	.....	.....	381,120	69,810 23	0 18·31
1898-9	155,510	36,628 81	51,040	13,283 71	105,058	23,315 82	.....	.....	311,608	73,228 34	0 23·50
	2,275,292	720,565 78	1,108,624	272,870 34	2,327,300	517,426 65	18,005	7,458 03	5,729,221	1,518,320 80	0 26·50

STATEMENT showing the Quantities of Material removed and Cost of Work done in each Province, by hand dredging, for the twenty-seven Years ended June 30, 1899.

FISCAL YEAR.	NOVA SCOTIA.		PRINCE EDWARD ISLAND.		NEW BRUNSWICK.		QUEBEC.		Total Quantity.	Total Expenditure	Cost per Cubic Yard.
	Quantity.	Cost.	Quantity	Cost.	Quantity.	Cost.	Quantity.	Cost.			
	c. yds.	$ cts.	c. yds.	$ cts.	c. yds.	$ cts.	c. yds.	$ cts.	c. yds.	$ cts.	$ cts.
1878-9	245	555 13							245	555 13	2 26·58
1879-80	12,370	3,666 90							12,370	3,666 90	0 29·64
1880-1	11,140	2,560 25							11,140	2,560 25	0 22·98
1881-2	10,640	2,650 00							10,640	2,650 00	0 24·90
1882-3	8,190	2,500 00							8,190	2,500 00	0 30·52
1883-4	5,460	2,500 00							5,460	2,500 00	0 45·78
1884 to 1899	Nil.	Nil.							Nil.	Nil.	
	48,045	14,432 28							48,045	14,432 28	0 30·03

STATEMENT showing quantities of Material removed by, and Expenditure of each Dredge during the twenty-seven years ended June 30, 1899.

Dredge.	Total quantities and cost for twenty-six Years ended June 30, 1898.			Fiscal Year 1898-9.			Total for twenty-seven Years ended June 30, 1899.		
	Total Quantity.	Total cost.	Cost per cubic yard.	Quantity.	Total cost.	Cost per cubic yard.	Total Quantity.	Total cost.	Cost per cubic yard.
	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.
St. Lawrence	1,146,449	320,909 70	0 27·99	70,790	12,699 57	0 17·93	1,217,239	333,609 27	0 27·40
Canada	773,179	251,322 36	0 32·50	53,040	9,848 14	0 18·56	826,219	261,170 50	0 31·61
New Dominion	1,178,655	218,324 49	0 18·52	54,050	8,284 14	0 15·32	1,232,705	226,608 63	0 18·38
Prince Edward	1,051,674	256,231 67	0 24·36	51,040	13,283 71	0 26·02	1,102,714	269,515 38	0 24·44
Cape Breton (old)	534,938	139,074 33	0 25·99	.....	.....	.....	534,938	139,074 33	0 25·99
Geo. McKenzie	573,910	226,766 11	0 39·51	31,680	14,081 10	0 44·45	605,590	240,847 21	0 39·77
Cape Breton	147,243	25,966 21	0 17·63	50,308	13,134 79	0 26·08	197,551	39,101 00	0 19·79
Clam Shell	.....	.....	.....	700	1,896 89	2 70·98	700	1,896 89	2 70·98
	5,406,048	1,438,594 87	0 26·61	311,608	73,228 34	0 23·50	5,717,656	1,511,823 21	0 26·44

STATEMENT showing quantities of Material removed by hand dredging and Expenditure incurred at each locality for twenty-seven years ended June 30, 1899.

Locality.	Fiscal Year 1898-9.			Total for twenty-seven Years ended June 30, 1899.		
	Quantity.	Total cost.	Cost per cubic yard.	Total Quantity.	Total cost.	Cost per cubic yard.
	c. yds.	$ cts.	$ cts.	c. yds.	$ cts.	$ cts.
Parrsboro', N.S.	Nil	Nil	Nil	42,595	12,804 68	0 30·06
Windsor, N.S	Nil	Nil	Nil	5,450	1,627 60	0 29·86
				48,045	14,432 28	0 30·03

PROVINCE OF QUEBEC.

RIVER ST LAWRENCE SHIP CHANNEL.

The River St. Lawrence ship channel, between Montreal and Quebec, is 160 miles in length. Of this 110 miles is natural deep water and 50 miles dredged channel.

The river bed is chiefly of a hard character and not affected by the current. In only two places, where the shoals are of sand, does the channel fill up and require redredging.

The channel through Lake St. Peter is 18 miles in length. It was deepened from $10\frac{1}{2}$ feet to $27\frac{1}{2}$ feet at ordinary low water. No dredging has been done in Lake St. Peter for 12 years.

The extraordinary increase in the size of the vessels using this channel makes it absolutely necessary that it should be enlarged.

The work during the fiscal year consisted of general widening, deepening and straightening in the places most required, and further dredging near Quebec where advantage has heretofore been taken of the tide.

The reconstruction and improvement of the plant for the deeper and heavier work was continued.

A hydrographic survey is in progress to enable a better and more complete chart of the river to be made.

The constant testing and supervision of the channel was again maintained. No accident took place that could be attributed to the fault of the channel.

The total cost of the ship channel including plant, up to the end of the fiscal year was $5,253,838.87, and the quantity dredged in cubic yards amounted to 23,424,376.

For the fiscal year the cost was, for dredging $79,590.09, and plant $206,102.74, while the quantity dredged was 474,753 cubic yards.

Five elevator dredges were employed during the fiscal year ended June 30, 1899.

DREDGE 'LAURIER.'

The dredge *Laurier* continued working on the northern half of the channel at Ste. Croix, from July 1 to October 14, 1898, removing 88,475 cubic yards of sand and stones, at a cost of $10\frac{3}{100}$ cents per cubic yard, when she was removed to Pointe Citrouille, working there twenty-one days and removing 8,950 cubic yards of clay and sand, at a cost of $22\frac{26}{100}$ cents per cubic yard.

This dredge was then taken to Poullier Varennes, where she worked until November 22, when she was taken into winter quarters at Sorel.

Operations were resumed at Poullier Varennes on May 6, 1899, and continued there up to the close of the fiscal year, removing 115,500 cubic yards of hard clay and stones, at a cost of $5\frac{26}{100}$ cents per cubic yard.

DREDGE 'LAVAL.'

On July 1, 1898, the dredge *Laval* was engaged on the south half of the channel, at Lotbinière and continued there up to July 18, when she completed the 500 foot channel through the Barre à Boulard to a depth of 29 feet at low water.

The total quantity of material removed was 4,174 cubic yards of stones and large boulders, at a cost of $37\frac{87}{100}$ cents per cubic yard.

The plant was then removed to Cap Santé, and dredged there up to November 22, when she was taken to winter quarters.

In the spring of 1899 the work was proceeded with by the dredge *Laval* up to the close of the fiscal year; 37,440 cubic yards of stones, gravel and hard clay were removed, at a cost of $37\frac{47}{100}$ cents per cubic yard.

DREDGE 'No. 11.'

At the beginning of the fiscal year 1898, *Dredge No. 11* was working at Contrecœur and continued there until August 12, removing 68,120 cubic yards of clay, at a cost of $4\frac{63}{100}$ cents. She was afterwards taken to Batiscan where she worked until September 17, removing 16,100 cubic yards of clay and stones, at a cost of $16\frac{71}{100}$ cents per cubic yard. She was then removed to Cap Levraut, and worked there up to October 19, dredging 5,470 cubic yards of clay and stones, at a cost of $42\frac{22}{100}$ cents per cubic yard. She was next taken to Batture à Perron, where she worked up to October 26, removing 960 cubic yards of sand and stones, at a cost of $57\frac{99}{100}$ cents per cubic yard. The work consisted of cleaning up the channel at this place. This plant was then removed to Pointe Citrouille, and continued there up to November 9.

The total quantity of material removed was 4,000 cubic yards of sand, at a cost of $18\frac{55}{100}$ cents per cubic yard.

The dredge was then taken to Varennes and continued to work there up to November 26, the close of navigation, when she was laid up for the winter.

In the spring of 1899 this plant was again placed at Varennes and continued there up to the close of the fiscal year.

The total quantity of material removed at this place was 90,770 cubic yards of clay, at a cost of $5\frac{81}{100}$ cents per cubic yard.

DREDGE 'No. 8.'

Dredge *No. 8*, having been removed from Kingston harbour, where it had worked during the season of 1898, commenced work at this place on June 19, and continued there up to the close of the fiscal year 1899. The quantity of material removed was 3,300 cubic yards of clay at a cost of $86\frac{50}{100}$ cents per cubic yard.

DREDGE 'No. 12.'

On July 1, 1898, the dredge *No. 12* was working at Pointe aux Trembles and continued up to July 20, removing 3,225 cubic yards of clay, sand and stones, at a cost of $31\frac{73}{100}$ cents. This plant was then removed to Cap Magdelaine, where she worked until August 26 cleaning up the channel, removing 2,550 cubic yards of sand and stones, at a cost of $77\frac{18}{100}$ cents per cubic yard. She was then taken to Cap Levraut and continued to work there up to October 1; the material removed was 4,275 cubic yards of clay and stones, at a cost of $53\frac{40}{100}$ cents per cubic yard. The plant was next towed to Pointe Citrouille and continued working there until October 15. The quantity of material dredged was 9,450 cubic yards, at a cost of $11\frac{66}{100}$ cents per cubic yard. It was then removed to Champlain, and dredged there until November 12, removing 7,275 cubic yards of hard clay and stones, at a cost of $19\frac{48}{100}$ cents per cubic yard. The plant was afterwards removed to Varennes and remained there up to November 26, when she was taken to Sorel, and dismantled. The material removed at this place consisted of 4,660 cubic yards of hard clay, at a cost of $16\frac{89}{100}$ cents per cubic yard.

DREDGING SHIP CHANNEL, RIVER ST. LAWRENCE, between Montreal and Quebec—

Vessels.	Fuel.	Wages.	Board.	Stores and Materials.	Rebuilding and Repairs.	Expenditure on New Plant and Ship-yard improvements	Proportion of General Maintenance expenses, inclusive of surveys, inspection, etc.	Total expenditure for each vessel.	Total expenditure for each service.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Dredge Laurier	1,339 50	3,105 88	1,128 78	2,231 09	1,790 75	....	2,174 26	11,770 26	
" ..	.....	.....	.....	.....	.....	.....	.....	.....	
" ..	.....	.....	.....	.....	.....	.....	.....	.....	
Dredge Laval.	1,257 25	2,866 26	963 23	1,677 52	2,291 57	.....	2,051 86	11,107 69	
" ..	.....	.....	.....	.....	.....	.....	.....	.....	
Dredge No. 11.	1,566 00	2,669 10	985 92	934 00	1,695 75	.....	1,778 81	9,629 58	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	42,096 70
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" No. 8..	81 25	528 03	.....	1,067 96	3,426 61	.....	703 26	3,807 11	
" No. 12.	807 25	1,788 87	701 13	233 57	1,183 15	.....	1,068 09	5,782 06	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
" " .	.....	.....	.....	.....	.....	.....	.....	.....	
Stone Lifter No. 2.	22 87	306 45	64 20	7 91	205 54	.....	137 53	744 55	744 50
" ..	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tug St. Jean Iberville.	624 39	1,676 47	560 41	1,176 22	211 73	.....	962 79	5,212 01	
Tug Cartier...	608 35	1,589 81	537 50	311 28	623 92	.....	831 74	4,502 60	
" M.F. Parsons.	705 38	1,330 70	445 86	243 38	451 75	.....	719 86	3,896 93	
" C.J. Brydges.	531 53	858 22	280 10	73 00	539 57	.... ..	517 15	2,799 57	
Tug St. Francis	48 75	358 12	.....	55 71	391 03	.....	193 41	1,047 02	36,748 89
" Emilia...	212 88	296 79	90 97	329 37	144 33	.....	243 42	1,317 76	
" Eureka...	898 50	1,889 85	.....	1,701 86	.....	.....	1,017 39	5,507 60	
" Jno. Pratt	1,059 25	1,994 24	1,225 06	565 00	569 72	.....	1,226 53	6,639 80	
" St. James	954 25	1,783 61	488 04	804 25	719 32	.....	1,076 13	5,825 60	
Hy. Survey...	.....	.....	.....	.....	.....	.....	.....	.....	
New Plant and Improvement.									
New Steel Dredge No. 3.	.....	.....	.....	.....	.....	32,167 15	.....	....	
New Steel Dredge No. 4.	.....	....	.....	.....	.....	33,910 81	.....	.....	
New Tug St. James.	.....	.....	.....	.....	.....	10,461 25	.....	.....	
New Tug Emilia.	.....	.....	.....	.....	.....	4,781 97	.....	... .	
Tug Eureka ..	....	.....	....e...	.....	.....	26,000 00	.....	.....	
(4) New dumping scows (200 yards.)	.....	.....	.....	.....	.....	32,061 16	.....	.....	

CLASSIFICATION OF DISBURSEMENTS for Fiscal Year ended June 30, 1899.

Stone Lifter Service.	Tug Service.	Survey Service.	Total cost of working each dredge and attending plant.	Number of Working Days.	Hours of actual Work	Cost of each locality.	Number of Cubic Yards Dredged.	Cost per Yard.	Kind of material used.	Locality of Dredging.
$ ts.	$ cts.	$ cts.	$ cts.			$ cts.		$ cts.		
....	5,212 01	.....	16,982 27	92	421¼	8,877 09	88,475	10 3/100	Sand and stones.	Barre Ste. Croix.
....	.....	.....	.....	21	80¾	2,026 30	8,950	22 26/100	Clay and sand.	Pt. Citrouille.
....	.....	.....	.....	63	335½	6,078 88	115,500	5 29/100	Clay and stones.	Varennes.
...	4,502 60	.....	15,610 29	16	112½	1,580 79	4,174	37 87/100	Stones..	Lotbinière.
....	.....	....	.... ..	142	642¾	14,029 50	37,440	37 47/100	Hard clay and stones.	Cap Santé.
....	5,214 69	.....	14,844 27	34	284	3,154 41	68,120	4 63/100	Clay....	Contrecœur.
...	.....	.....	.....	29	232½	2,690 53	16,100	16 71/100	Clay and stones.	Batiscan.
....	.....	.....	.. . .	25	192	2,319 42	5,470	42 23/100	" ..	Cap Levraut.
....	.....	.....	.....	6	44½	556 65	960	57 93/100	Sand and stones.	Batture à Perron.
....	.....	.....	.....	8	56½	742 21	4,000	18 55/100	Sand...	Pt. Citrouille.
....	.....	.....	.....	58	522	5,381 05	90,770	5 93/100	Clay....	Varennes.
....	1,047 02	.....	4,854 13	11	57½	2,854 13	3,300	86 60/100	"	Sillery.
...	2,799 57	.....	8,581 63	13	134	1,023 50	3,225	31 75/100	Clay, sand and stones.	Pointe-aux-Trembles.
....	.....	.....	.....	25	198	1,968 26	2,550	77 18/100	Sand.....	Cap Magdelaine.
....	.....	.....	....	29	243	2,283 19	4,275	53 40/100	Clay and stones.	Cap Levraut.
....	.....	.....	.....	14	110½	1,102 23	9,450	11 66/100	Sand.....	Pt. Citrouille.
....	.....	.....	.. ..	18	132	1,417 15	7,275	19 48/100	Hard clay and stones.	Champlain.
....	.....	.. ..	.....	10	89½	787 30	4,660	16 89/100	Hard clay....	Varennes.
744 50	.....	.....	744 50	15	13	384 26	27	14 23 18/100	Stones..	Cap Santé.
.....	.....	.....	... .	16	14¼	360 24	32	11 25 75/100	"	Barre Ste. Croix.
....	.....	... .. .	5,507 60							
.....	.....	.....	6,639 80							
.....	.....	.. ..	5,825 60							
.....	.....	29,335 52								

DREDGING SHIP CHANNEL, RIVER ST. LAWRENCE, between Montreal and Quebec—

Vessels.	Fuel.	Wages.	Board.	Stores and Materials.	Rebuilding and Repairs.	Expenditure on New Plant and Ship-yard improvements	Proportion of General Maintenance expenses, inclusive of surveys, inspection, etc.	Total expenditure for each vessel.	Total expenditure for each service.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
(1) New sounding scow.						2,324 83			
New shops and equipment.						33,185 47			
New boiler shop						3,759 04			
New coal barge						4,851 65			
Semaphore St. Jean.						1,386 84			
Improvment to Tug Eureka.						7,953 57			
Ontario and Quebec dredging.						6,759 00			
Stores and fuel on hand.						6,500 00			
Total.....	10,717 40	23,042 40	7,471 20	11,412 12	14,244 74	206,102 74	14,702 23	79,590 09	

SESSIONAL PAPER No. 9

CLASSIFICATION OF DISBURSEMENTS for Fiscal Year ended June 30, 1899.

Stone Lifter Service.	Tug Service.	Survey Service.	Total cost of working each dredge and attending plant.	Number of Working Days.	Hours of actual Work	Cost of each locality.	Number of Cubic Yards Dredged.	Cost per Yard.	Kind of material removed.	Locality of Dredging.
$ cts.	$ cts.	$ cts.	$ cts.			$ cts.		$ cts.		
744 50	18,775 89	29,335 52	79,590 09	645	3,916	39,723 34	474,753			

DREDGING AT BERTHIER (EN HAUT).

Brethier (en haut), in the county of the same name, is a town of 1,600 inhabitants situate on the north shore of the St. Lawrence, 45 miles below Montreal, and opposite the town of Sorel.

The Berthier channel is separated from the ship channel by the Sorel Islands. Dredging has been done from time to time is this channel, which is used by bateaux and by steamers of the Richelieu and Ontario Navigation Company.

Dredging was continued from the commencement of the fiscal year with a view to securing a channel 100 feet wide and 9 feet deep, at ordinary low water. The work was not finished when the work was stopped, owing to the appropriation being exhausted.

The expenditure for the fiscal year was $6,941.28.

DREDGING AT BOUCHERVILLE.

Boucherville is an incorporated village in Chambly county, on the south shore of the River St. Lawrence.

Between July 19 and August 4, 1898, the dredge *Canals No. 1* operated in the Boucherville River, or channel, as well as at the Boucherville wharf.

On the eastern side of the 'Hochelaga' wharf, two cuts of 72 feet long, having a width of 30 feet, were made, and on the western side of the same wharf, one cut of 63 feet long and 15 feet wide, was finished.

In the steamboat channel (called Durochers), a shoal of 60 feet long and 45 feet wide was removed.

All of the above dredging was done to a depth of 10 feet.

The quantity dredged was 3,100 cubic yards, of hardpan and sand.

DREDGING AT CHATEAUGUAY.

Chateauguay Basin is at the mouth of the Chateauguay River, 14 miles south-west of Montreal.

Between July 2 and September 8, 1898, the dredge *Little Giant* operated at this locality.

Dredging was done from the wharf at the basin, towards the outlet of the river (in the St. Lawrence), removing many shoals and widening and deepening the steamboat channel.

The depth of water made was 7 feet, and 16,650 cubic yards of clay, sand, hardpan, and boulders were removed.

To make the dredging done at this locality of a permanent nature, the services of a 'stone lifter' would be required in order to remove large boulders to a safe distance from the cuts made. As it is now, these large boulders, which the dredge is unable to remove, are simply rolled back from the cuts; but in the spring time, many of them are found washed back again into the cuts, owing to the swift current.

DREDGING AT COTEAU LANDING.

Coteau Landing is the chief town of the county of Soulanges, on the St. Lawrence River, 36 miles west of Montreal.

Dredge *No. 6* was employed at Coteau Landing, dredging in connection with the approach to the new elevator, and was engaged there from July 2 until October 29, 1898.

A basin 394 feet long, 180 feet wide and from 12 to 14 feet in depth, was made alongside the Canada Atlantic Railway elevator docks, with a channel to deep water 250 feet wide.

On the eastern side of the elevator a basin was made 245 feet long and 70 feet wide with a channel 60 feet wide to deep water.

Three sections of old cribwork were taken out to allow room for vessels to turn at the eastern side of elevator.

It was found necessary to change the approach to the elevator as originally laid out, owing to a shorter distance to be dredged to deep water, and the material was found to be of a much softer nature.

The basin, 245 feet long, by 70 feet wide, on the eastern side of elevator, was done under the direction of the Canada Atlantic Railway officials.

Sixty-seven thousand and fifty cubic yards of sand, clay and stones were removed.

DREDGING AT DOUCET'S LANDING.

Doucet's Landing, in the parish of Ste. Angèle, Nicolet county, is on the south shore of River St. Lawrence, opposite Three Rivers. A branch of the Grand Trunk Railway terminates here.

The water at the railway wharf was not sufficiently deep to accommodate the traffic from the railway to the ocean steamers at Three Rivers.

A dredge was borrowed from the Montreal Harbour Commissioners to do the work. Dredging was carried on from July 1, 1898, until August 16, during which time 19,980 cubic yards were removed, at a cost of $3,739.06.

DREDGING AT ISLE GROS BOIS.

Isle Gros Bois, an island in the River St. Lawrence, 5 miles below Montreal.

The dredge *Canals No. 1* was engaged here between July 2 and 18, 1898.

In front of the floating wharf, one cut of 165 feet long, by 15 feet wide, was made.

One cut 60 feet long and 15 feet wide, on the western side of the wharf was finished, and, on a shoal in the channel approaching the wharf, two cuts of 82 feet long, by 30 feet wide, were completed. All of the above dredging was done to a depth of 10 feet, and 2,750 cubic yards of clay was removed.

DREDGING AT LAPRAIRIE.

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

Between July 2 and November 9, 1898, the dredge *T.F.M. No. 1* was employed at Laprairie in deepening and widening the channel from the Richelieu and Ontario Navigation Company's wharf out to the main channel, as well as in front of the wharf itself.

A cutting of about 5,000 feet long, and 50 feet wide, to a depth of 7 feet at low water, was made from the main channel to the wharf, and adjoining the above cutting, for the same distance and depth, a cut was made from 12 to 20 feet wide.

On the eastern side of the wharf, a cutting was finished of 110 feet long, and 113 feet wide. The outside entrance on the eastern side of channel was belled off.

In front of the wharf and extending westward of it, 200 feet square of dredging was finished to 7 feet in depth.

This work, together with that done by the dredge *Nithsdale* in 1896-7, gives a channel 170 feet wide at its entrance, and 150 feet wide for a distance of 5,000 feet, with a depth of 7 feet from the main channel to the wharf, and leaving ample room in front of the wharf for steamers to turn.

Thirty-eight thousand one hundred and twenty-five cubic yards of clay, hard pan, and clay and stones were removed.

DREDGING AT PAPINEAUVILLE.

Papineauville, Ottawa county, is on the River Ottawa, 41 miles east of Ottawa.

On June 13, 1899, the dredge *T.F.M. No. 1* began dredging at the Papineauville Lumber Company's wharf, and finished on the 21st of the same month.

On the western side of the wharf, a cut of 85 feet long, by 20 feet wide was made. In front of the face of the wharf, a cutting of 150 feet square was finished.

Three thousand four hundred cubic yards of clay were removed.

DREDGING, RIVIÈRE DU LOUP (EN HAUT).

Rivière du Loup (en haut) is a river that takes its source in the Laurentides and flows into Lake St. Peter at Louiseville, Maskinongé county.

The main traffic in this river is from the extensive Tourville lumber mills. The mill's company have their own docks and operate a fleet of lighters and two steamboats.

During the extreme low water of 1895 and 1897 no lumber could be shipped after September 1.

Dredge *St. Pierre* worked at the mouth of the river from June 10 until the close of the fiscal year.

The channel commenced was 75 feet wide and 6 feet deep at low water.

At the end of the fiscal year 7,040 cubic yards had been removed.

RIVER ST. MAURICE—CHANNEL BETWEEN GRANDES PILES AND LA TUQUE.

The St. Maurice, a river of Quebec, one of the largest tributaries of the St. Lawrence, takes its rise in two small springs, one being in a savanne and the other a half mile from it, at the foot of a small hill forming part of the height of land between the province of Quebec and the North-west Territories, over 409 miles north-west of Three Rivers, at which point it falls into the St. Lawrence. It expands into numerous lakes, some of large size, and its banks are generally high, in some places from 200 to 1,000 feet, and covered with groups of majestic trees. It is adorned with a number of beautiful islands, and has a great variety of falls and cascades, the most important being the falls of Grand-Mère and the Shawenegan. From its outlet to Grandes Piles, a distance of 37 miles, this river is not navigable, owing to the numerous falls and rapids which follow each other without intermission, but from Grandes Piles up to La Tuque, a distance of 75 miles, there is a channel for vessels, the draught of which at places is, however, limited to two feet at low water, on account of several impediments, in this stretch of 75 miles, the impediments to navigation are greatest at the Rapids Manigance, the shoals at the Mehonac, Pointe à Tom, the shoal at l'Ile aux Morpions, and at Pointe à Trudel near Grandes Piles.

In 1891–2, work was commenced at some of the above mentioned points to make them navigable for boats of greater draught. At the shoal opposite River Mekinac and at the Rapid Manigance a large quantity of rock was blasted and removed, at a cost of $1,225 26. In 1892–3, some further improvements were made to the Rapid Manigance, but the work had to be discontinued after a short time, owing to a sudden rise in the water. The sum expended was $1,279.78. In 1893–4 between July 10, and October 16, a large number of boulders were removed from the upper reef on the western side of the channel in the Rapid Manigance, 644 being removed, and 61 which were too large to handle, broken up with dynamite. The channels on the shoals at the Mekinac and at Pointe à Trudel were also deepened, and the best channel, at the shallow point, between Grandes Piles and La Tuque was marked out for the season of navigation. Amount expended $3,142.70. In 1894–5 the shoal at Mekinac was deepened to five feet; and thirty-nine land marks were established on the river bank to indicate the channel; 71 buoys have been kept at the shallow point during the navigable season to indicate the channel. The amount expended during the year was $1,721.50.

In 1895–6 a total number of fifty-two landmarks were fixed to indicate the channel and the buoys were kept in position. Some landmarks were repaired and whitewashed, the position of some of these was also altered owing to a change in the direction of the channel. The deepening of the channel at l'Ile aux Morpions was also commenced, but very little was done owing to a sudden rise of the water. Amount expended, $955.77.

In 1896-7 the only work done was the placing of buoys and their removal in the fall, and the repairing of some landmarks. Expenditure, $162.33.

In 1897-8 the sum of $1,048.43 was expended in purchasing materials for the work and in placing and removing the buoys.

In 1898–9 the only work done was the placing of the buoys and their removal in the autumn. Expenditure $255.

The total amount expended in this work is as follows :—

During fiscal year	1891-2	$1,225 26
"	1892-3	1,279 78
"	1893-4	3,142 70
"	1894-5	1,721 50
"	1895-6	955 77
"	1896-7	162 33
"	1897-8	1,048 43
"	1898-9	255 00
Total		$9,790 77

On April 15, 1898, a contract was made with Messrs. Beatty & Sons for the construction of a new clam-shell dredge. The work was completed on January 10, 1899. The dredge was ready for work at the end of the fiscal year.

DREDGING IN THE RIVER ST. FRANCIS.

The River St. Francis rises in Lake St. Francis, Wolfe county, and empties into the River St. Lawrence, at Lake St. Peter.

The dredge *St. Louis* was employed on this river during the whole of the fiscal year 1898-9, in removing shoals and making a depth in the main channel of from 5 to 7 feet, between Pierreville Mills and the Richelieu and Ontario Company's wharf.

Dredging was also done in front of the wharf at the Tourville Lumber Mills Co., at Pierreville Mills.

Twenty-seven thousand four hundred and thirty cubic yards of sand, and clay and stone were removed.

DREDGING AT ST. JOHNS, P.Q.

St. Johns, the *chef-lieu* of the district of Iberville, on the Richelieu River, is 27 miles from Montreal.

The dredge *Canals No. 1* was engaged at this locality between October 1 and November 26, 1898, and May 8 and June 30, 1899, doing the following dredging :—

In front of the sheet pile wharf, adjoining cuts of 412, 382, 367, 354, 352, 337 and 312 feet long were made, having a total width of 105 feet, and a depth of 7 feet at low water.

Dredging was also done in the main channel, removing shoals and boulders.

Fifteen thousand five hundred and eighty cubic yards of hardpan and boulders were removed.

There being extensive traffic on this river, a great deal of dredging is still required to be done between Isle aux Noix and St. Johns, to make navigation safe for the larger boats.

DREDGING AT ST. JEAN DES CHAILLONS.

St. Jean des Chaillons, Lotbinière county, on the River St. Lawrence, 57 miles south-west of Quebec.

The dredge *Nithsdale* was employed at St. Jean des Chailllons between July 2 and 16, 1898, in deepening the channel in front of the brickyard wharfs.

One cut of 600 feet long, 25 feet wide, and 9 feet in depth, was made, and 3,835 cubic yards of hardpan, and clay, were removed.

DREDGING AT ST. MICHEL.

St. Michel, county of Bellechasse, of which it is the county seat, is on the St. Lawrence River, about 15 miles below Levis.

Between July 28 and October 25, 1898, and May 16 and June 30, 1899, the dredge *Nithsdale* was engaged here, and the following dredging was done :—

Along the front of the wharf a cut of 60 feet long and 25 feet wide was finished. One cut alongside the western side of pier of 125 feet long, by 25 feet wide ; and in the channel about 150 feet out from the face of the wharf, a cutting of 350 feet long, by 100 feet wide, was made. The depth obtained throughout was 9 feet at low tide.

Fourteen thousand seven hundred and thirty-five cubic yards of fine sand, clay and stone, and boulders, were removed.

Owing to the exposed position of this locality, much time was lost through rough weather, and on account of the dredging being done in tidal water, only an average of about 5 hours per day, or half the working time, could be performed.

DREDGING AT ST. NICHOLAS.

St. Nicholas, Levis county, is on the River St. Lawrence, 15 miles above Quebec.

Between July 18 and 25, 1898, the dredge *Nithsdale* was engaged here in dredging for cribwork.

A cut was made across the front of Baker's wharf, of 100 feet long and 25 feet wide, 1,800 cubic yards of gravel, clay and stone being removed.

DREDGING AT VARENNES.

Varennes, an incorporated village in Verchères county, on the St. Lawrence, 14 miles below Montreal.

The dredging done here was by dredge *Canals No. 1.*

Running parallel with, and in front of the wharf, the following adjoining cuts were made :— One each of 230, 220, 216, 210 and 165 feet long ; and on the east and west sides of the wharf, one cut each of 75 feet long ; all cuts being 20 feet wide, and to a depth of 12 feet at low water.

Seven thousand five hundred and sixty cubic yards of clay and gravel were taken out.

PROVINCE OF ONTARIO.

DREDGING AT ADOLPHUSTOWN.

Adolphustown, Lennox county, on the Bay of Quinté, is 18 miles from Napanee.

Between July 2 and 11, 1898, the dredge *Queen* was engaged here, and made two cuts of 310 feet long, by 50 feet wide and 9 feet deep, from the front of the wharf out to navigable water.

One thousand two hundred and thirty cubic yards of clay were taken out.

DREDGING AT BAYFIELD.

Bayfield, Huron county, is situated on Lake Huron, 12 miles from Goderich.

Dredge *Hackett* worked at this harbour from September 6 until October 15, 1898.

The quantity of material removed, consisting of gravel, clay, stone and old cribs, amounted to 5,460 cubic yards, at a cost of $1,200.

DREDGING AT BELLEVILLE.

Belleville, the shire town of the county of Hastings, is situated on the Bay of Quinté, at the mouth of the River Moira, and is 43 miles west of Kingston.

The dredge *Queen* was employed at this locality between the following dates :—

From July 12 until November 23, 1898.

From April 18 until May 6, 1899.

From May 22 until June 25, 1899.

The work done here consisted principally in continuing the deepening of the main channel in the harbour, as well as in front of the wharfs and channels leading to the wharfs.

An embankment was formed connecting the mainland with 'Mill Island' to serve as a breakwater.

From 'Old Ashery Point' to the piers, another breakwater was also formed, from the material dredged.

Forty-two thousand one hundred cubic yards of clay, stone and mud were excavated.

Great benefit was derived at this place from the deepening of the channels and the throwing up of the materials dredged, the latter portion of the work being done at the expense of the harbour commissioners..

Before this work was done the lower portion of the city was submerged with water and floating ice each spring, causing considerable damage to property in the vicinity. The year 1899 was the first year that no flood occurred.

DREDGING AT BOWMANVILLE.

The harbour of Bowmanville, or Port Darlington, county of Durham, is on the north shore of Lake Ontario, 40 miles east of Toronto.

Between July 2 and September 8, 1898, the dredge *Nipissing* was engaged here.

Two adjoining cuts of 1,490 and 1,385 feet long by 50 feet wide, to a depth of 14 feet, were made, running from the mouth of, and between the piers, down into the harbour.

Thirty-one thousand nine hundred and twelve cubic yards of sand, clay and gravel were removed.

DREDGING AT COBOURG.

Cobourg, Northumberland county, is situated on the north shore of Lake Ontario, 69 miles north-east of Toronto.

On May 31, 1899, the dredge *Nipissing* began operating at Cobourg, and continued until the close of the fiscal year, or June 30, 1899.

The work done at this locality consisted of making three diagonal adjoining cuts from the inner end of harbour, towards the lighthouse, of 600,560 and 540 feet long, having a total width of 75 feet, and two cuts alongside the outer end of the eastern pier, of 495 and 110 feet long. All the dredging was done to a depth of 14 feet at low water.

13,424 cubic yards of hardpan and sand were taken out.

DREDGING AT DESERONTO.

Deseronto, Hastings county, is on the Bay of Quinté, and a station on the Bay of Quinté Railway.

The dredge *Queen* was engaged at this locality between May 8 and 20, 1899, and the following work was done :—

Three adjoining cuts—two of 374 feet, and one of 224 feet long, having a total width of 75 feet, running from the iron works dock out to deep water. The depth obtained was from 16 to 11 feet; the variation in depth being accounted for by rock bottom being met with when half way between deep water and the dock.

3,570 cubic yards of mud was removed.

DREDGING AT FRENCHMAN'S BAY.

Frenchman's Bay, or Pickering Harbour, Ontario county, is on Lake Ontario, 21 miles east of Toronto.

On September 9, 1898, the dredge *Nipissing* began working at Frenchman's Bay, and continued until October 5, doing the following dredging :—

One cut between the piers of 740 feet long; one cut of 1,016 feet long, running from the inner end of piers towards the elevator, one cut of 210 feet long, running across the front of the elevator, and two short cuts of 80 feet long, one each at both ends of the wharf.

All cuts were 25 feet wide, with a depth of 12 feet, 11,550 cubic yards of ordinary and fine sand and mud were removed.

DREDGING AT GODERICH.

Goderich, in the county of Huron, is situate on the east shore of Lake Huron at the mouth of the Maitland River, about 68 miles from Sarnia and 60 miles from London. It is the terminus of the Buffalo branch of the Grand Trunk Railway, and is a place of considerable importance, partly on account of large deposits of salt found in its vicinity. A large elevator was erected during the fiscal year, which will give a great impetus to to the grain traffic.

The harbour at the present time comprises an inner basin about 25 acres in extent and two parallel jetties forming the entrance from the lake. The northern side of the basin is formed by an artificial bank 2,500 feet in length, composed of very strong cribwork on the Maitland River side and of pile work on the harbour side, the space between the two being filled in and bearing a spur track. The line of cribwork serves as a training wall to prevent the Maitland River from discharging into the harbour. The cribwork is sunk generally in 17 feet of water, and its height above low water level s 18 feet. The north entrance jetty is 1,700 feet in length, the width varying from 20 to 30 feet, with a block 40 by 45 feet at the head. The south jetty, starting from the end of the curve formed by the basin is 1,600 feet in length and the width varies from 20 to 40 feet. The jetties are parallel and 200 feet apart, excepting at the outer end of the southern jetty where the entrance is 265 feet wide. The inner angle of the harbour for about 900 feet in length is considerably shoaled up; the average depth of water in the rest of the basin is 14 feet, and in the entrance channel it varies from 13 to 15 feet. This channel is proposed to be dredged to a depth of 20 feet, including the southern portion of the basin.

With this in view a large amount of dredging was done during the fiscal year both in the harbour near the elevator, and at the entrance.

The material removed, consisting of sand, gravel and rock, amounted to 70,740 cubic yards; the amount expended being $9,632.41.

The total expenditure in connection with this harbour, on dredging, since 1882 has been $41,797.18.

DREDGING AT HAMILTON.

Hamilton harbour is a part of Burlington Bay, which lies in front of and adjacent to the city of Hamilton.

Between May 11 and 26, 1899, the dredge *Ontario* was employed here, and did the following dredging, at the Rogers Coal Company's coal wharf:—

In front of the wharf, four adjoining cuts were made of 87, 120, 164 and 275 feet long, having a total width of 100 feet; and on the eastern side of wharf, a cut of 175 feet long, by 25 feet wide was made; all to a depth of 14 feet at low water.

4,470 cubic yards of sand, and clay, were excavated.

The dredging on the eastern side of the wharf being private work, was paid for by the Rogers Coal Co.

DREDGING AT HAWKESBURY.

Hawkesbury, Prescott County, on the River Ottawa, is 2 miles from Grenville.

The dredge *Little Giant* operated at this locality between September 12 and October 21, 1898, also between June 13 and 30, 1899, and the following dredging was done:—

Three cuts of 300 feet long, having a total width of 75 feet, and 8 feet in depth, were made on a hardpan shoal, at the head of Cobb Island.

A basin was made in front of Higginson's wharf, to 8 feet in depth.

14,150 cubic yards of hardpan, sand, boulders and gravel, were removed.

Little benefit will be derived from the work done here, until the whole channel is dredged, which will require a full season to perform.

DREDGING AT JORDAN HARBOUR.

Jordan, Lincoln county, on Twenty-mile creek, is 7 miles from St. Catharines.

Between September 26 and November 21, 1898, and May 29 and June 30, 1899, the dredge *Ontario* was employed here, and the following dredging was done:

One cut between the piers out to deep water of 730 feet long, 25 feet wide; and two cuts on a sand bar outside the mouth of the piers of 360 feet long each.

A turning basin at the inner end of harbour was begun, upon which two adjoining cuts were made of 140 feet long, and 50 feet feet wide.

The depth of dredging done at this locality was to 12 feet at low water.

26,600 cubic yards of sand, clay, and gravel, were excavated.

DREDGING IN THE KAMINISTIQUIA RIVER.

Between July 2 and November 9, 1898, the dredge *No. 9* was engaged in the Kaministiquia River.

Resuming operations where left off last year, between the 'McKeller' and 'Mission' Rivers, the dredge made a further cutting of 3,629 feet long, having an average width of 190 feet, to the depth of 20 feet, arriving nearly opposite the mouth of the Mission River.

A cutting was also made opposite the new steel elevator of 562 feet in length, and 150 feet in width, to within 40 feet of the dock, and to a depth of 20 feet at low water.

A shoal was also removed at the mouth of the Mission River, 370 feet long, 150 feet wide, to a depth of 16 feet.

The materials removed consisting of hardpan, boulders and sand, amounted to 146,450 cubic yards.

The dredge *Arthur* (contractors) was also employed on this river between June 21 and 30, 1899, dredging in front of the Canadian Pacific Railway coal dock, and Graham and Horn's dock, removing 4,447 cubic yards of clay and sand.

The dredge hull of *No. 9* being very old and weak, and liable to collapse and sink at any moment, it was dismantled in the fall of 1898, and the machinery shipped to Sorel; while the hull, boilers and scrap were sold for $375.

In connection with the dredging done in this river, the dredge *No. 9* first began on August 2, 1894, and has been almost continuously employed until November 9, 1898,

during which time, the total quantity of materials removed were 855,880 cubic yards of hardpan, sand, clay, boulders and mud, at a cost of 6½ cents per cubic yard.

This includes the cost of dismantling, the shipment of machinery to Sorel, and all contingencies in connection with the same.

DREDGING AT KINGSTON.

Kingston, a city of Ontario, is situated at the outlet of Lake Ontario, 172 miles west of Montreal.

The elevator dredge *No. 8* was engaged in dredging in the harbour from July 2 until November 30, 1898, and the following work was done :—

Along the front of the Montreal Transportation Company's elevator, a cutting of 200 feet long by 150 feet wide.

In the main channel a cutting of 2,300 feet long by 200 feet wide was finished, beginning opposite the M. T. Company's elevator and finishing opposite the south side of the Richelieu and Ontario Navigation Company's wharf.

All the above dredging was done to a depth of 18 feet, and 138,460 cubic yards of clay, hardpan and boulders were taken out.

Considerable work with a spoon dredge will be necessary around the wharfs, where the elevator dredge could not reach.

DREDGING AT MEAFORD.

Meaford is on the southern shore of Georgian Bay, in the county of Grey, 19 miles from Owen Sound.

The dredge *Challenge* was employed at Meaford from July 2 until September 7, 1898, and from May 29 to June 30, 1899.

The work here consisted of deepening and widening the inner harbour generally to a depth of from 13 to 14 feet. 41,760 cubic yards of clay, sand and gravel were removed.

DREDGING AT MIDLAND.

Midland, Simcoe county, is the Georgian Bay terminus of the Grand Trunk Railway.

The dredge *Challenge* was employed at Midland from July 2 until September 7, 1898.

A cutting was made from the esplanade, near the new elevator, outwards to deep water, of 300 feet, having a width of 200 feet at shore end and 150 feet at outer end, and to a depth of 20 feet.

21,390 cubic yards of clay, sand and mud were taken out.

DREDGING AT OAKVILLE.

Oakville, county of Halton, is a port of entry on Lake Ontario, 22 miles south-west of Toronto and 18 miles east of Hamilton.

The dredge *Nipissing* worked at this locality between October 8 and November 22, 1898, and the following dredging was done :—

Three cuts between the piers of 998, 772 and 702 feet long, having a total width of 75 feet, and 14 feet in depth, at low water.

16,499 cubic yards of gravel, boulders, hardpan and clay were removed.

DREDGING AT PICTON.

Picton, Prince Edward county, is an important harbour on the Bay of Quinté.

A contract was made with Messrs. McNamee & Simpson to dredge the harbour to 11 feet at low water. The amount of the contract was $11,500.

The expenditure on the work of the contract for the fiscal year was $7,000.

DREDGING AT PORT STANLEY.

The harbour of Port Stanley is at the mouth of Kettle Creek, on the north shore of Lake Erie, 24 miles from London. It is formed by two piers extending into the lake, one on each side of the mouth of the creek.

On July 2, 1898, the dredge *Ontario* continued its operations at Port Stanley, and was employed until September 15.

In line with and outside the piers, six adjoining cuts were made, the longest cuts landing inside the mouth of the piers, as follows :—Three of 704 feet, and one each of 509, 395 and 319 feet long, the width being 130 feet outside, and 60 feet inside the mouth of the piers.

A shoal 300 feet long and 50 feet wide was removed from between the piers, and a basin having a length of 200 feet, and from 125 to 200 feet wide was made in the harbour.

All of the dredging was done to a depth of 14 feet.

Twenty-seven thousand six hundred and seventy cubic yards of sand and clay were removed.

DREDGING AT ROCKLAND.

Rockland, Russell county, is on the Ottawa River, 22 miles from Ottawa.

Between June 22 and 30, 1899, the dredge *T. F. M. No. 1*, was employed at this locality.

Dredging was done in the channel, or approach to the wharf, making a cutting on eastern side of 500 feet long, also alongside the western side of the wharf, a cutting of 200 feet long and 125 feet wide ; all to a depth of 9 feet at low water.

Three thousand seven hundred and fifty cubic yards of clay and sawdust were excavated.

DREDGING AT TRENTON.

Trenton, Hastings county, is on the River Trent, at the head of the Bay of Quinté, 12 miles west of Belleville.

The dredge *Queen* was employed here between June 26 and 30, 1899, in dredging in front of the elevator, and Squires docks, but on account of rock bottom being found at both places, only scraping could be done. 360 cubic yards of clay and stones were removed.

DREDGING—QUEBEC AND ONTARIO.

CLASSIFICATION OF DISBURSEMENTS of Dredges operated by the Public Works Department during the Year ended June 30, 1899.

DREDGE *CHALLENGE.*

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Total.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	142 74	303 06	384 77	416 66	447 92	43 00	30 00	30 00	30 00	.....	.....	411 67	2,239 82
Coal	.....	7 30	94 90	209 11	243 52	.....	.....	.....	.....	.....	122 32	430 81	1,107 96
Wood	.....	67 37	74 93	112 94	.....	.....	.....	.....	.....	.....	.....	.....	255 24
Provisions	107 84	103 00	111 66	128 10	116 76	.....	.....	.....	.....	.....	56 77	109 66	733 79
Stores	1 00	15 93	.....	.....	23 65	.....	.....	.....	.....	28 50	50 00	41 71	160 79
Equipment	.....	.....	.....	36 90	5 25	.....	.....	.....	.....	83 42	.....	91 55	217 12
Repairs	45 09	26 79	.....	5 89	18 10	.....	.....	.....	.....	32 00	653 07	32 42	813 36
Pilotage	.....	.....	.....	15 00	.....	.....	.....	.....	.....	.....	.....	.....	15 00
Contingencies	4 84	480 30	494 00	.....	46 05	.....	.....	.....	.....	17 70	18 81	6 86	1,068 56
Totals	301 51	1,003 75	1,160 26	924 60	901 25	43 00	30 00	30 00	30 00	161 62	900 97	1,124 68	6,611 64
Working expenses	256 42	976 96	1,160 26	918 71	883 15	43 00	30 00	30 00	30 00	129 62	247 90	1,092 26	5,798 28
Repairs, ordinary	45 09	26 79	.....	5 89	18 10	.....	.....	.....	.....	32 00	653 07	32 42	813 36
Totals	301 51	1,003 76	1,160 26	924 60	901 25	43 00	30 00	30 00	30 00	161 62	900 97	1,124 68	6,611 64

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION OF DISBURSEMENNS of Dredges operated by the Public Works Department, &c.—*Continued.*

DREDGE *ONTARIO.*

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	191 11	399 38	395 00	395 00	395 00	235 00	.....	40 00	.....	.....	434 04	364 67	2,849 20
Coal	.....	168 00	105 00	308 55	242 50	.....	40 35	.....	.....	49 80	84 03	152 43	1,150 66
Provisions	103 00	51 50	103 00	103 00	151 16	.....	.....	.....	.....	45 25	51 50	103 00	711 41
Stores	.....	.....	.....	21 89	42 05	.....	.....	.....	.....	28 50	51 50	48 12	192 06
Equipment	7 00	.....	.....	.....	.....	.....	.....	.....	.....	83 40	5 95	16 90	113 25
Repairs	.....	.....	31 96	13 35	66 41	394 50	.....	283 89	1,011 99	825 02	50 36	177 10	2,854 58
Pilotage	.....	.....	.....	.....	25 00	.....	.....	.....	.....	.....	.....	30 00	55 00
Towage	.....	.....	125 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	125 00
Contingencies	.....	.....	.....	62 24	91 13	52 20	.....	.....	.....	58 34	297 70	71 90	633 51
Totals	301 11	618 88	759 96	904 03	1,013 25	681 70	40 35	323 89	1,011 99	1,090 31	975 08	964 12	8,684 67
Working expenses	301 11	618 88	728 00	890 68	946 84	287 20	40 35	40 00	.....	265 29	924 72	787 02	5,830 09
Repairs, ordinary	.....	.....	31 96	13 35	66 41	.....	.....	283 89	479 71	757 02	50 36	177 10	1,859 80
" extraordinary	.....	.....	.....	.....	.....	394 50	.....	.....	532 28	68 00	.....	.....	994 78
Totals	301 11	618 88	759 96	904 03	1,013 25	681 70	40 35	323 89	1,011 99	1,090 31	975 08	964 12	8,684 67

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION OF DISBURSEMENTS of Dredges operated by Public Works Department, &c.—*Continued.*

DREDGE *NIPISSING.*

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	191 11	395 00	395 00	395 00	395 00	251 01	40 00	40 00			145 70	440 64	2,688 46
Coal	298 88		13 45	165 50							375 90		853 73
Provisions	103 00	107 50	103 00	103 00	105 33						79 82	69 86	671 51
Stores		11 90	5 20		38 22					28 50	105 83		189 65
Equipment			9 00							92 60	11 49	34 13	147 22
Repairs	35 63	19 00	22 55		10 50			30 00	845 55	1,161 35	42 35	138 12	2,305 05
Contingencies		19 88			51 86	7 65					33 85	36 20	149 44
Totals	628 62	553 28	548 20	663 50	600 91	258 66	40 00	70 00	845 55	1,282 45	794 94	718 95	7,005 06
Working expenses	592 99	534 28	525 65	663 50	590 41	258 66	40 00	40 00		121 10	752 59	580 83	4,700 01
Repairs, ordinary	35 63	19 00	22 55		10 50			30 00	255 55	821 31	42 35	138 12	1,375 01
" extraordinary									590 00	340 04			930 04
Totals	628 62	553 28	548 20	663 50	600 91	258 66	40 00	70 00	845 55	1,282 45	794 94	718 95	7,005 06

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION OF DISBURSEMENTS of the Dredges operated by the Public Works Department, &c.—*Continued.*

DREDGE *QUEEN.*

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	217 72	390 00	395 00	265 00	404 17	25 00	25 00	25 00	40 00		262 58	315 00	2,364 47
Coal	11 37	264 50	150 69	75 90	63 85					97 35	105 45	26 57	795 68
Wood					6 00								6 00
Provisions	109 13	56 50	98 16	72 50	109 00					37 00	75 53	83 25	641 07
Stores				1 38	34 32					28 32	43 96	39 35	147 33
Equipment			18 40	60	2 50					83 40	38 88	2 60	146 38
Repairs	41 72	44 99	20 10	50 33	65 98		97 78	17 25	24 46	443 45	1 80	60 30	868 16
Pilotage					17 00								17 00
Contingencies	2 50		5 96	50	28 34		10 12			23 15	4 58	61 90	137 05
Totals	382 44	755 99	688 31	466 21	731 16	25 00	132 90	42 25	64 46	712 67	532 78	588 97	5,123 14
Working expenses	340 72	711 00	668 21	415 88	665 18	25 00	35 12	25 00	40 00	269 22	530 98	528 67	4 254 98
Repairs, ordinary	41 72	44 99	20 10	50 33	65 98		97 78	17 25	24 46	443 45	1 80	60 30	868 16
Totals	382 44	755 99	688 31	466 21	731 16	25 00	132 90	42 25	64 46	712 67	532 78	588 97	5,123 14

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION OF DISBURSEMENTS of Dredges operated by the Public Works Department, &c.—*Continued.*

DREDGE *ST. LOUIS.*

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	371 28	340 00	340 00	340 00	.. ..	.....	.....	. ..	.....	.....	345 96	350 00	2,087 24
Coal	76 00	80 00	74 00	85 00	32 50	.. ..	.....	.....	.....	.....	.....	123 50	471 00
Provisions	103 25	103 05	103 25	103 15	.....	.....	.....	.....	.....	34 93	101 17	103 00	651 80
Stores	.....	.....	4 60	.....	23 82	.....	.....	.....	.....	.....	.....	59 65	88 07
Equipment	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46 58	46 58
Repairs	14 65	39 70	19 00	2 00	9 91	.....	.....	.....	371 58	206 40	.....	240 92	904 16
Contingencies	20 75	.....	0 50	3 25	.....	.....	.....	.....	.....	.....	.....	.....	24 50
Total	585 93	562 75	541 35	533 40	66 23	.....	.....	.....	371 58	241 33	447 13	923 65	4,273 35
Working expenses	571 28	523 05	522 35	531 40	56 32	.....	.....	.....	.....	34 93	447 13	682 73	3,369 19
Repairs, ordinary	14 65	39 70	19 00	2 00	9 91	.....	.....	.....	371 58	206 40	.....	240 92	904 16
Total	585 93	562 75	541 35	533 40	66 23	.....	.....	.....	371 58	241 33	447 13	923 65	4,273 35

DREDGE *No.* 9.

Wages	340 03	699 22	661 08	701 31	731 86	80 00	.....	38 00	.....	.....	100 00	176 77	3,528 27
Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	130 40	130 40
Provisions	269 00	134 50	265 90	279 00	229 25	.....	.....	.....	.....	.....	.....	101 02	1,318 67
Stores	5 70	7 80	.....	18 28	23 15	.....	.....	.....	15 65	.....	.....	.....	70 58
Equipment	3 50	.....	.....	.....	32 45	.....	.....	.....	24 26	.....	.....	.....	60 21
Repairs	20 10	14 84	.....	28 69	14 17	374 42	.....	.....	12 00	.....	85 18	196 47	745 87
Pilotage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57 00	57 00
Contingencies	.....	658 06	437 50	400 00	140 00	92 10	.....	2,001 12	.....	.....	85 25	124 44	3,938 47
Total	638 33	1,514 42	1,364 48	1,417 28	1,220 88	546 52	.....	2,039 12	51 91	.....	270 43	786 10	9,849 47
Working expenses	618 23	1,499 58	1,364 48	1,388 59	1,206 71	172 10	.....	2,039 12	39 91	.....	185 25	589 63	9,103 60
Repairs, ordinary	20 10	14 84	.....	28 69	14 17	.....	.....	.....	12 00	.....	85 18	.....	174 98
" extraordinary	.....	.....	.....	.....	.....	374 42	.....	.....	.....	.....	.....	196 47	570 89
Total	638 33	1,514 42	1,364 48	1,417 28	1,220 88	546 52	.....	2,039 12	51 91	.....	270 43	786 10	9,849 47

DREDGING—QUEBEC AND ONTARIO—Continued.

Classification of Disbursements of Dredges operated by the Public Works Department, &c.—Continued.

DREDGE *No.* 8.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	254 98	630 63	617 65	592 00	647 89	564 09							3,307 24
Coal	547 07	406 53	442 35	543 91	528 52	38 50				92 39			2,599 27
Provisions	100 00	195 32	200 00	200 00	200 00	175 31					48 00		1,118 63
Stores	34 90	6 80	19 30	12 93	35 73	2 80							112 46
Equipment	228 01	46 13	33 20	85 52	11 44								404 30
Repairs	63 14	17 98	32 33	68 52	79 14	337 73	1,103 97		3,413 95	589 05	132 00		5,837 81
Towage		100 00		10 00	3 00								113 00
Contingencies	13 28		28 00		72 07	75 95		72 90					262 20
Totals	1,241 38	1,403 39	1,372 83	1,512 88	1,577 79	1,194 38	1,103 97	72 90	3,413 95	681 44	180 00		13,754 91
Working Expenses	1,178 24	1,385 41	1,340 50	1,444 36	1,498 65	856 65		72 90		92 39	48 00		7,917 10
Repairs, Ordinary	63 14	17 98	32 33	68 52	79 14	337 73	384 23		1,313 95	589 05	132 00		3,018 07
" Extraordinary							719 74		2,100 00				2,819 74
Totals	1,241 38	1,403 39	1,372 83	1,512 88	1,577 79	1,194 38	1,103 97	72 90	3,413 95	681 44	180 00		13,754 91

DREDGING, QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION OF DISBURSEMENTS of Dredges operated by the Public Works Department &c.—*Continued.*

DREDGE *NITHSDALE.*

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	379 99	417 00	439 30	484 74							218 02	370 00	2,309 05
Coal	70 00	77 65	76 00	54 50							9 75	224 25	512 15
Provisions	166 45	110 00	124 25	108 95							65 61	110 00	685 26
Stores			9 84	43 08							2 57	38 35	93 84
Equipment											0 64	56 29	56 93
Repairs	17 40			111 19							23 60	104 75	256 94
Pilotage			5 00										5 00
Contingencies	1,085 00	1,088 17	1,053 00	1,018 00							770 00	1,088 00	6,102 17
Totals	1,718 84	1,692 82	1,707 39	1,820 46							1,090 19	1,991 64	10,021 34
Working expenses	1,701 44	1,692 82	1,707 39	1,709 27							1,066 59	1,886 89	9,764 40
Repairs, ordinary	17 40			111 19							23 60	104 75	256 94
Totals	1,718 84	1,692 82	1,707 39	1,820 46							1,090 19	1,991 64	10,021 34

DREDGING—QUEBEC AND ONTARIO—Continued.

CLASSIFICATION OF DISBURSEMENTS of Dredges operated by the Public Works Department &c—Concluded.

DREDGE *No. 1* DEPARTMENT, RAILWAYS AND CANALS.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	360 00	360 00	360 00	360 00	360 00	30 00	30 00	30 00	.....	.....	376 67	609 22	2,875 89
Coal	.....	52 50	42 00	110 89	81 60	.....	.....	.....	.....	71 65	104 93	136 54	600 11
Provisions	100 00	100 00	100 00	100 00	104 50	.....	.....	.....	.....	.....	70 00	70 00	644 50
Stores	.....	.....	3 36	.....	15 10	.....	.....	.....	.....	14 74	1 75	59 45	94 40
Equipment	2 59	.....	.....	37 60	4 50	.....	.....	.....	.....	41 54	52 38	36 00	174 61
Repairs	7 95	.....	12 52	12 75	6 94	.....	.....	.....	344 64	525 99	59 95	164 30	1,135 04
Towage	.....	.....	.....	9 50	.....	.....	.....	.....	.....	.....	.....	27 50	37 00
Contingencies	1 62	.....	.....	30 16	.....	.....	.....	.....	.....	6 03	10 00	6 00	53 81
Totals	472 16	512 50	517 88	660 90	572 64	30 00	30 00	30 00	344 64	659 95	675 68	1,109 01	5,615 36
Working expenses	464 21	512 50	505 36	648 15	565 70	30 00	30 00	30 00	.....	133 96	615 73	944 71	4,480 32
Repairs, ordinary	7 95	.....	12 52	12 75	6 94	.....	.....	.....	344 64	525 99	59 95	164 30	1,135 04
Totals	472 16	512 50	517 88	660 90	572 64	30 00	30 00	30 00	344 64	659 95	675 68	1,109 01	5,615 36

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION AND QUANTITIES of Material removed by Dredges operated by the Public Works Department during the Year ended June 30, 1899.

DREDGE *CHALLENGE.*

Description of Material dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.
Gravel			9,490	7,240	890							6,750	24,370
Clay	7,800	3,900			1,000						1,950	10,840	25,490
Sand—ordinary	3,120	870		3,000	600								7,590
Mud	600	3,840	1,260										5,700
Totals	11,520	8,610	10,750	10,240	2,490						1,950	17,590	63,150

DREDGE *ONTARIO.*

Gravel			490	3,290	3,020							340	7,140
Clay		1,860	2,380	4,240	3,300						2,805		14,585
Sand—ordinary	10,420	9,550	3,860		1,600						1,665	9,920	37,015
Totals	10,420	11,410	6,730	7,530	7,920						4,470	10,260	58,740

DREDGE *NIPISSING.*

Hard-pan					1,325							4,375	5,700
Boulders				575									575
Gravel	800			4,625	2,212								7,637
Clay		1,825	1,875	4,475	925								9,100
Clay and stone				375	1,987								2,362
Sand—ordinary	14,512	11,625	7,200	375								9,049	42,761
Sand—very fine			1,775										1,775
Mud			3,025	450									3,475
Totals	15,312	13,450	13,875	10,875	6,449							13,424	73,385

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION AND QUANTITIES of Material removed by Dredges operated by the Public Works Department &c.—*Continued.*

DREDGE *QUEEN.*

Description of Material dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.
Clay	1,230												1,230
Clay and stone	2,870	5,450	7,680	6,330	3,830					3,690	4,380	3,740	37,970
Mud					2,380						3,570	2,110	8,060
Totals	4,100	5,450	7,680	6,330	6,210					3,690	7,950	5,850	47,260

DREDGE *No. 9.*

Hard-pan		6,200	7,500										13,700
Boulders		1,350	550	300									2,200
Clay	17,000	14,100	13,500	18,000	5,400								68,000
Sand, ordinary	20,050	19,000	10,500	10,000	3,000								62,550
Totals	37,050	40,650	32,050	28,300	8,400								146,450

DREDGE *ST. LOUIS.*

Clay and stone	630												630
Sand, ordinary	3,775	5,265	4,695	4,350							4,035	4,680	26,800
Totals	4,405	5,265	4,695	4,350							4,035	4,680	27,430

DREDGING—QUEBEC AND ONTARIO—*Continued.*

CLASSIFICATION AND QUANTITIES of Materials removed by Dredges operated by the Public Works Department &c.—*Concluded.*

DREDGE *No. 8.*

Description of Material Dredged.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand Totals.
	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.	c. yds.
Hard-pan				1,600	1,140								2,740
Boulders					440								440
Clay	33,060	24,820	29,500	24,340	23,560								135,280
Totals	33,060	24,820	29,500	25,940	25,140								138,460

DREDGE *No. 1.* (Railways and Canals.)

Hard-pan	100			2,900	4,000						3,250	4,490	14,740
Boulders				430	260							250	940
Gravel		700											700
Clay	4,350	3,100	3,760										11,210
Sand—ordinary	600	800											1,400
Totals	5,050	4,600	3,760	3,330	4,260						3,250	4,740	28,990

DREDGE *NITHSDALE.*

Hard-pan	2,455												2,455
Boulders												100	100
Gravel	900												900
Clay	2,400												2,400
Clay and stone		2,959	3,434	3,095							1,627	2,980	14,095
Sand—very fine	195	225											420
Totals	5,950	3,184	3,434	3,095							1,627	3,080	20,370

DREDGE STATEMENT, 1898–9.

SHOWING materials removed at the different localities, total amount of expenditure on each dredge, and average cost per cubic yard.

DREDGE 'CHALLENGE.'

Location.	Hard-pan.	Boulders.	Gravel.	Clay.	Clay and stone.	Sand, ordinary.	Sand, fine.	Mud.	Total Cubic Yards.
	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.
Midland				11,700		3,990		5,700	21,390
Meaford			24,370	13,790		3,600			41,760
			24,370	25,490		7,590		5,700	63,150

Total amount of expenditure, $6,611.64. Cost per cubic yard, $10\frac{7}{75}$ cts.

DREDGE 'ONTARIO.'

Port Stanley				3,840		23,830			27,670
Jordon			7,140	7,940		11,520			26,600
Hamilton				2,805		1,665			4,470
			7,140	14,585		37,015			58,740

Total amount of expenditure, $8,684.67. Cost per cubic yard, 14½ cts.

DREDGE 'NIPISSING.'

Bowmanville			800	3,700		27,412			31,912
Frenchman's Bay						6,300	1,775	3,475	11,550
Oakville	1,325	575	6,837	5,400	2,362				16,499
Cobourg	4,375					9,049			13,424
	5,700	575	7,637	9,100	2,362	42,761	1,775	3,475	73,385

Total amount of expenditure, $7,005.06. Cost per cubic yard, 9⅝ cts.

DREDGE 'QUEEN.'

Adolphustown				1,230					1,230
Belleville					37,610			4,490	42,100
Deseronto								3,570	3,570
Trenton					360				360
				1,230	37,970			8,060	47,260

Total amount of expenditure, $5,123.14. Cost per cubic yard, 10⅘ cts.

STATEMENT showing the material removed at the different localties, &c.—*Concluded.*

DREDGE 'ST. LOUIS.'

Location.	Hard-pan.	Boulders.	Gravel.	Clay.	Clay and Stone.	Sand ordinary.	Sand fine.	Mud.	Total Cubic Yards.
	c y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.
River St. Francis. ...	.....	.....	.....	.....	630	26,800	.....	.....	27,430

Total amount of expenditure, $4,273.35. Cost per cubic yard, 15¼cts.

DREDGE 'NO. 9.'

Kaministiquia River .	13,700	2,200	.....	68,000	.....	62,550	.....	.....	146,450

Total amount of expenditure, $9,849.47. Cost per cubic yard, 6$\frac{13}{16}$cts.

DREDGE 'CANALS NO. 1.'

Ile Gros Bois..... ...	...	....	.....	2,750	... .	....	.....	....	2,750
Boucherville.....	100	.....	.....	1,600	.....	....	.....	.....	3,100
Varennes	....	.....	700	6,860	.....	1,400	.....	.....	7,560
St. Johns.....	14,640	940	.....	.....	.....	.....	.....	.....	15,580
	14,740	940	700	11,210	.....	1,400	.....	....	28,990

Total amount of expenditure, $5,615.36. Cost per cubic yard, 19$\frac{3}{8}$cts.

DREDGE 'NO 8.'

Kingston.....	2,740	440	.....	135,280	.....	... .	.....	..	138,460

Total amount of expenditure, $13,754.91. Cost per cubic yard, 9$\frac{1}{16}$c.

DREDGE 'NITHSDALE.'

St. Jean des Chaillons.	2,455	.....	.....	1,380	.....	....	.....	. . .	3,835
St. Nicholas.....	..	.....	900	900	....	.....	.....	.....	1,800
St. Michel.....	.....	100	.... .	.....	14,215	.....	420	.....	14,735
	2,455	100	900	2,280	14,215	.....	420	.....	20,370

Total amount of expenditure, $10,021.34. Cost per cubic yard, 49½ cts.

STATEMENT showing the material removed at the different localities, &c.—*Concluded.*

DREDGE 'No. 6' (Contractor's).

Location.	Hard-pan.	Boulders.	Gravel.	Clay.	Clay and Stone.	Sand, ordinary.	Sand, fine.	Mud.	Total, Cubic Yards.
	c.y.	c. y.	c. y.	c. y.	c. y.	c. y.	c. y.	c.y.	c. y.
Coteau Landing	....	.....	575	29,600	14,875	22,575	.....	....	67,625

Total amount of expenditure, $8,458. Cost per cubic yard, 12½ cts.

DREDGE 'LITTLE GIANT' (Contractor's).

Chateauguay	380	200	.....	7,910	.....	8,160	.....	....	16,650
Hawkesbury	3,070	470	390	1,600	.....	8,620	.....	.. .	14,150
	3,450	670	390	9,510	.....	16,780	.....	.....	30,800

Total amount of expenditure, $8,843.25. Cost per cubic yard, 29$\frac{1}{10}$ cts.

DREDGE 'T. F. M. No. 1' (Contractor's).

Laprairie	1,575	....	.....	31,225	5,325	.... .	....		38,125
Papineauville	.....	.....	.....	3,400	.....	. . .	.....	.....	3,400
Rockland	.. .	.....	.....	3,750	.....	... ...	.. ..	.....	3,750
	1,575	....	.....	38,375	5,325	... .	....		45,275

Total amount of expenditure $9,335.88. Cost per cubic yard, 20$\frac{5}{8}$ cts.

DREDGE 'ARTHUR' (Contractor's).

Kaministiquia River	.....	....	.....	3,447	.....	1,000	.....	.....	4,447

Total amount of expenditure, $712.25. Cost per cubic yard, 16 cts.

STONE LIFTERS.

The following statement shows the expenditure and localities where the stone lifters were employed during the fiscal year 1898--9

Name of Stone Lifter.	Where Employed.	When Employed.	Expenditure.	Nature of Work.
			$ cts.	
"Twin".....	Pointe-aux-Trembles (en bas)	July 2 to 18, 1898	86 85	Removing boulders from the steamboat channel as well as at the wharf.
"Ste. Croix".	" " ..	July 9 to Aug. 22, 1898	562 75	" "
"No. 1".	St. Jean des Chaillons.....	July 2 to Aug. 10, 1898	313 45	Removing boulders from channel opposite the brickyard wharf.
"Twin".. ...	Cap Santé.....	July 20 to Sept. 27. 1898	572 49	Removing boulders at wharf and from the steamboat channel.
"Ste. Croix".	St. Antoine de Tilly...	Aug. 25 to Sept. 25, 1898	591 80	" "

PROVINCE OE MANITOBA.

DREDGE 'WINNIPEG.'

Dredging at the mouth of Red River, Lake Winnipeg, and at West Slough, Selkirk, Manitoba.

Dredging a channel through the bar at the mouth of the Red River, Lake Winnipeg, in order to give uninterrupted navigation to lake boats, thereby develop the industries associated with the lake, began in 1884, and the work of dredging has been carried on since then each succeeding year.

Previous to 1893, dredging operations were located at the mouth of the west channel.

Transferring operations from the west to the east channel was occasioned by the flood and heavy ice flow of 1893, which caused the one to fill in, while very effectually scouring out the other.

The work in the west channel, however, cannot be in anyway considered as useless, for uninterupted navigation was maintained there, while previous to 1893, the extent of the bar at the mouth of the east channel (now used) would have required at least three seasons' work to get passage through it.

Owing to the unfortunate accident to the tug's (*Sir Hector*) machinery, in the wrecking of the cylinder, there was no dredging done at the lake from June, 1898, until June, 1899.

A new cylinder had to be provided, and was ordered from Messrs. Norman & Evans (Pound Manuft. Co.), Lockport, N.Y., they having all the patterns, &c., &c. They were unfortunate in casting; having two failures through flaws which were only discovered when the work was nearly completed, causing unexpected and regrettable delay.

The delay was such that the dredge was unable to be put to work until August 16. It was too late in the season to do any work at the lake that would be of any real benefit. The dredge was therefore placed to work on August 16, 1898, in the West Slough, near Selkirk, where the entrance to the slough needed broadening, and other portions of it requiring improving.

This work was successfully carried out, and the slough dredged to give a good depth of water for all purposes of navigation and to afford proper winter quarters for the lake fleet and the dredging plant.

The slough is the only place available for steamboats, dredging plant, &c., which affords a safe harbour against freshets and ice flooe in spring.

Dredging operations in the slough closed October 4 last.

The work accomplished in the slough, taking into consideration that the weather was most unpropitious, was very satisfactory.

The plant moved to the mouth of the river to begin dredging on May 29, 1899. Piles, were driven, braced and capped, to which the coal barge is moored and the plank ties up to it at night.

Soundings were made throughout the channel (May 31) and found it in excellent condition, giving nothing less than 9 feet of water and an average width of 300 feet. The lake level was 1 foot 1 inch above mean low water mark or 2 feet 1 inch above low water mark.

The dredge was put to work at the elbow of the channel and made satisfactory progress up to the end of the fiscal year, June 30, 1899.

The total amount of material removed is 41,940 cubic yards; the sum expended $10,452.36, and cost per cubic yard 24·94 cents.

It must be taken into consideration that the cost per cubic yard has been materially increased by the delay sustained by the wrecking of the tug's cylinder and the heavy expense in replacing it.

The industries in connection with the lake trade, viz., lumber, piles, ties, cordwood and fish, are on the increase.

DREDGING—MANITOBA.

CLASSIFICATION OF DISBURSEMENTS of the Dredge *Winnipeg* during the Year ended June 30, 1899.

Items.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Grand totals
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Wages	631 00	633 00	625 00	494 28	370 50	278 50	210 25	195 00	233 75	425 52	707 97	625 00	5,429 77
Coal	.....	561 40	... ...	422 80	.....	.....	.....	.....	.....	.....	.....	889 41	1,873 61
Wood (piles)	15 00	.....	7 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	22 00
Provisions	131 66	150 48	143 52	62 90	.....	.....	.....	.....	.....	.....	60 77	200 31	749 64
Stores	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	440 04	440 04
Equipment	26 90	106 32	.....	.....	.....	.....	.....	.....	.....	.....	.....	54 47	187 69
Repairs	50 55	592 05 133 63	13 75	116 78	154 10	162 61	96 93	177 35	67 42	256 32	326 23	110 19	2,257 91
Pilotage	... ...	... ...	... ...	... ...	.....	... ...	... ...	.....	.....	... ...	.....	.....	.....
Towage	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Contingencies	33 38	34 97	56 59	63 84	... ...	14 76	.....	.....	0 60	31 97	81 59	24 00	341 70
Totals	888 49	2,211 85	845 86	1,160 60	524 60	455 87	307 18	372 35	301 77	713 81	1,176 56	2,343 42	11,302 36
Working expenses	837 94	1,486 17	832 11	1,043 82	370 50	293 26	210 25	195 00	234 35	457 49	850 33	2 233 23	9,044 45
Repairs, ordinary	50 55	133 63	13 75	116 78	154 10	162 61	96 93	177 35	67 42	256 32	326 23	110 19	1,665 86
" extraordinary	....	592 05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	592 05
Totals	888 49	2,211 85	845 86	1,160 60	524 60	455 87	307 18	372 35	301 77	713 81	1,176 56	2,343 42	11,302 36

$850 is to be deducted (reconstruction tug *Victoria*) from grand total to give correct price per cubic yard.

SESSIONAL PAPER No. 9

STATEMENT showing the material removed at different localities, the total annual expenditure on each dredge, and the average cost per cubic yard, for the fiscal year 1898-9.

Localities.	Total.
	c. y.
West Slough at West Selkirk	27,540
Mouth of Red River (east channel), Lake Winnipeg	14,400
Total	41,940

Total expenditure during fiscal year 1899, $10,452.36. Average cost per cubic yard, 24·94 cents.

PROVINCE OF BRITISH COLUMBIA.

DREDGING, NANAIMO HARBOUR.

The harbour of Nanaimo, on the east coast of Vancouver Island and Straits of Georgia, is a very important one, on account of the extensive collieries worked in its vicinity; coal is shipped from here in large quantities to all points on the Pacific coast.

This harbour may be considered to be land locked. The entrance opening towards the east, is protected from heavy seas and winds from that direction by Sharp Point, on Vancouver Island, and Gabriola Island. To the north, Newcastle and Protection Islands guard it from seas caused by north and north-east gales, the direction of the longest reaches.

From the north end of the harbour a narrow passage between Vancouver and Newcastle Islands, leads to Departure Bay, 4½ miles distant, where there are several colliery wharfs, but it is only navigable by small craft. The entrance to Departure Bay for ships is by the north end of Newcastle Island.

The Nanaimo River empties into the harbour from the south over extensive mud flats lying between the New Vancouver Coal Company's wharfs and Sharp Point. These mud flats would no doubt encroach to a much greater extent than at present upon the harbour, were it not for the scouring effect of the ebb and flow of the tide, which with varying velocity races along their outer edge.

The south channel or passage is the entrance of the harbour leading to the loading docks of the New Vancouver Coal Mining and Land Company, Limited, the largest producers and exporters of coal in the Pacific province. The workings of this company extend in all directions at depths of from 800 to 1,000 feet under Nanaimo harbour towards Protection Island, and under the Mud Flats towards Sharp Point. The mines from the new shaft sunk lately at Gallows Point, Protection Island, are advancing to meet the workings from the Esplande shaft situated south of the company's wharfs. The annual output of coal of this company, for foreign as well as domestic use, is placed at 500,000 tons, the market value of which approximates $2,000,000.

The south channel or passage has been much contracted since 1862 by silt carried down into it by freshets on the Nanaimo and Chase Rivers. Sailing vessels in ballast arriving to load at the company's wharfs enter by the north channel and anchor to the north and west of the Middle Bank to wait their turn to unload at the ballast wharf and then load at the coal shoots. When loaded they are towed to sea by way of the south channel.

If there happen to be no room at the shoots, sailing vessels have to make way for steamships arriving for coal, by hauling off to the ground lying abreast of the wharfs between the site of the Nichol Rock and the spar buoy at the southern extremity of the Middle Bank, where they are exposed to dangerous winds blowing from across the Mud Flats and from the opposite direction down the passage leading to Departure Bay.

A great number of the vessels, both steam and sail which enter the harbour of Nanaimo are of large tonnage, drawing from 20 to 30 feet when loaded. These vessels

incur great risk of grounding, especially a sailing ship in tow of a tug, when leaving the company's wharfs, and because of the shoal water lying immediately to the east of the wharfs. Coasting steamers of light draught on arriving at and departing from the city wharfs find no little difficulty and danger in 'Beacon' and 'Carpenter' Rocks, which lie north of the wharfs about 700 feet from the shore.

The works which should be undertaken in addition to what has already been effected in connection with the lowering of the 'Nichol Rock' to 16 feet depth mean low water, spring tides, at a cost of about $44,000, are:—

1st.—The improvements required to afford safe navigation to deep draught sea-going vessels calling at the New Vancouver Coal Company's wharfs.

2nd.—Such additional dredging as may be found necessary to ensure the safety of coasting craft calling at the city wharfs.

As before stated, vessels arriving for coal in ballast enter the harbour by the south channel, come to anchor and gradually make their way up to the coal shoots. This can be done by the exercise of ordinary care without much danger of grounding or striking, now that the depth over 'Nichol Rock' is 16 feet at mean low water, spring tides. Of course, Middle Bank is a possible danger, but its removal is out of the question at the present time, owing to its great extent.

The improvements which should first be carried out are therefore limited to those found to be necessary in the immediate vicinity of the wharfs, and thence seawards by the south passage towards the entrance to the harbour. It is found that on account of the close proximity of the rock to the surface of the bottom along the front of the wharfs—it crops up at a depth of 26 feet below mean low water springs—the depth of 30 feet cannot be obtained in that locality except at great cost. The improvements to be proceeded with should therefore be confined for the present to securing by dredging the minimum depth of 26 feet along the wharf front and the greater depth of 28 to 30 feet at mean low water spring tides, over the area of the south channel lying east of the wharfs.

During the fiscal year 1898-9, the operations in Nanaimo Harbour consisted of dredging in front of the city wharf and in widening the south channel to a depth of 30 feet at low water.

The dredge *Mud Lark* arrived at Nanaimo on October 8, 1898, but, owing to extensive repairs being necessary, dredging was not commenced until November 6. From that date until November 15, dredging was carried on in front of the city wharf and 2,970 cubic yards of material was removed.

The dredge was then moved to the south channel, where operations were continued, with short interruptions on account of minor repairs and stormy weather, until the end of May, when the dredge was laid up and the plant moved to the Fraser River. During this period material, chiefly sand, to the amount of 449 scow loads, or 60,615 cubic yards, was removed.

The following table classifies, in a concise form, the particulars of the manner in which the time, in hours, has been consumed in dredging, repairing, moving, &c., as well as the quantity of material dredged and fuel used:—

Hours working		2,060
Hours dredging	1,101	
" repairing	566	
" dismantling bofore moving	18	
" moving	12	
" preparing to lay up dredge	90	
" coaling	102	
" watering	22	
" sundries, such as cleaning, preparing dredge, &c.	149	
		2,060
No. of scows of material removed		449
" cubic yards of material removed		60,615

The details of expenditure for running expenses, during the past fiscal year, are as follows:—

Wages	$5,578 55
Material	850 63
Equipment	629 18
Towage	50 00
Coal	1,351 47
Provisions	1,274 01
Water	31 00
Contingencies	144 75
Total	$9,909 59

The appropriation for dredging in British Columbia, $15,000, was used to cover the running expenses of (1) the snag boat *Samson*, operating on the Fraser River, and (2) the dredge *Mud Lark*, except when operating in Nanaimo Harbour, and (3) in building a dam on the Columbia River, between the Arrow Lakes, to deepen the water at Swift-water Riffle. This appropriotion was augmented by the amounts, aggregating $1,980, charged to the Marine Department, and credited to dredging, British Columbia, from month to month for the services of the snag boat *Samson*, in attending to the buoys marking the channels at the mouth of the Fraser River. Therefore, the amount available for the combined expenditure during the past fiscal year was $16,980.

(1) Snag Boat *Samson*, Fraser River:—

The *Samson* was engaged principally in removing snags from the channel of the Fraser River between Chilliwhack and the mouth, including the North Arm and Pitt River, in sounding and surveying the channel between New Westminster and the mouth of the main channel and driving piles, &c., to mark the channels through the sand heads at the mouths of the North Arm and Canoe Pass.

The *Samson* returned from the Stikine River on October 20, 1898, and was immediately employed at her former duties in connection with the Fraser River. Shortly after the arrival of the *Samson* at New Westminster, Captain P. Wilson, who had been in command while on the Stikine River, was replaced by Captain C. H. DeBeck, who assumed command on October 22.

Previous to the return of the *Samson*, the snag scow, which was towed by a hired steamer, was used on the Fraser River in the removal of snags, &c. This scow was constructed to take the place of the *Samson* when the latter was sent to the Stikine River.

The following is a table giving the number of hours the *Samson* was employed on each service from October 21, 1898, to June 30, 1899:—

October 21, 1898, to June 30, 1899, exclusive of Sundays and holidays, 214 working days, equal 2,140 hours.

	Hours.
Number of snags removed 223; snagging	282
Buoy service	350
Repairing and painting	306
Sounding and surveying	68½
Pile-driving	66
Visiting, repairing and painting tide gauges	79
Repairing observatory gang-way	10
" winter boom	23
Removing sturgeon stakes	34
Preparing to lay up and to commence	50
Laid up on acconnt of ice	40
Pulling piles for W. A. Gilley	25
Raising boiler of *Edgar* and placing boiler in *Vulcan*	10
Removing broken pile from ferry landing	15
Employed in connection with Fraser River improvements	189
Sundries, such as shipping supplies, watering, taking on fuel, &c	592½
	2,140

Steam up	1,570¾ hours.
Coal used (washed nut)	317,600 lbs.
Wood used	57½ cords

The details of the expenditure in connection with the snag boat *Samson* are as follows :—

Wages	$ 5,258 28
Provisions	1,508 83
Equipment	164 46
Material	1,159 24
Wood and coal	643 00
Tug hire	584 00
Water	30 00
Contingencies	75 53
Total	$ 9,423 34

(2) Dredge *Mud Lark* :—

At the opening of the fiscal year 1898–9 the dredge *Mud Lark* was employed on the Fraser River, in removing sand bars, &c., at several points, until September 1, 1898. During this time, a period of fifty-two working days, 20,450 cubic yards of sand was removed, of which 18,300 cubic yards was dumped over the side and 2,160 cubic yards taken away in the dump scows.

Preparations for moving the dredge to False Creek, Vancouver Harbour, were commenced on September 1, 1898, and dredging there was started on the 8th. The work contemplated at this point was completed on October 5. During this 19,260 cubic yards of material was removed of which 8,325 cubic yards was dumped over the side and the remainder, 10,935 cubic yards, was removed in scows and dumped in deep water.

The following details show the expenditure under this service :—

Wages	$ 2,108 91
Material	325 99
Equipment	34 55
Provisions	691 21
Coal	469 05
Water	55 00
Tug-hire	80 00
Contingencies	64 75
Total	$ 3,829 46

(3) Dredging Columbia River at Cariboo City :—

The sum of $1,991.43 was expended in building a dam on the Columbia River, at Cariboo City, with the object of deepening the channel.

The details of the expenditure are as follows :—

Wages	$ 1,298 25
Material	693 18
Total	$ 1,991 43

(4) Dredging, B.C., generally :—

The following are the details of the expenditure under the above heading :—

Examining dredges	$	232 50
Wages on tug *Princess*		330 00
Supplies "		34 26
Survey at Alberni		156 15
Care of plant, Somas River		7 00
Removal of snags from Nicomekl River		294 25
Supplies for above work		12 80
Unloading coal		26 25
Wharfage, Wrangel		10 90
Board, Cariboo City		8 50
Total	$	1,112 61

Dredge Repairs, B.C.—Appropriation, $2,000.

(*a*) Snag boat *Samson* :—

During the winter the snag boat *Samson* was hauled out on the ways for general repairs, which were necessary on her return from the Stikine River. The repairs included some new timbers, planking and deck. The house on the upper deck was lengthened 9 feet and the sanitary arrangements overhauled. The total cost of this was $1,121.24, the ordinary repairs costing $123.68.

(*b*) Dredge *Mud Lark* :—

The repairs to the dredge *Mud Lark* which were made during the past fiscal year consisted, in addition to ordinary minor repairs, in renewing the stern spud anchor and supplying a new dipper arm. The cost of these latter was $534.31, and of the minor repairs, $217.02.

DREDGING PLANT.

The following is a summary description of the dredging plant owned and operated by the Public Works Department in the various parts of the Dominion.

MARITIME PROVINCES.

The self-propelling elevator dredge *St. Lawrence* (iron hull)—

Length over all	175 feet.
Beam	30 "
Draught when loaded, aft	13·5 "
" " forward	8·5 "
Least working depth,(ladder with 32 buckets dropped 30 feet from bow)	8·5 "
Greatest working depth (bucket ladder dropped 40 feet from bow)	28·0 "
Capacity of hopper for spoil material	350 cubic yards.
Speed when light	6 to 7 miles per hour.
Speed when loaded	3 to 4 "
Daily rate of dredging in hard material	350 to 700 cubic yards.
" " ordinary earth	750 to 1,000 "
" " soft material	1,050 to 1,400 "

The self-propelling elevator dredge *Canada* (iron hull)—

Length over all	130 feet.
Beam	20 "
Draught when loaded, aft	11·5 "
" " forward	7·0 "
Least working depth	7·0 "
Greatest working depth (ladder 24 buckets)	16·0 "
Capacity of hopper for spoil material	90 cubic yards.
Speed when light and newly painted	6 to 7 miles per hour.
Speed when loaded	3 to 4 "
Daily rate of dredging in hard bottom	180 to 270 cubic yards.
" " with ordinary digging	180 to 360 "
" " soft material	360 to 450 "

The spoon dredge *New Dominion* (wooden hull)—

Length over all	90 feet.
Width	28 "
Draught	5½ "
Greatest working depth	21 "
Daily rate of dredging in hard material	300 cubic yards.
" " ordinary material	450 "
" " soft material	600 to 700 "
Number of dump scows or barges used	4

The spoon dredge *Prince Edward* (wooden hull)—

Length	80 feet.
Width	28 "
Draught	6 "
Greatest working depth	20 "
Daily rate of dredging in hard material	350 cubic yards.
" " ordinary material	500 "
" " soft material	600 to 700 "
Number of accompanying dump scows	3

The spoon or dipper dredge *George McKenzie* (wooden hull)—

Length	90 feet.
Width	28 "
Draught	5 "
Greatest working depth	22 "
Daily rate of dredging in hard material	350 cubic yards.
" " ordinary material	500 "
" " soft material	600 "

The boom and dipper dredge *Cape Breton* (steel hull)—

Length	91 feet.
Beam	36 "
Draught	7½ "
Greatest working depth	34 "
Daily rate of dredging in hard material	1,000 cubic yards.
" " ordinary material	1,500 "
" " soft material	2,000 "
Number of barges used (steel, each of 210 cubic capacity)	2

The new clam shell wood dredge, 3 decked scows.
The pile-driver, with boiler and engine mounted on scow.
The stone lifter with large grips.

N.B.—Tug service performed by hired tugs in the Maritime Provinces.

River St. Lawrence Ship Canal.

The elevator dredge *Laurier* (wooden hull)—

Length over all	168·0 feet.
Width of beam	32·0 "
Depth of hold	14·0 "
Average draught	10·5 "
Greatest working depth	42·5 "
Daily rate of dredging in hard clay, about	1,700 cubic yards.
" " ordinary earth, about	3,000 "
" " soft clay (Lake St. Peter)	4,000 "

The elevator dredge *Laval* (wooden hull, small buckets)—

Length over all	150·0 feet.
Width of beam	30·0 "
Depth of hold	14·0 "
Average draught	11·0 "
Greatest working depth	43·5 "
Daily rate of dredging in hard material, about	400 cubic yards.
" " ordinary clay	2,000 "

The elevator-dredges *Nos. 11* and *12* (wooden hulls)—

Length over all	137·0 feet.
Width of beam	29·5 "
Depth of hold	11·0 "
Average draught	8·5 "
Greatest working depth	38·0 "
Daily rate of dredging in hard material, about	200 cubic yards.
" " ordinary clay "	2,000 "

The elevator dredge *No. 8* (wooden hull)—

Length over all	137·0 feet.
Width of beam	29·6 "
Depth of hold	11·0 "
Average draught	8·6 "
Greatest working depth (short bucket frame)	27·0 "
Daily rate of dredging in hard material, about	200 cubic yards.
" " soft clay, about	1,800 "
" " ordinary clay, about	1,200 "

The stone lifter *No. 2* (wooden hull)—

Length over all	80·0 feet.
Breadth	25·0 "
Depth of hold	7·0 "
Size of well	22 by 10·0 "

Fourteen dumping scows, the dimensions and capacities of which are as follows:—

No. of Scows.	Length.	Breadth.	Depth of Hold.	Capacity.
1	60 feet.	16 feet.	6½ feet.	60 cubic yards.
7	80 "	16 "	7 "	75 "
2	84 "	20 "	8 "	150 "
2	90 "	18 "	7 "	150 "
2	95 "	23 "	8½ "	200 "

The coal barge *Caroline*—

Length over all	103·7 feet.
Breadth	22·5 "
Depth of hold	8·3 "
Capacity	250 tons.

The coal barge *Waverly*—

Length over all	100·0 feet.
Breadth	20·9 "
Depth of hold	7·1 "
Capacity	250 tons.

The coal scow *No. 1*—

Length over all	80·0 feet.
Breadth	16·0 "
Depth of hold	4·5 "
Capacity	90 tons.

The coal scow *No. 2*—

Length over all	54·0 feet.
Breadth	18·0 "
Depth of hold	4·0 "
Capacity	60 tons.

The sounding scow—

Length over all	60·0 feet.
Breadth	25·0 "
Depth of hold	4·5 "

The winch scow *No. 1*—

Length over all	54·0 feet.
Breadth	18·0 "
Depth of hold	4·0 "

The winch scow *No. 2*—

Length over all	50·0 feet.
Breadth	19·0 "
Depth of hold	4·0 "

C. J. The above ship channel plant was attended in 1898-99 by the tugs *John Pratt, St. James, St. Francis, Brydges, M. J. Parsons, Cartier, St. John d'Iberville* and *Emelia.*

QUEBEC AND ONTARIO.

The elevator dredge *No. 9* (wooden hull)—

Length	137·0 feet.
Width	29·0 "
Depth of hold	11·0 "
Draught	9·0 "
Greatest working depth	38·0 "
Daily rate of dredging in hard material	200 cubic yards.
" " soft "	2,000 "

Dredge attended by tug *Delisle* with two dump scows, each of 80 cubic yards capacity.

The dipper dredge *Queen* (wooden hull)—

Length	65·3 feet.
Width	25·0 "
Depth of hold	5·0 "
Draught	3·0 "
Greatest working depth	16·0 "
Daily rate of dredging in hard material	200 cubic yards.
" " in medium firm material	400 "
" " in soft material	600 "

Dredge attended by tug *Ottawa* with two dump scows, of 60 cubic yards capacity.

The dipper dredge *Nipissing* (wooden hull)—

Length	70.7 feet.
Width	25·0 "
Depth of hold	6·0 "
Draught	4·5 "
Greatest working depth	20·0 "
Daily rate of dredging in hard-pan, etc	300 cubic yards.
" " in stiff clay	500 "
" " in soft clay and sand	800 "

Dredge attended by tug *St. Paul* and two dump scows, of 75 cubic yards capacity.

The dipper dredge *Ontario* (wooden hull)—

Length	71·0 feet.
Width	25·0 "
Depth of hold	6·0 "
Draught	4·5 "
Greatest working depth	20·0 "
Daily rate of dredging in hard material	300 cubic yards.
" " in medium firm material	500 "
" " in soft clay and loose sand	800 "

Dredge attended by new tug *Sir John* with two dump scows, of 60 cubic yards capacity.

The dipper dredge *Challenge* (wooden hull)—

Length	70·5 feet.
Width	25·0 "
Depth of hold	6·0 "
Draught	4·5 "
Greatest working depth	21·0 "
Daily rate of dredging in hard material	300 cubic yards.
" " in medium firm or ordinary earth	500 "
" " in soft clay and loose sand	800 "

Dredge attended by tug *Trudeau* with two dump scows, having a capacity of 60 cubic yards.

The spoon dredge *St. Louis* (wooden hull)—

Length	50·0 feet.
Width	14·0 "
Depth of hold	4·0 "
Draught	2·5 "
Greatest working depth	12·0 "
Daily rate of dredging in hard-pan, &c	50 cubic yards.
" " in soft material	300 "

Dredge attended by tug *Daisy* with two dump scows, having a capacity of 30 cubic yards; plant used only for light digging.

A twin stone lifter (catamaran style)—

Length of each wooden hull	42·0 feet.
Width " "	8·5 "
Depth of hold	3·0 "
Draught	1·0 "
Distance between hulls	7·0 "

One wooden scow for reserve coal supply for Q. & O. dredging fleet—

Length	59·0 feet.
Breadth	17·0 "
Depth of hold	8·3 "
Draught when loaded	6·0 "
Capacity	100 tons.

MANITOBA.

The dipper dredge *Winnipeg* (wooden hull)—

Length	71 feet.
Width	25 "
Depth of hold	6 "
Draught	4·5 "
Greatest working depth	20·0 "
Daily rate of dredging in hard material	300 cubic yards.
" " ordinary earth	500 "
" " soft clay and loose sand	800 "

Dredge attended by tug *Sir Hector* with two dump scows, having a capacity of 60 cubic yards, and a coal barge.

The *Priestman* dredge.
The steamer *Victoria*.

BRITISH COLUMBIA.

The dipper dredge *Mud Lark* (wooden hull)—

Length	90·0 feet.
Width	30·0 "
Depth of hold	7·9 "
Draught	4·6 "
Greatest working depth	40·0 "
Daily rate of dredging in hard-pan and hard gravel and boulders	300 to 400 cubic yds.
" " medium hard earth	500 to 600 "
" " soft material, mud, etc	800 "

Dredge *Mud Lark* attended by tug *Princess* and three dump scows.

The self-propelling stern wheel, clam-shell dredge *Muskrat*—

Length	60·0 feet.
Width	30·0 "
Depth of hold	3·3 "
Draught	1·7 "
Daily rate of dredging in loose gravel, &c., the only kind of material which has been worked so far	300 cubic yards.

The *Muskrat* works with two scows in attendance.
The snag-boat *Samson* and one scow.
The snagging scow built for use on the Fraser while the *Samson* was operating on the Stikine.

GRAVING DOCKS.

The Dominion Government owns and maintains three graving docks, viz:—The Lorne Graving Dock, at Lévis, in the province of Quebec; the Kingston Graving Dock, at Kingston, in the province of Ontario; and the Esquimalt Graving Dock, at Esquimalt, near the city of Victoria, in British Columbia.

LÉVIS GRAVING DOCK.

The town of Lévis is situated on the south shore of the St. Lawrence, opposite the city of Quebec.

Construction.—In 1878 the construction of a graving dock was commenced by the Harbour Commissiones of Quebec at St. Joseph de Lévis or Lauzon, a village two miles below the city of Lévis. The amount required for the prosecution of the work was loaned by the Dominion Government to the Harbour Commissioners of Quebec, under authority of the Act 38 Victoria, chap. 56, assented to on April 8, 1875.

The dock was completed in 1886, at a cost of $910,000; on September 1, of that year, the ss. *Titania* was docked therein.

The dock became a public work of the Dominion Government under authority of the Act 50 Vic., chap 6, assented to on May 22, 1888, which also realeased the Quebec Harbour Commissioners from all obligation to repay to the Government of Canada the whole or any part of the advances made to them towards the construction of the work or any sums in payment of the interest thereon. The dock came under the control and administration of the Department of Public Works on October 17, 1890.

The general plan of the dock is a rectangular figure, 445 feet long, 100 feet wide at coping level and 73 feet wide at the bottom, with a circular head 31 feet radius. Square offsets of 19 feet on each side from the top and width of the timber slides and stairs, which are placed in pairs, side by side, at both ends. The width of the inner invert, between the main body of the dock and the caisson berth is 8 feet, making the total length of the dock, inside the first meeting face of the caisson, 484 feet.

The depth of water on the sill is 26½ feet, at high water spring tides and 20½ feet at high water neap tides.

The entrance of the dock is 62 feet wide, and it closes by a caisson travelling on rollers, worked by a pair of high pressure auxiliary engines of 34 horse-power. These engines also work a small pump with a capacity of 900 gallons per minute, which is used to clear the drainage well, the dock is constantly kept dry with this pump.

The main pumps, two in number, are of the ordinary style of lift pumps, 4 feet in diameter with a 5-foot stroke, and discharge 14,000 gallons per minute. They are worked by a pair of jet condensing engines, 27½-inch cylinders with 3-foot stroke, and of 400 horse-power.

Steam is supplied by three tubular boilers, 14 feet 10 inches in length and 6 feet in diameter.

The dock proper is built of the best quality of limestone from the Terrebonne quarries, the courses being exceptionally heavy and laid in Portland cement. It is lighted with twelve arc lamps supplied from a Thomson & Houston dynamo, so that vessels can be docked at night and work carried on without interruption.

The following is a statement showing the number of vessels docked, the cost of maintenance and repairs, and the amounts collected during each fiscal year from the time the control of the dock was assumed by the Government up to and including the present fiscal year. Under the head of repairs and improvements are set down the amounts expended for such works and additions as could not be performed by the

ordinary staff of the dock. In all cases the cost of ordinary care and small repairs to the machinery is included under the head of maintenance.

Fiscal Year.	Number of Vessels Docked.	Repairs and Improvements.	Maintenance.	Revenue.	Remarks.
		$ cts.	$ cts.	$ cts.	
1888-9..	3	.....	4,965 67	2,349 60	Ordinary care and small repairs.
1889-90.	5	2,194 90	9,331 74	17,498 99	Cleaning, painting, repairs to machinery.
1890-1..	5	6,283 24	5,605 31	18,063 52	Iron beams placed under the bearings of the shaft of the main pumps to strengthen and do away with vibration; machinery painted and generally overhauled; a quantity of gravel and stones removed by one of the departmental dredges, assisted by a stone lifter from the shoal off the entrance of the dock.
1891-2..	3	4,981 35	8,298 76	4,384 97	Sluice valves in caisson and culverts taken off their seats, cleaned of all rust and replaced; inside of caisson scraped and two coats of cement wash applied; outside of caisson and folding bridge painted and joints in masonry of dock repainted. General and thorough repairs to engines of auxiliary pumps and boilers.
1892-3..	11	2,626 03	7,838 47	13,306 43	Engine-house and shop painted three coats; caisson placed in chamber, and bottom and lower portions and sides and ends scraped and painted two coats; timber facing repaired to ensure close joint with invert and side walls.
1893-4..	8	.....	7,967 07	13,310 94	Stone foundation for coal shed built, but shed not completed.
1894-5..	7	.....	8,321 62	13,795 19	Coal shed completed and ordinary care to machinery, &c.
1895-6..	8	.....	9,205 80	8,835 39	Caisson berth and recess cleaned of sediment; bottom, sides and ends of caisson scraped of all rust and painted two coats.
1896-7..	7	.....	7,718 88	12,346 57	Head and sides of dock levelled, back of coping and drain put in; 40 staging planks and 130 horizontal timber shores purchased.
1897-8..	7	.....	6,148 32	19,839 97	Ordinary care and repair to pumping machinery and caisson.
1898-9..	8	.....	7,235 88	13,786 09	
	72	76,088 52	82,637 52	137,517 66	

During this year the stringers of the caisson folding bridge were replaced by iron girders at a cost of $260.75; the planking of the folding bridge and the planking over the caisson chamber were renewed at a cost of $254.91; 800 feet of 2½-inch hose were purchased to replace that which had been in use for nine years, the cost was $703.95, these three items are entered under the head of maintenance. The dock has been kept in excellent working condition with the ordinary care to the machinery.

The expenditure of $7,235.88 incurred during the last fiscal year for working expenses and renewal may be subdivided as follows:—

Staff	$3,846 76
Labourers	685 26
Coal, oil, waste, renewals, &c	2,703 86
	$7,235 88

The total amount expended on this work is $1,008,726.04, made up of $910,000 for construction, and $98,772.04 for maintenance and repairs.

KINGSTON DRY DOCK.

Kingston is situated at the outlet of Lake Ontario, 172 miles west of Montreal, and is an important commercial centre.

Construction.—In 1888 the construction of a dry dock, located near the centre of Kingston harbour was commenced and was completed in 1892, at a cost of $461,097.72.

It is built of limestone laid in cement mortar; has good yard accommodation, and can take in any vessel that passes through the Welland canal; the depth of water on the sill being 14½ at low water, and 16½ feet at high water.

The general plan of this dock is a rectangular figure. The length from the foot of the stairway, at its head over the keel blocks, and up to the inner invert is 280 feet. This invert is 10 feet wide, hence from the inner side of the caisson to the foot of the stairs the distance is 290. By placing the caisson gate out on the apron the last mentioned length can be increased by 23 feet to 313 feet. The length at coping level from the outer end or lake face of the wing walls of the dock to the top of the stairway at its head is 370 feet. The width of the dock between walls is 47 feet at floor level and 70 feet at coping level. Its depth from the top of coping to the floor at the sides is 20 feet 6 inches, the radius of the inverts being 193 feet. The rudder well commences at 10 feet from the face of the inner invert and is 2½ wide, 24 feet long, and 12 feet long keel blocks are placed at 5 feet centres from end to end of the dock; there are also 32 bilge blocks at 10 feet centres on the floor of the dock.

The caisson is 59 feet in length on long face, 57 feet on short face, 13 feet wide by 22 feet deep. It is operated by a worm gear arrangement in connection with the auxiliary engines hereinafter alluded to.

The large steam boilers (battery of 4) are connected and provided with controlling valves, so that one or more of them may be used at the same time. The length of the shell is 14 feet, each boiler has 83-3½ inch flues of the same length as the shell; diameter 5 feet 6 inches; thickness of plates ⅜ inch. Pressure of steam carried, 100 pounds to square inch.

The small auxiliary boiler is of the drop flue type. The shell, which is 9 by 4 feet, plates ⅜ inch thick, has 250 drop flues 1¼ by 18 inches, with circulating tubes. This boiler saves from 50 to 75 per cent of the fuel required to keep up steam in one of the large boilers for general purposes, when the main pumps are not being operated.

The main engines two in number, are of the vertical high pressure type, the cylinders being 18 by 18 inches. These engines operate the main pumps.

The main pumps are of the centrifugal type, having each a 20 inch diameter discharge, and jointly capable of discharging 30,000 gallons per minute against a head of 33 feet.

The auxiliary engines are of the vertical high pressure type. The two cylinders are each 12 by 12 inches. These engines operate the auxiliary pump and the caisson.

The fire pump was made by Knowles Co. of Boston; its steam cylinder is 15 by 21 inches and the water cylinder 10 by 21 inches. This pump can be used to do the duty of the auxiliary pump, should the latter be disabled.

The pony engine and pump has two steam cylinders, each 6 by 7 inches; its water cylinder is 4 by 7 inch. This pump is used for feeding the water supply to the boilers and for sprinkling purposes, and is capable of supplying 3,000 gallons per minute against a head of 32 feet.

A large steam derrick is used for lifting purposes in connection with docking operations and repairs.

Beside the machinery building which is of stone, and measures 84 by 36 feet, exclusive of chimney 15 by 15 feet at the base; a wooden metal cased shed, 30 by 40 feet, has been erected to the southward of the said building for the storage of coal. The dock property is inclosed by a wooden fence of the best description, 868 feet long, with gates on Gore and Union streets.

During the fiscal year this dock was maintained in good working condition, ordinary care being bestowed on the pumping machinery, caisson, derrick, &c. No new work was undertaken.

Electric lights and a ship carpenter's shed are wanted to complete the full equipment of the dock.

The following is a statement showing the number of vessels docked, the cost of repairs and maintenance, and the amounts collected during each fiscal year since the dock is in operation, up to and including the present fiscal year. Under the head of 'Repairs and Improvements' are set down the amounts expended for such works and additions as could not be performed by the ordinary staff of the dock. In all cases the cost of ordinary care and small repairs to the machinery is included under the head 'maintenance.'

Fiscal Year.	Number of Vessels Docked.	Repairs and Improvements.	Staff and Maintenance.	Revenue.	Remarks.
		$ cts.	$ cts.	$ cts.	
1891-2	21	442 33	4,978 90	2,105 70	A travelling crane erected in the engine-room, 32 bilge blocks with the necessary hauling chains placed in position.
1892-3	51	48,612 54	8,033 91	6,196 49	A vertical boiler 4 feet in diameter, by 9 feet in height was purchased. Fire pump removed from upper to lower floor of engine-room. A shed for storage of coal was built, also a wooden fence 868 feet in length around the dock property.
1893-4	44	782 97	6,607 46	7,453 01	Minor repairs.
1894-5	24	.....	5,939 51	2,878 23	Steam derrick painted; stone work pointed with Portland cement. Wood work of engine house painted, &c.
1895-6	65	925 00	5,357 16	3,954 78	Putting in sprocket wheels and chains in lieu of old drums and cables for operating the caisson, &c.
1896-7	58	.....	4,657 10	6,360 60	Minor repairs.
1897-8	35	.....	4,733 79	7,448 31	Painting coal shed and caisson; levelling dock premises: concreting engine-room floor, &c.
1898-9	59	.....	5,046 70	7,506 88	Minor repairs and ordinary care to machinery.
	357	50,762 84	45,354 53	43,904 00	

The expenditure of $5,046.70 incurred during the present fiscal year for working expenses may be subdivided as follows :—

Staff	$2,995 00
Wood and coal	1,226 50
Rent, water, &c	185 00
Necessary repairs, paint, oil, waste, &c	640 20
Total	$5,046 70

The total amount expended on this work is $557,215.09 made up of $461,097.72 for construction, and $96,117.37 for improvements, maintenance and repairs.

ESQUIMALT GRAVING DOCK.

Esquimalt, in the electoral district of Victoria, is situated on the Straits of San Juan de Fuca, about 3 miles from the city of Victoria.

Construction and description —This dock is built in a small cove in Esquimalt Harbour. It was commenced by the provincial government of British Columbia, but the work was taken over by the Dominion Government while being proceeded with, and the dock was completed and opened in July, 1887.

The principal dimensions of the dock and caisson gate may be stated as follows :—

	Feet.	Inches.
Length of dock over keel blocks	430	0
Width of inner invert	20	0
Width of caisson chamber	15	10
Width of outer invert	15	0
Total length of dock	480	10
Width of dock at coping level	90	0
Width of dock at entrance	65	0
Width of floor of dock	41	1
Radius of inverts	16	6
Total depth of rock above inverts	33	6
Height of inverts above floor of dock	3	0
Height of keel blocks	2	10
Length of keel blocks	4	0
Length of caisson (inside facing)	67	0
Length of caisson (outside facing, reversible)	15	8

At low water the depth on the inverts is 24 feet 6 inches, and at an ordinary high water 26 feet 6 inches.

The following is a summary description of engines, boilers, pumps, electrical and diving apparatus, hoisting and hauling machinery, buoys, lathes, other machine tools and appliances, and supplies required for repairing, fire fighting and other purposes which are available for use at this station :—

Two condensing engines, cylinders 27 inches in diameter, 36-inch stroke.
Two lifting pumps, cylinders 48 inches in diameter, 60-inch stroke.
Three Cornish boilers, 6½ feet in diameter and 14 feet in length.
One high pressure auxilliary engine, cylinder 16 inches in diameter, 20-inch stroke.
One centrifugal drainage pump, 14-inch suction, 12-inch discharge.
One return tubular boiler, 5 feet 3 inches in diameter and 14½ feet in length.
One hauling engine for caisson, cylinder 12 inches in diameter, 14-inch stroke.
One centrifugal drainage pump, 6-inch suction, 5-inch discharge.
One Edison No. 4 dynamo, 1,600 C. P., 16 lamps around dock.
One engine for dynamo, 8 inches in diameter by 12-inch stroke.
One iron movable stop-gate for caisson chamber.
Twenty-five iron bollards around dock.
One wooden crane, 10 tons capacity.
Eight hand capstans.
Six hydrants.
Three hose reels and 200 feet of canvas hose.
One diving apparatus complete.
One lathe, 6 foot bed.
One drilling machine.
One set of taps and dies complete.
One steam box for bending planks.
Two iron warping buoys.
Two dolphins to mark channel at entrance of dock.

The following is a statement showing the number of vessels docked, the cost of repairs and maintenance, and the amounts collected during each fiscal year since the dock is in operation, up to and including the present fiscal year.

Under the head of repairs and improvements are set down the amounts expended for such works and additions as could not be performed by the ordinary staff of the dock.

In all cases the cost of ordinary care and small repairs to the machinery is included under the head of maintenance:

Fiscal Years.	Number of Vessels Docked.	Construction.	Repairs and Improvements.	Staff and Maintenance.	Revenue.	Remarks.
		$ cts.	$ cts.	$ cts.	$ cts.	
1882-7	.....	1,149,146 25	.....	.....	.....	Cost of construction, including $250,000 refunded by the Imperial Government.
1887-8	6	.....	.....	6,342 63	5,337 46	Electric lights installed, &c.
1888-9	18	.....	8,571 22	12,720 10	14,811 86	Electric lighting completed; a lathe and drill set up; a small centrifugal pump substituted for the auxiliary pump; sheds for fire-hose carts erected, &c. Some dredging done.
1889-90	10	.....	7,150 00	12,719 94	13,563 62	New keel blocks, hand rails, staunchions, &c., provided, and minor repairs effected by dock staff.
1890-1	30	.....	2,639 65	12,725 90	29,603 14	A coal shed, 58 x 36 feet, erected; general repairs and improvements by dock staff.
1891-2	18	.....	2,410 49	14,232 47	18,416 23	Pump wells and foundations for machinery repaired; a large portion of engine-room floor, which had been cracked by settlement, was re-laid with Portland cement concrete, and wall of engine-house facing dock pulled down and rebuilt. In addition many minor repairs were done.
1892-3	11	.....	8,859 78	13,196 61	23,204 38	A leak in the caisson chamber repaired, and minor improvements and repairs made.
1893-4	7	.....	.....	10,075 59	10,786 70	Caisson scraped, painted and machinery generally overhauled.
1894-5	11	.....	.....	10,419 76	6,320 25	General repairs, painting, &c.
1895-6	15	.....	.....	12,355 09	10,221 68	Spur driving wheel of main pumps, which had been broken, was replaced by a new wheel. A planer added to the equipment, and necessary repairs and renewals made.
1896-7	13	.....	.....	10,770 28	7,514 80	Ordinary repairs, painting.
1897-8	14	.....	.....	11,745 84	6,233 52	Repairs. Furnace shed enlarged and brick drain built.
1898-9	29	.....	.....	11,957 05	10,315 53	Ordinary care to machinery.
Totals	182	1,149,146 25	29,631 14	139,261 26	156,329 17	

During the last fiscal year the dock has been kept in good running order, with the ordinary care to the caisson and pumping machinery.

The total expenditure for the year amounts to $11,957.05.

SLIDES AND BOOMS.

The Dominion Government owns and operates slide and boom works built to facilitate the pa-sage of square timber, round logs flatted and dimension timber, &c, on the River Ottawa and tributaries, on the lower 40 miles or so of the St. Maurice, and in the Trent and Newcastle District between Fenelon Falls and Heeley's Falls.

In the subjoined reports, the superintending engineers of these river works, Messrs. G. P. Brophy, F. X. Thos. Berlinguet and R. B. Rogers, give particulars relative to the works of construction, reconstruction, improvement and repair carried out under

their supervision on government slides, booms, piers, dams, streams, buildings, &c., during the fiscal year, the expenditures incurred for staff, maintenance, improvements, &c., the quantities of the various descriptions of timber that pass through their works, the revenue accurred from toll levied on the said timber, and other information of general interest and utility to lumberman and the public at large.

REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, Superintending Engineer.)

The Acting Chief Engineer
of the Public Works of Canada,
Ottawa.

Sir,--In accordance with instructions conveyed to me in your communication dated July 18 last, I have the honour to submit the following report on the works under my charge on the Ottawa River and certain of its tributaries for the fiscal year ended June 30, 1899.

During the late summer and autumn months of 1898, when the great bulk of the 'drives' had passed, an examination was made of the various river structures and repair work commenced and completed during the winter months, which may be described as follows :—

REPAIRS AT STATIONS ON THE OTTAWA RIVER (Main Stream).

Carillon.—At this place three elm spindles 25 feet long and 9 inches in diameter were provided for the guide booms and certain minor repairs, such as patching the slide and boom planking, were attended to by the staff on the works.

Hull or North Chaudière.—The central portion of bottom planking in slide was renewed its whole length, average of 6 feet in width x 170 feet long. Five-inch red pine plank was used. A portion of bottom immediately below stop-logs was covered with 3-inch maple (25 feet x 12 feet in width) to prevent wear from logs going over drop at stop-log checks. A number of cross sills were found decayed and had to be replaced. The new sills 12 inches x 12 inches were laid along side the old ones. In places the sides of slide were gouged out and had to be repaired with new sheeting. The boom coverings and fastenings were repaired and adjusted from time to time. The Slide master's house, sheds and storehouses were shingled, and otherwise repaired.

Ottawa or South Chaudière.—A portion of the cribwork forming north side of slide between 2nd and 3rd slides had to be taken down and rebuilt. This section was overhanging the slide channel and diminished the width at this particular place. The length of cribwork repaired was 95 feet, three courses in front and one in rear The old stonefilling which had been removed in order to carry on the work was replaced and a quantity of new stone was quarried and placed in crib, for additional ballast. At foot of 2nd slide, the top timbers of side pier on south side were knocked off when ice was moving out. The damage was made good by laying a number of layers of 3-inch plank on its flat, well spiked together. Loose sheeting in bottom of the different slides was secured with extra spikes, protruding heads of spikes driven home. Storehouses, sheds were enlarged, shingled, and otherwise improved. The booms and aprons were adjusted and repaired as required and bulkhead flooring patched.

Portage du Fort.—At this station the bottom planking of the slide, where worn out and decayed, was repaired by substituting new material, and the spikes where necessary driven home. This work was done by the men operating the slide.

Mountain.—The bottom of slide at outlet was renewed with 4-inch maple plank 45 feet in length by 26 feet wide. The sides of slide, bulkhead, stop-log gains, &c., were patched with 4-inch pine plank. Twelve new stop-logs 14 inches by 14 inches (maple) were provided, and old stop-logs were dressed over again.

Calumet.—In front of controlling bulkhead and dam near outlet of third slide, a boom 150 feet in length was built. This boom for 66 feet in length is composed of six sticks, three wide and two deep, the balance, 84 feet, being an ordinary double boom. The boom is secured at each end to a pier each 14 feet square at bottom drawn in to 10 feet square at top and 15 feet high. The object of this boom is to keep logs, drift wood, &c., from being drawn through sluice gate in dam and interfering with cribs running over timber apron. Jams of logs used also to form in front of sluice gate and thus prevent the proper working of stop-logs to control running of cribs. A glance pier was built along shore below third slide to keep cribs of timber off rocky bank, and to enable raftsmen to run rapids at Roche Miner with greater safety. The pier is 220 feet long, 12 feet high, and 10 feet wide at bottom and 6 feet at top. Last spring owing to action of high water, a section of 125 feet in length, forming wall of third slide on shore, side was overturned into slide channel. The stone filling had to be taken out, and the cribwork forced back into position again before cribs could run the slide. Some minor repairs were also made to sheeting on top of flat dams and boom coverings. The improvements carried out at the Calumet recently, make running at this station comparatively an easy matter.

TRIBUTARIES OF THE OTTAWA.

Gatineau River.—The tops of booms and gaps were repaired with 3-inch pine sheeting. The flooring of bridge over new canal was renewed with 3-inch white pine plank. Chains, clevises, boom fastenings were overhauled and renewed. Fences along reserve were patched and strengthened where required. The station house, fences, also received a coat of paint. The labour was performed by staff under direction of the boom master.

Madawaska River.—At the mouth of river a sunken pier was constructed and placed in position to strengthen main retaining boom. The pier is 16 feet square by 8 feet high, covered on bottom with 4-inch and on top with 3-inch elm plank, stonefilled and supplied with the necessary buoys and chains. Three boom piers, 13 feet by 14 feet, and seven courses were rebuilt from water's edge up. Seven other piers were patched, damaged sheeting, posts, fenders, &c., all being made good, while some stone ballast in piers which had been knocked out was replaced. The boom chains and clevises were examined, and where defects were found, new irons were inserted.

Barrett's Chute.—At this place a washout occurred at upper end of long flat dam on south side of river. This dam was extended on shore 27 feet, the height being 6 feet and 10 feet face sheeting.

High Falls.—Defective planking in sides of slide was replaced. The top plank of upper bulkhead, 16 feet by 25 feet by 4 inches, was renewed, while the insides of both bulkheads were sheeted with 3-inch maple plank. Guide boom pier No. 3 above slide was rebuilt from low water mark. The pier is triangular in shape, 41 feet to a side, and 9 feet 6 inches high.

Ragged Chute.—The glance pier at brink of chute was renewed at shore and for a distance of 15 feet, and an addition made of 32 feet in length, making the total length

of new work 47 feet. The pier is 12 feet wide and has an average height of 5 feet. A washout at the end of the pier made it necessary to undertake its extension.

Chain Rapids.—When the water had been shut off the foundations of bulkhead piers were repaired and the upper portion of single stick slide was rebuilt, consisting of sheeting, posts and braces. The sheeting is of 4-inch maple plank, the side being 185 feet in length, and 4 feet 6 inches high. Twenty-seven pairs or sets of posts with braces were put in to sustain sheeting. At outlet of slide a section 61 feet in length was renewed with 12-inch by 12-inch maple for a glance, to prevent gouging out of side. A guide boom pier above slide 16 feet by 20 feet and 7 feet high was rebuilt from low water mark.

Coulonge River.—At the village of Fort Coulonge a length of 734 lineal feet of single boom was converted into a double one. The sticks in old boom were faced and new 12 feet x 14 feet timber attached with 1-inch screw bolts. A pier to support this boom was rebuilt from low water line. It is 16 feet x 25 feet at water line and 12 feet x 14 feet at top and 9 feet high.

At High Falls Station.—A stay pier for guide boom was raised one course, and a double boom of 12 feet x 14 feet timber, 130 feet was built and stretched along shore at bend of river opposite main dam to prevent logs and timber gouging out the bank. The long slide here was repaired from time to time as was found necessary. The structure was brought up to grade frequently, new posts, braces and sills placed in position, planking in bottom and sides renewed, oak and elm being used for this purpose. The guide booms above slide were damaged by spring freshet and had to be repaired.

Black River.—The expenditure at this station was principally for timber, for booms and piers, maple and pine plank for sides and bottom of slide. Some minor repairs were made to boom chains and fastenings during the season of high water.

Petewawa River.—At mouth of river seven piers supporting retaining boom were repaired. New timbers which had been carried away were replaced on tops of piers, new stone filling added, corners and sides of piers strengthened by new 4 inch plank fenders.

At Second Chute.—Twenty-two new false posts, 4 feet long, were put in place and sheeting in sides of slide replaced, where worn, with 4-inch pine.

At Third Chute.—Seventy-one false posts, 4 feet long, white pine, were put in. The sheeting throughout the whole length of slide 1,300 feet was overhauled and repaired, and a length of about 200 feet on north side of slide was supplied with 2-inch pine foot boards. The sides of slide throughout were also braced with additional 6-inch x 6-inch pine scantling. A number of boom chains were supplied and are available in cases of emergency.

Lake Traverse.—The pier dam at foot of artificial channel was rebuilt for a distance of 110 feet x 10 feet wide and 6 feet high.

McDonald's Slide.—The head pier of slide on south side was rebuilt 40 feet long x 10 feet wide and 5 feet high. The foot piers, sheeting in both bottom and sides of slide, &c., were repaired and timbers were spiked unto pier facing chute to protect its side. Decayed sills in bottom of slide were also replaced.

At Cedar Lake Retaining Dam.—The apron at north sluiceway was repaired, twenty-one pieces of timber 14 feet long being used for this purpose. The top of these fingers was protected with ½-inch x 4-inch steel bars. The sheeting on the different dams was patched, and a quantity of gravel placed in front of the structure 160 feet in

extent to staunch the flow of water. The sheeting on the dam to south of bulkhead was wholly renewed with 5-inch plank, 13 feet face and 28 feet width. The rear of this dam was also patched, new stringers and ties being put in. The top planking on bulkhead was repaired in many places and three new stop-logs were provided for sluice gate. At extreme north end of main dam a wash out took place and the gap was filled by a pier 20 feet long x 8 feet wide and 3 feet high. Stone ballasted.

Dumoine River at Hiyh Falls Station.—The pier dam to west of slide and also head piers of slide were raised a course. Timbers were hewn and fitted in bottom of slide at curves to prevent wear from passing logs and to stiffen the structure. The planking in sides of slide was repaired and iron bars ¼-inch x 5-inch were laid on bottom at steep pitches to protect floor. The main guide boom was strengthed at upper end, fastening being made secure, and new chains provided. A signal wire and gong were placed in position to control feeding of slide.

All the repairs were completed in due time and the works were ready for the business of 1899 on the opening of navigation.

Last spring the waters of the Ottawa and tributaries rose to a great height and during the portion of the season covered by this report, remained at a very favourable pitch for the purposes of the raftsman.

The following statement, furnished by the collector of slide and boom dues in your department, shows the number of pieces of square timber, saw-logs, &c., that passed through the works under my charge during the fiscal year ended June 30, 1899, and accrued revenue thereon :—

Square timber	25,785	pieces
Saw-logs	2,950,561	"
Boom and dimension timber	57,405	"
Flat and round timber	5,835	"
Cedars	66,160	"
Railroad ties	372,108	"
Fence posts	116,515	"
Telegraph poles	448	"
Total	3,594,817	"

Also 5,616¼ cords pulpwood, and one (1) steam-boat.

The revenue accrued on the above was $38,818.98.

A statement is herewith transmitted, showing the expenditure at stations in the different districts.

In respectfully submitting the above,

I have the honour to be, sir,

Your obedient servant,

GEO. P. BROPHY,

Superintending Engineer Ottawa River Works.

REPORT ON THE ST. MAURICE RIVER WORKS.

(By F. X. Thos. Berlinguet, Superintending Engineer.)

Public Works of Canada,
Rsident Engineer's Office,
Three Rivers, November 28, 1899.

Eugène D. Lafleur, Esq.,
Acting Chief Engineer,
Department of Public Works,
Ottawa.

Sir,—As requested in your letter No. 1829, I have the honour to submit the following report on the St. Maurice works, for the fiscal year 1898-9 ended June 30 last.

Before entering into details, a few general remarks in relation to the River St. Maurice and its works may not be out of place.

The St. Maurice, as is well known, is a river of great magnitude, it is one of the largest tributaries of the St. Lawrence, not only on account of its length, but also on account of the volume of its water. The three branches which form its outlet unite about a mile above the St. Lawrence, and from thence the river has an average width of a quarter of a mile, as far as Weymontachingue, that is to say, for more than 300 miles above its mouth.

Its extent has never yet been correctly ascertained, but it is generally supposed to drain a territory of more than 20,000 square miles. Its course is generally through a very mountainous country, and is impeded by a great number of rapids and falls; the most important being the falls of Shawinigan, La Tuque and Grand'Mère; nevertheless there are considerable stretches which are navigable, and such is the rapidity of its current, and the roughness of its numerous falls and rapids, that no works, except those of the most solid, and permanent description, can be made to stand.

In fact, at certain seasons of the year, the river is considered unmanageable. The St. Maurice differs in this respect from the Ottawa and most other rivers where timber is made; here but few places are to be found where timber can be retained or boomed.

The history of the commencement of the timber trade on the St. Maurice is somewhat interesting.

It was only in 1825 that the Government took measures for the dividing into regular sections the vast territory of the St. Maurice.

In 1852.—The timber limits were erected definitely and systematically. The following year great improvements were made in the river to facilitate the descent of wood.

The first saw-mill of any importance erected on the St. Maurice was at Les Grès, about sixteen miles above Three Rivers,—it was built in 1846; the second was built at La Pointe des Américains in 1853.

In 1867.—A third saw-mill was built on Ile Bellerive, at the mouth of the St. Maurice, now known as Baptist's Island.

The St. Maurice works were commenced in December, 1851, at Three Rivers, Shawinigan and Grand'Mère, and additions thereto, to a limited extent, have been made nearly every year since.

In 1859.—The works in use on the River St. Maurice were distributed at the different places as follows:—

At Three Rivers, 12,181 feet of booms and forty-six piers.

At Les Grès, 6,000 feet of booms and six anchor piers.
At Shawinigan, 17,500 lineal feet of booms, 38 piers and a slide 600 feet in length.
At Grand'Mere, 4,900 feet of booms, 8 anchor piers and a slide.
At La Tuque, 3,500 feet of booms and 5 anchor piers.
The total cost of these works amount to $218,101.

In 1860.—A wing pier dam of cribwork about six feet high and 200 feet in length was built at the Little Piles, 33 miles from the mouth of the St. Maurice.

The Little Piles has a fall of not over 6 feet with a deep narrow channel on the east shore. The west shore has a bad reef of high rugged rocks which formerly gathered large quantities of timber in high water. It was with great difficulty and expense that it could be extricated. The above mentioned work was built along the upper edge of the reef to the deep water channel.

In 1861.—About 30 miles from the mouth of the river, the Grand'Mere is a fall of about 40 feet in hight in which there are two channels of about equal size, separated by an island. The fall on the west side is almost perpendicular, that on the east side is of much greater length and far more gradual. The beauty and magnificence of this fall, and the surrounding scenery, like that of Shawinigan, can hardly be surpassed.

The works here originally consisted of a good substantial slide, over the west side of the island above mentioned, 400 feet in length, and two long conducting booms, 3½ feet wide, and about 1,700 in length each, one from the slide extending diagonally across the east channel to a point on the west shore, the other, in like manner across the east channel to a point on the east shore. It was found, by experience, that most of the lumber which passed through the slide entered a very violent eddy at the foot of the falls, where it received much injury and where it was taken out with great expense and difficulty. The slide and the boom to the eastshore above mentioned were consequently abandoned. The boom from the west shore to the island was retained, and so placed as to throw all the lumber into the east channel, where it passes with less injury and expense. There is also a small but violent eddy at the foot of the falls, on the east side, where timber is somewhat injured at certain pitches of the water, and in 1861, two piers were built from the shore at right angles with the current to destroy it. These piers had not the anticipated effect.

In 1865.—Some new works were done at Shawinigan, five piers and 350 feet of booms.

At La Tuque, three piers.

In 1866.—500 feet of new booms, 5 feet in width, were built at Three Rivers.

The government purchased the works built by private parties on the Vermillion River.

The Vermillion River flows from the north-west and discharges into the St. Maurice at a point 116 miles above its mouth.

Additional dams were built, so that the new works consist of:—

2,677 lineal feet of booms.
550 lineal feet of slides.
682 lineal feet of dams and side piers.
2 mooring piers of 25 x 25 feet.
1 anchor pier of 15 x 15 feet.

During the year 1866, the works were operated with much success, and no accident worthy of remark happened, except the breakage of the boom at La Tuque. This boom was badly broken by the ice from Plamondon's Eddy, and about 500 feet out of the 3,500 feet there, were carried away and lost.

In 1867.—At Three Rivers, renewing 1,168 lineal feet of boom, 5 feet wide, 14 inches thick, 144 feet of boom, 6 feet wide.

At Shawinigan, building two mooring piers, 30 x 30 feet, and 28 feet in height.

Renewing 200 lineal feet of boom.

At Grand'Mere, remewing 500 feet single boom.

At La Tuque, two wing dams at mouth of Quinn's Creek, one anchor pier, 15 x 15 feet, and 8 feet high, above falls.

In 1868.—At the mouth of the river, one small pier to attach booms in winter, three small anchor piers for use in low water; four lengths new boom, 136 feet long each, 6 feet wide; 500 feet new boom, 4 feet wide.

At Shawinigan, renewing 600 lineal feet of glance boom 3½ feet wide.

At La Tuque, raised large pier above falls.

In 1869.—No works were made during the year, chargeable to construction.

At the mouth of the river, 1,200 lineal feet of single boom 20 inches x 20 inches.

At Shawinigan, renewing 300 lineal feet of conducting boom.

At La Tuque, five anchor piers, 15 x 15 feet square and 8 feet high.

In 1870.—At Three Rivers, renewing 900 feet of five-ply booms.

At Shawinigan, renewing the bulk head of the slide.

At Grand'Mere, 385 feet of single boom, and building an anchor pier, 15 x 15 x 8 feet.

At La Tuque, one pier 15 x 15 x 8 feet.

In 1871.—At Three Rivers, the construction of one pier for wintering the booms; 880 feet of five-ply booms.

At Grand'Mere, 625 feet of single booms; the construction of two anchor piers.

In 1872.—The construction of eleven mooring piers at Cap aux Corneilles; for the erection of a new retaining boom

At La Tuque, the construction of dams at the foot of the falls; and the construction of 484 feet of booms.

At Shawinigan, one mooring pier, 30 x 32 x 28 feet; four anchor piers; 500 feet of five-ply booms.

At Grand'Mere, 150 feet of boom; two anchor piers.

In 1873.—The year of the great flood which occurred on May 22 to 25.

At Three Rivers, the construction of 484 lineal feet of booms.

At Shawinigan, 150 feet of booms.

At La Tuque, 1,200 feet of single booms.

On the Vermillion, 1,100 feet of single booms.

In 1874.—Mouth of the river, renewing four mooring piers; renewing 3,500 lineal feet boom 60 x 4 inches; constructing four piers—foundations 35 x 40 feet, superstructure 25 x 30 feet, and 30 feet high.

At Shawinigan Falls.—Renewing two piers fromlow water mark. Renewing dam and bulk-head of slide and pier at foot of slide. Renewing 450 feet of slide. Renewing 1,153 lineal feet boom, above slide.

At Grand'Mere.—Renewing 600 feet boom, 36 x 12 inches.

1875-6.

At the entrance of the river.—Two piers, foundations 36 x 46 feet. Two cribs, 35 feet by 40 feet deep, numbered 7 and 8; 5,016 pounds iron; 617 yards of stone.

At Shawinigan.—Two cribs, 35 feet by 34 high; 1,150 yards of stone. One crib, 32 feet by 34 feet. Four toises of stone at the foot of each crib.

At Grand'Mere.—1,100 feet boomage.

At Chute des Iroquois.—One dam 36 feet long by 12 feet high. One wharf 150 feet long by 6 feet high.

1876-7.

At Three Rivers.—Three mooring piers 35 feet by 18 by 15 feet. Five piers 12 x 12 x 3 feet, for guy chains. One mooring pier.

At Shawinigan.—One mooring pier 30 x 22 x 26 feet.

At Grand'Mere.—Single boom 350 feet. Three piers of 12 x 12 x 5 feet.

At La Tuque.—Dwelling house, 30 x 35 feet. Pier of 18 x 18 x 5 feet. Three piers of 12 x 12 x 5 feet.

1877-8.

At Three Rivers.—Seventeen piers raised by 3 feet in elevation.

At Shawinigan.—1,025 feet, five ply booms. 340 feet, 34-inch booms. 60 feet, 4 ply booms. Ten mooring piers of 13 x 13 x 6 feet.

1878-9.

At the mouth of the river.—Two piers 26 x 21 feet raised 3½ feet.

Cap aux Corneilles.—One pier built to hold the booms in winter.

At Grand'Mere.—Construction of a dam at the head of the old slide at Grand'Mere Falls. One pier 12 x 12 feet and 8 feet high.

1879-80.

Mouth of the St. Maurice.—Construction of a pier 12 x 35 x 17 feet high. (Porte à Perron). Fourteen piers repaired.

Cap aux Corneilles.—Eleven piers repaired. Two small mooring piers constructed.

Les Grès.—300 feet of 3 feet boom, new. 500 feet of 4 feet boom, new. 500 feet of single stick boom repaired. One wharf 124 feet long and 16 feet high.

At Shawinigan Bay.—Three piers 11 x 11 x 15 on the shoals; 1,350 feet of new boom, of 3 feet on the shoals; 1,360 feet of new boom, of 5 feet to retain the timber in the bay. Repaired five piers.

Above the Falls.—308 feet of slides made anew. Repaired the remainder of the slide in several places; 700 feet of new boom, of 3 feet; lengthened the slide wharf 60 x 8 feet; a dam, of 60 x 10 feet, at the head of the falls; raised three piers 5 feet.

At Les Hetres.—650 feet of new boom, 28 inches; a new pier 13 x 13 x 6 feet; 25 pieces for single booms.

At Grand'Mere.—600 feet of boom in round timber; 200 feet of new boom, of 4 feet; 117 feet of new boom, of 5 feet.

At Petites Piles.—Rebuilding of a dam, 110 x 23 x 7 feet high.

1880-1.

Mouth of the St. Maurice.—Raising two piers, 12 and 15 feet.

Cap aux Corneilles.—Raising one pier.

At Shawinigan Bay.—4 piers, 11 x 11 x 15 feet on the shoals; 162 feet of boom, 12 x 13 inches.

Above Shawinigan Falls.—Flooring 99 feet of slide in birch, of 5 x 12 inches; raising a pier, above the fall, 12 feet; repairing the great dam at the head of the falls; 300 feet of new boom, 4 feet wide; 73 feet of new boom, 12 x 13 inches.

At Grand 'Mere —800 feet of new boom, 4 feet in width.

1881-2.

At Cap aux Corneilles.—Made a wharf to protect the shed foundation.

At Shawinigan—634 feet of new boom, 24 x 13 inches.

At Les Hètres.—418 feet of new boom, 24 x 13 inches.

1882–3.

At the mouth of the St. Maurice.—The reconstruction of four small snubbing piers.

At Cap aux Corneilles.—Constructed two snubbing piers.

At Les Grès.—Constructed two snubbing piers, 14 x 14 x 6 feet.

At Shawinigan.—The coustruction of 760 pieces of boom, 4 feet x 13 inches; 1 crib dam; repaired piers Nos. 9 and 11.

At Grand'Mere.—Constructed 200 feet of three-ply boom.

1883–4.

At Cap aux Corneilles.— Four toise of stone, put in piers.

At Shawinigan.—Repaired upper parts of piers Nos. 1, 2, 3, 4, 6, 8 and 12.

At Grand'Mere.—Renewed 300 feet of boom; replaced a few pieces of single boom.

NEW RETAINING BOOM.

At Les Piles.—Repaired the old booms from La Tuque; repaired a scow; built a barge for this new station.

At Grandes Piles.—Eight mooring piers, 30 x 30 x 30 feet.

1884–5.

At the mouth of the St. Maurice.—Two piers, 20 x 20 x 15 feet; one wharf of 12 x 14 feet, for snubbing, were rebuilt.

At Cap aux Corneilles.—Rebuilding two piers from low water mark.

At Shawinigan.—The construction of a mooring pier.

At Grandes Piles.—The construction of three jam piers: No. 2½, 40 x 30 feet and 32 feet in height; No. 3½, 40 x 30 and 26 feet high; No. 4½, 40 x 30 and 27 feet high; also 1,400 feet of four-ply booms and 300 feet of three-ply booms.

1885–6.

At the mouth of the St. Maurice.—Repairing 5 piers and rebuilding one from low water level.

At Shawinigan.—Rebuilding one pier, 45 x 40 x 38 feet. Mining the rocks at the mouth of the slide. Replacing 1,200 feet of booms and one pier, 15 x 15 feet. Rebuilding the wharf down the slide.

At Les Piles.—Constructing a shed, 40 x 30 feet, and a forge.

1886–7.

At the mouth of the St. Maurice.—21 piers repaired. Two anchors weighing 2,500 pounds; one floating pier, 48 x 16 feet; 14,433 pounds of chains.

At Shawinigan.—Reconstructing the pier protecting the end of the slide; fixing a rail all around the pier. Reconstructing a snubbing pier, 11 x 11 feet, on a height of 6 feet.

At Grand'Mere,—Repairing two piers, 10 x 20 feet x 8 feet in height, and filling the same with stone. One thousand eight hundred feet of boom, round stick, 12 inches in diameter.

1887–8.

At Three Rivers.—8 piers repaired.

At Shawinigan.—4 piers, Nos. 41, 42, 44 and 45, measuring 12 x 12 x 6 feet each, rebuilt. Pier No. 47 rebuilt from low water mark, 25 x 25 x 18 feet.

At Grandes Piles.—6 piers, Nos. 2½, 4, 5, 6, 7 and 8 repaired.

1888–9.

At the mouth of the St. Maurice.—Construction of a pier.

1890–1.

At the mouth of the St. Maurice.—Six pieces of boom strengthened with 11 x 17-inch spruce; 1,500 pounds of iron bolts. Seven pieces of boom, 30 feet long x 32 inches thickness, spruce.

At Cap au Corneilles.—Five pieces of boom, 150 feet long by 5 feet, sheeted with 3-inch plank. Repairing 2,000 feet of old 2 ply booms.

At Shawinigan.—Sheathing 1,081 feet of boom 3½ feet wide, with 3-inch planking of spruce and hemlock. Reconstructing pier No. 7 in the retaining boom, 33 feet long, 21 feet wide and 30 feet high. Construction of a wharf 67 feet long, 8 feet high; to protect blacksmith shop against eroding of the hill which takes place every spring. Repairing 121 feet of doubled boom, making 6 feet in width, with 3-inch cross-ties every 10 feet.

At Grand'Mere.—Two pieces of boom 150 feet long by 3 feet wide, covered with 3-inch planking. Repairing a small wharf at the foot of the falls, 12 feet square. Covering 225 feet of boom with 3-inch plank, 1,500 feet of chain of ¾ and ⅞ inches.

At Grandes Piles.—Repairs to piers Nos 1, 2, 3 and 4. Repairs to two pieces of boom of 150 feet sheathed with 3-inch plank.

1891–2.

At the mouth of the St. Maurice.—The planking of three piers was renewed and and some repairs done to a shed. A new scow was also built.

At Cap aux Corneilles.—The work done consists of the building of pier No. 51 for the distribution of logs at the head of Cap aux Corneilles booms, at a distance of about 800 feet below the Canadian Pacific Railway bridge. The pier measures 29 x 17 feet at low water level. Three other piers were also repaired.

At Shawinigan.—The work done at that station consists of the rebuilding pier No. 10 in the Bay of Shawinigan. This pier was built in 1854, and has been repaired several times since. The dimensions of the section of the pier rebuilt are 32 x 19 feet at the low water level, and 15 x 11 feet on the top, with an elevation of 30 feet above low water.

At Grand'Mere.—The building of two anchor piers 30 feet square on the bottom and 18 feet square on the top, with an elevation of 10 feet.

1892–3.

Instead of each lumber merchant having a drive of his own logs, as formerly, they combined to have a joint drive from the Piles down, which proved very satisfactory.

At Three Rivers.—Four mooring piers Nos. 57, 58, 59, 60 were rebuilt, and one repaired, at Cap aux Corneilles, to retain the logs on the eastern side of the river at a medium stage of the water level.

At Shawinigan.—Slight repairs were made, the sheathing at the head of the slide was renewed.

At Ile de la Chute.—(New retaining boom) some 500 feet of booms from the bay were removed to the island, at the head of the fall.

At Grand'Mere.—Slight repairs were made to the main boom.

At Pointe à Magdeleine.—(New retaining boom.) One mooring pier No. 10 and one anchor pier No. 9 were built, at Pointe à Magdeleine, to retain logs on the western side of the river, about one mile above Grandes Piles.

1893-4.

The lumber merchants, finding that the plan of a joint drive worked well in 1892, repeated it in 1893, with satisfactory results.

At Three Rivers Station.—Slight repairs were made to the booms, to strengthen them, and mooring posts were placed where necessary.

At Shawinigan Station.—The bottom and sides of the slide were partially repaired by replacing the worn-out timber and planking with new material. New stop-logs were also provided, and the apron faced with hard wood, and the projecting spikes in the bottom and sides of the slides were countersunk.

At pier No. 39 some of the sheathing carried away by the ice was replaced, and piers Nos. 52, 53 54, 57, 58 59, 60, 61 and 62 in the Bay of Shawinigan were renewed. A telephone line has been built from Shawinigan slide to connect with that of the Laurentian Telephone Company at Grandes Piles.

At Grand'Mere.—Slight repairs were made to the main boom.

At Pointe à Madeleine.—Two anchor piers (Nos. 11 and 12) were built to increase the capacity of the booms on the western side of the river.

1894-5.

At Three Rivers Station.—Slight repairs were made to the booms, 877 feet of four-ply booms were strengthened by adding timber on each side along the whole length of the boom and mooring posts were placed where necessary.

At Shawinigan Station. The bottom and sides of the slide were partially repaired by replacing the worn-out timber and planking with new material, the apron faced with hardwood, and the projecting spikes in the bottom and sides of the slides were countersunk.

At Iles des Hêtres.—(New retaining boom) seven anchor piers (Nos. 68, 69, 70, 71, 72, 74 and 75) and two jam piers (Nos. 73 and 76) were built, with 950 feet of three-ply booms, to retain logs in the channels formed by the islands at that place; to increase the capacity of the retaining booms at this station, and also to protect the slide from a great accumulation of logs at its head. This is a more economical place in which to retain logs than at Shawinigan Bay, for three reasons:—

1. Because the fluctuation of water is much less; when the water raises 22 feet at the Bay, it rises only 12 feet at the Hêtres.

2. Because the cost of this work is much less at the Hêtres than at Shawinigan Bay—as the work erected at the bay to retain 100,000 logs cost over $60,000, while that at the Hêtres can retain over 200,000 logs and the work has cost only $3,000. The proportion is the same with regard to the repairs.

3. This work being (two miles) above the slide, prevents a too great accumulation of logs at the slide, where breaks often happened.

At Grand'Mere.—Slight repairs were made to the main boom.

At Grandes Piles.—The work performed at this station consists of repairs made to piers (Nos. 4, 5, 6 and 7), also 1,022 feet of single boom were renewed at Les Plaines, below Grandes Piles Falls. Also the construction of the eastern section of the telephone lines from Shawinigan Falls to Point Magdeleine at Grandes Piles.

1895-6.

At Three Rivers.—Pier No. 33 at Ile St. Quentin had to be rebuilt from the water's edge, others were partially taken down and had damaged timbers removed and replaced by new ones, mooring posts were placed where necessary. Additional chains were provided to increase the capacity of the booms above the railway bridge.

On December 31, 1895, water rose considerably on the River St. Maurice, ice moved at the railway bridge and carried about 2,000 feet of booms into the St. Lawrence and several piers were considerably damaged.

At Shawinigan.—The bottom and sides of the slide were partially repaired. Slight repairs were made to the house occupied by the boom master at Shawinigan Bay.

At the beginning of January, 1896, the highest flood ever known on the river in winter time occurred, and grave fears were entertained for the safety of the booms. About 800 feet of the booms at Shawinigan Bay were totally destroyed in the fall at Grès.

A quantity of chain was procured for the booms at this place and the fastenings made secure.

At Pointe à Bernard.—(New retaining boom). Five anchor piers (Nos. 77, 78, 79, 80 and 81) were built with 700 feet of three-ply booms, above Shawinigan Falls.

At Grand'Mere.—Slight repairs were made to the booms above and below the falls. Additional boom chains were provided for the work here and certain minor repairs carried out.

At Grandes Piles.—In the spring of 1894, ice shoves wrecked some five of the boom support piers (Nos. 5, 6, 7, 8 and 12), several had to be rebuilt (Nos. 12, 13 and 14), others were partially taken down and had the damaged timbers removed and replaced by new ones; plank fenders spiked on the exposed sides of the piers; snubbing posts planted and the stone filling brought up to the level, also 1,663 feet of single boom were renewed at Les Plaines, below Grandes Piles Falls.

1896–7.

At Three Rivers.—Piers Nos. 10, 12, 27, 30, 31 and 61, at the railway bridge, were partially taken down, and damaged timbers were removed and replaced by new ones. Plank fenders were spiked on the exposed sides of the piers, some new snubbing posts put up, and the stone filling brought up to level, also 550 feet of three and five-ply booms constructed.

Mooring posts were renewed where found necessary.

At Pointe à Lambert.—(New retaining boom.) Construction of anchor piers Nos. 92, 93, 94, 95, 96, 97, 98 and 99.

At La Gabelle.—The small dam was rebuilt, also pier.—

At Shawinigan.—The reconstruction of the dam built in 1852, at the head of the main fall, which was carried away during the high freshet of 1896. The bottom and sides of the slide were partially renewed.

At Pointe à Bernard.—Construction of three anchor piers Nos. 84, 82 and 83.

At Grand'Mere.—Slight repairs were made to the main boom.

Some 900 feet of single booms has also been provided to prevent the logs from going into the eddy below Grand'Mere Falls.

At Grandes Piles.—The work performed at this station consists of the following, viz.: Repairs were made to piers Nos. 1, 2, 3 4, 5, 6, 7 and 8. New sheathing was put around them where required, and some were raised to the proper height. Mooring posts were renewed where found necessary, and all others put in thorough order for the following year.

Also, 2,051 feet of single booms renewed at Les Plaines, below Grandes Piles Falls.

At Pointe à Magdeleine.—Repairs were made to piers Nos. 11 and 12.

1897–8.

At Three Rivers.—Piers Nos. 1, 3, 6, 8, 12, 19, 23, 25, 27, 29, 30, 31, 32, 34, 40, 44, 50, 51, 53, 54, 56 and 61, were partially taken down and the damaged timbers removed and replaced by new.

At Shawinigan.—Slight repairs were made to piers Nos. 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13 and 86. The bottom and sides of the slide were partially repaired by replacing the wornout timber and planking with new material; the projecting spikes in the bottom and sides of the slide were countersunk. Slight repairs were made to the house occupied by the boom master at Shawinigan Bay. About 1,800 feet of three-ply

booms were strengthened. Mooring posts were renewed on all piers where found necessary.

At Pointe à Bernard.—Slight repairs were made to piers Nos. 78, 79, 80, 81, 82, 83, 84 and 85.

At Iles des Hêtres.—Slight repairs were made to piers Nos. 67, 69, 70, 71, 72, 87, 88, 89.

At Grand'Mere.—Slight repairs were made to pier No. 1 and to the main boom.

At Grandes Piles.—Repairs made to piers Nos. 1, 2, 3, 3½, 4, 4½, 5, 6, 7 and 8. New sheathing was put around them where required and some were raised to the proper height. Mooring posts were renewed where found necessary and all others put in order for the following. year.

At Pointe à Magdeleine.—Repairs were made to piers Nos. 10 and 11.

1898-9.

At Three Rivers.—Mooring posts were renewed on seven piers, marked 26, 72, 74, 75, 76, 83, 21, 23, 63, 66 and 71.

At Point à Lambert.—Slight repairs were made to the following piers, marked Nos. 92, 93, 94, 96, 97, 98, 99, 106 and 107.

At Shawinigan.—Slight repairs were made to piers Nos. 4, 5, 6, 7, 9, 12, 40, 42, 54. A section of the slide was renewed.

At Pointe à Bernard.—Slight repairs were made to piers Nos. 79, 80, 81, 84, 85, 86, and 77.

At Iles des Hêtres.—Slight repairs were made to piers Nos. 68, 73, 74, 76, 87 and 88.

At Grand'Mere.—The construction of two mooring piers, Nos. 3 and 4.

At Grandes Piles.—The piers Nos. 1, 2, 3, 4, 5, 6, 7 and 8 underwent the necessary repairs.

At Pointe à Magdeleine.—Slight repairs were made to pier No. 16.

This is a resumé of the more important works erected on the River St. Maurice since 1851 up to July, 1899.

From 1851 to June 30, 1892. The gross expenditure was		$1,157,651 32
The gross revenue was		245,776 22
Deficit		$911,875 10
From July 1, 1892, when I took charge, to June 30, 1898, the gross expenditure was	$ 86,612 07	
The gross revenue was	113,307 63	
Surplus		$ 26,695 56
Deducting the surplus of the last six years		26,695 56
We have a net deficit to June 30, '98, of		$885,179 54

It is only fair to explain that notwithstanding the small expenditure of the last six years, the capacity of the booms has been increased from safe accommodation for 260,000 logs to efficient holding, at ordinary high water of nearly a million or almost four times the capacity of the works when I took charge, and this besides defraying the cost of ordinary repairs and management.

It will be readily seen from the following, the various points where accommodation has been increased and to what extent.

			Former Capacity.	Present Capacity.
			Logs.	Logs.
Three Rivers Station—				
Cap aux Corneilles,	2 miles	from outlet	100,000	200,000
Pointe à Lambert	4	"	.....	30,000
Shawinigan Station—				
Iles aux Tourtes	17	"	.....	150,000
Bay Shawinigan	20	"	60,000	60,000
River Shawinigan	20	"	.....	10,000
Iles de la Chute, above slide	22	"	.....	80,000
Pointe à Bernard	23	"	.....	50,000
Iles des Hêtres	24	"	.....	150,000
Grand' Mère Station—				
Little Piles	34	"	.....	30,000
Grandes Piles Station—				
Grandes Piles	37	"	100,000	100,000
Pointe à Magdeleine	38	"	.....	100,000
			260,000	960,000

If we establish a comparison between the expenditures and the revenue of this year and those of the past thirty-one years, the result will be as per following :—

STATEMENT showing the number of logs, the gross revenue, the expenditure for staff, management, repairs and construction ; also the net revenue on the St. Maurice works during the thirty-one years from July 1, 1867, to June 30, 1899.

Year.	Number of Logs.	Gross Revenue.	Staff and Management.	Repairs and Improvements.	Total Staff and Repairs.	Net Revenue.	Deficit.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1867-8	264,970	7,635 98	9,914 15	6,351 81	16,265 96	.....	8,629 98
1868-9	434,693	7,151 25	9,668 64	3,258 51	12,927 15	.....	5,775 90
1869-70	230,037	15,706 89	9,168 67	7,258 72	17,002 79	.....	1,295 90
1870-1	326,949	9,430 42	11,489 30	5,183 99	17,085 80	.....	7,625 38
1871-2	335,418	11,297 15	12,311 53	5,522 19	18,232 05	.....	6,934 91
1872-3	264,598	12,188 41	16,356 60	7,092 43	23,877 03	.....	11,688 62
1873-4	411,037	11,108 12	17,767 31	9,560 48	27,771 39	.....	16,663 27
1874-5	387,334	15,363 80	17,851 96	9,036 50	27,460 07	.....	12,096 27
1875-6	291,183	13,900 16	18,251 84	4,490 87	23,310 71	.....	9,410 55
1876-7	220,635	11,338 48	13,675 26	5,892 27	20,185 53	.....	8,847 05
1877-8	207,810	7,913 40	12,759 50	6,232 87	19,542 37	.....	11,628 97
1878-9	160,414	6,136 94	13,355 19	4,291 19	18,205 38	.....	12,068 44
1879-80	23,508	1,023 26	14,823 10	8,497 07	24,093 69	.....	23,070 43
1880-1	93,836	7,592 62	14,993 41	3,831 27	19,403 18	.....	11,810 56
1881-2	329,978	11,939 64	17,768 48	9,167 21	27,545 69	.....	15,706 05
1882-3	461,845	16,288 01	15,460 92	5,524 73	20,985 65	.....	4,697 64
1883-4	200,547	13,511 36	15,160 55	5,008 37	20,168 92	.....	6,657 56
1884-5	226,443	5,127 64	17,092 03	6,103 62	23,195 65	.....	18,068 01
1885-6	107,233	669 13	18,698 12	14,316 58	33,014 70	.....	32,345 57
1886-7	271,251	5,554 19	19,198 46	18,751 96	37,950 42	.....	32,396 23
1887-8	213,740	4,246 17	16,943 92	18,242 52	35,186 44	.....	30,940 37
1888-9	328,103	7,323 27	21,290 72	5,517 33	26,808 05	.....	19,484 98
1889-90	197,365	4,242 18	13,957 09	4,753 76	18,710 85	.....	14,468 67
1890-1	203,099	3,953 87	17,155 67	6,638 78	23,794 45	.....	19,840 58
1891-2	282,738	4,520 50	15,658 83	4,332 75	19,991 55	.....	15,471 08
1892-3	569,703	11,114 90	9,259 86	831 13	10,090 99	1,023 91	.....
1893-4	755,657	14,544 55	7,565 65	2,545 09	10,110 77	1,433 78	.....
1894-5	779,892	14,305 53	6,512 83	4,001 34	10,514 17	3,792 36	.....
1895-6	1,163,610	21,358 74	8,114 01	5,645 38	13,759 39	7,599 36	.....
1896-7	1,240,459	22,090 50	8,647 72	9,816 21	18,563 93	3,426 57	.....
1897-8	1,763,908	29,893 41	8,217 26	15,355 56	23,572 82	6,320 59	.....
1898-9	1,374,742	21,418 47	8,988 71	8,657 22	17,645 93	3,772 54	.....

The zero of the Grand Piles gauge corresponds to 298·39 feet above the zero of the Three Rivers gauge connected with the St. Lawrence geodetic levelling.

The mean fluctuation of the water level for each month during the working season, for the last seven years, has been as shown in the following table of elevations of mean low water, in feet and tenths above zero of Grandes Piles gauge, for each month of the working season, August, 1892 to November, 1898.

Year.	April.	May.	June.	July.	August.	September.	October.	November.
1892	...	...	...	...	7·5	3·8	4·7	5·1
1893	3·9	12·7	10·4	6·1	4·6	5·0	4·1	3·6
1894	8·5	13·2	8·8	7·6	5·3	4·2	7·5	8·1
1895	...	14·0	9·2	5·9	6·3	5·1	4·1	4·4
1896	9·7	13·3	7·7	6·4	3·4	2·6	3·3	8·5
1897	6·4	14·7	9·4	6·7	5·3	4·4	3·1	2·7
1898	9·5	10·9	9·0	7·4	5·2	5·0	5·8	6·7

1898-9.

The works performed during the fiscal year ended June 30, 1899, has already been described. The tail drive arrived at Three Rivers on August 20, 1898. The last logs for Three Rivers were sluiced from the government booms at the railway bridge on October 12, 1898.

The following statement, furnished by the collector of slide and boom dues, shows the quantities of the various descriptions of timber that passed the Government works, during the season 1898, together with the amount of revenue accrued as tolls for the fiscal year covered by this report :—

STATEMENT of the number of saw-logs, &c., that passed through the government slide and works on the St. Maurice River during the fiscal year ended June 30, 1899.

	Pieces
Saw-logs	935,291
Logs for pulp wood	437,683
Cedars, flat and round timber	11,688
Total	1,384,662

The revenue accrued on the above was $21,418.47.

The following expenditures have been incurred for the staff, maintenance, repairs and improvements during the fiscal year 1898-9 :—

Staff and maintenance	$ 8,988.71
Repairs and improvements :—	
Grandes Piles Station	$ 2,417 48
Grand'Mère "	2,004 47
Shawinigan "	1,563 33
Three Rivers "	2,671 94
Total	$17,645 93

I have the honour to be, sir,

Your obedient servant,

F. X. THOS. BERLINGUET,

Superintending Engineer.

REPORT ON THE TRENT AND NEWCASTLE DISTRICT WORKS.

(By R. B. Rogers, Superintending Engineer.)

PETERBOROUGH, December 23, 1899.

SIR,—I have the honour to submit the annual report on the works under my charge for the fiscal year ending June 30, 1899.

The works under my supervision on this district are constructed for two purposes, namely, those constructed for the benefit of navigation, and those constructed for the benefit of the lumbermen. The former, such as locks and canals, are under the control of the Department of Railways and Canals, the latter, such as slides and booms, together with the improvements of the river navigation, is under the charge of the Department of Public Works.

The works are situated along the River Trent and its upper waters between the Bay of Quinté on the south and Balsam Lake on the north, a distance of about 170 miles.

There is a very large watershed reaching as far north as the head waters of the Madawaska, on the north and west, comprising an area of over 2,000 square miles. The regulation of this large watershed has become a very important matter to navigation, to the descent of timber and the many industries located along the route.

The water throughout the season was about normal, though the spring freshet was somewhat higher than usual, however, it passed off without doing more than the usual amount of damage to the works.

The works are now in fair condition. Most of the larger works that are required for the running of logs are now built, so that in future, unless other large works are erected for the lumbermen, the expenditure for maintenance and renewals will be smaller than for some years previous.

The following works were executed at the different stations during the year :—

FENELON FALLS.

The slide at this station was taken out during the passage of a drive of logs through it. A special grant of $4,000 was made for this work. The work of rebuilding this slide was started, and by June 30 the sum of $1,075.83 was expended. The proposed position for this slide had to be changed owing to the protests of the owners of the water powers there that it would injuire their power. The work was nearly half completed when these owners discovered that the original site was the most advantageous one for them as well as for other interests concerned. It was, however, then too late to be changed, and the slide was built in the position it formerly occupied. It was somewhat shortened, which made the cost less than was estimated for the first proposed position.

BUCKHORN.

The south pier of the slide was strengthened by constructing a new pier below it. This new pier also serves to hold the water in the channel below, and very much improves the running of logs through the slide. The boulders were also removed from the channel below the slide. New timbers were also put in for the gallows frame of the slide.

KATCHEWANNOE LAKE.

The boom separating the timber and navigation channels was repaired by the placing of new chains and straightening the alignment of the boom.

HASTINGS.

The floor of the slide was repaired and new stoplogs procured.

I have the honour to be, sir,

Your obedient servant,

RICHARD B. ROGERS,

Superintending Engineer.

BRIDGES.

It may be stated that in the older provinces of the Dominion, the Federal Government has confined itself, as a rule, to take under its exclusive control and make provision towards the construction and maintenance of important interprovincial road bridges and bridges required across waterways.

In the sparsely settled districts of the North-west Territories, the Government of Canada has undertaken to provide for the erection and maintenance of ordinary road bridges over large streams; bridges that are urgently needed to afford uninterrupted communication through trails and highways of national importance, which neither the municipalities to be more immediately benefited by the structures, nor the territorial authorities most directly concerned could be expected to erect and maintain at their sole expense.

During the last fiscal year works have been executed on the following bridges:—

OTTAWA.

Sappers' Bridge.—The roadway was widened 7 feet on the north side. The old coping, hand rail, sidewalk, &c., were removed, and a new sidewalk, carried on a steel structure, was built outside of the wall. The old iron guard rail was placed on the new structure, and broken sections were renewed. New corner posts and special castings and brackets had to be provided. The new sidewalk is 8 feet wide and extends the full length of the bridge, it is supported by five posts on stone pedestals and fifteen latticed girders with the necessary cross girders for wooden stringers. The sidewalk is composed of two courses of plank laid transversely, the lower of 3 inches and top 2 inches. The space between the old paving and the new sidewalk was filled with macadam pending the laying of the scoria pavement.

The amount expended was $2,324.30.

Maria Street Bridge.—The central span over the Rideau Canal was serengthened by trusses of 10 x 12 inch timber supported on upright timbers or posts against the piers carrying the bridge. Timbers 6 x 13 inches were bolted to the bottom chord of the north truss to stiffen it. The span west of the main span was also braced. The roadway planking was renewed with 3-inch planks for a distance of 130 feet. The side on the north side was raised to grade and the central portion over the canal renewed with 3-inch pine. Defective stringers were renewed and guard rails braced.

The amount expended was $464.65.

Chaudière Bridges over Slides.—A new crossing was laid on wing leading to Victoria Island, the roadway and sidewalks were patched and cleaned, and during the winter months, surplus ice and snow were removed from the sidewalks.

Union Bridge between Ottawa and Hull.—The top planking on the north side was renewed for a distance of 160 feet, 13 feet in width with 3-inch red pine. The sidewalks on both sides were patched. The sidewalk at the south end on east side was renewed with 2-inch pine planks on a length of 127 feet by 7 feet in width.

Causeway between Ottawa and Hull.—The west side of the causeway wall was pointed with cement mortar. The sidewalks, guard rails, &c., were repaired and pitch holes in roadway were filled.

The amount expended on the three above works was $7,088.98.

EDMONTON BRIDGE.

Edmonton is on the north side of the North Saskatchewan River, in the District of Alberta, N.W.T., situated on the high table land above the deep valley of the Saskatchewan, about 192 miles North of Calgary.

On either side of the river the higher plateau is at an elevation of abount 190 feet above the river level, and the slope toward the lower plateau or narrow valley is very sharp.

On the south side of the river, opposite the town of Edmonton, is 'South Edmonton,' the terminus of the Calgary and Edmonton Railway (operated by the Canadian Pacific Railway Company), from which all freight for Edmonton and the northern districts has to be taken across the river on scows or ferries and during the seasons of running ice and high water at a great disadvantage and sometimes not without danger to life and property.

In 1892 a survey was made by the Dominion Government to select a site for a traffic bridge across the Saskatchewan at Edmonton. The location of the bridge was fixed nearly opposite the centre of the town where roads leading to the foot of the hills existed or could easily be built. It was intended to build only a highway traffic bridge, and the location was made with this end in view; subsequently, the town of Edmonton, offered a contribution of $25,000 towards its construction on condition that the Government would build a combined railway and traffic bridge. This was accepted and plans ordered.

Tenders were called for the substructure or masonry work in July, 1897, and the contract awarded to François Lemoine, of Montreal, August 17, 1897, for the bulk sum of $36,500, not including piles in foundation, which were to be paid, as per schedule price, $1 per lineal foot in the work.

The work under contract comprised the building of three piers and two abutments, piling in foundations, rip-rapping, and road approaches on both sides.

Work commenced early in September, 1897, but was stopped November 9, for the winter. It was resumed March 27, 1898, and completed June 20.

The piers and abutments, which are made entirely of concrete, are 173 feet 8 inches distant, centre to centre. They are of rectangular section, and at the top carry a cap of cut stone for the bridge girder plates. At the base upstream and downstream ends are rounded and the ice cutter brought up with a slope of 1 to 1.

The smallest section at the top is 7 x 24 feet, and the largest section at the base 9·3 feet by 35·3 feet. The caissons have a width of 14·5 feet, and an extreme length of 52·5 feet, the foundation area being 656 square feet. The average total height of the piers above foundation bed is 38 feet, and above low water level 30 feet.

The piers are founded below the alluvial gravel deposit made by the river on indurated clay, permanent in character, and is the same material which forms the foundation of the bluffs adjoining the river. This material is called by the miners, hard-pan or country rock. It varies very much in hardness, some spots being found relatively

soft, others as hard as shale; excepting the hardest variety, it crumbles to pieces when exposed to the air.

North Pier.—Five feet in depth of drift gravel was removed at the north pier, or a total of about 250 cubic yards. At that depth 7 feet below extreme low water level a hard stratum of clay shale was reached. After testing, it proved to be only a thin crust, about 8 inches in thickness, underlaid by ordinary clay.

Piles were ordered for the foundations. The caisson was first sunk into place and piles driven inside to a very hard stratum. They were then cut off 5 feet below low water level and the caisson filled in solid with Portland cement concrete from the hard-pan bottom.

Centre Pier.—About 250 cubic feet of drift gravel was removed from the foundation pit, to a depth of 7½ feet of water, the depth of gravel averaging 5 feet.

This gravel was underlaid by a hard stratum of indurated clay, or clay shale. Borings at different places inside the foundation area did not show any soft stratum or soft pocket and this material after testing was proved to be perfectly safe for the foundation of the pier.

South Pier.—The depth of the drift gravel averaged only 6 inches and the quantity of material removed about 25 cubic yards.

The stratification there was about the same as at the north pier, though generally harder. Piles were ordered and driven in the same way as described for the north pier; 67 piles were driven in each of these piers.

Caissons.—Caissons for the three piers were made of 12 in. x 12 in. British Columbia fir timber. All joints were caulked and when sunk into place, clay was deposited outside and rammed round the base of the caissons. Concrete filling was then started, and the concrete deposited under water to a depth of about 3 feet with a specially constructed box.

After allowing three days for the setting of this layer, the caissons were pumped out and the concrete continned up to low water level, in the dry, well rammed and packed under the cross ties, and over the top of piles.

The body of the pier proper was started at low water level and carried up in a timber casing. Tongued and grooved boards were used to mould the straight faces, and thin sheet iron supported by scantlings for the end curves.

Abutments.—About 450 cubic yards of earth excavation removed from the foundation pits, and 45 piles for each abutment driven to firm stratum.

These were cut off 6 inches above formation level and a strong grillage laid on top. The concrete was well rammed around the head of the piles and between the pieces composing the grillage. No timber was left exposed.

Concrete.—Proportions and ingredients for the concrete were measured by volume, a barrel of cement being taken as unity.

The proportions were as follows:

1 Portland cement; 1¾ to 2 of sand; 5 of broken stone (size 2½ in.)

A special finer concrete used for the facings was as follows:

1 Portlant cement; 1½ sand; 4 broken stone (size 1½ in.)

The facing and backing were carried at the same time in the same layers.

Before placing the concrete for facing, cement mortar of 1 cement to 1 sand was spread over the previously deposited layer, close to the boards forming the casing. The concrete was then deposited, worked with the shovel and rammed, forcing the cement mortar along the face of the mould and filling in all voids. In this way the facing was very successful, showing after the removal of the timber casing, a smooth, dense surface without pits or irregularities.

Before beginning a new layer the concrete already set was well scraped, swept and thoroughly wetted.

During hot weather the fresh concrete was always protected from the direct rays of the sun by wet canvas sheets and sprinkled from time to time.

Cement and Cement Testing.—The work was entirely done with Portland cement. One thousand barrels of the 'Josson' brand or Belgian cement, and 1,200 barrels of the 'Samson' brand, or Owen Sound cement, were used in the work. Out of this number 12 barrels were rejected.

The tensile strength for most of the briquettes made, after nine days' immersion in water, was over 500 pounds to the square inch, the briquettes having been previously allowed to set for 18 hours before immersion.

Quite a number of tests gave a strength of over 650 pounds to the square inch at that age.

These tests were highly satisfactory when it is considered that they were made without all the care taken in laboratories, and without any extra ramming for compactness, and when frost at night was quite frequent.

Tests of briquettes, 1 cement to 2 sand, were also satisfactory, both as to their tensile and crushing strength.

Rip-rapping.—About 300 cubic yards of rip-rap stone was deposited around the caissons.

APPROACHES.

North Approach.—This approach consists in a filling 150 feet long and 20 feet in width at top. Its greatest height is 10½ feet where it connects with the abutment. The material used for filling is a mixture of coal refuse and clay.

Right of way was secured for this approach by the town of Edmonton from the owners, for the sum of $100.

South Approach.—This approach consists in a cutting 150 feet long and 20 feet in width at the bottom, the greatest height of the cut being 5 feet.

Right of way 66 feet wide and 200 feet long was transferred by the owners to the town of Edmonton free of charge.

The total expenditure during the fiscal year ended June 30th, is as follows:—

Contract price for piers, abutments, rip-rapping, caissons, approaches, &c	$36,500 00
Piles in foundations, 3,549¾ lineal feet at $1 per lineal foot, as per schedule price	3,549 75
Lumber in grillage for abutments, 5,042 F.B.M. at $30 (schedule price)	151 86
Additional height of 2 feet to piers and abutments (concrete)	1,500 00
Superintendence, inspections, travelling expenses, &c.	1,867 53
Total	$43,569 14

At the close of the fiscal year 1898, plans and specifications for the steel superstructure were almost ready, and it was intended to call for feeders in a short time.

During the fiscal year a contract was entered into with the Dominion Bridge Company for the construction of the steel superstructure consising of four spans each 173 feet 8 inches, for the sum of $46,332.

The work was not completed at the end of the fiscal year.

During this year, an ice pier was also constructed by the department in front of the south or channel pier of the bridge, at a distance of 100 feet from it.

Though no danger to the bridge piers was anticipated, this ice breaker was built mostly as a factor of safety to provide aginst certain possibilities of the ice floe in the

River Saskatchewan during spring time. It is located on the path of the heaviest floe of drift ice, where the strongest current exists, and is also on the path of the heavy drift timber brought down by the river during freshet time, and will serve the double purpose of breaking the ice floe, and keeping a timber and log jam from forming at the bridge piers proper.

In connection with the ice floe, about 1¼ miles above the bridge site, there is a rocky bar extending entirely across the river forming a shallow rapid, where the ice sometimes, during spring time,—but not frequently—piles up and forms an obstruction to the flow of the river, which may rise from 5 to 10 feet above winter level before the ice jam gives way.

This pile of ice is then rushed down the river, practically on top of a wave at the start, and before it reaches the bridge site has not had time to spread or lose much of its impact force. The ice breaker is intended to receive principally the first shock of this ice, outside of keeping as stated above, timber jams from forming at the bridge piers.

The construction of the crib was commenced March 6, and completed March 31, occupying twenty-three actual working days, and was done by day labour.

The total length of the pier is 42 feet, and the width 18 feet.

The upstream end is pointed at an angle of 90° and is built up from low water level with a slope of 1½ to 1. The total height is 21 feet, and it is sunk in 7 feet of water at low water, and rests on a hard indurated clay bottom, permanent in character.

Six anchor piles were driven in the crib, and the up stream end covered with iron plates well bolted to the heavy timber sheathing. British Columbia fir was used for the entire construction.

The total cost of the pier is as follows :—

Timber	$1,094 03
Stone for filling and rip-rapping	504 00
Wages, cartage, &c.	797 12
Iron, hardware, blacksmithing, &c	779 22
Miscellaneous	24 00
Total for construction work	$3,198 37

BANFF BRIDGE.

This bridge is built over the Spray River, in the district of Alberta, by the local legislature, the Dominion Government having been asked to subscribe a certain amount towards the construction of the bridge, the sum of $3,087.93 was granted.

SURVEYS, EXAMINATIONS AND INSPECTIONS.

The following places or works were visited by the engineers for the purpose of inspection, examination or survey during the fiscal year ended June 30, 1899.—

NOVA SCOTIA.

Name.	County.	Name.	County.
Arichat	Richmond.	Malignant Cove	Antigonish.
Baddeck	Victoria.	Margaree Breakwater	Inverness.
Bedford	Halifax.	Morrison's Point	Victoria.
Big Pond	Cape Breton.	McNair's Cove	Antigonish.
Caribou Island	Pictou.	North Ingonish	Victoria.
Chebogue	Yarmouth.	North Side East Bay	Cape Breton.
Cow Bay	Cape Breton.	Port Hillford	Guysboro.
Cribbin's Point	Antigonish.	Port Hood	Inverness.
Englishtown	Victoria.	River John	Pictou.
Grand Etang Bridge	Inverness.	Ross' Wharf, dredging	Victoria.
" dredging	"	Scotch Cove	"
Grand Narrows	Cape Breton.	Tracadie	Antigonish.
Harbour a Bouche	Antigonish	Whycocomagh	Inverness.
Iona	Victoria.	Windsor	Hants.
Mabou	Inverness.		

PRINCE EDWARD ISLAND.

Alberton	Prince.	Miminigash	Prince.
Brae	"	North Rustico	Queen's.
Belfast	Queen's.	New London	"
Clifton	"	Red Point	"
Canoe Cove	"	Souris	King's.
Crapaud	"	St. Mary's Bay	"
Charlottetown	"	Sturgeon	"
Cape Traverse	Prince.	St. Peters	"
Georgetown	King's.	South Rustico	Queen's.
Graham's Pond	"	Tignish	Prince.
Hickey's Pier	Queen's.	Vernon River	Queen's.
Mill Creek	King's.	Wood Island	"
Mink River	"	West Point	Prince.
Montague	"	Woolfville	King's.

NEW BRUNSWICK.

Name.	County.	Name.	County.
Alemek	Gloucester.	High and Low Water Wharf (R. St. John)	Queen's.
Anderson's Hollow	Albert.	Hopewell Station.	Albert.
Bathurst	Gloucester.	Jemseg (R. St. John)	Queen's.
Bay du Vin	Northumberland.	L'Etang	Charlotte.
Black River	St. John.	McGowan's (R. St. John)	Sunbury.
Buctouche	Kent.	Mispec	St. John.
Burnt Church	Northumberland.	Negro Point	"
Campbellton	Restigouche.	Newcastle	Northumberland.
Cape Tormentine	Westmoreland.	Oromocto (R. St. John)	Sunbury.
Caraquet	Gloucester.	Quaco	St. John.
Caraquet (Lower)	"	Richibucto	Kent.
Caraquet (Upper)	"	Salmon River (R. St. John)	Queen's.
Chatham	Northumberland.	Salmon River (Upper)	Albert.
Clifton	Gloucester.	Sewell's Wharf (R. St. John)	Sunbury.
Cocagne	Kent.	Shippegan	Gloucester.
Cole's Island (R. St. John)	Queen's.	Springhill (R. St. John)	York.
Dalhousie	Restigouche.	St. John Harbour	St. John.
Edgett's Landing	Albert.	Thompson's Wharf (R. St. John)	Queen's.
Fort Dufferin	St. John.	Tobique	Victoria.
Gerow's Wharf (R. St. John)	Queen's.	Tracadie	Gloucester.
Grand Anse	Gloucester.	Two Rivers	Albert.
Grand Lake (R. St. John)	Queen's.	Tynemouth Creek	St. John.
Grand Manan	Charlotte.	Washademoak (R. St. John)	Queen's.
Grimross Canal (R. St. John)	Queen's.	Wilson's Beach	Charlotte.
Herring Cove	Albert.		

QUEBEC.

Bic	Rimouski.	Matane	Rimouski.
Berthier (en haut)	Berthier.	Oak Point	Bonaventure.
Cap à l'Aigle	Charlevoix.	Port au Persil	Charlevoix.
Grosse Roche	Rimouski.	Rimouski	Rimouski.
Ile aux Coudres	Charlevoix.	Rivière du Loup (en haut)	Maskinongé.
Ile Verte	Temiscouata.	St. Jean, I.O	Montmorency.
Lachine	Jacques Cartier.	St. Michel	Bellechasse.
Les Boules	Rimouski.	Trois Pistoles	Temiscouata.

ONTARIO.

Burlington Channel	Wentworth.	Port Colborne	Welland.
Collingwood	Simcoe.	Port Elgin	Bruce.
Hawkstone	"	Port Maitland	Monk.
Kingston	Frontenac.	Picton	Prince Edward.
Niagara River	Welland.	Severn River	Ontario.
Oakville	Halton.	Thornbury	Grey.
Owen Sound	Grey.	Wolfe Island	Frontenac.

There were 979 official papers referred by the Secretary to the Chief Engineer's office for report or action. Over 11,000 letters were received from the resident engineers and others, and 5,277 were sent out.

In conclusion I take great pleasure in complimenting the officers under my control for the great zeal shown in managing the different works under their charge; taking into consideration the fact that without any material increase in the working staff, the business of this branch has increased in the past couple of years almost twenty-five per cent.

E. D. LAFLEUR,

Acting Chief Engineer, Public Works of Canada.

PART V

REPORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED JUNE 30, 1899

GOVERNMENT TELEGRAPH SERVICE.

OFFICE OF THE GENERAL SUPERINTENDENT,
OTTAWA, April 6, 1900.

SIR,—I beg leave to submit herewith my report on the Government Telegraph Service for the twelve months ended June 30, 1899.

The report, similarly to that of the previous year, is prefaced by a list, to date, of the land lines and cables in operation; with data of lengths, year of construction, number of offices at present established, and an estimate of the traffic obtaining.

The usual tabular statements giving lists of the offices, operating staff, &c., in the several districts are appended to the report; likewise the tariff sheets, giving the rates charged for messages on the several lines.

I have the honour to be, sir,

Your obedient servant,

D. H. KEELEY,

General Superintendent.

J. R. ROY, Esq.,
Acting Secretary, Department of Public Works.

APPENDED TABLES.

The usual tabular statements of the lines and offices, staff, &c., appended to this report, will be found to contain whatever additions or changes have been made up to June 30, last.

D. H. KEELY,
General Superintendent.

OTTAWA, April 6, 1900.

GOVERNMENT TELEGRAPH SERVICE.

Location of Lines.	Points connected.	Year.	Length of Lines.			Number of Offices.	Yearly Average of Messages Sent.
			Land Lines.	Cables.	*Total.		
			Miles.	Knots.			
Newfoundland..	Port au Basque—Cape Ray. ...	1883	14	.....	14	2	
Nova Scotia....	North Sydney—Meat Cove (with loops).....	1880-98	147¼	.....			
"	Across Bras d'Or Channel....	1880	.....	½	148¼	13	3,000
"	" St. Ann's Harbour....	1887	.....	¼			
"	" Ingonish Harbour.....	1887	.....	¼			
"	Meat Cove—St. Paul's Island.....	1890	.....	20	23	2	50
"	On St. Paul's Island.....	1890	3	.....	63	7	2,500
" ...	Mabou—Cheticamp.....	1887	63	.....			
"	Barrington—Cape Sable	1883	16	.....			
"	Across Bear Point Channel...	1883	.....	1½	17¾	(Leased)	
"	" Lt. House Channel....	1883	.....	¼			
New Brunswick.	Chatham—Escuminac.....	1885	42	.....	42	5	600
" ..	*Bay of Fundy System:*						
" ..	Eastport—Campobello.. ..	1880	.....	1¾			
" ..	On mainland Eastport.....	1880	¼	.....			
" ..	On Campobello Island.....	1880	7½	.....			
" ..	Campobello—Grand Manan...	1880	.....	7¼			
" ..	On Grand Manan Island....	1880	25¼	.....	44¼	8	2,500
" ..	Grand Manan—Cheney's Island.....	1890	.....	½			
" ..	On Cheney's Island.....	1890	¾	.....			
" ..	Cheney's Island—Whitehead Island..	1890	.....	¾			
Quebec.	Bay St. Paul—Chicoutimi.....	1881	92	.....	92	6	
"	Branch St. Alexis to L'Anse St. Jean	1898	40	.....	40	1	
"	Murray Bay—Big Romaine. ..	1881-98	628½	.....			12,000
"	Across Saguenay River.... .	1883	.....	1¼	667¾	40	
"	Bersimis to Manicouagan....	1883	.....	12			
"	Manicouagan to Godbout.....	1883	.....	26			
"	*Quarantine System:*						
"	Quebec—L'Ange Gardien.....	1885	13	.....			
"	L'Ange Gardien—Orleans Island....	1885	.....	¾			
"	On Orleans Island..... ...	1885	29¼	.....	52¾	7	2,300
"	Orleans Island—Isle Réaux...	1889	.....	2			
"	On Isle Réaux..	1889	2½	.....			
"	Isle Réaux—Gross Isle. ..	1889	.....	2			
"	On Grosse Isle (all told).....	1885-94	3¼	.....			
"	*Anticosti System:*						
"	Gaspé—L'Anse à Fougère....	1881	28	.....			
"	L'Anse à Fougère—Anticosti..	1881	.....	44½	316½	10	1,500
"	On Anticosti Island.....	1881-90	223½	.....			
"	Anticosti—Long Point, Mingan	1890	.....	21			
"	Meat Cove (C.B.)—Magdalen Islands.....	1880	.....	55	138½	9	2,000
"	On Magdalen Islands.....	1881	83	½			
Ontario	*Pelee Island System:*						
"	Leamington—Point Pelee.....	1889	12	.....	34	10	800
"	Point Pelee—Pelee Island...	1889	.....	9½			
"	On Pelee Island..	1889-98	12½	.....			
North-west.....	Qu'Appelle—Edmonton and St. Albert	1883-87	607½	.....	607½	15	4,700
"	Moosejaw—Wood Mountain... ..	1885	90½	.....	90½	2	300
British Columbia	Ashcroft—Barkerville.....	1878-87	276½	.....	276½	8	4,500
" ..	Victoria—Cape Beale.	1891	118	.....	118	7	150
" ..	Nanaimo—Comox and Alberni ...	1893-95	110½	.....	110½	8	7,000
" ..	Ashcroft—Lillooet...	1896	62	.....	62	1	500
	Total....	.....	2,751½	207¼	2,958¾	164	44,400

*For convenience in totalling, the knots of cable are regarded as statute miles.

NOTE.—Since the close of the year 1898-99, the following lines have been constructed:—

	Miles.
Yukon—Lake Bennett-Dawson and Atlin	639
British Columbia—Kamloops-Lower Nicola	67
" Alberni-Cape Beale	57

And on the north shore of the St. Lawrence considerable preliminary work has been done for the further extension beyond Romaine to the Strait of Belle Isle.

REPORT ON THE GOVERNMENT TELEGRAPH SERVICE FOR 1898-9.

In this report, if no reference is made to any particular line, the latter will be understood to have been free from interruption and satisfactorily operated.

With few exceptions, the land lines and cables were kept in good order throughout the year. Such renewals and general repairs as were called for are hereinafter noted in detail.

The expenditure and revenue for each of the several lines will be found in a tabular statement at the end of the report.

NEWFOUNDLAND.

The line from Port au Basque to Cape Ray continues to be operated as heretofore, under the agreement with the Anglo American Telegraph Company.

MARITIME PROVINCES.

Mabou-Cheticamp Line.—Pursuant to the intention expressed in last year's report, the work of repoling the section between Margaree and Mabou was carried out in the course of the past season. Hackmatack poles, 22 feet long and 6 inches in diameter at the top were obtained from residents along the route; and the work was done by local labour under the foremanship of Western Union linemen. In all, 1,359 poles were put in, including 165 on the loop to N. E. Margaree. (This work was completed in November, 1899.

Meat Cove Line.—The repoling of the Ingonish-Meat Cove section, that was in hand as mentioned in last year's report, was performed under contract by Mr. Norman McLeod, of Cape North, who also supplied the poles (spruce, to the number of 1,655; 23 feet long and 5 inches diameter at the top, same size as used in the original construction and subsequent renewals). The loop line to Neil's Harobur, $1\frac{3}{4}$ miles, was included. This work was completed in December, 1898.

The projected loop line to Dingwall, $2\frac{3}{4}$ miles off the main line near Aspy Bay, was also constructed; and an office was established at that place, with Mr. McLeod as agent, August 31, 1898.

The office at Baddeck, which had been in charge of Mr. David Dunlop since January 1, 1892, was transferred to Mr. Alex. Anderson on December 2, 1898; and at South Ingonish, Mr. F. C. Brewer, agent-operator since August 1, 1891, was on May 7, 1899, succeeded by Mr. George Brewer.

In consequence of the resignation of Thomas Morrison, who was appointed April 1, 1898, to take charge of the line-repairing between Englishtown and North Sydney, Mr. John Campbell, of Englishtown, was appointed to succeed him from May 1, 1899.

The office at Port Bevis was closed at the end of November, 1898, and has been discontinued, there being no longer any need for an office at that place.

Cheticamp-Meat Cove.—It has been decided to complete the line of telegraph communication all around the coast of Cape Breton by the filling of this gap, an estimated distance of 40 miles. An appropriation of $5,200 was made for this purpose in the session of 1899, and the work is now in hand.

Barrington-Cape Sable Line.—The cable—¼ mile—connecting the Cape Sable light-house with the rest of the system, became inoperative early in the winter. It was found later on to be badly corroded and wasted away; and when the ss. *Newfield* was sent to the Bay of Fundy in the following autumn for other cable work, a new section was put in and connection re-established. (October 26, 1899).

Bay of Fundy Lines.—The Grand Manan-Campobello cable has been in operation since the repair made in August, 1898, noted in last year's report, with the exception of an interruption of several days in January, 1899: from the 8th to the 16th. It turned out, on examination, which was made as speedily as possible by the local superintendent, to have been caused by a disconnection of the wires, by some person unknown, at the terminal hut at Liberty Point, Campobello. Reward notices were posted as a precaution against a repetition of the occurrence.

At Welshpool for the season of 1899 a telephone was put in operation between the Tyn-y-coed hotel and our regular office in the village, for the better accommodation of the community generally, instead of a temporary removal of the office from the village to the hotel as was the case in the previous year.

At Flaggs Cove, Miss M. E. Burnham, who took Miss Watts' place, as operator temporarily on October 1, 1898, has continued in that capacity, Miss Watts having since resigned the office.

RIVER AND GULF ST. LAWRENCE.

Anticosti Island Lines.—As mentioned in last year's report, the practicable betterment of the Island land line was enquired into, and it had been decided to renew the wire between Becscie River and English Bay, a distance of 22 miles. $1,200 has been provided in the estimates of last session for this work and it will be carried out early in the season of 1900.

The cable between South-west Point and the mainland at Gaspé became intermittently inoperative in October, 1898. The ss. *Newfield* visited that locality soon after the trouble was reported, and the cable was put in good working order on the 5th of the following month.

In the autumn of 1898 the Great North Western Telegraph Company undertook and carried out an improvement in the land line connection with Gaspé Basin, whereby the previously used line for 54 miles beyond Fox River was shunted off with six offices in circuit, and a new pole line built direct to Gaspé Basin, a distance, from Fox River, of 12 miles. It is proposed to abandon our present circuitous line of 28 miles between these two points and make connection with the Anticosti Cable at Fox River by this short route. An item for this purpose has been submitted for the estimates for next session.

At Fox Bay, Anticosti, Mr. J. Stubbart, who had been Agent-Operator since November 1, 1888, was succeeded by Mr. Jos. Cabot, transferred from Becscie River office, May 13, 1898. The Becscie River office has been temporarily closed.

Magdalen Islands Lines.—The cable between Old Harry and the mainland at Meat Cove suffered a second interruption in the season of 1898. Just 18 days after the repair was effected (September 10), as mentioned in the last annual report, communication again ceased. The ss. *Newfield* was again brought into requisition, and on revisiting the locality the cable was found to have parted 3 miles off the main shore; it was apparently chafted through. When again relaid it was put down in a less direct line than on the previous occasion, with a view to ensuring plenty of slack on the bottom. Communication was restored on October 25, (1898). Beyond making this repair the cable was not otherwise taken in hand, and the conditions reported last year have since remained unaltered.

In consequence of the washing away of a portion of the sand bar between Amherst and Etang du Nord in December, 1898, there was an interruption of the land line at

that point until communication was in January restored by the erection of a light pole line across the bar, which had to some extent reformed. It has been found difficult to maintain ; and to make the connection permanent and reliable, it is proposed to lay a cable of 5½ knots spanning the gully and shifting sands. An item has been submitted for inclusion in the Estimates for this purpose.

St. Paul's Island Line.—The St. Paul's cable continuing in sufficiently satisfactory operation since the repair made in September, 1898, no attempt was made to clear out the leak existing in it, as would in last year's report. It will probably be as well to defer that work until an actual break down calls for action, unless the *Newfield* happens meanwhile to be available in the vicinity at a suitable time to advantageously take it in hand.

North Shore Lines.—There was an intermittant trouble between Bersimis and Godbout from July 25 till the October, 18 1898, when reliable communication was established by an overhauling of the cable end at the Point Outardes landing, where it had been disturbed by the high seas. At the outset, the trouble was below Point Outardes, and probably in one or other of the Godbout-Manicouagan cable ends, which had been meanwhile examined and overhauled by the local agents. The North Shore traffic, at the times when direct communication with Bersimis was cut off, went round by way of Long Point, Anticosti Island and Gaspé ; so there was no actual stoppage of the telegraph service.

In the autumn of 1898, in furtherance of the improvement effected by the woods clearance between Port Neuf Mills and Bersimis, the line wire all the way from Bersimis to Murray Bay was overhauled and all defective parts cut out and the joints soldered throughout. The G. N. W. Telegraph Co. took the same action between Murray Bay and Quebec ; so that the whole has been put in the best possible condition.

On March 1, 1899, the cable between Manicouagan and Godbout gave out. Examination was made as far as practicable at the respective landings by Messrs. A. Lausier and N. A. Comeau, local agents, and it was finally concluded the trouble was in deep water. Under the circumstances the trafic of the line was for some time routed via Anticosti, as on the previous occasion already noted, and the service was performed uninterruptedly.

NOTE—The ss. *Newfield* was subsequently brought to the locality, and it was found that the cable had developed core faults in several different places within three or four miles off the shore at either end, besides being parted at a spot where the armour wires were quite corroded away. The greater part, over 18 knots of the length, tested well however and was left undisturbed. Some new pieces were put in where needed, and the repair was completed on October 11, 1899.

At *Pentecost* some general repairs were made last autumn to the telegraph office building. The work was done by local labour.

At *Kegaska* an office was opened with Mr. Alfred Cormier, teacher in charge, in January, 1899. It is intended to have him act in the same capacity at other places further down on the projected extension beyond Romaine.

Construction.—As noted in last year's report, the North Shore line has been extended below Point Esquimaux, a distance of 172 miles to Big Romaine. The further extension towards Chateau Bay, opposite Belle-Isle, has since been under way. The route was explored by Mr. P. A. Perron ; the length being estimated at 315 miles ; and contract for the supply of poles (cedars, 20 feet long and 6 inches in diameter at the top, to be used throughout) were entered into with Mr. L. P. De Courval, of Arthabaskaville, and, for the work of construction with Mr. Xavier Gendreau of Point Esquimaux. Some of the poles were delivered before the close of navigation and some further preliminary work performed. The contract calls for completion of the whole by July 31, 1900.

Quarantine Line.—The experimental installation of telephone apparatus in conjunction with the telegraph on this system, of which mention was made in last year's report, proved so unsatisfactory in every way that it was discontinued in November, 1898. The telegraph, as previously, has since been in operation.

The cable between Isle aux Reaux and Grosse Isle, which was damaged and repaired in April, 1897, was again interfered with and damaged by ice on February 7, 1898. The trouble was found near the Isle aux Reaux shore, and communication was restored by the local repairer, Mr. N. Roberge, on May 7 following.

ONTARIO.

Pelee Island Line.—The cable, whose position was in June, 1898, changed, and supposed to have been thereby rendered more secure against interruption, ceased working again on December 11 in the midst of an unprecedented ice shove in the lake. Repairs were made in the month of May following, communication being restored on the 21st. The cable was found to have been badly strained and broken, both between the Dummy Light and the mainland and at the other end near the island landing. Upon completion of such overhauling and repair as was practicable, the cable as a whole exhibited a leaky condition, and it has become so far used up that more than one further attempt to restore communication through the main section, in event of a break, will hardly be warrantable. In anticipation of this there is an intention to apply for a vote next session for a renewal of this connection. The cable was first put down in 1889.

NOTE.—On June 28, 1898, in a storm, when the lake rose three feet above high water mark at Point Pelee, this cable gave out again between the mainland and the Dummy Light. Subsequently it was found to have been strained and broken for a length of 500 feet, near the Dummy Light. Mr. J. Quick, of North Point, Pelee Island, made the repair on July 19, using a piece of good cable that was left on hand from the previous overhauling.

Again on November 14, 1899, this cable ceased working between the mainland and the Dummy Light; the season being too far advanced to admit of an examination, it has since remained inoperative. So soon as practicable in the spring the connection will be re-established.

NORTH-WEST.

Some ordinary general repairs were made along the lines during the seasons of 1898 and 1899, but no actual reconstruction work or renewal was called for.

Beaumont, 15 miles from Edmonton, is being connected by telephone, the government granting aid in the matter of line material and instruments, the local residents putting in the poles and providing labour for the construction work. The line will probably be completed early next year (1900).

At *Edmonton.*—Mr. Geo. E. Voyer, who had been joint agent for the Canadian Pacific and Government telegraphs since March, 1893, was, on the 1st April, 1899, succeeded by Mr. W. C. Gillis transferred from Victoria. At the end of May following, Mr. Gillis resigned and was succeeded by Mr. S. B. McNamara who has since been in charge.

At *Victoria.*—W. C. Gillis, transferred to Edmonton as above on the 1st April, 1899, was succeeded by Mr. J. C. Gordon as agent-lineman.

At *Fort Saskatchewan*—The town office which had been previously operated on commission was made a salaried station and Mr. A. W. M. Campbell was transferred thereto from Moose and took charge as agent-operator on the first October 1898. The barracks office also changed hands, Mr. G. M. Grahame being succeeded in turn by Messrs G. Wright, A. L. Bell, Jas. Ritchie and J. A. Macdonald, the last named has been acting as operator since May 1, 1899.

At *Moose.*—Upon Mr. Campbell's transfer as above, Mr. J. T. Callahan took charge as agent-lineman from October 1, 1898.

At *Pitt.*—The stable was destroyed by fire in October, 1898, and the office building had become so much dilapidated that there was a proposal to utilize it as a stable and to put up a new building for office and dwelling; action was however deferred and the agent-lineman was placed at Onion Lake, 13 miles east, pending development of requirements, as it is questionable whether any useful purpose would be served by the continuance of a station at Pitt.

At *Saddle Lake.*—In November, 1898, some necessary repairs were made upon the office building and stable.

BRITISH COLUMBIA.

Barkerville Line.—The proposed re-poling, mentioned in last year's report, was deferred. It is intended to make provision for this work next session. Such interruptions as occurred in the course of the year were of but short duration and the line has on the whole been kept in satisfactory operation.

At Bridge Creek.—(108 mile House) C. H. Tingly, agent-operator was succeeded by R. M. Cornell and the location of the office changed to 111 mile House; November 9, 1898.

At Ashcroft.—C. A. Sherr succeeded W. Jamieson as joint agent for the Canadian Pacific Telegraph and Government lines, July 4, 1898.

Nanaimo Comox Line.—In consequence of a roadway having been recently opened up between Quellicum and Union Bag, 20 miles, it has been found desirable to shift the line thereto from its present location through the woods, and a sum for that purpose has been provided in the estimates.

(NOTE.—This work was partly done in the month of October and November 1899, by the regular lineman with local assistance, and is to be completed next spring.)

At Fanny Bay.—D. R. O'Hanly, lineman, was succeeded by Thomas Hudson, November 17, 1898.

Victoria.—Cape Beale Line.—This line continues subject to frequent and prolonged interruptions due to the conditions mentioned in former reports. In the course of the past season the construction of the projected alternative line from Alberni to Cape Beal was taken in hand as mentioned hereunder.

At Carmanah West (Clo-oose), J. W. Irwin, lineman, was succeeded by J. Vanslyke, June 1, 1898.

CONSTRUCTION SINCE CLOSE OF FISCAL YEAR 1899.

Alberni—Cape Beale Line—This new line, for which the material (No. 6 iron wire, &c., &c.) was laid down at Alberni in the previous year, was built under contract by Mr. T. D. Conway of Chemainus, B.C., and completed on October 1, 1899. It skirts the shore of the natural canal for most of the way and cuts across the promontories approaching Cape Beale. Total length, 57 miles. The pole line is of cedars 23 feet long, 6 inches in diameter at the top and numbering thirty-two to the mile. The line is operated by the agents who were already acting at the respective terminal offices, Miss Patterson at Cape Beale and C. T. Haslam at Alberni. A temporary arrangement has been made with Mr. G. A. Huff, proprietor of a steamboat on the route, for the keeping of the line in working order.

Kamloops—Lower Nicola Line—In the course of the past season a line (67 miles) was built between these two points under contract by Mr. J. H. Latremouille, of Kamloops. It was completed on December 1, 1899. No. 8 iron wire was used in the

construction, and poles of the best wood found available along the route, 25 feet long, 5 inches diameter at the top and numbering thirty-two per mile. Arrangements are in hand to connect, by this line, a number of telephone stations to be established in convenient localities.

Bennett—Dawson and Atlin Lines (Yukon)—In the course of the season of 1899 a line was constructed by day labour, under the direction of Mr. J. B. Charleson, between Lake Bennett and Dawson, and a branch line from Bennett to Atlin, in all some 670 miles. Offices have been opened at intermediate points. Connection is made at Bennett with the White Pass and Yukon Railway Company's telegraph to Skagway, where boat service with Vancouver and Victoria affords means for interchange of traffic.

It is intended to have a line of 900 miles or so built in the same way in the season of 1900 between Atlin and Quesnelle, on the Barkerville line, which latter connects with the Canadian Pacific telegraph system at Ashcroft.

REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the lines in the several districts hereinbefore mentioned are given in the following table:—

—	Expenditure.	Revenue.	Remarks.
	$ cts.	$ cts.	
Lower St. Lawrence and Maritime Provinces—			
Anticosti Island lines	3,887 35	1,048 24	
Bay of Fundy "	6,416 05	773 45	
Cape Ray "	250 00	.....	
Cape Sable "	25 00	.....	
Cheticamp "	806 63	451 54	
Escuminac "	442 24	137 02	
Low Point Agency	50 00	587 30	
Magdalen Island lines	8,566 17	728 03	
Meat Cove line (including St. Paul's Island)	4,397 74	1,201 45	
North Shore St. Lawrence (East of Bersimis)	19,146 09	1,046 40	
North Shore St. Lawrence (West of Bersimis)	4,988 11	448 36	
Quarantine line	975 51	.....	
Cable ship *Newfield*, renewals of plant	920 52	.....	
Subsidies, stationary, line and office material and contingencies, chargeable to appropriation for Gulf lines	3,128 49	.....	
Ontario, Pelee Island line	1,653 87	142 00	
North-West telegraph lines	14,507 34	1,704 92	
British Columbia, Comox (including Alberni line)	8,464 44	2,204 28	
Kamloops—Nicola	1,209 10	.....	
†Barkerville line	3,198 70	.....	
†Cape Beale line	4,332 34	.....	
Telegraph service generally	1,137 90	.....	Signal Service messages, Meteorological Service messages and reports, and Fisheries bulletins are handled free of tolls.
Total	88,503 59	10,472 99	

† The C.P.R. operating these two lines, retains the revenue, and the government reimburses them the excess of expenditure over revenue.

GOVERNMENT TELEGRAPH SERVICE.

NEWFOUNDLAND TELEGRAPH SYSTEM.

No.	Stations.	Intermediate Distance.	Operator.	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	Cap Ray Lighthouse.....	14	....	50 00 " ..	.....	
	Total.....	14		100 00 " ..		

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.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

ANTICOSTI TELEGRAPH SYSTEM.

No.	Stations.	Intermediate Distance.	Agent, and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	*Fox Bay	0	Geo. Cabot	50 00 or com'n	May 13, 1899.	The commission is 25 per cent on all business to and from the office in each instance; and commission guaranteed not to be less than at the rate of $50 per annum. *A special allowance for maintenene of office, $50, per annum, has been added to the commission for offices marked*, since September, 1887.
2	Heath Point Lighthouse	23	T. Gagné	50 00 "	July 20, 1881.	
3	South Point Lighthouse	32½	A. Nadeau	50 00 "	Oct. 1, 1888.	
4	*Shallop Creek	17½	B. Bradley	50 00 "	July 7, 1881.	
5	Salt Lake	52½	Z. Beaudin, repairer	365 00 "	May 6, 1896.	General repairer. Plus $1 per d. when absent on duty.
			A. Beaudin, operator	50 00 "	" 12, 1896.	
6	South-west Point Lighthouse	15	Miss G. Pope	420 00 "	Oct. 18, 1880.	Chief operator, since August 1, 1882.
			H. Pope, D. Supt.	200 00 "	July 21, 1893.	Plus $1 per day when absent on duty.
7	Jupiter River	7		50 00 "		
8	Otter River	17½		50 00 "		
9	*Becscie River	22		50 00 "		Temporarily closed since May, 1899.
10	Cape Eagle (Ellis Bay)	10		50 00 "		
11	West Point Lighthouse	9	A. Malouin	50 00 "	Aug. 1, 1881.	
12	English Bay	3	F. Cabot	120 00 and com.	July 1, 1882.	Until July, 1896. The salary was $50 with the special allowance for maintenance as above.
13	Mechastic Bay	14¼				
	Totals	223¼		1,605 00		

South-west Point connects with l'Anse à Fougère, Gaspé, by cable 44¼ knots; and from Mechastic Bay connection is made with Long Point of Mingan by cable 21 knots.

1	L'Anse à Fougère		N. Bernier	17 00		Special aliowance for the cable terminus. A testing station only.
2	Gaspé Basin	28	J. J. Annett	420 00	Oct. 16, 1881.	Transfer office. Connection with G.N.W. telegraph system. Allowance was $240 previous to Aug. 1, 1898.
		28		437 00		

MAGDALEN ISLANDS SYSTEM.

MAGDALEN ISLANDS SECTION.

No.	Stations.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment	Memo.
		Miles.		$ cts.		
1	Amherst	0	Miss J. Shea	50 00 or com'n.	Oct. 1, 1882	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of $50 per annum.
	Amherst Lighthouse	9	Wm. Cormier	50 00 "	June 11, 1881	
3	Etang du Nord village	15	P. Pelletier, lineman Mrs. A. Binet	400 00 " 50 00 "	Dec. 1, 1881 " 1, 1881	Plus $20 per annum for rent.
4	Etang du Nord lighthouse	1	N. Arsenault	50 00 "	Sept. 1, 1891	Two-wire loop line.
5	Grindstone Island	5	W. Leslie	Com'n 25 p.c.	May 20, 1897	
6	Grindstone West		A. LeBourdais, D. Spt. M's. E. LeBourdais, op.	600 00 50 00	Aug. 17, 1880 Sept. 15, 1893	Plus $1 per day when absent on duty.
7	House Harbour (½ knot cable)	3	P. L. Joncas	50 00 or com'n.	June 1, 1888	
8	Wolfe Island	28½				
9	Grosse Isle	11	N. Clark	200 00 and com'n	June 1, 1888	
10	Grand Entry	11	Mrs. F. Atkins	50 00 or com'n.	Feb. 18, 1882	
	Totals	83½		1,550 00		

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

MAGDALEN ISLANDS SYSTEM.

CAPE BRETON SECTION.

No.	Stations.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
	Meat Cove (Cable station)	0	A. B. McDonald	500 00	Nov. 7, 1880	The commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of $50 per annum.
2	Aspy Bay	10½	I. Y. Nichols	50 00 or com'n.	July 1, 1894	
3	Dingwall (loop line)	3¾ / 2¾	Murdock McLeod	50 00 "	Aug. 31, 1898	The loop line formerly running to White Point, has been withdrawn.
4	Neil's Harbour (½ way house) / (loop line	14 / 1¾	M. McLeod	50 00 "	April 1, 1887	
5	Ingonish, North Bay	9	J. M. Burke	50 00 "	" 1, 1882	
6	South Ingonish	10½	Geo. Brewer	50 00 "	May 7, 1899	
7	French River (¼ knot cable)	23	John McDonald	50 00 "	April 1, 1889	
8	Englishtown (¼ knot cable)	11	W. Bingham	120 00 "	July 19, 1882	Switching point for Baddeck line.
9	South Gut, St. Ann's (on loop)	5	Miss T. Morrison	50 00 "	Dec. 1, 1891	
10	Baddeck (on loop)	13	A. Anderson	50 00 "	" 2, 1898	
—	Englishtown (back on loop)	18				This loop to Baddeck starts from and returns to Englishtown.
11	Port Bevis (2½ miles, looped off Baddeck line)	5		Commission only		Port Bevis office closed and permanently discontinued in November 1898.
12	Kelley's Cove (N. Campbellton)	6	Miss M. Campbell	50 00 or com'n.	April 1, 1885	
13	Big Bras d'Or (½ knot cable)	2½	Mrs. E. Livingston	50 00 "	Jan. 1, 1889	
14	North Sydney	12½	W. U. Tel. Co	Commission only		The commission is 50 per cent on local business and 25 per cent on through messages; and covers supervision of line and office accommodation at North Sydney.
	Repairer's Sections.					
	Meat Cove—Sugar Loaf		M. McAskill	80 00	April 1, 1898	
	Sugar Loaf—Ingonish		Charles Smith	80 00	" 1, 1898	
	Ingonish—Englishtown		R. A. McDonald	80 00	" 1, 1898	
	Englishtown—Baddeck		D. Morrison	60 00	" 1, 1898	
	Englishtown—North Sydney		J. Campbell	60 00	May 1, 1899	
	Totals	148¼		1,480 00		

Meat Cove station connects with the Magdalen Islands system by a cable to Old Harry Head, 55 knots, and with St. Paul's Island by a cable of 20 knots. The latter is operated with telephones.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

NOVA SCOTIA TELEGRAPH SYSTEM.

CAPE SABLE SECTION.

No.	Section.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Barrington	0				This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time.
2	Newellton (including 1½ knots cable)	11				
3	Cape Sable Island lighthouse (including 1¼ mile cable)	6¾				
	Totals	17¾				

EAST COAST SECTION.

N.B.—In connection with the Signal Service, a land line, 208 miles in length was erected in 1881, between Canso and Halifax, for a bonus of $16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

MABOU-CHETICAMP, C.B., TELEGRAPH SYSTEM.

No.	Station.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.				
1	Mabou	0	Mrs. M. McDonald	$120 per annum	April 1, 1887.	The commission is 25 p. c. of the Government line tolls, and is guaranteed to amount to not less than $50 per annum. Where 50 p. c. commission is paid there is no guarantee as to amount.
2	Broad Cove	20	Mrs. Annie McLellan	$50 or commission	March 1, 1892.	
3	S. W. Margaree	12	J. D. McFarlane	Com'n 50 per cent.	Feb. 1, 1898.	
4	Margaree Harbour	5	H. K. McLean	$50 or commission	Oct. 20, 1896.	
5	N. E. Margaree (loop line wire)	10	Mrs. J. D. Ross	$50 "	Feb. 1, 1898.	
6	Grand Etang	8	Joseph Doucette	Com'n 50 per cent.	April 23, 1893.	
7	Cheticamp	8	Mrs. M. Fiset D. C. Dawson, D.Supt.	$100 or commission $150 per annum	" 1, 1887. " 1, 1887.	The guarantee commission at Cheticamp was $50 until July, 1895.
	Totals	63		$520 per annum		

CHATHAM-ESCUMINAC, N.B., TELEGRAPH SYSTEM.

1	Chatham	0	Great North-western Telegraph Co	$185		This amount is paid for supervision of the line and office accommodation at Chatham.
2	Black Brook	5½		50 or commission		The commission is 25 p. c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than $50 per annum.
3	Baie du Vin	15	Miss M. Williston	50 "	March 1, 1885.	
4	Lower Hardwicke	6	Mrs. M. Brimner	50 "	Aug. 1, 1891.	
5	Escuminac	3½	D. Lewis	50 "	Sept. 1, 1885.	
6	Point Escuminac lighthouse	12	K. R. McLennan	50 "	Nov. 1, 1893.	$12 per annum allowed for care of main battery at Point Escuminac.
	Totals	42		$435		

GOVERNMENT TELEGRAPH SERVICE—Continued.

GROSSE ILE QUARANTINE TELEGRAPH SYSTEM.

No.	Stations.	Intermediate Distance.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Quebec	0	Great North-west'rn Telegraph Co.	185 00		This amount is paid for supervision of the line, and covers rent of pole line from Quebec to L'Ange Gardien, for which $35 per annum is charged.
	L'Ange Gardien	13				
	Orleans Island landing (cable)	3/4				
	St. Pierre	3 1/4	C. Turcott	50 00 or com'n	Mar. 1, 1885.	This commission is 25 per cent of the Government line tariff in each instance, and is guaranteed to amount to not less than $50 per annum.
3	Ste. Pétronille	4 1/2	M. Plante	50 00 "	April 7, 1896.	
4	St. Laurent	6 1/2	M. Gobeil	120 00 and 25 p.c. commission	Sept. 15, 1888.	
5	St. Jean	7	P. Pouliot	120 00 and 25 p.c. commission	July 1, 1888.	
6	St. François	6 3/4	H. Lemelin	50 00 or com'n	Nov. 1. 1897.	
7	Isle Réaux (including 2 knots cable)	3 1/4				
	Isle Réaux (land line)	2 1/2				
8	Grosse Isle quarantine office (including 2 knots cable)	3 1/2	M. Langlois	50 00 "	Sept. 1, 1885.	$12 per annum allowed for care of main battery at Grosse Isle.
	Quarantine telephone system 2-wire line	1 3/4				NOTE.—The telephone system on Grosse Isle since May, 1893, has comprised 1 3/4 mile of 2-wire line, with 11 connections or stations.
		52 3/4		625 00		

BAY OF FUNDY, N.B., TELEGRAPH SYSTEM.

GRAND MANAN SECTION.

No.	Sections.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
	Long Eddy Cable Hut, to	Miles.		$ cts.		
1	Flagg's Cove	3	Mrs. C. C. Seely (D. Supt.)	540 00	Nov. 18, 1880.	Allowance was $420 previous to January 1, '99. The commission is 25 p.c., upon all business to and from the office in each instance; said commission guaranteed not to be less than at the rate of $50 per annum. When 50 p.c. commission is paid there is no guarantee as to amount.
	"		Miss M. E. Burnham	50 00 or com'n.	Oct. 1, 1898.	
	"		A. Gilmour, repairer	60 00	Dec. 1, 1894.	
2	Castalia	2½	G. E. Dalzell	Com'n 25 per cent.	June 1, 1898.	
3	Woodward's Cove	3½	W. A. Fraser	" 50 "	Feb. 28, 1893.	
4	Grand Harbour	2	J. L. Newton	75 00 or com'n.	Apr. 1, 1887.	$25 per annum is included for repeating Whitehead br.
5	Seal Cove	4½	P. Russell	50 00 "	May 1, 1891.	
6	Southern Head Lighthouse	5½	O McLaughlin	Com'n 25 per cent.	Apr. 24, 1897.	Southern Head office is now operated by telephone from Seal Cove.
	Branch Line.					
	Grand Harbour	0				
7	Cheney's Island (½ knot cable)	4¾	W. Cheney	Com'n 25 per cent.	Feb. 1, 1891.	
8	Whitehead Island (¾ ")	1½	I. D. Harvey	50 00 or com'n.	June 1, 1898.	
	Totals	27¼		825 00		

CAMPOBELLO SECTION.

	Liberty Cove Cable Hut, to					
1	Welchpool	7½	Miss E. G. Vennell	210 00 and com'n.	Sept. 1, 1895.	Allowance was $100 & com'n previous to Oct. 1, '98.
2	Eastport, Maine, U.S.A.	¼	J. Cushing	200 00	Dec. 26, 1881.	" $100 previous to Jan. 1, '99.
	Totals	8		410 00		

A cable of 1¾ knots connects Welchpool with the landing ½ mile from Eastport; and a cable of 7¼ knots is laid from Long Eddy, Grand Manan, to Liberty Cove, Campobello.

GOVERNMENT TELEGRAPH SERVICE—Continued.

CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM.

CHICOUTIMI SECTION.

No.	Stations.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Bay St. Paul	0	F. Boivin	180 00 per annum / 25 p.c. commission.	Previous to April 1, 1885	*The commission upon business is 25 per cent of the Government tolls of the line; the amount guaranteed to be not less than 50 per annum.
2	St. Urbain	9	A. Boivin	50 00 or comm'n*	"	
3	La Cruche	37	... / A. Gauthier (repairer)	50 00 " / 210 00	" / May 15, 1887	Until June 1, 1897, when a second repairer was appointed, the salary paid was 420 per annum.
4	St. Alexix	31½	O. Pelletier	50 00 or comm'n.	Jan. 1, 1889	
5	St. Alphonse de Bagotville	3	A. Simard	50 00 "	April 1885	
6	Chicoutimi	11½	G. N. W. Tel. Co / J. Fortin (repairer)	25 p.c. commission / 420 00 per annum	Nov. 1893 / June 1, 1897	Plus $12 per annum for care of main battery. J. Fortin's division includes the branch line to L'Anse St. Jean.
Branch Line 7	St. Alexis	0	...	...	...	
	L'Anse St. Jean	40	Mrs. R. Martel	50 00 or comm'n.	Aug. 1, 1897	Plus $12 per annum for care of main battery.
	*Totals	132		1,060 00		

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

CHICOUTIMI AND NORTH OF ST. LAWRENCE TELEGRAPH SYSTEM—*Continued.*

NORTH SHORE (West of Bersimis).

No.	Stations.	Intermediate Distances.	Agents and Operators.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Murray Bay	0	Mrs. F. Vincent	50 00 or comm'n.	Previous to April 1, 1885	
2	Cap à L'Agle	4	N. Duchesne	50 00 "	June 1, 1888	
3	St. Fidèle	6	A. N. Parent	50 00 "	April 1, 1890	
4	Port au Persil	7	A. Brassard	50 00 "	May 1, 1889	
			A. Brassard (repairer)	210 00 "	June 1, 1897	
5	St. Siméon	4	D. Gaudin	50 00 "	Dec. 1, 1887	
6	Baie des Rochers	12	G. Savard	50 00 "	June 1887	
7	Riv. aux Canards	17 Branch Line	G. Bouillenne	100 00 "	Nov. 1886	Mr. Bouillenne at River Canard has acted as repeating operator for the St. Etienne branch since August, 1889. †Until June 1, 1897, when an additional repairer was appointed, the salary paid N. Caron was $420 per annum.
8	St. Etienne		†N. Caron (repairer)	210 00	Sept. 1890	
9	Tadousac (1¼ knot cable)	13	J. E. Caron	50 00 or comm'n.	Nov. 1, 1888	
10	Bergeronnes	15	M. Savard	50 00 "	April —, 1885	
11	Escoumains	12	J. H. Topping	50 00 "	" —, 1885	
12	Baie de Bacons	8	P. Bouchard		May 6, 1892	Commission, at 25 per cent, without guarantee at Baie des Bacons.
13	Mille Vaches	8	J. A. Puise	50 00 or comm'n.	April —, 1885	
14	Portneuf Mills	11½				Closed November, 1895.
15	Portneuf light	6	S. Bouchard	50 00 or comm'n.	July 1, 1890	
			E. Courbron (repairer)	420 00	April 1, 1888	
16	Sault au Cochon	7	J. Forest	50 00 or comm'n.	Dec. 1, 1887	Sault au Cochon closed September 30, 1896.
17	Bersimis	31*	A. Lausier (agt. and opr.)	500 00	Sept. —, 1896	Formerly located at Manicouagan; Bersimis is now the repeating office.
			Mrs. A. Lusier, asst. opr.	180 00	Oct 1, 1897	
			E. Pope, dist. supt.	600 00	April —, 1885	
	*Totals	161½		2,820 00		

*NOTE.—In the estimates the maintenance of the Chicoutimi and North Shore lines is provided under head of North Shore Line. They are operated conjointly.

North Shore (East of Bersimis).

1	Pointe aux Outardes (cable)	12	X. Tremblay*	50 00	or comm'n.	Dec. 1, 1896.	
2	Pointe Paradis, Manicouagan	18					The repeating office formerly at Manicouagan was removed to Bersimis in September, 1896.
3	River Godbout (cable)	26	N. A. Comeau	50 00	or comm'n.	Oct. 15, 1883.	
4	Pointe des Monts	13½	L. F. Faffard	50 00	do	Dec. 28, 1883.	
5	Trinity Bay West	5½	Z. Poulin	50 00	do	May 16, 1884.	
6	Trinity Bay East	2½	A. Bilodeau	Commission only		do 1, 1889.	
7	Caribou Islands	7	I. Comeau	do		Sept. 1, 1889.	
8	Pointe aux Anglais	10½	Paul Côté	Accommo. office		Jan. 10, 1895.	No commission is paid at this office.
9	Pentecost River	6½	E. H. Têtu, D. Supt	1,080 00	per annum.	Nov. 1, 1891.	
10	Ste. Marguerite	47½	A. Therriault	180 00	do	July 1, 1888.	
11	Seven Islands	22¾	P. E. Vignault opr F. Gallienne, lineman	180 00 540 00		Jan. 2, 1884. April 22, 1890.	Plus 50 cents per day when absent on duty.
12	River Moisie	15½	J. Porlier	50 00		June 1, 1896.	
13	Sheldrake	72	A. Le Berge	50 00	or comm'n.	Oct. 1, 1897.	
14	Thunder River	6½	Mrs. H. Cody	50 00	do	Feb. 1, 1890.	
15	Magpie	14	Geo. Molloy	50 00	do	Oct. 1, 1889.	
16	St. John's River	9	B. Chambers	50 00	do	do 1, 1889.	
17	Long Point	10	A. Maloney	360 00		Sept. 21, 1896.	Long Point is the repeating office for the Anticosti cable in operation since September 1, 1891.
18	Mingan	7	M. J. Maloney	50 00	or comm'n.	Oct. 1, 1889.	
19	Pointe aux Esquimaux	24	D. C. Hould	Commission only		May 21, 1893.	The commission at Point aux Esquimaux is 50 per cent, without guarantee as to amount.
20	Piastre Bay	43	S. Tanguay	50 00	or comm'n.	Sept. 1, 1897.	
21	Aguanus	36¾	L. Cummings	100 00	do	Oct. 2, 1897	
22	Natashquan	16	E. Vignault	50 00		Sept. 16, 1898.	
23	Kagaska	33	A. Cormier	120 00	per annum.	Jan. 1, 1899.	
24	†Big Romaine	43	Miss R. A. Blais	50 00	or comm'n.	Sept. 21, 1898.	
	Total	506¼		3,210 00			

Notes.—*The commission, except where otherwise stated, is 25 per cent of the Government line tolls on business handled. † This line is being further extended towards Belle Isle.

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

ONTARIO—PELEE ISLAND TELEGRAPH SERVICE.

No.	Stations.	Intermediate Distances.	Agents.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.		$ cts.		
1	Leamington		J. McR. Selkirk, D. Supt	50 00	Nov. 1, 1888	
2	Leamington Dock	2	F. Deslaurier	Accommodat'n office.	" 1, 1895	
3	Club House	5	C. Harrison.	Commission 25 p. c.	April 1, 1889	The commission is on the tolls for the Government line.
4	Point Pelee	5	W. A. Grubb	"	Nov. 1, 1888	
5	Dummy Light (cable)	2	W. Grubb	"	July 1, 1898	
6	Lizard Point Landing (cable)	7½				
7	North Point Light Island	1	J. E. Quick	50 00 and comm'n.	Dec. 1, 1890	North Point Lighthouse is the repeating office for the system, when occasion requires.
8	North Dock	2	C. B. Quick	Commission 25 p. c.	Nov. 1, 1888	
9	McIntyre's Corners	2½	Mrs. A. McIntyre	"	" 1, 1896	
10	West Dock	2½	A. M. McCormick	"	" 9, 1888	
11	South Dock	4½	F. B. McCormick	"	" 1, 1888	
	Total	34		100 00		

NOTE.– This line is operated with telephones.

LINES IN THE NORTH-WEST TERRITORY.

No.	Stations.	Intermediate Distances.	Agents.	Salaries per Annum.	Date of Appointment.	Memo.
	Qu'Appelle-Edmonton Section.	Miles.		$ cts.		
1	Qu'Appelle	0	J. S. Macdonald, Dist. Supt.	1,200 00	Jan. 1, 1898.	
			C.P.R. Tel. Co.'s	420 00	Dec. 1, 1896.	The Agt.-Opr. at Qu'Appelle is joint with the C.P.R.
2	Fort Qu'Appelle	17	Miss E. Johnston	600 00	Mar. 1, 1885.	
3	Touchwood	46	A. Von Lindeburgh	600 00	Nov. 1, 1883.	
4	Humboldt	78				Humboldt office was closed August 20, 1893.
5	Saskatoon (14 miles loop)	69	C.P.R. Tel. Co.'s	300 00	Jan. 1, 1892.	The Agt.-Operator at Saskatoon is joint with the C.P.R.
			J. Harrington, repairer	600 00	" 1, 1888.	
6	Henrietta "	52	W. Salsbury	720 00	Oct. 1, 1886.	
7	Battleford	47	L. P. O. Noel	720 00	April 15, 1890.	The repairer, formerly stationed at Battleford, was transferred to Humboldt in November, 1892, and thence to Moosejaw, May, 1893.
8	Bresaylor	27	H. McCleneghan	480 00	Sept. 19, 1895.	
9	Fort Pitt	62	D. Noel	600 00	Mar. 1, 1897.	
10	Onion Lake	13	G.G.Mann, operator and agent	240 00	Jan. 1, 1892.	
11	Moose	32½	J. T. Callaghan	600 00	Oct. 1, 1898.	
12	Saddle Lake	45	L. Picard	600 00	July 1, 1891.	
13	Victoria	37	J. C. Gordon	600 00	April 1, 1899.	
14	Fort Saskatchewan	49	A. W. M. Campbell	600 00	Oct. 1, 1898.	
	"		J. A. Macdonald	120 00	May 1, 1899.	Special connection for Mounted Police.
15	Edmonton	24	S. B. McNamara	360 00	June 1, 1899.	The office at Edmonton has been operated jointly with the C.P.R. Tel. Co. since January 1, 1892.
			W. McKay, repairer	720 00	May 1, 1886.	
	Branch Line—					
	Edmonton	0				The St. Albert branch line is operated with telephones. It was leased to the Edmonton District Telephone Co., from October 24, 1895.
	St. Albert	9				
	Wood Mountain Section.					
1	Moosejaw	0	A. Wilcox, agent	240 00	Dec. 1, 1891.	Moosejaw office is operated jointly with the Canadian Pacific Telegraph Co.
			H. Sikes, repairer	600 00	" 1, 1893.	
2	Wood Mountain	90½	J. H. Thompson, agent	180 00	" 1, 1890.	
	Total	698		11,100 00		

GOVERNMENT TELEGRAPH SERVICE—*Continued.*

GOVERNMENT TELEGRAPH SERVICE IN BRITISH COLUMBIA.

No.	Stations.	Intermediate Distances.	Agents.	Salaries per annum.	Date of Appointment.	Memo.
	Ashcroft—Barkerville.†	Miles.		$ cts.		
			Jas. Wilson (Kamloops), joint dist. supt. Govt. & C.P. lines	180 00	.....	Proportion of salary pertaining to this line.
1	Ashcroft Station	0	C. A. Sherr.	240 00	July 4, 1898.	" " ; the Ashcroft office is operated jointly with the C.P.R. Tel.
2	Clinton	30	A. LeBourdais, agt. & rep.	600 00	Feb. 16, 1883.	
3	Bridge Creek, 108-Mile House	53	R. M. Cornell "	720 00	Nov. 9, 1898.	Location changed to 111 Mile House.
4	150-Mile House*	40	S. T. Hall, agt. & operator	456 00	Nov. 1, 1896.	
5	Soda Creek	38	G. H. Smith, agt. & repairer.	900 00	Mar. 1, 1896.	
6	Quesnelle	54½	J. E. Bowron "	564 00	Prior to 1891.	*There is a testing office at 134-Mile House. The business done there is accounted at 150-Mile House office.
7	Stanley	48	Accommodation com. office	.....	.....	
8	Barkerville	13	J. Stone, agent and repairer.	1,000 00	Feb. 17, 1873.	
	Total	276½		4,660 00		
	Ashcroft—Lillooet.†		Jas. Wilson (Kamloops), joint dist. supt. Govt. & C.P. lines	120 00	.....	Proportion of salary pertaining to this line.
	Ashcroft Station	0	C. A. Sherr.	240 00	July 4, 1898.	" " ; the Ashcroft office is operated jointly with the C.P.R. Tel.
1	Pavillion	40	Accommodation office, com.	.....	Dec. 1, 1896.	
2	Lillooet	22	S. A. Macfarlane, agt. & ope.	720 00	Jan. 3, 1896.	
	Total	62		1,080 00		
	Victoria—Cape Beale.†		Jas. Wilson (Kamloops), joint dist. supt. Govt. & C.P. lines	120 00	.....	Proportion of salary pertaining to this line.
1	Victoria	0	E. Houghton, operator	240 00	Nov. 1, 1891	Proportion of salary.
2	Sooke	18	M. Milne, commission office	.....	April 21, 1896.	
3	Otter Point	8	E. Gordon, agt. & operator	720 00	Dec. 1, 1891.	
4	Jordan River	10	J. Goudie "	510 00	May 1, 1897.	
5	Port San Juan	30	J. W. Williams "	720 00	Oct. 25, 1892.	
6	Carmanah Lighthouse (Clo-oose 2 miles west)	24	W. P. Daykin, agt. & operat.	240 00	Nov. 1, 1891.	†These three lines are operated by the Canadian Pacific Railway Co. for the Government, the arrangement being terminable at any time.
			D. Logan, repairer	540 00	April 1, 1898.	
			J. Vanslyke "	540 00	June 1, 1899.	
7	Cape Beale	28	M. Patterson, agt. & operator	120 00	Sept. 1, 1899.	
	Total	118		3,780 00		

GOVERNMENT TELEGRAPH SERVICE IN BRITISH COLUMBIA.

NANAIMO, COMOX AND ALBERNI.

No.	Office.	Intermediate Distances.	Agents, etc.	Positions.	Salaries per Annum.	Date of Appointment.	Memo.
		Miles.			$ cts.		
1	Nanaimo	0	W. F. Archibald / Joint with C.P.R.	Agent and operator..	186 00	March 1, 1896..	This payment—$15.50 per month- comprise $10 for agency, $3 for messenger service, and $2.50 for care of main battery.
2	Wellington	5	E. & N. Ry. Co.	"	Commission.	April 1, 1893..	
3	Parksville	23	Mrs. R. Williams	"	240 00	Dec. 1, 1897..	
			Geo. Williams	Repairer	570 00	" 1, 1897..	
4	Fanny Bay	23	Thos. Hudson	"	780 00	Nov. 17, 1898..	
5	Union Bay	9¼	E. McDonald	Agent and operator..	360 00	June 3, 1898..	
6	Union Mines		J. Dunsmuir	Accommodat'n office.			See mention of this in body of report (1897-98).
7	Cumberland	10	Albert Peacy	Agent and operator..	120 00 & com. 25p.c.	April 28, 1898..	
8	Courtney	7					Courtney and Fanny Bay are communicated with by telephone at pre-arranged intervals.
9	Comox	3¾	M. McDonald	Agent and operator..	360 00 & com. 25p.c.	Nov. 1, 1895..	At Comox the salary was $120 per year, without commission, until July 1, 1897.
		81					
	Branch.						
10	Parksville / Alberni	29½	C. T. Haslam	Agent and operator..	720 00	June 27, 1895..	NOTE.—These two lines are operated by the Government through the office of the resident engineer at Victoria.
	Total	110½			3,336 00		

GOVERNMENT TELEGRAPH LINES.

SPECIAL TARIFF.

Cable messages.—The rate for transatlantic messages passing over the government lines is the same as for ordinary through messages, excepting where the ordinary tariff is more than 25 cents; in such cases the government line rate is 4 cents per word, with a minimum charge of 25 cents. For example:—

For a message of six words or less the charge is 25 cents for government line.

For a message of seven words the charge is (7 x 4c.) 28 cents for government line.

For a message of twelve words the charge is (12 x 4c.) 48 cents for government line.

In every case the counting of words includes the address and signature in the same way as for transatlantic cable toll.

Press despatches.—The rate for press despatches on the government lines, formerly a quarter cent per word, has been changed to 20 cent per 100 words; no single message less than 20 cents.

REGULAR TARIFF—NOVA SCOTIA.

Line from North Sydney to Meat Cove—Local rate 25-1 (13 offices).

Big Bras d'Or	Through rate 25-1 from North Sydney, W. U. office.		
New Campbellton (Kelly's Cove)	"	"	"
Port Bevis	"	"	"
Englishtown	"	"	"
Baddeck	"	"	"
St. Anne, South Gut	"	"	"
French River	"	"	"
South Ingonish	"	"	"
Ingonish	"	"	"
Neil's Harbour	"	"	"
White Point	"	"	"
Aspy Bay	"	"	"
Meat Cove	"	"	"

Line from Mabou to Cheticamp—Local rates 25-2 (6 offices).

Broad Cove	Through rate 15-1 from Mabou, W. U. office.		
South West Margaree	"	"	"
Margaree Harbour	"	"	"
North East Margaree	"	"	"
Grand Etang	"	"	"
Cheticamp	"	"	"

Line from Barrington to Cape Sable—Local rate 12-1 (2 offices)

Newellton	Through rate 12.1 from Barrington, W. U. office,		
Cape Sable lighthouse	"	"	"

SESSIONAL PAPER No. 9

NEW BRUNSWICK.

Line from Chatham to Point Escuminac—Local rate 25-1 (4 offices).

Bay du Vin	Through rate 15-1 from Chatham, G. N. W. Office.	
Lower Hardwicke	"	"
Escuminac	"	"
Pt. Escuminac Lt. House	"	"

Line from Easport, Me., to Campobello, Grand Manan, and Whitehead Islands (9 offices).—Local rates between offices on Grand Manan, and Whitehead Islands 15-1; Grand Manan and Campobello Island 25-2; The Islands and Eastport, Me. 25-2. W.U.O.

Welchpool, Campobello	Through rate 25-2 from Eastport, Me., W. U. Office.	
Flagg's Cove, Grand Manan	"	"
Castalia	"	"
Woodward's Cove	"	"
Grand Harbour	"	"
Seal Cove	"	"
Southern Head	"	"
Cheney's Island	"	"
Whitehead Island	"	"

QUEBEC.

Line from Gaspé to Anticosti Island, Q. (9 offices)—Local rates between offices on the Island 25-1; Gaspé and the Island offices 50-2.

South-West Point	Through rate 50-2 from Gaspé, G. N. W. Office.	
Salt Lake	"	"
Shallop Creek	"	"
South Point	"	"
Heath Point	"	"
Fox Bay	"	"
Becscie River	"	"
West Point	"	"
English Bay	"	"

Line from Meat Cove, C.B., N.S., to Magdalen Islands, Q. (8 offices)—Local rates between offices on the Islands 25-1; Meat Cove and the Islands 50-2; Offices on the Meat Cove Line and the Islands 50-2.

Amherst Island	Through rate 50-2 from N. S., W. U. Office.	
Amherst Lt. House	"	"
Etang du Nord Village	"	"
Etang du Nord Lt. House	"	"
Cap aux Meules (Grindstone)	"	"
House Harbour	"	"
Grosse Isle	"	"
Grand Entry	"	"

Line from Meat Cove, C.B., N.S., to St. Paul's Island.—Local rate between offices on Meat Cove Line and St. Paul's 50-2 (1 office).

St. Paul's Island Lt. House, from North Sydney, N.S., W. U. Office.

Line from Quebec to Grosse Isle Quarantine Station (7 offices)—Local rates between offices on Orleans Island and Isle Réaux 15-1; on Orleans Island, Isle Réaux and Quebec 15-1; on Orleans Island and Grosse Isle 25-1; on Isle Réaux and Grosse Isle 15-1.

St. Pierre, Orleans Island	Through rate	15·1	from Quebec, G. N. W. Office.
Ste. Pétronille	"		"
St. Laurent	"		"
St. Jean	"		"
St. François	"		"
Isle Réaux	"		"
Grosse Isle	"	25·1	"

Line from Baie St. Paul to Chicoutimi (6 offices).

For business with offices west of Baie St. Paul, and terminating at Quebec, add 15c. and 1c. 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.

Line from Murray Bay to Point Esquimaux (38 offices), with branch to Anticosti.

For business with offices west of Murray Bay and terminating at Quebec, add 15c. and 1c. to the Government line tariff.

For business with offices west of Murray Bay beyond Quebec, add the full rate of the Great North-western Telegraph Company to the Government line tariff.

Local rates between offices not more than 100 miles apart 15-1; more than 100 miles apart 25-1; on Mainland and Anticosti 50-2.

St. Urbain	15-1	from Baie St. Paul (Ck. Que.)	G. N. W. Office.
Lacruche	"		"
St. Alexis	"		"
L'Anse St. Jean	"		"
St. Alphonse de Bagotville	"		"
Chicoutimi	"		"
Cap à l'Aigle	15-1	from Murray Bay (Ck. Que.)	G. N. W. Office.
Ste. Fidèle	"		"
Port au Persil	"		"
St. Siméon	"		"
Baie des Rochers	"		"
Rivière au Canards	"		"
St. Etienne	"		"
Tadousac	"		"
Bergeronnes	"		"
Escoumains	"		"
Baie des Bacons	"		"
Mille Vaches	25-1	"	"
Portneuf Mills		"	"
Portneuf Light		"	"
Sault au Cochon		"	"
Betsiamits (Bersimis)		"	"
Manicouagan (Pt. Outardes)		"	"
River Godbout		"	"
Pointe des Monts		"	"

Trinity Bay, West	25-1	from Murray Bay (Ck. Que.)	G. N. W. Office.
Trinity Bay, East	"	"	"
Caribou Islands	"	"	"
English Point	"	"	"
Pentecost	"	"	"
Ste. Marguerite	"	"	"
Seven Islands	"	"	"
River Moisie	"	"	"
Sheldrake	"	"	"
Thunder River	"	"	"
Magpie	"	"	"
St. John River	"	"	"
Long Point	"	"	"
Mingan	"	"	"
Point Esquimaux	"	"	"
Piastre Bay	"	"	"
Aguanus	"	"	"
Natashquan	"	"	"
Big Romaine	"	"	"
Anticosti Id., via Long Point	50-2	"	"

ONTARIO.

Line from Leamington to Pelee Island (Telephone Circuit)—Local rates between Leamington and Point Pelee 15-1; Mainland and Island Offices 25-1; Offices on the Island 15-1. (8 offices.)

Gun Club House, Mainland	15-1	(thro' business) from	Leamington, G.N.W.
Point Pelee, Mainland	"	"	"
Dummy Light	"	"	"
North Point Light House Pelee Island	"	"	"
North Dock, Pelee Island	"	"	"
McIntyre's Corners	"	"	"
West Dock, Pelee Island	"	"	"
South Dock, "	"	"	"

NORTH-WEST TERRITORY.

Line from Qu'Appelle (C.P.R. Stn.) to Edmonton, Alberta—Local rates 15-1, 25-2 and 50-3 for distances 10 to 600 miles. (13 offices.)

Fort Qu'Appelle	25-2	Qu'Appelle or	Saskatoon.
Touchwood	"	"	
Saskatoon (Trans. Office C.P.R. Tel.)	"	"	
Henrietta	"	"	
Battleford	"	"	
Bresaylor	25-2	Saskatoon; 50-3	Qu'Appelle or Edmonton.
Pitt	"	"	
Onion Lake	"	"	
Moose	50-3	Saskatoon,	Qu'Appelle or Edmonton.
Saddle Lake	"	"	
Victoria	25-2	Edmonton; 50-3	Qu'Appelle or Saskatoon.
Fort Saskatchewan	"	"	
Edmonton (Trans. office C.P.R. Tel.)	"	"	

Line from Moosejaw (C.P.R. Stn.) to Wood Mountain—Local rates 25-2 (1 office).

Wood Mountain	25-2 from Moosejaw.

BRITISH COLUMBIA.

Line from Ashcroft (C.P.R. Stn.) to Barkerville—Local rates 25, 50, 75 (9 offices).

Clinton	25-2	from Ashcroft	C.P.R. Tel. Office.
Bridge Creek		"	"
150-Mile House	50-3	"	"
Soda Creek		"	"
Quesnelle		"	"
Stanley	75-5	"	"
Barkerville	75-5	"	"
Lillooet (branch)	50-3	"	"
Pavillion (on Lillooet branch)		"	"

Line from Victoria to Cape Beale—Local rate 50-3 (6 offices).

Sooke	50-3	from Victoria,	C.P.R. Tel. Office.
Otter Point		"	"
Jordan River		"	"
Port San Juan		"	"
Carmanah Lt. House		"	"
Cape Beale		"	"

Line from Nanaimo to Comox—Local rate 25-2 (9 offices).

Wellington (C.P.R. & E. & N. Ry.)	25-2	from Nanaimo.	
Parksville		"	or Wellington.
Fanny Bay		"	"
Cumberland		"	"
Union Bay		"	"
Union Mines		"	"
Courtney		"	"
Comox		"	"
Alberni (branch)		"	"

Offices on Government lines as listed	149
Offices at transfer points with connecting lines	15
Total number embraced by the service	164

N.B.—When the tariff rate is entered as 25-1 or 50-2, etc., the meaning is that the rate is 25 cents or 50 cents for ten words and 1 cent or 2 cents for each additional word.

PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS, 1898-99

COLLECTION OF REVENUE.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, November 18, 1899.

J. R. ROY, Esq.,
Acting Secretary Department of Public Works,
Ottawa.

SIR,—I have the honour of submitting my report for the year ended June 30, 1899.

I have examined the books and accounts of all the officers under my control, excepting those of the dockmaster at Esquimalt—and it is my pleasing duty to state these officials have complied with the rules laid down, for their guidance, by the department and have faithfully accounted for all the revenue collected by them.

I regret being obliged to state that the revenues have declined very seriously during the year just closed—amounting to, only, $92,365.03, which is less than the previous year by $32,412.78.

This deficiency is mostly composed of a shortage in the revenue from slides and booms—which will appear in the details which follow, in referring to the different services seriatim.

SLIDES AND BOOMS.

OTTAWA DISTRICT.

The tolls charged up during the year amounted to $38,966.18, including over charges of $147.20, which, being deducted, leaves the net revenue $38,818.98. The number of saw-logs which passed through the works was 2,950,561 pieces or 1,115,440 less than during the previous year.

Of square timber we had 25,785 pieces or 66 pieces less than last year.

All the revenue from the Ottawa district was collected within the financial year.

Of the dues accrued since July 1, 1889, there remains still uncollected $7,507.98, full particulars of which will be found in statement No. 2 herewith.

Of the dues accrued prior to July 1, 1889, there remains uncollected $56,805.65, all of which should be written off.

See statements Nos. 1 and 3 for details.

The accounts for the Ottawa district stand thus:

Dues accrued during the year 1898–9		$ 38,818 98
All collected during the year.		

The amount outstanding uncollected remains at the same figure as on June 30, 1898, thus:—

Dues accrued prior to the collection being transferred to this department, July 1, 1889		$ 56,805 65
Dues of 1889–90	$6,903 05	
1890–1	28 42	
1892–3	379 80	
1896–7	196 71	7,507 98
		$ 64,313 63

Since this department assumed control of the collection of these dues, July 1, 1889, of the revenue accrued say $585,817.60, exclusive of $6,903.05 Chaudière boomage, which

should not have been charged up, only $28.42 of absolutely established revenue is uncollected—all the remainder should be written off but the last item of 1896-7, which possibly ought to meet with the same treatment.

Herewith are statements in detail:—

No. 1.—Statement of amounts outstanding prior to July 1, 1889, uncollected September 30, 1899.

No. 2.—Statement of amounts accrued at Ottawa since July 1, 1889, uncollected September 30, 1899.

No. 3.—Statement of amounts accrued at Quebec prior to July 1, 1889, uncollected September 30, 1899.

No. 4.—Statement of number of pieces of square timber, saw logs, &c., which passed through the Ottawa district works during the year ended June 30, 1899.

No. 5.—Statement of dues accrued from each of the slides and works in the Ottawa district during the year ended June 30, 1889.

A reference to statement No. 5 with previous year's reports will show that one of our largest revenue producing streams has been steadily declining for the past three years. I refer to the River Madawaska, the income from which was as follows:—

1896-7	$ 14,661 35
1897-8	10,025 57
1898-9	5,792 92

This decline is due to the Madawaska country being largely denuded of its good timber and by the operation of the Ottawa and Parry Sound Railway, by which large quantities of saw logs are conveyed from the timber limits directly to the mills at Ottawa.

But the great shrinkage in revenue this year must be attributed to the restricted cut of timber during the winter of 1897-8. The figures in the statement hereunder show the decrease was general, occurring on all the rivers but two, and in these the increase was but trifling in amount.

River or Improvement.	Dues 1897-8.	Dues 1898-9.	Gain 1898-9.	Loss 1898-9.
	$ cts.	$ cts.	$ cts.	$ cts.
Main Ottawa	5,758 48	5,375 91		382 57
Cheneaux Boom	9,209 21	6,576 84		2,632 37
River Petewawa	20,280 04	6,470 87		13,809 17
River Madawaska	10,025 57	5,792 92		4,232 65
River Coulonge	4,071 63	4,777 07	705 44	
River Dumoine	612 39	369 07		243 32
Black River	2,566 02	2,675 98	109 96	
Gatineau Boom	8,242 41	6,780 32		1,462 09
Overcharges collected	15			15
	60,765 90	38,818 98	815 40	22,762 32

Showing a net loss of $21,946.92 compared with 1897-8. Nevertheless it should be born in mind that when the tariff was revised in 1894 it was calculated to give an average of $49,000 per annum, and as the total revenue from the date of the present tariff has been as follows:—

Year ending June 30, 1895	$ 52,111 20
" " " 1896	49,400 15
" " " 1897	51,580 67
" " " 1898	60,765 90
" " " 1899	38,818 98
we have for the five years a total of	$ 252,676 90

which gives an average of $50,535.38, or $1,535.38 more than the estimated annual revenue.

The great difference between the revenue from the river Petewawa in 1898-9 compared with the previous year seems to call for remark. The same was abnormally large in 1897-8, as will be seen from the following figures :—

RIVER PETEWAWA.

Year ending June 30,			1895	$ 9,797 76
"	"	"	1896	13,345 71
"	"	"	1897	9,606 44
"	"	"	1898	20,280 04
"	"	"	1899	6,470 87
A total for the five years of				$ 59,500 82

giving an average of $11,900.16, which is almost double the amount expected when the tariff was prepared.

I fear in the near future railways now under construction will cut very seriously into the revenue from this source.

Finally the steady decline in the manufacture of square timber has been an important factor in reducing the revenue from the Ottawa district.

During the past season the sawed lumber trade revived, and as a consequence the output of saw logs this winter will be the largest for several years. However, this increase will not affect the revenue for the current financial year, but will be felt in 1900-1901.

ST. MAURICE DISTRICT.

The revenue from this district was $21,386.59, a decrease of $8,506.82 as compared with 1897-8. All the dues of 1898-9 were collected within the financial year.

There is no change in the amount outstanding on July 1, 1898, namely $14,481.49, all of which had accrued before I took charge in 1892, and as I have frequently reported should be written off (statement No. 6). As elsewhere, the past season has been a most favourable one for the disposal of sawn lumber in this district, the number of vessels loaded with lumber at Three Rivers this summer being unprecedented. But much of the success of the lumber merchants was marred by the wholly accidental disaster of September 27 and 28 last, when owing to an unusually high freshet the booms at Three Rivers were nearly all carried away and upwards of 100,000 logs escaped into the St. Lawrence of which, taking one consideration with another, nearly fifty per cent was a a dead loss; the same falling heaviest on the St. Maurice Lumber Co., Warren Curtis, and the Laurentide Pulp Co., though Messrs. Alex. Baptist and William Ritchie, were also losers, but in a minor degree.

Having investigated this matter closely, I am convinced that no blame attaches to this department, and would mention just one reason for this conclusion—the booms of three of the lumbermen at Three Rivers gave way several hours before our works—some of their piers were undermined and destroyed—we did not lose one, and I feel bound to say, that though a large expenditure will be required to place the works in as good a state of efficiency as they were previous to the disaster of September 27 last, it would be undoubtedly in the interest of the department to restore the damaged works and afford ample and reliable accommodation to the lumbermen before the opening of navigation next spring.

NEWCASTLE DISTRICT

The accompanying statement No. 7 shows details of $6,058.34 uncollected, of which $3,521.19 should be written off in accordance with a decision in the exchequer court.

I have again to express regret that no settlement has been reached of the dispute whereby the balance $2,537.15 might be disposed of and made to disappear from the accounts.

In consequence another year has passed without any dues being charged up in this district, and the longer the settlement is delayed, so much greater will be the difficulty of straightening up the accounts become.

GRAVING DOCKS.

ESQUIMALT, B. C.

The revenue from this source, shown in detail in statement No. 8, was $10,315.63, being $4,087.71 in excess of that of the previous year.

This dock was occupied 134 days as against 91 days in 1897–8, and the gross tonnage of vessels docked was 47,668 tons, while in the previous year it was 28,453 tons.

By orders in council of March 7, and May 1 last the charges of the use of this dock were reduced to the following rates :—

Gross Tonnage.	Entrance Fee.	First Day.	Each subsequent Day.
	$ cts.	$ cts.	$ cts.
All vessels up to 1,000 tons	75 00	150 00	50 00
From 1,000 to 2,000 "	100 00	200 00	50 00
" 2,000 to 2,500 "	125 00	250 00	50 00
All vessels over 2,500 "	200 00	400 00	50 00

Two cents per ton, on all over 2,500 tons.

It is hoped that with such reasonable rates much of the business that has heretofore gone to foreign docks will be attracted, and at least working expenses realized for the department.

LEVIS—GRAVING DOCK.

For the year ended June 30 last, the revenue amounted to $13,786.09 see statement No. 9, being less by $6,053.88 than the previous year.

The dock was occupied 104 days in 1898-9 exclusive of winter months, during previous year it was in use 109 days of the open season—the gross tonnage of vessels docked was 13,711 while in 1897-8 it was 18,913 tons.

The dock was also occupied all winter by the steamer *Campana* and Levis ferry pontoon.

By order in council of August 10, 1899, the regulations were revised in many respects, the most important change being to abolish the delay of ten days, formerly allowed, between the presentation of an account for dockage dues and payment of the same—the rule now being that all dockage charges must be paid before the vessel leaves the dock.

KINGSTON GRAVING DOCK.

From this dock we had $7,506.88, or $58.57 more than during the previous year. See statement No. 10.

During 1898-9 the dock was occupied for ninty-three days of the season of navigation, being forty-three days less than the previous year, but from August to December, 1897, the rates were about 50 per cent lower than last year.

The tonnage of vessels docked during the fiscal year ended June 30 last, was 28,579·75 tons, while the previous year it was 17,623 tons.

The dock was occupied during the winter of 1898-9 for sixty-one days, while the steamer *Rosedale* was in possession the whole of the preceding winter or 106 days.

The same rule applies at Kingston as at Levis namely all dockage charges must be paid before the vessel leaves the dock.

LOCKS.

RIVER DU LIEVRE.

The tolls collected from this work were $173.72 or $73.12 less than the previous year.

RIVER YAMASKA.

The tolls collected amounted to $377.14, or $21.68 more than in 1897-8.

Thus the total collections that passed through my hands may be summarized as follows :—

From slides and booms	$60,205 57
" graving docks	31,608 60
" locks	550 86
	$92,365 03

For convenience of comparison hereunder is a statement of Public Works revenue collected, 1898-9 and 1897-8.

—	Year, 1898-9.	Year, 1897-8.	Excess, 1898-9.	Deficiency, 1898-9.
Slides and Booms.	$ cts.	$ cts.	$ cts.	$ cts.
Ottawa District	38,818 98	60,765 90	.....	21,946 92
St. Maurice District	21,386 59	29,893 41	.....	8,506 82
	60,205 57	90,659 31	.....	30,453 74
Graving Docks.				
Esquimalt	10,315 63	6,227 92	4,087 71	.....
Levis	13,786 09	19,839 97	.....	6,053 88
Kingston	7,506 88	7,448 31	58 57	.....
	31,608 60	33,516 20	4,146 28	6,053 88
Net loss	.....	.....	.....	1,907 60
Locks.				
Riviere du Lievre	173 72	246 84	.....	73 12
Riviere Yamaska	377 14	355 46	21 68	.....
	550 86	602 30	21 68	73 12
Net loss	.....	.....	.....	51 44

In conclusion I have as usual to acknowledge the uniform courtesy and cheerful assistance accorded me at all times by the officials with whom I have been brought in contact during the year.

I have the honour to be, respectfully, sir,

Your very obedient servant,

EDWARD T. SMITH,
Collector Public Works Revenue.

No. 1.—STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, outstanding June 30 1899, and remaining uncollected on September 30, 1899.

By Whom Due.	Bad and Doubtful Debts.	Chaudière Boomage in Suspense.	Other Slide and Boom Dues disputed.	Total Outstanding on Sept. 30, 1899.	Year to which Dues belong.	Remarks.
	$ cts.	$ cts.	$ cts.	$ cts.		
John and Wm. McLean	53 14	*		53 14	1873	Insolvent.
John Rowan	342 50			342 50	1872-1873	"
Lemieux & Charette	21 30			21 30	1873	"
Taillon & Lapierre	148 10			148 10	1873-1874	"
Mosgrove & McHarry	261 42			261 42	1873-1874	"
W. C. Wells	600 90			600 90	1873-1874	"
Dufresne & McGarity	528 80			528 80	1874-1875	"
Walton Smith	171 46			171 46	1874-1875	"
A. H. Baldwin	3,507 92			3,507 92	1871 to 1874	"
Hon. James Skead	9,807 65			9,807 65	1861, 1863, 1864, 1869, 1875 to 1878	"
Batson & Currier	5,558 70			5,558 70	1875 to 1877	"
A. F. A. Knight	546 30			546 30	1878	"
James Walker	11 25			11 25	1877	"
R. Campbell & Son	1,558 50			1,558 50	1879 to 1881	"
James G. Bryson	73 50			73 50	1886	"
Costello Bros	90 62			90 62	1882	"
N. E. Cormier	428 34			428 34	1888	"
James Yuill	9 29			9 29	1876	Overcharge.
J. & B. Grier	76 84			76 84	1883	"
R. & W. Conroy	95 42			95 42	1882-1883	" Reported in return S—38 for March, 1886.
A. & P. White	101 00			101 00	1881	"
B. Caldwell & Son	4 33			4 33	1887	"
J. R. Booth		9,871 93	398 88	10,270 81	1881 to 1888	$398.88 counter claim for damages by the breaking of Coulonge Boom.
Perley & Pattee		8,889 85		8,889 85	1881 to 1888	
The Bronsons and Weston Lumber Co		8,180 79		8,180 79	1881 to 1888	
Pierce & Co.		462 18		462 18	1888	*Chaudière Boomage—These parties claim that they have maintained these works wholly at their own expense since 1881.
G. A. Grier & Co		1,060 59		1,060 59	1886-1887	
Estate late Levi Young		1,461 20		1,461 20	1881 to 1885	
Wm. Mason		413 85		413 85	1881 to 1888	

Gilmour & Co.		406 27		406 27	1884	
John Rochester		258 88		258 88	1881 to 1883	
J. & G. Bryson			252 20	252 20	1886	Counter claim for damages by breaking of Coulonge works.
	23,997 28	31,005 54	651 08	55,653 90		

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

No. 2.—STATEMENT of Slide and Boom Dues accrued from the Ottawa River Works since July 1, 1899, outstanding on September 30, 1899.

Name.	Year to which Dues belong.	Chaudière Boomage in suspense.	Ordinary Dues.	Total Outstanding.	Remarks.
		$ cts.	$ cts.	$ cts.	
J. R. Booth	1889-90	2,561 69	.....	2,561 69	Chaudière Boomage reported to Council and referred to the Treasury Board; should be written off.
The Bronsons and Weston Lumber Co	"	2,056 96	.....	2,056 96	
Perley & Pattee	"	1,203 26	.....	1,203 26	
Wm. Mason and Sons	"	167 66	.....	167 66	
Pierce & Co.	"	913 48	.....	913 48	
Alex. Fraser acct. Thos. Stephens	1890-1	.....	28 42	28 42	Legal action taken to recover this.
J. R. Booth	1892-3	.....	379 80	379 80	Retained by Mr. Booth in settlement of an account due him, which the Auditor General refuses to pay, as Mr. Booth appeared to be in arrears in this and statement No. 1.
Bryson & Fraser	1896	.....	196 71	196 71	Have counter claim for work done on slide to this amount.
		6,903 05	604 93	7,507 98	

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which were sent to Quebec for collection.

Name.	From 1860.	From 1861.	Total.
	$ cts.	$ cts.	$ cts.
Hon. James Skead	245 00	210 00	455 00
James Mair		696 75	696 75
	245 00	906 75	1,151 75

These amounts were uncollected, as the parties claimed damages for loss caused by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the 5th idem, Messrs. Skead and Mair were notified that the department could not recognize their claim.

To the best of my knowledge, this decision was never communicated to the collector of slide dues, consequently their accounts remained in abeyance.

Since then both parties died, and I believe both were insolvent at the time of their death.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

No. 4.—STATEMENT of the number of pieces of square timber, saw-logs, &c., that passed through the Government Slides and Works on the River Ottawa and its tributaries during the fiscal year ended June 30, 1899.

———	Pieces.
Square timber	25,785
Saw-logs	2,950,561
Boom and dimension timber	57,405
Flat and round timber	5,835
Cedars	66,160
Railroad ties	372,108
Fence posts	116,515
Telegraph poles	448
Total	3,594,817

Also 5,616¼ cords pulp wood and one steam boat.
The revenue accrued on the above was $38,818.98.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 30, 1899.

No. 5.—STATEMENT showing the dues accrued on the undermentioned works on the River Ottawa and its tributaries during the fiscal year ending June 30, 1899.

River or other Improvement.	Amount.
	$ cts.
Main Ottawa	5,429 57
Cheneaux boom	6,523 18
River Petewawa	6,470 87
" Madawaska	5,792 92
" Coulonge	4,777 07
" Dumoine	369 07
Black River	2,675 98
Gatineau boom	6,780 32
	38,818 98

Amounting to $38,818.98.

EDWARD T. SMITH,

Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 30, 1899.

No. 6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works, outstanding on June 30, 1889, and remaining uncollected on September 30, 1899.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		$ cts.	$ cts.	
George Baptist, Son & Co	1878	469 95		Have counter claims for damages to logs caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes. These claims were submitted to special commissioner Mr. McDougall, afterwards judge, who after hearing the evidence on both sides, recommended that the claims of the parties should be allowed.
" "	1879	2,110 62		
" "	1880	1,696 18		
" "	1881	293 69		
" "	1882	165 80		
" "	1884	118 50		
" "	1888	4 28		
			4,859 02	
Ross, Ritchie & Co	1878	3,072 84		
"	1883	2,173 68		
"	1884	28 96		
"	1886	1 62		
"	1887	4 38		
			5,281 48	
Alex. Baptist	1879	.....	2,116 96	
Wm. Ritchie & Co	1888	779 24		
"	1889	332 11		
			1,111 35	Of this amount $754.20 is claimed to be an overcharge. Insolvent.
Ritchie Bros	1886	413 43		
"	1887	634 71		
			1,048 14	This amount is composed of overcharges in 1886 and 1887 of $842.76 and overpaymant in 1884 of $205.38.
G. B. Hall	1890	.....	49 34	Insolvent.
T. E. Normand	1890	.....	14 28	Claims that this balance is an overcharge.
Trefflé Biron	1891	.....	0 92	Would cost more to collect than it is worth.
Total	.....	.....	14,481 49	

To make this balance agree with the Public Accounts, there should be deducted $7.93 overcredited Alex. Baptist, and $217.17 added therto, being $190.40 paid, July 23, 1884, and $26.77 overcharged in error to Wm. Little, not in any of the collector's returns, which will give balance due September 30, 1894, of $14,690.73.

EDWARD T. SMITH,

Controller of Slides and Booms.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

No. 7.—STATEMENT of Slide and Boom Dues accrued from the Newcastle and Trent River Works, outstanding on June 30, 1898, and remaining uncollected on September 30, 1899.

Name.	Year to which Dues belong.	Amount.	Total.	Remarks.
		$ cts.	$ cts.	
Irwin & Boyd	1881	59 79		Insolvent.
Thomson & McArthur	1880	52 78		"
Jabez Thurston	1882	12 50		"
McDougall & Ludgate	1879	65 07		"
Biglow & Trounce	1882 to 1885	216 21		"
R. & G. Strickland	1882, 1883, 1885, 1886 and 1887	215 08		"
Estate late Geo. Hilliard	1877 to 1883 and 1886	354 15		Dead, and estate distributed.
T. G. Hazlett	1881, 1882, 1884 to 1889	885 25		According to judgment in Exchequer Court *re* Boyd *vs.* Smith these cannot be collected.
I. M. Irwin	1882, 1883, 1885 to 1888	698 45		
D. Ullyott	1881 to 1887	547 68		
Green & Ellis	1881 to 1883, 1885, 1888 and 1889	157 01		
A. W. Parkin	1884, 1885, 1888, 1890 and 1891	65 92		
The Dixon estate	1883	137 50		
Alfred McDonald	1888	40 80		
John Parkin	1889	13 00		
Gilmour & Co	1893	690 58		
The Rathbun Company	1893	1,846 57		
			6,058 34	

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

THE DRY DOCK AT ESQUIMALT.

No. 8.—STATEMENT of Dues and other charges collected during the Year ended June 30, 1899.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE. From		To		Dockage Charges.	Other Charges	Total.
		1898.		1898.		$ cts.	$ cts.	$ cts.
H.M.S. Virago	265	July	28..	Aug.	6	Working ex	penses..	373 18
H.M.S. Sparrowhawk	265	"	28..	"	6			
Str. Aorangi	4,196	Aug.	16..	"	18..	648 00	.....	648 00
Str. Horsa	639	Sept.	2..	Sept.	4.	332 50	4 80	337 30
Str. Kinshin Mara	3,596	"	7..	"	25.	2,304 00	30 00	2,334 00
H.M.S. Icarus and scows	970	Oct.	3..	Oct.	11..	Working ex	penses..	415 54
Str. Tartar	4,425	"	12..	"	15..	658 00	.....	658 00
H.M.S. Amphion and scow	4,300	"	24..	"	27..	Working ex	penses..	164 58
Str. Garonne	3,876	"	27..	"	29..	518 00	4 20	522 20
H.M.S. Leander	4,300	"	31..	Nov.	5..	Working ex	penses..	236 62
H.M.S. Pheasant	755	Nov.	12..	"	19	Working ex	penses..	407 18
H.M.S. Egeria	940	"	12..	"	19			
Barque Harvester	1,494	"	30..	Dec.	2..	417 50	.....	417 50
Str. Fastnet	338	Dec.	14..	"	31..	580 00	6 60	586 60
H.M.S. Phaeton	4,300	Jan.	4..	Jan.	12..	Working ex	penses..	396 54
H.M.S. Virago	265	"	14..	"	26	Working ex	penses..	589 30
H.M.S. Sparrowhawk	265	"	14..	"	26			
Ship Hawaiian Isles	2,097	Feb.	20..	Feb.	21..	400 00	1 50	401 50
Govt. str. Quadra and scow	573	April	10..	April	15	440 00	.....	440 00
Govt. str. Earl	54	"	10..	"	15			
H.M.S. Amphion	4,300	"	17..	"	24..	Working ex	penses..	336 15
Str. Garonne	3,876	May	24..	May	26..	488 00	5 40	493 40
Str. Douglas	639	June	1..	June	6..	350 00	6 00	356 00
H.M.S. Egeria	940	"	9..	"	10.	Working ex	penses..	196 94
Water supplied Marine Railway for washing ships' bottoms, 8,500 galls. at 60c								5 10
								10,315 63

EDWARD T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

THE DRY DOCK AT LÉVIS.

No. 9.—STATEMENT of Dues and other charges collected during the Year ended June 30, 1899.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE. From	PERIOD OF DOCKAGE. To	Dockage Charges.	Other Charges	Total.
		1898.	1898.	$ cts.	$ cts.	$ cts.
SS. Livonian	4,063					
" cargo	300					
	4,363	July 4	Aug. 27	7,612 04	26 00	7,638 04
Boat Cambria	1,252	Sept. 19	Entry fee	200 00		200 00
"			Oct. 7	1,107 78		1,107 78
Steam barge Aragon	1,450	Oct. 18	Entry fee	200 00		200 00
"		" 18	Nov. 4	1,194 00		1,194 00
S.S. Glenvech	3,084		Entry fee	200 00		200 00
"		Nov. 10	Nov. 15	758 40		758 40
Turret Chief	1,881		Entry fee	200 00		200 00
"		Nov. 16	Nov. 23	657 87		657 87
Dredge No. 12		May 5	May 9	330 00		330 00
Levis ferry pontoon		Entry fee	Wintering	200 00		200 00
S.S. Campania	1,681	"	"	200 00		200 00
"		Winter		800 00		800 00
Levis ferry pontoon		"		100 00		100 00
				13,760 09	26 00	13,786 09

EDWARD T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, September 30, 1899.

THE DRY DOCK AT KINGSTON.

No. 10.—STATEMENT of Dues and Other Charges collected during the Year ended June 30, 1899.

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE. From	PERIOD OF DOCKAGE. To	Dockage Charges.	Other Charges	Total.
		1898.	1898.	$ cts.	$ cts.	$ cts.
Str. Bothnia	833·36	July 5	July 6	133 33	10 50	143 83
Barge Eagle	316	" 6	" 8	107 44	.....	107 44
Str. Caspian	968·48	" 9	" 14	485 80	10 50	496 30
Tug Bronson and barge Acadia	70 / 374	" 15	" 16	88 80	15 50	104 30
Barge Winnipeg	734·27	" 18	" 19	123 42	.....	123 42
" Colborne	301	" 19	" 21	81 27	.....	81 27
Tug Active and barge McCarthy	301·70 / 254	" 22	" 24	144 46	5 00	149 46
Str. Vision	98·34	" 25	" 26	20 00	.....	20 00
Barge John Gaskin	487	" 27	" 29	131 49	.....	131 49
Govt. Scow No. 1 and dredge 8	und'r100	" 27	" 28	20 00	.....	20 00
Barge Harvest	262	" 29	" 31	72 40	.....	72 40
Tug Jessie Hall and barge Corn Crib	29 / 296	Aug. 1	Aug. 3	87 75	.....	87 75
Tug Walker	138·58	" 6	" 7	27 71	.....	27 71
SS. Bannockburn	1,619·56	" 8	" 9	211 95	.....	211 95
Str. Sir L. Tilley	1,177·77	" 9	" 13	477 10	2 50	479 60
" freight	200					
Str. Columbian	703·90	" 13	" 14	120 39	.....	120 39
Tug Bronson and barge Iowa	70 / 365	" 15	" 18	138 10	10 50	148 60
Elevator No. 2	292	" 18	" 20	78 84	.....	78 84
Tug Thomson	185·05	" 25	" 25	37 00	5 00	42 00
Barge Dunmore	617·24	" 26	" 27	154 92	2 50	157 42
Tug Mabel McDonald	29	Sept. 1	Sept. 1	20 00	.....	20 00
Str. Tecumseh	839·67	" 15	" 17	203 23	.....	203 23
" St. Lawrence	312·90	" 21	" 24	106 38	.....	106 38
Barge Kingston	599	Oct. 25	Oct. 26	109 90	3 00	112 90
" Danforth	669·36	" 26	" 27	116 93	.....	116 93
" Augustus	830·62	" 28	" 28	143 56	.....	143 56
Str. Ocean	688·75	" 29	" 30	138 87	5 00	143 87
" freight	200					
Steam barge J. L. Nichols	77	Nov. 2	Nov. 3	20 00	.....	20 00
Barge Kildonan	522·78	" 4	" 10	285 24	5 00	290 24
Tug Bronson	70	" 8	" 8	30 50	5 00	35 50
Str. Bannockburn	1,619·56	" 16	" 17	222 45	.....	222 45
Schr. Maria Annette	277	" 29	Dec. 2	95 40	5 00	100 40
Tug Jessie Hall and barge Wheat Bin	29 / 320	Dec. 5	" 6	69 80	.....	69 80
Str. Chieftain	434·68	" 6	" 9	147 78	.....	147 78
" Armenia	623·68	" 12	" 15	199 67	.....	199 67
Tug Jessie Hall	29	" 15	" 16	20 00	.....	20 00
			1899.			
Tug Bronson	.....	" 22	Feb. 20	100 00	Entr'nce fee.	100 00
		1899.				
Str. Chieftain	435	April 18	April 19	87 00	.....	87 00
SS. Minnedosa	1,081	" 20	" 21	158 10	.....	158 10
Barge Hector	539	" 22	" 27	254 82	.....	254 82
Str. Chicora	930·50	" 28	" 30	208 18	.....	208 18
		1898.				
		Dec. 22	Feb. 14			
Government dredge No. 8 and 2 scows	465	1899.		631 50	.....	631 50
		April 14	April 17			

THE DRY DOCK AT KINGSTON—*Continued.*

No. 10.—STATEMENT of Dues and Other Charges collected, &c.—*Continued.*

NAME OF VESSEL DOCKED.	Tonnage.	PERIOD OF DOCKAGE. From	PERIOD OF DOCKAGE. To	Dockage Charges.	Other Charges	Total.
		1899.	1899.	$ cts.	$ cts.	$ cts.
Str. Orion	846	May 17	May 19	193 82	.....	193 82
" Erin	651	" 29	" 30	115 10	5 00	120 10
" New York	295	" 30	" 31	69 50	.....	69 50
" Empire State	380	June 1	June 2	76 00	.....	76 00
Tug Bronson	137	" 5	" 6	27 40	.....	27 40
Str. Glengarry	732	" 10	" 13	225 68	.....	225 68
Govt. tug Delisle	45	" 15	" 17	40 00	.....	40 00
Str. Brockville	191	" 19	" 19	38 20	.....	38 20
Ship Minnedosa	1,041	" 24	" 25	154 10	.....	154 10
Str. Tecumseh	840	" 27	" 28	134 00	.....	134 00
Barge Melrose	768	" 30	July 1	126 80	.....	126 80
		1898.				
Tug Bronson	137	Dec. 22	Feb. 20	99 80	5 00	104 80
				7,411 88	95 00	7,506 88

EDWARD T. SMITH,
Collector of Public Works Revenue.

PUBLIC WORKS DEPARTMENT,
OTTAWA, September 30, 1899.

PART VII

LIST OF SOME OF THE ACTS OF PARLIAMENT

PASSED AT THE SESSION OF 1899

HAVING

REFERENCE TO THE DEPARTMENT OF PUBLIC WORKS OR WORKS UNDER ITS CHARGE

LIST of some of the Public Acts of the Parliament of Canada passed at the Fourth Session of the Eighth Parliament, closed by Prorogation on August 11, 1899, and having reference to the Public Works Department or works under its charge (62–63 Victoria).

Subject.	Full Title of the Statute.	Chapter.	Page in Statute Book.
Sums granted to Her Majesty for the financial year ending June 30, 1899, 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, 1899, and the 30th June, 1900, and for other purposes relating to the public service.	1	
Sums granted to Her Majesty for the financial year ending June 30, 1900, 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 year ending the 30th June, 1900, and for other purposes relating to the public service.	2	43
Reports of the Minister of Public Works to the Governor in Council as to the standing of incorporated companies to be made previous to the granting of a subsidy in connection with the construction of dry docks.	An Act to encourage the construction of Dry Docks..	9	1
Respecting regulations for the preservation of health of persons in connection with public works.	An Act for the preservation of health on Public Works.	30	189
Respecting the conditions governing the power of the Quebec Harbour Commissioners to raise money for the purposes of the said Act.	An Act to amend and consolidate the Acts relating to the Quebec Harbour Commissioners.	34	197
Respecting sums to be applied towards the improvements in the harbour of Montreal.	An Act respecting the Harbour Commissioners of Montreal.	36	227

J. A. CHASSÉ,

Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 1, 1899.

STATEMENTS

SHOWING

1st.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM JUNE, 30, 1898 TO JUNE 30, 1899.

2nd.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS, DURING THE FISCAL YEAR ENDED JUNE 30, 1899.

3rd.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS, DURING THE FISCAL YEAR ENDED JUNE 30, 1899.

OTTAWA, December 1, 1899.

SIR,—I beg leave to forward to you herewith the following statements concerning the transactions of the department during the last fiscal year with respect to contractors and property, and which are required for insertion in the annual report 1898-9, viz :—

No. 1.—Statement of contracts let by this department during the fiscal year ended June 30, last.

No. 2.—Statement of property purchased and sold by this department during the same period.

No. 3.—Statement of property leased to and by the said Department of Public Works during the same period ; and

No. 4.—A list of some Public Acts of the Parliament of Canada passed at the last Session, and having reference to the department.

I have the honour to be, sir,

Your obedient servant,

J. A. CHASSÉ,

Law Clerk.

The Secretary of the Department of Public Works,
Ottawa.

No. 1.—CONTRACTS let by the Department of Public Works of Canada from June 30, 1898, to June 30, 1899.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS.			$ cts.
Government House, Parliament and Departmental Buildings.			
Parliament and Departmental Buildings—Supply of coal	John Heney & Son	March 21, 1898	24,299 12
Parliament and Departmental Buildings—Supply of ice	F. A. Lusignan & M. Lapointe	April 29, 1899	per 100 lbs. 0 10
Public Building—Western Block—Four tubular boilers	W. J. Campbell	Sept. 23, 1898	1,884 00
Public Building—Eastern Block—Sprague passenger elevator	Lewis Bros. & Co.	April 12, 1899	3,995 00
Public Building—Post Office Department, Langevin Block—Steel vaults	J. & J. Taylor	Feb. 23, 1899	13,367 00
Parliament Grounds—Erection of a statue of Her Majesty Queen Victoria	L. P. Hébert	Oct. 13, 1898	18,500 00
Parliament Grounds—Erection of a statue of late Hon. Alex. MacKenzie	L. P. Hébert & H. MacCarthy	Nov. 3, 1898	14,000 00
Parliament Buildings—East, West, Centre, Langevin Block and Supreme Court—Supply of gas for heating purposes	Ottawa Gas Co.	Jan. 21, 1899	per 1,000 c. ft. 1 00
Rideau Hall—Removal of snow	Thos. Whelan	Dec. 5, 1898	For season 319 00
Nova Scotia.			
Amherst post office—Supply of coal	Acadia Coal Co., Ltd	Aug. 23, 1898	193 90
Annapolis " "	Burchell Bros	" 31, 1898	140 91
Antigonish " "	Acadia Coal Co., Ltd	" 23, 1898	75 53
Arichat " "	I. Leblanc	Sept. 29, 1898	70 00
" savings bank "	"	" 29, 1898	35 00
" custom-house "	"	" 29, 1898	35 00
Baddeck post office "	Burchell Bros	Aug. 31, 1898	90 00
Dartmouth " "	Wm Roche	Sept. 1, 1898	54 85
Halifax Dominion building "	"	" 1, 1898	719 65
" Asst. Rec. Gen'l office "	"	" 1, 1898	
" immigration building "	"	" 1, 1898	222 65
" examining warehouse "	"	" 1, 1898	268 76
" Asst. Rec. Gen'l office "	Intercolonial Coal Mining Co	Aug. 23, 1898	32 20
" immigration building "	" "	" 23, 1898	9 20
" drill hall—Fittings	Rhodes, Curry & Co., Ltd	June 9, 1899	9,350 00
" " Construction of heating apparatus	Joseph Lamarche	July 20, 1898	6,600 00
" " Electric light, wiring and fittings.	John L. Griffin	Aug. 27, 1898	3,982 31
Liverpool—Construction of a public building	Rhodes, Curry & Co.	Jan. 26, 1899	10,777 00
Lunenburg post office—Supply of coal	James Kenna	Sept. 5, 1898	189 00
New Glasgow " "	Acadia Coal Co., Ltd	Aug. 23, 1898	143 80
North Sydney " "	Burchell Bros	" 31, 1898	112 50
Pictou " "	Acadia Coal Co., Ltd	" 23, 1898	110 06
" custom-house "	"	" 23, 1898	78 62
Sydney post office "	C. F. Routledge	" 26, 1898	136 13
Truro " "	Acadia Coal Co., Ltd	" 23, 1898	121 50
Windsor " "	"	" 23, 1898	140 22
" public building—Plumbing	F. F. Murphy	Sept. 13, 1898	980 00
" " Painting and glazing	Wm. Allison	" 13, 1898	265 00
" post office—Heating apparatus	Joseph Lamarche	Oct. 4, 1898	961 80
" public building—Roofing	Hutson & Sons	Sept. 16, 1898	910 00
Yarmouth post office—Supply of coal	Wm. Law & Co	" 3, 1898	235 00

SESSIONAL PAPER No. 9

No. 1.—CONTRACTS let by the Department of Public Works of Canada from June 30 1898 to June 30, 1899.

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—*Continued.*			$ cts
Prince Edward Island.			
Charlottetown Dominion building—Supply of coal	Peake Bros. & Co.	Aug. 29, 1898	434 08
Montague post office—Supply of coal	Geo. Wightman	Sept. 3, 1898	42 89
Summerside " "	Robert T. Holman	Aug. 31, 1898	200 97
" " "	James Kenna	Sept. 5, 1898	30 15
New Brunswick.			
Bathurst post office—Supply of coal	Robert Seely	Aug. 31, 1898	295 76
Chatham " "	R. R. Call	" 22, 1898	292 80
Dalhousie post office—Supply of coal	Chas. Powell	Aug. 31, 1898	176 26
Fredericton " "	Robert Seely	" 31, 1898	248 36
Moncton " "	Acadia Coal Co.	" 23, 1898	185 74
New Castle " "	R. R. Call	" 22, 1898	262 31
St. John, north " "	R. P. & W. F. Starr	" 31, 1898	29 42
" west " "	" "	" 31, 1898	476 61
" savings bank "	" "	" 31, 1898	219 55
" custom-house "	" "	" 31, 1898	1,242 31
St. Stephens post office "	C. H. Clerke	" 22, 1898	102 60
Sussex " "	Robert Seely	" 31, 1898	207 58
Tracadie lazaretto "	R. R. Call	" 22, 1898	795 55
Woodstock post office "	Robert Seely	" 31, 1898	194 99
Quebec.			
Aylmer post office—Supply of coal	C. C. Ray & Co.	" 18, 1898	147 65
Coaticook " "	J. D. Smith	Sept. 2, 1898	193 73
Fraserville " "	N. Dion	" 2, 1898	261 00
Hull " "	C. C. Ray & Co.	Aug. 18, 1898	211 50
Joliette " "	Jas. T. Rowan	" 20, 1898	191 57
Lachine " "	Bell Bros. & Co., Ltd.	" 27, 1898	84 73
Laprairie " "	Ludger Beauvais	" 31, 1898	96 65
Lévis graving dock "	John H. Powell	" 23, 1898	850 00
Montreal post office "	T. F. Moore & Co.	" 19, 1898	742 23
" custom house "	"	" 19, 1898	577 50
" examining warehouse—Supply of coal	"	" 19, 1898	1,760 00
" northern receiving house "	"	" 19, 1898	20 47
" revenue building "	"	" 19, 1898	192 50
" post office—Supply of electric current for lighting building and operating elevators	Royal Electric Co.	" 1, 1898	Per annum. 6,872 71
Montreal post office—To renew the roof covering of the	Joseph Lamarche	Dec. 7, 1898	9,400 00
Quebec cullers' office—supply of coal	Frs. Gunn	Sept. 24, 1898	209 30
" custom-house "	"	" 24, 1898	749 41
" marine agency "	"	" 24, 1898	322 92
" examining warehouse "	"	" 24, 1898	479 39
" immigration office "	"	" 24, 1898	23 92
" post office "	"	" 24, 1898	478 60
" " (St. Roch) "	"	" 24, 1898	59 80
Richmond post office "	J. D. Smith	" 2, 1898	148 29
Rimouski " "	John H. Powell	Aug. 23, 1898	300 00
St. Jérôme " "	Chas. Godmer	Oct. 25, 1898	168 68
St. Johns " "	Simard & Son	Aug. 20, 1898	53 30
Sherbrooke " "	J. D. Smith	Sept. 2, 1898	277 23
Sorel " "	Leclaire & Lavallée	Aug. 19, 1898	209 25
Three Rivers " "	Z. Marchand	" 20, 1898	148 75
" custom-house "	"	" 20, 1898	276 60
Valleyfield post office "	D. Dion	" 30, 1898	46 00
West Farnham " "	Jos. Séguin & Co.	" 31, 1898	26 25

No. 1—CONTRACTS let by the Department of Public Works of Canada, from June 30, 1898, to June 30, 1899.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—*Continued.*			$ cts.
Ontario.			
Almonte post office—Supply of coal	Wm. McArthur	" 27, 1898	119 00
Amherstburg " "	John Mullens	Oct. 4, 1898	132 00
Arnprior public building—Construction of heating apparatus	Pierre Leclerc & Fils	Sept. 16, 1898	849 00
Barrie post office—Supply of coal	J. G. Scott	Aug. 27, 1898	210 00
Belleville " "	Chas. C. Leavens	" 29, 1898	433 58
Berlin " "	Kloepfer & Co	" 29, 1898	168 75
Brampton " "	Peaker & Son	Oct. 30, 1898	123 55
Brantford " "	John Mann & Son	Aug. 30, 1898	240 33
Brockville " "	R. R. Dowsley	" 29, 1898	180 00
Carleton Place post office—Supply of coal	J. H. Greig	Aug. 29, 1898	105 00
Chatham " "	J. L. Scott	Sept. 2, 1898	107 45
Cobourg " "	Geo. Plunkett	Aug. 30, 1898	168 04
Cornwall " "	Flack Bros	Sept. 1, 1898	240 00
Dundas " "	Chs. Sturrock	" 2, 1898	14 46
Galt " "	Colvin & Fraser	Aug. 29, 1898	151 30
Gananoque " "	C. E. Britton	Oct. 5, 1898	66 50
" custom-house	"	" 5, 1898	104 50
Goderich post office "	Wm. Lee	Sept. 1, 1898	139 48
Guelph " "	Frank Frank	Aug. 29, 1898	187 09
Hamilton " "	Thos. Myles & Sons	" 29, 1898	3 00
" custom-house "	Peoples' Coal Co'y	" 27, 1898	611 25
Ingersoll construction of a public building	R. Carrol & J. H. McKnight	Sept. 19, 1898	13,437 00
Kingston customs house—Supply of coal	James Sowards	Aug. 27, 1898	234 00
" post office "	"	" 27, 1898	202 80
" construction of a drill hall	Sullivan & Langdon	Dec. 3, 1898	61,930 00
" dry dock—Supply of electric current for lighting engine house	Kingston Light, Heat & Power Co	Apl. 13, 1898	per annum 385 00
Lindsay post office—Supply of coal	McLennan & Co	Aug. 29, 1898	140 30
London " "	Peoples' Coal Co	" 27, 1898	348 79
" custom-house "	"	" 27, 1898	341 49
" " "	John M. Daly	" 30, 1898	16 00
" " "	"	" 30, 1898	12 80
Napanee post office "	F. E. Vanluven	" 30, 1898	139 50
Niagara Falls " "	W. E. Thomas	" 30, 1898	143 50
Orangeville " "	J. R. Lathwell	Sept. 21, 1898	88 20
Orillia " "	Andrew Tait	" 20, 1898	159 00
Pembroke " "	Skinner & Ryan	Aug. 29, 1898	112 37
Peterborough " "	Peoples' Coal Co	" 27, 1898	126 91
" custom-house "	"	" 27, 1898	99 31
Petrolia post office—Supply of coal	J. & J. Kerr	Aug. 30, 1898	100 00
Port Arthur " "	Harstone & Byrnes	Sept. 13, 1898	93 78
Port Hope " "	W. T. Clarke	Aug. 29, 1898	164 50
Prescott " "	James Buckley	" 29, 1898	157 15
" custom-house "	"	" 29, 1898	89 80
Rat Portage construction of a post office building	Wm. Garson	July 4, 1898	18,875 00
St. Catharines post-office—Supply of coal	D. Dittrick	Sept. 1, 1898	108 00
St. Thomas " "	Peoples' Coal Co	Aug. 27, 1898	282 00
Smiths Falls " "	H. A. Crate	" 29, 1898	103 55
Stratford " "	Brigham & Ingram	" 30, 1898	262 43
Strathroy " "	Alex. Reed	Oct. 3, 1898	131 52
Toronto " "	Peoples' Coal Co	Aug. 27, 1898	646 40
" custom-house "	"	" 27, 1898	262 90
" examining warehouse "	"	" 27, 1898	595 20
" revenue office "	"	" 27, 1898	185 60
Trenton post office "	Chs. Crowe	" 29, 1898	90 00
Walkerton " "	Traill Bros	" 30, 1898	159 31
Windsor " "	R. J. Cleminson	" 31, 1898	387 08

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Continued.*

Works.	Names of Contractors.	Date of Contract.	Amount.
PUBLIC BUILDINGS—*Concluded.*			$ cts.
Manitoba.			
Brandon post office Supply of coal	Western Coal Co'y	Sept. 13, 1898	561 29
" experimental farm "	Alberta R'y. & Coal Co.	" 3, 1898	37 50
" " "	D. E. Adams	" 30, 1898	125 30
Winnipeg post office "	"	" 30, 1898	597 25
" custom-house "	Western Coal Co'y	" 13, 1898	606 13
" immigration office and sheds	"	" 13, 1898	325 08
" Indian and crown timber offices	"	" 13, 1898	344 54
" examining warehouse	"	" 13, 1898	348 30
North-west Territories.			
Calgary immigration shed—Supply of coal	Alberta Ry. and Coal Co.	Sept. 3, 1898.	16 32
" post office "	" "	" 3, 1898.	36 31
" court house "	" "	" 3, 1898.	16 32
" registry office "	" "	" 3, 1898.	
Indian Head experimental farm "	Geo. Thompson	" 10, 1898.	236 00
Lethbridge post office "	Edward Holmes	" 2, 1898.	44 50
Macleod court-house "	Alberta Ry. and Coal Co.	" 3, 1898.	92 00
" custom-house "	" "	" 3, 1898.	66 00
Moose Jaw court-house "	R. Beard	" 8, 1898.	98 00
Moosomin " "	T. H. Bristow	Nov. 29, 1898.	317 13
" " "	D. E. Adams	Sept. 30, 1898.	20 00
Regina post office "	Rembler Paul	Aug. 30, 1898.	210 00
" court-house "	"	" 30, 1898.	750 00
" land titles office "	"	" 30, 1898.	170 00
" Dominion lands "	"	" 30, 1898.	20 00
HARBOURS AND RIVERS.			
Nova Scotia.			
East Ragged Island—Construction of a wharf	J. B. McManus	Nov. 8, 1898.	2,280 00
Halls' Harbour—Extension to breakwater	"	Jan. 4, 1899.	3,200 00
Merigomish—Construction of a wharf	Hugh McDonald	Mar. 23, 1899.	865 00
North River—St. Ann's—Construction of a pile wharf	"	Sept. 1, 1898.	2,148 00
River Hébert—Construction of a pile wharf	John W. Tingley	Feb. 20, 1899.	1,195 00
Upper Woods Harbour—Construction of a public causeway and wharf	Donald Sutherland	Nov. 14, 1898.	1,940 00
Prince Edward Island.			
China Point—Construction of a new head-block and repairs to wharf	Alex. Compton	Feb. 10, 1899.	1,987 00
Miminegash—Construction of a new block at the outer end of north breakwater	Alex. McDonald	Jan. 11, 1899.	2,300 00
Knight's Point, Souris—Repairing and strengthening inner portion of breakwater	J. P. Brennan & B. H. Ramsay	Aug. 16, 1898.	8,900 00
Quebec.			
Cap-aux-Corbeaux, Baie St. Paul—Extension to wharf	Viau, Lachance & Hamel	Nov. 25, 1898.	12,500 00
L'Islet—Construction of a wharf	O. Carbonneau	June 24, 1899.	1,500 00
St. Roch des Aulnaies—Construction of a wharf and stone approach	Viau, Lachance & Hamel	June 21, 1899.	6,087 00

No. 1.—CONTRACTS let by the Department of Public Works, &c.—*Concluded.*

Works.	Names of Contractors.	Date of Contract.	Amount.
HARBOURS AND RIVERS—*Concluded.*			$ cts.
Ontario.			
Goderich—Reconstruction of breakwater	F. Smeeth & D. McGillicuddy	Aug. 11, 1898.	56,700 00
North Bay, Nipissing District—Construction of wharf	S. H. Lindsay & R. Burdett	Nov. 18, 1898.	16,387 00
Picton harbour—Deepening and dredging works	McNamee & Simpson	Jan. 18, 1899.	11,500 00
Manitoba.			
Lake Manitoba—Works for increasing and regulating the outflow of the waters through Fairford River	Frs. Lemoine	Dec. 22, 1898.	27,500 00
North-west Territories.			
Edmonton—Superstructure of a railway and general traffic bridge	Dominion Bridge Co., Ltd	March 7, 1899	46,332 00
Vessels, Dredges and Plant.			
Construction of one cylindrical straightway boiler of navy type	John McDougall	Nov. 19, 1898.	2,600 00
" " "	W. C. White	" 21, 1898.	2,600 00
" " "	J. & R. Weir	Jan. 16, 1899.	2,600 00
" " "	"	" 16, 1899.	2,600 00
Construction of a return tubular Fitzgibbon boiler	"	March 8, 1899.	2,500 00
" two triple expansion engines and one marine return tubular boiler	The Bertram Engine Works Co., Ltd.	April 10, 1899.	14,800 00
TELEGRAPH AND SIGNAL SERVICE.			
Alberni to Cape Beale, B.C.—Construction of a telegraph line	T. D. Conway	Mar. 15, 1899.	Per mile, 95 50
River St. Lawrence, north shore—Supply of 4,700 telegragh poles for telegraph line	L. P. deCourval	" 22, 1899.	Per pole, 0 85
River St. Lawrence, north shore—Supply of 6,000 telegraph poles for telegraph line	"	June 17, 1899.	Per pole. 0 80
River St. Lawrence, north shore—Supply of 12,000 braces for telegraph line	"	" 23, 1899.	Per brace. 0 10

J. A. CHASSÉ,

Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 1, 1899.

No. 2.—STATEMENT of Properties purchased or sold by the Department of Public Works during the fiscal year ended June 30, 1899.

Date of Conveyance.	Vendors.	Purchasers.	Description of Property.	For what purpose.	Area.	Price.
1898.						$ cts.
July 21..	North American Transportation Co., Ltd.	Her Majesty..	Sale of ship *Eureka*.	Government purposes...		26,000 00
Oct. 1..	Wm. J. Smith and uxor.	" ..	Land, wharf and approach, &c., Richard's Landing, St. Joseph's Island, Ont.	" " ...		3,000 00
" 12..	Sam. Carson and uxor...	" ..	Wharf, sheds and right of way, Port Lewis, Que.....	" " ...		300 00
Nov. 2..	Widow E. S. Vibert.....	" ..	Plot of ground, Long Point, Mingan, Que.....	Government telegraph...	8,160 superf. ft..	500 00
" 11..	P. M. Holden.....	" ..	Piece of land known as 'Church Lot,' Kentville, N.S. ..	For public building.....	6,400 " ..	2,500 00
" 16..	The Manitoba and Northwestern Ry. Co.	" ..	Lots Nos. 29, 30 and 31, block 8, township 25, range 4, Yorkton, Ass., N.W.T.	For immigration building	.....	1 00
" 21..	Andrew McNutt and uxor.	" ..	Parcel of land, Liverpool, N.S	Government purposes...	3,876 square ft..	825 00
" 22..	Nisbet Academy of Prince Albert.	" ..	Lot No. 45, range 8, Prince Albert Settlement.....	" " ...	.....	50 00
Dec. 23..	Alex. Watson and uxor..	" ..	Tract of land and premises composed of lot No. 65C, Woodstock, Ont.	Erection of public building.	.....	3,100 00
" 28..	Catharines Adams et al..	" ..	Parcel of land and premises composed of lot No. 66C, Woodstock, Ont.	" " ..	.....	3,800 00
1899.						
Jan. 12..	Municipality of St. Columba of Sillery, Que.	" ..	Part of lot No. 266, with old wharf thereon erected, St. Columba of Sillery, Que.	For a new wharf.....	5 arpents in superficies.	Free grant.
April 29..	Thos. F. Livingston.....	" ..	Land at Livingston Cove, Antigonish, N.S	Government purposes..	33,675 superf. ft.	1 00
June 3..	James Black.....	" ..	Bill of sale ship *Daisy*.....	" " ...	.....	1,200 00
" 10..	Joseph Leduc.	" ..	Land and old wharf Ste. Jeanne de l'Ile Perrot, Que....	Right of way..	$\frac{57}{100}$ of an acre...	500 00

No. 3.—STATEMENT of Properties leased to and by the Department of Public Works during the fiscal year ended June 30, 1899.

Date of Lease.	Lessor.	Lessee.	Property Leased.	For what purpose.	Duration of Lease.	Annual Rental.
1898.						
Aug. 27..	Grand Trunk Ry. Co.	Her Majesty.	Lands and wharf at Pointe Claire, Que.....	Government purposes..	10 years (renewable).	$150 per annum.
Nov. 1..	Dawes & Co....	"	Suite of four offices, St. James Street, Montreal	" " ..	5 years..... ...	500 "
Dec. 1..	Her Majesty....	Corporation of the city of Three Rivers, Que.	Lot of land, St. Christophe's Island, St. Maurice River, Que.	Building purposes.....	During pleasure.	1 "
1899.						
Jan. 1..	Grand Trunk Ry. Co.	Her Majesty.....	Portion of Union Station, Toronto, Ont	For storing Her Majesty's mail.	5 years.	$72.60 per month.
May 1..	C. C. Ray & Co.	"	Wooden shed, Rideau Canal Basin, Ottawa.	Storage of coal.....	1 year.....	$400 per annum.

J. A. CHASSÉ,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, December 1, 1899.

NATIONAL ART GALLERY

CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED JUNE 30, 1899

NATIONAL GALLERY.

CHIEF ARCHITECT'S OFFICE,
OTTAWA, May 2, 1900.

SIR,—I have the honour to report that the following additions have been made to the Gallery, during the fiscal year ended June 30, 1899.

Oil painting by F. McGillivray Knowles, Esq., R.C.A.

This painting has been presented to the Gallery by the Royal Canadian Academy, in accordance with the Act of incorporation requiring diploma pictures to be deposited in the National Gallery.

Portrait of the late Dr. Kingsford, presented by the artist, Charles Eugene Moss, Esq., R.C.A.

Fifteen thousand and sixty-three visitors have registered their names, being an increase of one thousand seven hundred and twenty-seven over the previous year.

I have the honour to be, sir,

Your obedient servant,

L. FENNINGS TAYLOR,

Curator.

Jos. R. ROY, Esq.,
Acting Secretary, Department of Public Works.

NAMES OF THE CHIEF OFFICERS OF THE DEPARTMENT OF PUBLIC WORKS

WITH

DATES OF APPOINTMENT, &c, FROM 1841 TO 1899.

NAMES OF THE CHIEF OFFICERS.

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1899.

Names.	Capacity or Office.	Date of Appointment. Served. From	To
Under Statute 4-5 Vic., Cap. 38.			
CORPORATION BOARD OF WORKS.			
Killaly, Hon. H. H	Chairman	Dec. 29, 1841	Oct. 3, 1844
Daly, Hon. D.	Members		
Harrison, S. B.			
Sullivan, R. B.			
Davidson, J., Esq.			
Begly, Thomas A.	Secretary	Aug. 17, 1841	
Keefer, Samuel	Chief Engineer	" 17, 1841	
Rubidge, F. B.	Architect and Assistant Chief Engineer	Dec. 15, 1841	
NEW BOARD OF WORKS.			
Killaly, Hon. H. H.	Chairman	Oct. 4, 1844	June 8, 1846
Daly, Hon. D.	Members		
Draper, Hon. W. H			
Morris, Hon. W.			
Papineau, Hon. D. B.			
Under Statute 9th Vic., Cap. 37, &c.			
Robinson, Hon. W. B.	Chief Commissioner	June 22, 1846	March 10, 1848
Taché, Hon. E. P	"	March 11, 1848	Nov. 26, 1849
Chabot, Hon. J	"	Dec. 13, 1849	March 31, 1850
Merritt, Hon. W. H.	"	April 8, 1850	Feb. 11, 1851
Bourret, Hon. J	"	Feb. 12, 1851	Oct. 27, 1851
Young, Hon. John	"	Oct. 28, 1851	Sept. 22, 1852
Chabot, Hon. J	"	Sept. 23, 1852	Jan. 26, 1855
Lemieux, Hon. F.	"	Jan. 27, 1855	Nov. 25, 1857
Alleyn, Hon. C	"	Nov. 26, 1857	Aug. 1, 1858
Holton, Hon. L. H.	"	Aug. 2, 1858	" 6, 1858
Sicotte, Hon. L. V.	"	" 7, 1858	Jan. 10, 1859
Rose, Hon. John	"	Jan. 11, 1859	June 12, 1861
Cauchon, Hon. Jos.	Commissioner	June 13, 1861	May 23, 1862
Tessier, Hon. U. J.	"	May 24, 1862	" 27, 1863
Drummond, Hon. L. T.	"	" 28, 1863	July 23, 1863
Laframboise, Hon. M.	"	July 24, 1863	March 29, 1864
Chapais, J. C.	"	March 30, 1864	June 30, 1867
Casgrain, Hon. Chas. Eus.	Second Commissioner	July 9, 1846	Feb. 29, 1848
Cameron, Hon. M.	Assistant Commissioner	March 11, 1848	" 1, 1850
Westenhall, John S., Esq.	"	Feb. 2, 1850	April 16, 1850
Bourret, Hon. Jos.	"	April 17, 1850	Feb. 11, 1851
Killaly, Hon. H. H	"	Feb. 12, 1851	May 6, 1859
Keefer, Samuel	Deputy Commissioner	May 6, 1859	March 7, 1864
Trudeau, Toussaint	"	March 8, 1864	
Begly, Thos. A.	Secretary	Feb. 10, 1841	Oct. 31, 1858
Trudeau, Toussaint	"	Dec. 13, 1859	March 7, 1864
Braun, Frederick	"	March 8, 1864	
Page, John	Chief Engineer	Oct. 31, 1853	Oct. 1, 1879

The names with the dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1899.—*Continued.*

Names.	Capacity or Office.	Date of Appointment. Served From	To
Under Statute 31 Vic., Chap. 12.			
McDougall, Hon. Wm	Minister	July 1, 1867	Dec. 7, 1869
Langevin, C.B., Hon. Hector L	"	Dec. 8, 1869	Nov. 6, 1873
Mackenzie, Hon. Alexander	"	Nov. 7, 1873	Oct. 16, 1878
Tupper, C.B., K.C.M.G., Sir Charles	"	Oct. 17, 1878	May 19, 1879
Langevin, C.B., K.C.M.G., Sir Hector L	"	May 20, 1879	Aug. 11, 1891
Smith, Hon. Frank	Acting Minister	Aug. 14, 1891	Jan. 10, 1892
Ouinet, Hon. Joseph Aldric	Minister	Jan. 11, 1892	April 30, 1896
Desjardins, Hon. Alphonse	"	May 1, 1896	July 12, 1896
Tarte, Hon. J. Israel	"	July 13, 1896	
Trudeau, Toussaint	Deputy Minister	May 29, 1868	Oct. 1, 1879
Baillargé, G. F	"	Oct. 4, 1879	Dec. 31, 1890
Gobiel, A	"	Jan. 1, 1891	
Braun, Frederick	Secretary	July 1, 1867	Sept. 30, 1879
Chapleau, S	"	Oct. 1, 1879	Nov. 4, 1880
Ennis, F. H	"	Nov. 5, 1880	Jan. 13, 1885
Gobeil, A	"	Jan. 23, 1885	Dec. 31, 1890
Roy, E. F. E	"	Jan. 1, 1891	
McPherson, D. A	Assistant Secretary	" 18, 1891	April 11, 1893
Desrochers, Rudolphe Charles	"	" 8, 1896	
Perley, H. F	Chief Engineer	Nov. 25, 1880	July 10, 1891
Baillargé, G. F	Assistant Chief Engineer	July 5, 1871	" 4, 1879
Coste, Louis	Chief Engineer	" 26, 1892	March 18, 1899
Scott, Thos. S	Chief Architect	May 26, 1871	Oct. 30, 1881
Fuller, Thomas	"	Oct. 31, 1881	June 30, 1897
Page, John	Chief Engineer	July 1, 1868	Oct. 1, 1879
Ewart, David	Chief Architect	Nov. 2, 1897	

NAMES OF THE OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA

On June 30, 1899

WITH

DATES OF APPOINTMENT, SALARIES, &c.

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of Persons employed on the various Slides and Booms, on June 30, 1899.

Name.	Date of Birth.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
Collector of Slide and Boom Dues.					$ cts.	
E. T. Smith	Nov. 26, 1846	Collector	Ottawa	July 1, 1889	1,800 00 a year	Date of first appointment to Crown timber office, Ottawa, 23rd June, 1864. Clerk, Dept. of Inland Revenue, July 1, 1870, to June 30, 1889. Transferred to civil list with rank of first class clerk, January 5, 1892.
F. X. Gagné	Sept. 23, 1859	Clerk	"	Dec. 16, 1897	912 50 "	Entered the service August 13, 1889.
James Steen	June 17, 1830	Boatman	"	July 12, 1889	60 00 a month	Employed during the season of navigation, for 8 months each year. Date of first appointment, May 26, 1861. Timber counter, Ottawa, for Dept. of Inland Revenue, Jan. 7, 1884, to June 30, 1889.
John Redmond	August 2, 1833	"	"	" 12, 1889	60 00 "	Employed during the season of navigation, for 8 months each year. Date of first appointment, May 1, 1872 Assistant timber counter, Ottawa, for Dept. of Inland Revenue, Jan. 7, 1884, to June 30, 1889.
Saguenay District						Saguenay District slides abandoned by authority of O. C. dated February 5, 1896 (No. 168,740).
St. Maurice District.						
L. P. Dallaire		Paymaster	Three Rivers	May 1, 1898	50 00 a month	
Cyriac Lymburner	1833	Boom master	Grand Mère	April 25, 1881	55 00 "	
Jos. Pagé	July 7, 1845	Slide "	Mouth of St. Maurice	Dec. 10, 1879	46 67 "	
Jos. Dick		Asst. "	Cap aux Corneilles	May 19, 1898	60 00 "	
Gédéon Rousseau		" "	Shawenigan & Grès	April 7, 1896	54 16 "	
Moïse Masson		Boom keeper	Grandes Piles	May 19, 1898	55 00 "	
Richelieu District.						
Cyrille Choquette		Boom master	Belœil Station	July 26, 1897	100 00 a year	

Ottawa District.								
G. P. Brophy	Feb.	24, 1846	Superintendent	Ottawa	July	6, 1873	2,500 00 "	*Ottawa 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 a day; also 25 to 30 labourers at from $1 to $1.40 a working day.
D. Scott	"	15, 1830	Accountant	"	Oct.	1, 1854	1,500 00 "	
J. C. Scott	June	27, 1865	Measurer	"	April	1, 1889	3 50 a day	
J. Kent	Jan.	28, 1864	Clerk	"	Aug.	1, 1886	3 25 "	
Wm. Cain	April	22, 1860	Messenger	"	Jan.	1, 1892	1 35 "	
Pierre St. Pierre			Deputy slide master.	Carillon	June	1, 1897	1 40 "	Actively employed about 7 months. Oversees repairs in winter.
D. Noonan	June	17, 1840	Boom master	Gatineau	Mar.	21, 1878	500 00 a year	" "
J. Soulière	Nov.	8, 1829	Deputy slide master.	Chaudière		1878	2 50 a day.	" "
P. D. Chene			"	Hull	June	14, 1899	1 25 "	Employed about 6 months.
W. D. Sheriff			"	Chats	April	26, 1898	1 25 "	" Oversees repairs in winter.
John Harvey	May	22, 1831	Slide master	Arnprior	July	12, 1882	2 50 "	Actively employed about 7 months.
Joshph McCrea	Mar.	26, 1869	Boom master	Springtown	May	15, 1880	300 00 a year	Employed about 3 months during season of navigation.
Patrick Barry	"	27, 1858	Slide master	High Falls	Mar.	10, 1888	1 50 a year	Employed 5 months during season of navigation. Oversees repairs in winter.
Duncan McLaren	Jan.	7, 1860	Deputy slide master.	Portage du Fort	Sept.	7, 1881	456 25 a year	" " "
J. G. Poupore	Feb.	27, 1857	"	Black River	Oct.	15, 1880	480 00 "	" " "
J. A. Robertson			"	Lower Petewawa	July	1, 1898	480 00 "	" " "
P. O'Connor			"	Upper Petewawa	Mar.	18, 1898	2 00 a day	
Wm. Thomson	May	3, 1843	"	Mountain	Oct.	10, 1879	1 25 "	6 mos. " "
G. H. Brabazon			"	Calumet	April	1, 1894	360 00 a year	6 to 7 mos. " "
John Mallin			"	Coulonge	"	10, 1899	360 00 "	4 mos. " "
H. R. Downey	May	16, 1846	"	Des Joachims	July	1, 1889	300 00 "	" " "
J. H. McGuire			"	Dumoine	May	1, 1897	300 00 "	Employed 3 months during season of navigation. Will inspect works when required.
J. W. Carmichael			"	Rocher Capitaine	Dec.	24, 1896	1 25 a day	" " "
A. H. Johnson	Nov.	28, 1839	"	Chenaux		1865	2 50 "	Paid during season of navigation, 7 months. Attends to repairs in winter.
G. T. Johnson	Sept.	10, 1841	"	"		1872	1 75 "	" "
Newcastle District.								
R. B. Rogers	Jan.	17, 1857	Superintendent	Peterboro'	July	1, 1884	800 00 a year	Receives $800 a year from Department of Railways and Canals.
G. H. Giroux			Clerk, supt.'s office	"	"	1, 1880	400 00 "	" $400 " "
R. A. Wagar			Slide master	Chisholm Rapids	June	15, 1898	200 00 "	
W. T. Junkin			"	Fenelon Falls	Nov.	15, 1896	100 00 "	$250 a year as lock master. " R. & C.
R. T. Hill			"	Buckhorn	July	1, 1891	100 00 "	Receives $150 a year from Department of Railways and Canals.
Hamilton Johnston			Slide master	Heeley's Falls	July	15, 1893	200 00 a year	
John Dinwoodie			"	Lakefield	June	20, 1893	150 00 "	
Richelieu District.								
C. Choquette			Boom master	Beloeil Station	July	26, 1897	100 00 "	

STATEMENT showing Names, &c., of persons employed on the various Slides and Booms—*Concluded.*

Name.	Date of Birth.	Position.	Where Employed.	Date of Appointment.	Salary.	Remarks.
Burlington Channel.						
Swing Bridge.					$ cts.	
Wm. Omand		Bridge attendant	Burlington	Sept. 19, 1896	600 00 "	
A. McDonald		Bridge assistant	"	April 1, 1896	1 25 a day	Employed 9 months.
C. Rasberry		"	"	Sept. 19, 1896	1 25 "	"
Jos. Eustice		"	"	" 19, 1896	1 25 "	"
Yamaska District.						
H. Lambert		Lock keeper	Yamaska	July 1, 1897	40 00 a month	
O. Mineau		"	"	Sept. 1, 1885	40 00 "	
Rivière du Lièvre.						
Hugh Gorman		Lock master	Rivière du Lièvre	April 15, 1897	40 00 "	
James Brazeau		Labourer	"	" 15, 1897	35 00 "	

JOS. VINCENT.

NAMES OF PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS

ON JUNE 30, 1899

WITH

DATES OF APPOINTMENT, SALARIES, &c.

GRAVING DOCK EMPLOYEES.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Graving Docks, June 30, 1899.

Name.	Date of Birth.	Position.	Where employed.	Date of Appointment.	Salary.	Remarks.
Esquimalt Graving Dock, British Columbia.						
John Devereux		Dockmaster	Esquimalt	Sept. 17, 1887	$166 66 a month	
A. C. Muir		Engineer	"	April 1, 1887	100 00 "	
J. W. Muir		Asst. engineer	"	Jan. 11, 1892	80 00 "	
A. D. Greeves		Carpenter	"	Dec. 1, 1887	80 00 "	
F. M. Jones		Stoker	"	July 1, 1890	60 00 "	
E. Williams		"	"		60 00 "	
John Stock		Watchman	"	July 1, 1894	50 00 "	
Lévis Graving Dock.						
Ulric Valiquette	June 30, 1856	Dockmaster	Lévis	April 13, 1891	1,800 00 a year	Annual allowance of $200 for house rent. First appointment, May 9, 1873.
Wm. Macdougall		Mechanical engineer	"	June 1, 1888	75 00 a month	
T. Guilbault		Asst. mechanical engineer	"	Sept. 1, 1897	45 00 "	
Narcisse Lemelin		Fireman	"	June 1, 1888	32 00 "	
		Caretaker and watchman	"			
Kingston Graving Dock.						
F. S. Rees		Dockmaster	Kingston	April 1, 1897	1,000 00 a year	
Robert McLeod		1st engineer	"	July 1, 1892	75 00 a month	
Wm. Geaghean		Fireman	"	" 1, 1892	45 00 "	
C. Staley		Watchman	"	" 1, 1892	45 00 "	

JOS. VINCENT.

LIST OF ENGINEERS, ENGINEMEN, FIREMEN AND CARETAKERS

EMPLOYED

IN THE PUBLIC BUILDINGS THROUGHOUT THE DOMINION
ON JUNE 30, 1899

GIVING

DATES OF APPOINTMENT, SALARIES, &c.

ENGINEERS AND CARETAKERS, PUBLIC BUILDINGS.

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on June 30, 1899.

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each year.	Yearly Salary.
						$ cts.		$ cts.
Amherst N.S.	Post office	James Morrison	May 2, 1824	Caretaker	Nov. 2, 1886	33 33	12 months,	400 00
Antigonish "	Public building	Angus McDonald	March —, 1820	"	Feb. 5, 1891	33 33	12 "	400 00
Annapolis "	Post office and C. house	John McKay	Oct. 26, 1847	"	April 1, 1891	33 33	12 "	400 00
Baddeck "	Public building	D. F. McKenzie		"	Jan. 21, 1898	16 67	12 "	200 00
Dartmouth "	"	J. C. Henley	Dec. 11, 1846	"	May 22, 1894	20 83	12 "	250 00
Halifax "	Dominion building	Richard Power	Aug. 15, 1834	Engineer	Oct. 1, 1871	62 50	12 "	750 00
" "	"	John Powell	" 21, 1836	Firemen	" 1, 1871	50 00	8 "	400 00
" "	"	J. F. Sullivan	April 16, 1866	Caretaker	July 1, 1892	33 33	12 "	400 00
" "	"	W. H. Gray	Nov. 26, 1848	Watchman	Sept. 10, 1891	39 00	12 "	468 00
" "	Drill hall	R. Harmen	Dec. 23, 1868	Fireman	Dec. 3, 1898	50 00	12 "	600 00
" "	Examining warehouse	M. O'Neil	" 30, 1850	Caretaker	Oct. 1, 1897	33 33	12 "	400 00
" "	Immigrant building	John Oxley	April 17, 1856	Fireman	Feb. 2, 1897	50 00	12 "	600 00
Lunenburg "	Public building	J. E. Hebb	Nov. 3, 1833	Caretaker	June 7, 1895	25 00	12 "	300 00
New Glasgow "	Post office	Daniel McDonald	Dec. 17, 1832	"	Oct. 1, 1889	25 00	12 "	300 00
North Sydney "	Public building	Alex. Green	July 10, 1825	"	Nov. 1, 1897	29 16	12 "	350 00
Pictou "	Post office and C. house	Jas. Arbuckle	Feb. 18, 1836	"	Dec. 20, 1896	25 00	12 "	300 00
Sydney, South "	" "	L. Keefe	May 5, 1846	"	Nov. 1, 1897	29 16	12 "	350 00
Truro "	" "	Alex. Smith	" 17, 1837	"	April 1, 1897	25 00	12 "	300 00
Windsor "	"	J. A. Mosher		"	Sept. 22, 1892	33 33	12 "	400 00
Yarmouth "	Public building	Robert Spears	Sept. 15, 1824	"	Feb. 13, 1899	33 33	12 "	400 00
Charlottetown P.E.I.	Dominion building	Wm. J. Fraser	Jan. 1, 1836	" & fireman	April 3, 1894	33 33	12 "	400 00
" "	"	Geo. Walker	Aug. 28, 1826	Messenger	Jan. 19, 1875	37 00	12 "	444 00
" "	"	M. A. Allan	Jan. 8, 1855	"	" 24, 1898	37 50	12 "	450 00
" "	"	Angus McKenzie	March 12, 1856	Watchman	Nov. 1, 1896	33 33	12 "	400 00
Montague "	Public building	W. Gillis	Oct. — 1831	Caretaker	May 9, 1898	13 33	12 "	160 00
Summerside "	Dominion building	A. MacSween	Sept. 25, 1835	"	Sept. 1, 1897	33 33	12 "	400 00
Bathurst N.B.	Post office	J. A. Melancon	Jan. 20, 1825	"	April 13, 1887	33 33	12 "	400 00
Chatham "	"	C. Johnston	May 18, 1856	"	March 27, 1895	25 00	12 "	300 00
Carleton, St. John "	"	James R. Reid	Aug. 15, 1823	"	Oct. 1. 1889	8 33	12 "	100 00
Dalhousie "	"	Wm. Gould	Jan. 1, 1853	"	Nov. 26, 1890	33 33	12 "	400 00
Fredericton "	"	James Perkins	Oct. 5, 1847	"	May 31, 1881	33 33	12 "	400 00
Moncton "	"	E. B. Hicks	Jan. 11, 1832	"	Jan. 11, 1886	33 33	12 "	400 00

Newcastle	"	"	Patrick Keating	March 13, 1840	"	Oct. 23, 1886	33 33	12	"	400 00	
St. Stephen	"	"	Samuel Topping	April 2, 1839	"	May 25, 1887	33 33	12	"	400 00	
Sussex	"	"	Shepherd Dryden	May 18, 1839	"	Jan. 15, 1897	16 66	12	"	200 00	
St. John	"	Custom-house	Neil J. Morrison	July 25, 1858	Engin'r & caretaker	April 27, 1894	60 00	12	"	720 00	
"	"	"	Christopher White	Nov. 20, 1844	Fireman	Nov. 9, 1885	50 00	12	"	600 00	
"	"	"	James A. Paul	Aug. 1, 1837	Caretaker	Oct. 13, 1891	41 67	12	"	500 00	
"	"	Post office	James Wolfe	March 10, 1856	Engineer	Dec. 1, 1893	55 00	12	"	660 00	
"	"	"	Edward Haney	Feb. 22, 1849	Hoist attendant	Nov. 27, 1882	50 00	12	"	600 00	
Woodstock	"	"	Charles Trafton	Jan. 20, 1839	Caretaker	May 1, 1897	33 33	12	"	400 00	
Aylmer	P.Q.	"	Miss M. G. Woods		"	April 29, 1895	5 00	12	"	60 00	
Berthierville	"	"	G. Levesque		"	July 4, 1898					
Coaticook	"	Public building	Israel Baldwin	Nov. 16, 1839	"	June 27, 1889	33 33	12	months	400 00	
Fraserville	"	Post office	Z. Raymond	" —, 1831	"	Nov. 2, 1897	20 83	12	"	250 00	
Hull	"	" &c	J. H. Kerr	April 13, 1847	"	Feb. 14, 1893	12 50	12	"	150 00	
Joliette	"	"	A. Ratel	Dec. 29, 1845	"	Sept. 1, 1897	29 16	12	"	350 00	
Lachine	"	"	P. O. Robert		"	Jan. 26, 1899	8 33	12	"	100 00	
Laprairie	"	"	A. Thomas	Aug. 8, 1848	"	Nov. 13, 1891	4 16	12	"	50 00	
Montmagny	"	"	J. Lespérance	June 25, 1898	"	June 25, 1898					
Montreal	"	Dominion buildings	Thomas Ryan	" 18, 1836	Foreman engineer	March 4, 1882	100 00	12	months	1,200 00	
"	"	Examining warehouse	M. Boyer	Feb. 18, 1848	Fireman	" 4, 1882	50 00	12	"	600 00	
"	"	"	N. Loiselle	Dec. 12, 1866	"	Dec. 4, 1898	45 00	8	"	360 00	
"	"	Post office	F. Green	Oct. 4, 1837	Engineer	Jan. 1, 1885	60 00	12	"	720 00	
"	"	"	L. D. Thibault	Jan. 28, 1861	Electrician	June 1, 1885	60 00	12	"	720 00	
"	"	"	G. S. Gingras	Dec. 13, 1867	" &c	Jan. 7, 1895	60 00	12	"	720 00	
"	"	"	Jos. Dutrisac	Feb. 2, 1863	Elevator man	Dec. 15, 1893	50 00	12	"	600 00	
"	"	"	Art. Forget	July 25, 1867	"	" 15, 1893	50 00	12	"	600 00	
"	"	"	S. N. Nickle	Dec. 25, 1871	"	March 1, 1894	50 00	12	"	600 00	
"	"	"	C. Vadeboncœur	May 17, 1842	Caretaker w.c.	Feb. 6, 1894	1 25 p.d.	12	"	456 25	
"	"	Inland revenue	Louis St. Jean	Sept. 17, 1840	Fireman	Dec. 1, 1892	50 00	12	"	600 00	
"	"	Custom-house	J. H. Marchand	" 6, 1849	"	" 2, 1882	50 00	12	"	600 00	
"	"	"	C. Daudelin	June 18, 1843	"	July 16, 1892	29 16	12	"	350 00	
"	"	Custom-h. and ex.-wareh.	B. Lajeunesse	Nov. 20, 1861	"	Nov. 23, 1896	45 00	9	"	405 00	
"	"	Drill hall and armouries	Wm. McDonald	Sept. 17, 1832	Engineman	Feb. 21, 1888	45 00	12	"	540 00	
Quebec	"	Examining warehouse	D. P. Kennedy	Feb. 9, 1865	Engineer	April 1, 1897	75 00	12	"	900 00	
"	"	"	T. P. McLaughlin	Aug. 25, 1871	Fireman	Aug. 26, 1892	45 00	12	"	540 00	
"	"	Culler's office	James O'Neil	" 15, 1861	"	" 1, 1894	45 00	12	"	540 00	
"	"	Custom-house	John R. Mountain	Nov. 1, 1848	"	Nov. 10, 1888	45 00	12	"	540 00	
"	"	Post office	J. Roy	Feb. 25, 1836	Caretaker	Sept. 1, 1897	12 50	12	"	150 00	
Rimouski	"	"	H. G. Lepage	Dec. 20, 1853	"	Nov. 1, 1897	33 33	12	"	400 00	
Richmond	"	"	H. Demarais	July 14, 1869	"	May 1, 1898	12 50	12	"	150 00	
Sherbrooke	"	"	O. Deseve	Aug. 8, 1848	"	April 2, 1898	33 33	12	"	400 00	
Sorel	"	"	C. Robitaille	Jan. 22, 1848	"	Sept. 1, 1897	33 33	12	"	400 00	
St. Henri	"	"	A. C. A. Bisonnette		"	March 4, 1895					
St. Hyacinthe	"	Public building	F. X. Tétrault	Nov. 8, 1846	Fireman	Aug. 5, 1893	33 33	12	months	400 00	
St. Johns	"	Post office	L. Forrant	Jan. 21, 1849	Caretaker	April 14, 1897	29 16	12	"	350 00	
"	"	"	Wm. Comper	May 20, 1826	Watchman	Dec. 28, 1881	12 50	12	"	150 00	
St. Jérôme	"	Public building	A. Beaudry	June 22, 1849	Caretaker	Nov. 3, 1896	4 16	12	"	50 00	
Three Rivers	"	Custom-house	Ph. Gravel	" 3, 1828	"	Feb. 1, 1891	25 00	12	"	300 00	
"	"	Post office	A. Gauthier	July 2, 1850	"	" 1, 1898	33 33	12	"	400 00	
Amherstburg	Ont.	"	R. Elliott	Aug. 22, 1835	"	May 7, 1897	33 33	12	"	400 00	

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Continued.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
						$ cts.		$ cts.
Almonte ..... Ont.	Post office.....	Wm. Moulton	March 23, 1839	Caretaker.....	Jan. 29, 1891	33 33	12 months..	400 00
Arnprior..... "	Public building.....	R. B. McCreary	.....	"	March 15, 1899	33 33	12 " ..	400 00
Brockville..... "	Post office.....	W. H. Moore.....	Jan. 1, 1846	"	Jan. 8, 1896	33 33	12 " ..	400 00
Brantford..... "	"	John Squire	April 24, 1842	"	Oct. 27, 1880	50 00	12 " ..	600 00
Barrie..... "	"	R. D. Hill.....	Nov. 1, 1857	"	June 26, 1896	33 33	12 " ..	400 00
Belleville..... "	"	J. P. Reeves.....	" 27, 1820	"	Oct. 17, 1883	50 00	12 " ..	600 00
Berlin..... "	"	.....	.....	"	.....	33 33	12 " ..	400 00
Brampton..... "	"	James McBride.....	Oct. 5, 1840	"	Jan. 29, 1891	33 33	12 " ..	400 00
Carleton Place..... "	"	Jas. F. Halfpenny ..	April 17, 1858	"	May 13, 1892	25 00	12 " ..	300 00
Chatham..... "	"	W. W. Mitchell.....	May 25, 1848	" &c	Jan. 7, 1885	29 16	12 " ..	350 00
Cornwall..... "	"	R. Conroy	Nov. 6, 1848	"	April 1, 1897	33 33	12 " ..	400 00
Cayuga..... "	"	G. A. Gibson	May 29, 1861	"	Sept. 3, 1891	4 16	12 " ..	50 00
Cobourg..... "	"	H. J. Payne.....	Jan. 31, 1854	"	April 24, 1890	33 33	12 " ..	400 00
Galt..... "	"	Wm. Kilgour.....	March 3, 1857	"	Sept. 23, 1886	33 33	12 " ..	400 00
Guelph..... "	"	Robert Higham.....	May 20, 1834	"	Oct. 29, 1889	33 33	12 " ..	400 00
Gananoque..... "	"	T. P. Richardson	Feb. 25, 1834	"	May 1, 1889	.....	.....	.....
Goderich ..... "	" &c	G. Bissett	April 14, 1851	"	Sept. 1, 1897	29 16	12 months..	350 00
Hamilton ..... "	Dominion building.....	Alfred Bernard.....	Dec. 27, 1847	"	Dec. 10, 1894	50 00	12 " ..	600 00
" ..... "	"	J. Wigglesworth.....	Aug. 7, 1863	Fireman	Oct. 1, 1896	40 00	8 " ..	320 00
" ..... "	"	Thos. Nicholson.....	Dec. 17, 1857	Engineer	March 2, 1887	50 00	12 " ..	600 00
" ..... "	Drill hall.....	H. Morris.....	Sept. 25, 1849	Fireman	Dec. 6, 1897	45 00	8 " ..	360 00
Kingston..... "	Military college.....	Wm. Johnston.....	" 12, 1842	Engineer	May 31, 1881	65 00	12 " ..	780 00
" ..... "	"	M. Madden.....	Dec. 22, 1838	Fireman	Oct. 12, 1878	55 00	12 " ..	660 00
London ..... "	Custom-house	M. Mulkern.....	Sept. 4, 1837	Engineman.....	Sept. 18, 1888	50 00	12 " ..	600 00
" ..... "	Post office.....	Wm. Greer.....	Oct. 12, 1839	Caretaker.....	March 16, 1884	33 33	12 " ..	400 00
" ..... "	"	John Price.....	" 6, 1836	Engineer	Jan. 14, 1884	50 00	12 " ..	600 00
Lindsay ..... "	" and C.-house...	Wm. Galbraith	Jan. 8, 1844	Caretaker.....	Nov. 16, 1893	33 33	12 " ..	400 00
Napanee..... "	" " ...	R. Webster.....	July 20, 1846	"	April 1, 1898	33 33	12 " ..	400 00
Niagara Falls..... "	"	Wm. J. Sheppard...	Jan. 4, 1854	"	Jan. 15, 1897	33 33	12 " ..	400 00
Orangeville..... "	"	John Wilkins.....	May 29, 1830	"	Sept. 15, 1886	33 33	12 " ..	400 00
Orillia..... "	"	John Frawley.....	March 14, 1844	"	Nov. 1, 1898	15 00	12 " ..	180 00
Peterborough..... "	"	John Irwin.....	May 17, 1842	"	June 8, 1887	41 66	12 " ..	500 00
" ..... "	Custom-house.....	Wm Taylor.....	.....	"	Jan. 26, 1889	25 00	12 " ..	300 00
Petrolea..... "	Post office.....	Chas. McRitchie...	March 29, 1853	"	Feb. 1, 1894	33 33	12 " ..	400 00

Port Colborne	"	"	Wm. Armstrong	Sept.	9, 1846	"	June	11, 1888	20 00	12	"	240 00
Port Hope	"	"	Levi Reynolds	Feb.	15, 1839	"	Nov.	17, 1885	33 33	12	"	400 00
Port Arthur	"	Public building	John Whitehead	April	15, 1839	"	Sept.	11, 1893	25 00	12	"	300 00
Pembroke	"	"	Samuel Hamilton	June	4, 1834	"	Oct.	29, 1890	33 33	12	"	400 00
Prescott	"	Post office	R. Birks	April	6, 1822	"	May	1, 1899	33 33	12	"	400 00
Stratford	"	" &c	J. H. Roberts	May	1, 1847	Engineer	Feb.	7, 1884	50 00	12	"	600 00
St. Catharines	"	"	Louis Reno	Oct.	24, 1842	Caretaker	"	27, 1897	33 33	12	"	400 00
St. Thomas	"	"	James Russell	Sept.	15, 1832	"	Sept.	4, 1885	33 33	12	"	400 00
Strathroy	"	Public bullding	Wm. J. Johnston	May	12, 1840	"	Oct.	25, 1890	33 33	12	"	400 90
Smith's Falls	"	"	R. W. Lewis	Aug.	19, 1863	"	Jan.	8, 1896	25 00	12	"	300 00
Toronto	"	Dominion buildings	W. J. Smith	Nov.	18, 1840	Foreman engineer	Dec.	9, 1897	100 00	12	"	1,200 00
"	"	Inland revenue building	C. H. Baillie	Sept.	22, 1852	Fireman	Jan.	13, 1891	50 00	12	"	600 00
"	"	Custom-house	Fred. Faragher	Oct.	16, 1865	"	Nov.	1, 1889	50 00	12	"	600 00
"	"	Examining warehouse	James Cosgrove	Feb.	10, 1844	Engineer	Dec.	28, 1874	65 00	12	"	780 00
"	"	"	Ed. Appleton	Sept.	26, 1864	Fireman	Sept.	23. 1886	55 00	12	"	660 00
"	"	"	Alexander Dey	"	27, 1863	Hoist attendant	Dec.	1, 1887	50 00	12	"	600 00
"	"	"	Wm. Chenery	Dec.	19, 1851	"	"	1, 1887	50 00	12	"	600 00
"	"	"	W. J. Slean	July	5, 1855	"	"	2, 1888	50 00	12	"	600 00
"	"	"	James Richardson	Feb.	23, 1831	Watchman	Sept.	3, 1888	46 50	12	"	558 00
"	"	Post office	J. Somers	April	8, 1835	Engineer	Oct.	9, 1897	45 00	8	"	360 00
"	"	"	Geo. Grunions	March	14, 1867	Fireman	"	1, 1898	45 00	8	"	360 00
"	"	"	George Letray	May	20, 1858	"	Nov.	1, 1896	45 00	8	"	360 00
"	"	Drill hall	Richard Eyre	Oct.	11, 1849	"	Mar.	25, 1895	45 00	12	"	540 00
"	"	"	D. Glionna			"	Oct.	1, 1898	45 00	8	"	360 00
"	"	Examining warehouse	F. C. McWhirter	Nov.	16, 1863	Watchman	Sept.	11, 1897	46 50	12	"	558 00
Trenton	"	Public building	David Allen	May	13, 1844	Caretaker	Aug.	31, 1889	33 33	12	"	400 00
Windsor	"	Post office	I. Belleperdie	Oct.	26, 1848	Engineman	Dec.	24, 1897	50 00	12	"	600 00
"	"	"	W. Curtis	March	6, 1844	Caretaker	Nov.	9, 1880	33 33	12	"	400 00
Walkerton	"	Public building	T. Gibson	Aug.	14, 1838	"	"	1, 1897	50 00	8	"	400 00
Brandon	Man.	"	T. Giles	Mar.	30, 1843	"	Aug.	1, 1897	40 00	12	"	480 00
Portage la Prairie	"	"	E. McNeil			"	Oct.	13, 1898	33 33	12	"	400 00
Winnipeg	"	Post office	J. R. Alexander	Aug.	19, 1852	Engineman	Jnne	1, 1888	70 00	12	"	840 00
"	"	"	Patrick Dillon	Mar.	17, 1849	Fireman	Jan.	1, 1889	45 00	12	"	540 00
"	"	"	Joseph Coutu	May	10, 1843	Hoist attendant	Mar.	16, 1887	45 00	12	"	540 00
"	"	"	Joseph Gagnier	April	11, 1853	Watchman	June	7, 1892	45 00	12	"	540 00
Calgary	N.W.T.	Public building	G. L. Fraser	Oct.	20, 1851	Caretaker	Aug.	1, 1894	40 00	12	"	480 00
"	"	Court-house	E. N. Brown	Mar.	8, 1845	"	Jan.	24, 1891	45 00	12	"	540 00
Edmonton	"	Land and registry office	R. Wylie	July	7, 1859	"	June	21, 1894	33 33	12	"	400 00
Lethbridge	"	Court house and C.-house	Robert Sage	Oct.	15, 1849	"	Aug.	26, 1894	35 00	12	"	420 00
Moosomin	"	" "	J. C. Jopp	Jan.	6, 1848	"	April	29, 1897	45 00	12	"	540 00
Moosejaw	"	" "	R. Smail	July	21, 1865	"	Nov.	21, 1898	33 33	12	"	400 00
Macleod	"	"	John Ryan	June	24, 1827	"	"	1, 1893	14 58	12	"	175 00
Prince Albert	"	" and jail	Geo. D. Northgraves	May	20, 1838	"	June	14, 1887	33 33	12	"	400 00
"	"	" "	J. Savard	Aug.	14, 1859	Fireman	Nov.	11, 1897	40 00	8	"	320 00
"	"	Land and registry office	George Cassie	Jan.	13, 1833	Caretaker	Aug.	25, 1893	33 33	12	"	400 00
Regina	"	Court house & C.-house	P. McAra	Mar.	24, 1840	"	"	1, 1889	45 00	12	"	540 00
"	"	" &c	Jas. McLachlan	Dec.	9, 1840	Fireman	Oct.	3, 1898	40 00	12	"	480 00
Wolseley	"	"	Charles Taylor	June	11, 1844	Caretaker	"	2, 1895	45 00	12	"	540 00
Nanaimo	B.C.	Post office	J. Thompson	Sept.	2, 1836	"	May	1, 1897	50 00	12	"	600 00
New Westminster	"	"	Jno. McMurphy	Aug.	2, 1812	"	Oct.	1, 1834	50 00	12	"	600 06

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at the Dominion Public Buildings, &c.—*Continued.*

Place.	Building.	Name.	Date of Birth.	Position.	Date of Appointment.	Monthly Salary.	Time employed each Year.	Yearly Salary.
Victoria..... B C.	Public building (old)....	W. H. Bailey.....	May 7, 1865	Caretaker.....	July 1, 1894	50 00	12 months..	600 00
" ..... "	New Dominion building.	Wm. McKay.....	Dec. 31, 1857	"	Feb. 4, 1898	50 00	12 " ..	600 00
Vancouver..... "	Public building.....	Atwell King.....	April 6, 1843	"	Aug. 25, 1893	33 33	12 " ..	400 00
Victoria..... "	Dominion building....	Wm. McRay.....	Dec. 31, 1857	"	Feb. 4, 1898	50 00	12 " ..	600 00
" ..... "	"	A. Johnson.....	.....	Asst. caretaker....	April 1, 1899	45 00	12 " ..	540 00
" ..... "	"	J. D. Milne.....	Oct. 12, 1840	Fireman.....	Oct. 4, 1899	45 00	12 " ..	540 00
" ..... "	"	J. McMillan.....	July 8, 1876	Elevatorman.....	Nov. 27, 1899	45 00	12 " ..	540 00

TABULAR STATEMENT

SHOWING THE DATE OF

THE CLOSING AND OPENING OF NAVIGATION

AT THE PRINCIPAL PORTS OF CANADA

ON THE SEABOARD, THE RIVER AND GULF OF ST. LAWRENCE, AND ON THE GREAT LAKES

1898-99

OPENING AND CLOSING OF NAVIGATION.

STATEMENT showing the Date of the Closing and Opening of Navigation at the undermentioned Ports of Canada, in 1898 and 1899.

Port.	Province.	Location.	Date of Closing 1898-9.	Date of Opening 1899.	Remarks.
Arichat	Nova Scotia	Isle Madam	Jan. 28, 1899.	Mar. 16.	
Bathurst	New Brunswick.	Baie des Chaleurs	Dec. 10, 1898.	May 1.	
Belleville	Ontario	Lake Ontario	Nov. 28, 1898.	April 17.	Bay clear of ice April 17, 1899; first vessel arrived April 27, 1899.
Campbellton	New Brunswick.	Baie des Chaleurs	Dec. 14, 1898.	May 1.	Ferry boat crossed from Cross Point December 14, 1898.
Charlottetown	P. E. Island	Gulf St. Lawrence	" 31, 1898.	April 17.	SS. Princess sailed for Pictou, N.S., April 17, 1899, arriving in five hours; SS. Stanley arrived from Pictou April 17, 1899.
Collingwood	Ontario.	Georgian Bay, Lake Huron	" 3, 1898.	" 29.	
Gaspé	Quebec	Gulf St. Lawrence	" 27, 1898.	May 1.	If there were steamer communication harbour could be kept open till end of January at least.
Georgetown	P. E. Island	"	Jan. 31, 1899.	April 14.	
Goderich	Ontario.	Lake Huron	Dec. 14, 1898.	" 23.	
Kincardine	"	"	" 1, 1898.	May 10.	Ice light to middle of January, then severe weather.
Kingston	"	Lake Ontario	" 30, 1898.	April 10.	
Louisburg	Nova Scotia	Atlantic Ocean			Port not closed. During March the drift ice stopped vessels, but this was rare during 1899.
Montreal	Quebec	River St. Lawrence	Dec. 1, 1898.	April 24.	
North Rustico	P. E. Island	Gulf St. Lawrence	" 25, 1898.	" 15.	
North Sydney, C.B.	Nova Scotia	Atlantic Ocean	Feb. 1, 1899.	" 1.	SS. Bruce made trips during the whole of 1898-9.
Owen Sound	Ontario.	Georgian Bay, Lake Huron	Dec. 12, 1898.	" 21.	
Percé	Quebec	Gulf St. Lawrence	Jan. 20, 1899.	" 10.	Ice between Bonaventure Island and Percé for about three weeks, floating ice impeded navigation for rest of the time.
Pictou	Nova Scotia	"	" 2, 1899.	" 14.	Harbour open to April 10, 1899. SS. Stanley began daily trips to Prince Edward Island. Steam ferry boat running between Pictou and Pictou Landing, April 14, 1899. Steamer Princess arrived from Charlottetown April 17. SS. Tram arrived from Dublin, April 22.
Port Arthur	Ontario.	Lake Superior	Dec. 10, 1898.	May 5.	
Port Dover	"	Lake Erie	" 10, 1898.	Mar. 5.	Ferry boat made last trip January 22, 1899, and made first trip April 18, 1899.
Port Hope	"	Lake Ontario			Open all winter.
Port Stanley	"	Lake Erie	Dec. 13, 1898.	Mar. 20.	A steam ferry boat runs to Conneaut, O., all winter, although not coming into the harbour proper, going to slip west of harbour.
Quebec	Quebec	River St. Lawrence			Navigation open all winter. Ferry steamer crossed all winter between Quebec and Levis. Last ocean steamer left Quebec November 23, 1898; last Montreal steamer left Nov. 25, 1898. Marie Josephine left for Anticosti April 4, 1899. Steamers St. Marnock and Freeman arrived at Indian Cove from sea April 22, and left for Montreal April 23.
Richibucto	New Brunswick.	Gulf St. Lawrence	Dec. 25, 1898.	April 25.	
Rimouski	Quebec	"	" 1, 1898.	" 1.	
t. Ann's	Nova Scotia	Atlantic Ocean	Feb. 1, 1899.	" 29.	

St. John's	Quebec	River Richelieu	Nov. 29, 1898.	" 20.	Canal opened May 1. River between St. John and Lake Champlain clear of ice April 29, and ice in the lake broke up after that date.
St. Peter's, C.B.	Nova Scotia	Atlantic Ocean	Jan. 19, 1899.	Feb. 10.	The harbour is frozen on rare occasions. The canal, Bras d'Or Lake, freezes about January 1, and opens April 15.
Sault Ste. Marie	Ontario	Lake Superior	Dec. 11, 1898.	April 29.	
Shediac	New Brunswick.	Gulf St. Lawrence	" 14, 1898.	" 27.	
Sorel	Quebec	River Richelieu	" 6, 1898.	" 26.	
Summerside	P. E. Island	Gulf St. Lawrence	" 14, 1898.	" 26.	
Sydney, C.B.	Nova Scotia	Atlantic Ocean	Jan. 11, 1899.	" 22.	Winter very severe and spring late; water part of harbour closed about a month. A strong icebreaker could keep ice broken all winter, unless north winds brought drift ice.
Tadousac	Quebec	River St. Lawrence			No ice interfered with navigation.
Three Rivers	"	"	Nov. 26, 1898.	April 28.	
Toronto	Ontario	Lake Ontario	Dec. 13, 1898.	" 8.	Bay clear of ice March 15, but froze over on 20th and held till March 24. Lakeside arrived on March 30, making regular trips from that date. Bay clear on April 8.
Wiarton	Ontario	Georgian Bay, Lake Huron.	Dec. 13, 1898.	April 19.	
Windsor	"	Detroit River	" 18, 1898.	" 1.	The railway and ferry boats crossed every day. The Imperial cleared outside of the River December, 18, 1898, and first clearance, Str. Imperial, April 1, 1899.
Winnipeg	Manitoba	Lake Winnipeg	Nov. 15, 1898.	Mar. 16.	
Wood Islands	P. E. Island	Gulf St. Lawrence	Dec. 27, 1898.	April 15.	Navigation carried on if straits clear of drift ice. No customs officer here.
York Factory	N. W. Ter.	Hudsons' Bay	Nov. 3, 1897.	May 28, '98	River full of ice Oct. 10, 1897. Came milder again till 27th, when all boats were taken out of river owing to running ice. Ice moved out May 5, 1898; water fell to ordinary level so that a solid wall of ice stretched across mouth of river on the 20th of same month.
York Factory.	N. W. Ter.	Hudsons' Bay	Nov. 8, 1898.	May 31, '99	River choked with ice October 8, 1898, but cleared on 11th.

OFFICIAL CORRESPONDENCE

DEPARTMENT OF PUBLIC WORKS

FROM JULY 1, 1867, TO JUNE 30, 1899.

OFFICIAL CORRESPONDENCE.

LETTERS Received and Sent from July 1, 1867, to June 30, 1899.

Years.	Received.	Sent.
1867—From July 1 to December 31	2,075	1,511
1868 " January 1 to December 31	3,498	2,317
1869 " " "	3,448	2,171
1870 " " "	4,961	3,185
1871 " " "	6,268	3,983
1872 " " "	8,333	4,428
1873 " " "	10,072	5,707
1874 " " "	9,800	5,043
1875 " " "	9,006	5,006
1876 " " "	7,971	4,773
1877 " " "	7,517	4,425
1878 " " "	6,886	4,021
1879 " " to October 6	7,186	4,547
1879 " October 7 to December 31	2,033	810
1880 " January 1 "	8,451	4,410
1881 " " "	9,599	5,529
1882 " " "	10,505	5,699
1883 " " "	11,633	6,227
1884 " " "	13,114	6,903
1885 " " "	8,977	5,321
1886 " " "	9,644	5,352
1887 " " to June 30	4,866	2,735
1887 " July 1 " 1888	10,493	6,343
1888 " " " 1889	10,522	7,042
1889 " " " 1890	10,098	7,448
1890 " " " 1891	10,576	7,286
1891 " " " 1892	11,637	6,700
1892 " " " 1893	11,720	6,220
1893 " " " 1894	9,517	6,028
1894 " " " 1895	10,190	5,148
1895 " " " 1896	10,223	5,573
1896 " " " 1897	11,404	5,033
1897 " " " 1898	9,640	5,250
1898 " " " 1899	9,639	4,784

NUMBER of Cheques sent by Accountant to Secretary's Branch and mailed through the latter, from 1882 to 1899.

Year.	——	No.
1882	From September 22 to June 30, 1883	1,566
1883	" July 1 " 1884	3,366
1884	" " " 1885	3,298
1885	" " " 1886	3,466
1886	" " " 1887	4,196
1887	" " " 1888	4,692
1888	" " " 1889	4,960
1889	" " " 1890	4,819
1890	" " " 1891	5,376
1891	" " " 1892	5,400
1892	" " " 1893	7,174
1893	" " " 1894	7,792
1894	" " " 1895	8,745
1895	" " " 1896	9,849
1896-7	Records incomplete; partially destroyed by fire, February 11, 1897	
1897-8	From July 1 to June 30, 1898	10,858
1898-9	" " " 1899	10,495

CHEQUES issued by Finance Department and mailed from Secretary's Branch.

Year.	——	No.
1885	From April 1 to June 30, 1885	245
1885	" July 1 " 1886	954
1886	" " " 1887	1,158
1887	" " " 1888	918
1888	" " " 1889	887
1889	" " " 1890	908
1890	" " " 1891	790
1891	" " " 1892	820
1892	" " " 1893	822
1893	" " " 1894	868
1894	" " " 1895	594
1895	" " " 1896	267
1896-7	Records incomplete; partially destroyed by fire, February 11, 1897	
1897-8	From July 1 to June 30, 1898	332
1898-9	" " " 1899	213

LETTERS Received and Sent, Chief Architect's Office, from January 1, 1880, to June 30, 1899.

Year.	Received.	Sent.
1880—From January 1 to June 30		1,273
1880 " July 1 " 1881		2,943
1881 " " " 1882		2,859
1882 " " " 1883	3,538	4,600
1883 " " " 1884	3,860	6,004
1884 " " " 1885	4,500	6,718
1885 " " " 1886	6,075	6,450
1886 " " " 1887	6,816	6,380
1887 " " " 1888	6,947	6,870
1888 " " " 1889	6,484	7,667
1889 " " " 1890	7,448	6,578
1890 " " " 1891		7,751
1891 " " " 1892	6,113	4,260
1892 " " " 1893	7,428	6,453
1893 " " " 1894	6,900	*4,517
1894 " " " 1895	7,538	†5,327
1895 " " " 1896	7,843	5,783
1896 " " " 1897	10,700	8,200
1897 " " " 1898	10,867	8,547
1898 " " " 1899	10,913	8,762

* The exact number of letters received cannot be accurately given, but would bear about the same proportion to the letters sent as last year.

† The decrease in the number of letters sent, is due to a change made on January 1, 1894, in the manner of transmitting accounts to the secretary. Previous to that date a letter accompanied each account, but now a bundle of accounts goes with each letter.

SESSIONAL PAPER No. 9

LETTERS Sent from Chief Engineer's Office, from January, 1880, to June 30, 1899.

Year.	——	No.
1880	From January 10, to June 30	418
1880	" July 1, " 1881	1,795
1881	" " " 1882	2,352
1882	" " " 1883	2,651
1883	" " " 1884	3,611
1884	" " " 1885	3,119
1885	" " " 1886	2,867
1886	" " " 1887	3,281
1887	" " " 1888	3,552
1888	" " " 1889	4,229
1889	" " " 1890	3,374
1890	" " " 1891	3,948
1891	" " " 1892	4,009
1892	" " " 1893	4,232
1893	" " " 1894	3,966
1894	" " " 1895	4,603
1895	" " " 1896	4,239
1896	" " " 1897	4,994
1897	" " " 1898	4,696
1898	" " " 1899	5,277

NOTE.—The letters, including returns, received in the Chief Engineer's Office may be estimated at the rate of two received to one sent.

DOMINION OF CANADA

ANNUAL REPORT

OF THE

DEPARTMENT OF RAILWAYS AND CANALS

FOR THE FISCAL YEAR

FROM JULY 1, 1898, TO JUNE 30, 1899

SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF THE REVISED STATUTES OF CANADA, CHAPTER 37, SECTION 28

PRINTED BY ORDER OF PARLIAMENT

OTTAWA
PRINTED BY S. E. DAWSON, PRINTER TO THE QUEEN'S MOST EXCELLENT MAJESTY
1900

[No. 10—1900]

To His Excellency the Right Honourable the Earl of Minto, G.C.M.G.,
&c., &c., &c., Governor General of Canada, &c., &c., &c.

MAY IT PLEASE YOUR EXCELLENCY :—

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of Railways and Canals, of the Dominion of Canada, for the past fiscal year, from July 1, 1898, to June 30, 1899.

All of which is respectfully submitted

ANDREW G. BLAIR,
Minister of Railways and Canals.

OTTAWA, April 25, 1900.

CONTENTS.

[*For Index see end of Volume.*]

MAPS

ACCOMPANYING REPORT OF THE DEPUTY MINISTER.

RAILWAY SYSTEM.

1. General map of the Dominion.
2. Nova Scotia, Cape Breton, Prince Edward Island and part of New Brunswick.
3. New Brunswick and parts of Maine and Quebec.
4. do do do taking in Montreal.
5. Eastern Ontario and part of Quebec.
6. Western Ontario.
7. North of Lake Superior.
8. Lake Superior to Manitoba.
9. Manitoba and Assiniboia.
10. Assiniboia and Saskatchewan.
11. Assiniboia and Alberta to the Rocky Mountains.
12. British Columbia.

CANAL SYSTEM.

13. St. Lawrence, Ottawa, Rideau and Richelieu Canals.
14. Welland Canal.
15. Trent Navigation and Murray Canal.
16. Sault Ste. Marie Ship Canal, also St. Mary's Falls Canal, Michigan.

Map showing the exploration made on proposed railway to Yukon District.

ERRATA.

Part I, p. 34.—Line 13 from top, for 1,282 read **1,137** miles.

Part II, p. 7.—Lachine Canal, for total Staff read $1,336,849.46.

" 8.—Beauharnois Canal, for total Staff read $542,209.03.

" 12.—Cornwall Canal, for total Staff read $470,994.68.

" 16.—St. Anne Canal, for total Repairs read $80,728.75.

" 17.—Carillon and Grenville Canal, for total Staff read $442,905.49.

" 28.—Recapitulation—Expenditure on Canals, for total Capital read $76,396,658.41, and total Staff, $7,326,177.32.

29.—Hydraulic and other rents, Welland Canal, in column 'Accrued during the year ended June 30, 1899,' read $12,417.38; and Carillon and Grenville Canal, in column 'Balance due June 30, 1899,' read $2,110.00.

33.—Intercolonial Ry., for total 'Working Expenses' read $70,297,571.74; and for total 'Revenue received,' read $63,998,738.02; and for 'Amounts transferred to Cons. Fund,' read $88,363.18.

" 41.—Annapolis and Digby Ry., for total Capital read $660,682.59.

" 44.—Recapitulation—Railways and Canals.—Total revenue received to July 1, 1898, $30,530,494.85.

" 45.—For Subsidies Voted to June 30, 1899, to Kingston Napanee and Western Railway read $208,732.80.

" 45.—Insert 'Canadian Pacific Ry. Co.' before 'Crow's Nest,' and change Subsidies Voted to June 30, 1899, to $2,776,250.00.

" 45.—For total Subsidies Voted to June 30, 1899, to Grand Trunk Ry.—'Victoria Bridge,' read $199,599.57.

REPORT OF THE DEPUTY MINISTER.

To the Honourable
ANDREW G. BLAIR,
Minister of Railways and Canals.

SIR,—I have the honour to submit the annual report of the Department of Railways and Canals for the fiscal year ended June 30, 1899.

The annual reports of the 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 (Part II.) will be found statements showing the amounts expended during the past fiscal year in construction, repairs, and maintenance of the several works under the department; also statements showing total expenditure on each canal since its construction, on each of the Government railways, and on the Canadian Pacific Railway so far as the Government is concerned; also a statement showing the payments made, year by year, to subsidized railways, with the aggregates of such payments.

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.*

In an appendix (Part VI.) will be found a special statistical report, embodying returns for the fiscal year ended June 30, 1899, made by Canadian railway companies, as required by statute. This report gives information as to railroad operations in Canada, including the Government roads.

The general facts gathered from the compilation will be of interest.

The number of railways in actual operation, including the two Government roads, the Intercolonial and the Prince Edward Island Railways, was 153: some of these however, are amalgamated or leased; making the total number of controlling companies 84, not including the Government railways. The number of companies absorbed by amalgamation is 33, and the number of leased lines is 35.

The number of miles of completed railway was 17,358, an increase of 488 miles, besides 2,402 miles of sidings. The number of miles laid with steel rails was 17,180, of which 562 miles was double track. The number of miles in operation was 17,250.

*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 report of the Chief Engineer of the department covers works of construction up to November 1, 1899.

The paid-up capital amounted to $964,699,784, an increase of $23,402,747. The gross earnings amounted to $62,243,784, an increase of $2,528,679, and the working expenses aggregated $40,706,217, an increase of $431,328 compared with those of the previous year, leaving the net earnings $21,537,567, an increase of $960,011. The number of passengers carried was 19,133,365, an increase of 689,316, and the freight traffic amounted to 31,211,753 tons, an increase of 2,425,750 tons. The total number of miles run by trains was 52,215,207, an increase of 1,526,924. The accident returns show 20 passengers killed.

The Government expenditure on railways prior to and since the date of confederation (1867) amounts, on capital account, to $124,327,857.65 (including a payment of $25,000,000 to the Canadian Pacific Railway Co.) and for railway subsidies charged against the Consolidated Fund the further sum of $20,633,842.16, making a total expenditure of $144,961,699.81 In addition, there has been an expenditure since confederation, for working expenses of $76,726,244.05, covering the maintenance and operation of the Government roads, or a grand total of $221,687,943.86,* all of which, with the exception of $13,881,460.65, has been expended on railways during the past thirty-two years. The revenue derived from the Government roads during the same period amounts to $68,451,220.29.

CANADIAN PACIFIC RAILWAY.†

By the payment during the fiscal year of the sum of $233.67, the total amount, $579,255.20, awarded to the Canadian Pacific Railway Company in 1891 by the special arbitrators in respect of transferred works in British Columbia, and to be expended by the company, under Government supervision, in certain specified directions, has now been earned and paid. A report from the Chief Engineer will be found in Part I., p. 30, giving certain information in respect of this railway.

GOVERNMENT RAILWAYS IN OPERATION.

The several lines maintained by the Government are: The Intercolonial, the Windsor Branch (maintained only), and the Prince Edward Island Railways.

Details respecting these railways and their operations will be found in the appendices, Part I., containing reports from the Chief Engineer of the department, the General Manager of Government Railways, and the officials of these roads.

The gross earnings of all the Government roads for the past fiscal year, 1898-9, amounted to $3,945,817.40, and compared with those of the preceding year show an increase of $631,970.30. The gross working expenses amounted to $3,906,612.31, an increase of $329,363.43.

The net profit on the operations of the year was $39,205.19.

The above figures include the sum of $210,000, rental of leased lines for the extension of the Intercolonial into Montreal.

*This does not include an annual subsidy of $186,600 to the Atlantic and North-west Railway Company for 20 years from July 1, 1889, nor interest at 5 per cent on the sum of $2,394,000, payable to the province of Quebec for the line from Quebec to Ottawa, which sum has been transferred to the Public Debt.

†A summarized statement showing the transactions of the government with the company will be found in the Annual Reports of this department for the years 1886-7 and 1895-6, the road having been opened for through traffic in June, 1886.

SESSIONAL PAPER No. 10

INTERCOLONIAL RAILWAY.

On March 1, 1898, the operations of the Intercolonial were extended to Montreal by means of leases obtained from the Grand Trunk and Drummond County Railway Companies, making an addition of 169·81 miles to the operation of the government line, its length being 1,314·67 miles, instead of 1,145.

Consequently, in the fiscal year 1897-8 a new element was introduced into the Intercolonial Railway accounts by the payment of rental during four months for these leased lines, and in order not to complicate the comparison of averages of that with those of the preceding year, the rental was treated as a separate matter, not entering into the ordinary statements of expenditure on the road. This led to some apparent discrepancies, as was explained in a foot-note on page XI. of my report.

This year (1898-9) the accountant of the railway has dealt with the rental as an addition to the ordinary working expenses (page 66), and in his comparative statement of averages (page 73) gives such averages, for each year, both with the rental included, and also with rental omitted. The figures of my present report as Deputy are based on his statements with the rentals included and the differences which have resulted from the use by the General Manager and by the Chief Engineer of the department of figures from which it was omitted will, next year, cease to exist. Meantime, this explanation will cover any seeming discrepancy of statement in the matter.

CAPITAL ACCOUNT.

During the fiscal year there was an addition of $1,081,929.94 to the Capital Account expenditure, making the total expenditure chargeable to 'Capital,' on the whole road as amalgamated under the Act 54-55 Vic., ch. 50 (1891), up to June 30, 1899, $56,750,843 89.

The additions made during the year included $63,945.04 for increased accommodation at Halifax, $195,534.59 for increased accommodation at St. John, $20,000 for increased accommodation at Moncton, $21,258.68 for the extension to deep water at North Sydney, $17,358.96 to build an elevator at St. John, $41,203.83 to build an elevator at Halifax, $49,990.39 to strengthen bridges, and $619,999.26 for rolling stock. The report of the General Manager (Part I., p. 59) shows and explains these several items.

REVENUE ACCOUNT.

The gross earnings of the year amounted to $3,738,331.44, an increase of $620,661.59, and the working expenses to $3,675,686.21 (including $210,000 rent paid for the extension into Montreal), being an increase in comparison with the previous year (when $70,000 was paid for such rental), of $348,037.70; the excess of earnings over expenditure being $62,645.23, against an excess of expenditure over earnings in the previous year of $209,978.66, or a betterment of $272,623.89.

Comparing the earnings with those of the previous year, the passenger traffic produced $1,167,453.16 or 31·23 per cent of the gross earnings, an increase of $113,588.52; the freight traffic amounted to $2,348,096.58 or 62·57 per cent of the gross earnings, an

increase of $490,356.52, and the carriage of mail and express freight produced $222,-781.70 or 5·96 of the gross earnings, an increase of $16,716.55. The earnings per mile were $2,843.55,* an increase of $249.02.

GENERAL OBSERVATIONS.

A comparison of the traffic of the past fiscal year with that of the previous year shows certain interesting features.

The number of passengers carried was 1,603,095, an increase of 74,651, and 1,750,-761 tons of freight were carried, an increase of 316,185 tons.

Of flour and meal 1,157,250 barrels were carried, an increase of 169,842. Of grain 2,595,353 bushels were carried, an increase of 1,043,981; of this 30,000 bushels was for shipment at Halifax. Lumber showed an increase of 52,460,215 superficial feet, the total quantity carried being 306,554,031 feet. There was an increase of 20,520 in the number of live stock, of which 109,821 head were carried. 494,206 tons of coal, an increase of 124,257 tons, were carried. Of raw sugar, none was carried. Of refined sugar, 26,164 tons, a decrease of 390 tons were carried. A total of 6,583 tons of fresh fish, a decrease of 1,747 tons, and a total of 5,474 tons of salt fish, an increase of 469 tons, were carried.

Of ocean borne goods, other than deals, to and from Europe via Halifax, the aggregate was 34,263 tons, an increase of 8,043 tons. Of this 31,555 tons was local traffic. In addition 82,260 tons of deals were carried.

In the winter of 1898–99 the removal of snow and ice entailed an expenditure of over $70,000, about $12,000 more than the cost the previous year.

The permanent way and all structures and works are in good order.

The train mileage (or number of miles run by trains) of the year was 4,881,695, an increase of 926,686 miles. The cost per train mile was 75·29 cents, 8·85 cents less than in the previous year.

The working expenses per mile of railway amounted to $2,795.90, an increase of $26.63 per mile.

The value of stores on hand at the close of the fiscal year, including fuel, rails and old material, was $553,177.72.

A number of interesting statistical and comparative tables and other information relating to the railway and the several features of its traffic during the past year and the previous year of its operation, will be found in the appended reports of the Chief Engineer of the department and of the officers of the road.

WINDSOR BRANCH.

This road is 32 miles in length. It extends from Windsor Junction, on the Intercolonial Railway, to Windsor.

This railway is operated by the Dominion Atlantic Railway Company, formerly the Windsor and Annapolis Railway Company. The company pay all charges in connection with the working of the traffic, two-thirds of the gross earnings being allowed them, the

*These figures are based on a mileage for 1898-99 of 1,314·67 miles and an average mileage of 1,201·63 n 1897-98.

Government taking the remaining one-third, and assuming all costs of maintenance of the road and works. This arrangement is carried out under an agreement dated December 13, 1892, which extends for a further term of 21 years, arrangements similar to those made in 1871.

All charges for superintendence and supervision of maintenance of works are borne by the Government; the duty of supervision being performed by the chief officers of the Intercolonial Railway.

The gross earnings of the Government (one-third of gross receipts) credited to this branch, amounted to $42,474.03, an increase of $5,247.39. The expenses of maintenance amounted to $12,873.09, a decrease of $5,308.54, leaving the profit to the Government $29,600.94.

The road has been maintained in good order. Details will be found in the appendices. (*See* Part I., p. 104.)

PRINCE EDWARD ISLAND RAILWAY.

CAPITAL ACCOUNT.

The total cost of the road and equipment chargeable to capital account at the close of the fiscal year was $3,790,107.26; there being an addition during the year of $22,000.00 on account of the shortening of the line between North Wiltshire and Colville, the purchase of a wharf at Mount Stewart, and rolling stock.

REVENUE ACCOUNT.

The gross earnings amounted to $165,012.03, and the working expenses to $218,053.01; the expenditure in excess being $53,040.98.

Compared with the previous year, the gross earnings show an increase of $6,061.42. The railway carried 129,667 passengers, an increase of 3,157, producing $65,383.11, an increase of $1,648.50. Of freight there were carried 57,968 tons, an increase of 429 tons, producing $75,888.52, an increase of $4,042.92, while the earnings from mails and sundries amounted to $19,740.40, an increase of $370.

Compared with the previous year, the working expenses were less by the sum of $13,365.73.

The train mileage (the number of miles run by trains) was 263,335, an increase of 10,441 miles.

The cost per mile run by trains was 82·80 cents, a decrease of 8·71 cents; and per mile of railway $1,038.35, a decrease of $63.64.

The value of stores on hand at the close of the fiscal year was $84,039.91.

The road, with its buildings and rolling stock, has been maintained in a satisfactory condition.

Details of operations will be found in the appendices (Part I., p. 109), including the reports of the superintendent and other officers.

SURVEY FOR A RAILWAY TO GIVE ACCESS TO THE YUKON DISTRICT.

In 1898 and 1899, in accordance with parliamentary provisions, surveying parties have been engaged in the work of endeavouring to find a feasible route for a railway, on Canadian territory entirely, to give communication with the Yukon District from a point on an existing Canadian railway, and also from a Canadian port on the Pacific coast, and the approximate cost of such a railway. Reports from the officers in charge of those surveys will be found printed in the appendices (Part I., p. 134) and a brief summary of the results obtained forms part of the chief engineer's report (Part I., p. 32) together with an explanatory sketch map.

GOVERNMENT ACTION AS TO SUBSIDIZED RAILWAYS.

NOTE.—The numbers within brackets after the title of the company refer to the lists of railways subsidized by Parliament, in Part III.

With regard to the several lines of railway subsidized by the Dominion, the following represents the action taken and the progress made, in so far as the Dominion Government is concerned; 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 end of the fiscal year, June 30, 1899, only.

The following shows the aggregate of the payments made on ordinary subsidy account since the system of subsidizing railway enterprises was commenced:

For the fiscal year	1883–84,	ended on June 30,	1884	$ 208,000 00
do	1884–85	do	1885	403,245 00
do	1885–86	do	1886	2,171,249 00
do	1886–87	do	1887	1,406,533 00
do	1887–88	do	1888	1,027,071 92
do	1888–89	do	1889	846,721 83
do	1889–90	do	1890	1,491,595 72
do	1890–91	do	1891	1,079,105 87
do	1891–92	do	1892	1,061,615 93
do	1892–93	do	1893	624,794 07
do	1893–94	do	1894	1,043,285 10
do	1894–95	do	1895	1,123,949 10
do	1895–96	do	1896	648,145 49
do	1896–97	do	1897	230,355 30
do	1897–98	do	1898	1,228,334 78
do	1898–99	do	1899	3,014,620 05
				$17,608,592 16

To the above there have to be added the following exceptional subsidies:

Canada Central Railway	1,525,250 00
Canadian Pacific Railway	25,000,000 00
" " extension	1,500,000 00
Western Counties Railway (Digby-Annapolis section)	500,000 00
Total subsidies paid up to June 30, 1899	$46,133,842 16

The above does not include the annual subsidy payable to the Atlantic and North-west Railway Company, nor the amount due to the province of Quebec for the railway between Ottawa and Quebec, which has now been transferred to the public debt. (*See* note on page 44 of the Accountant's statement, Part II.)

The following pages show, in alphabetical sequence, the position of those companies whose dealings with the Government in respect of subsidies are not yet closed. Reports of previous years give information as to companies whose subsidies have been fully earned and paid prior to July 1, 1898.

A tabulated statement of payments will be found in Part II., page 45, and a list of subsidy agreements entered into during the fiscal year in part IV., Page 2.

The several Subsidy Acts passed in each year from 1882 will be found in Part III. No subsidies were authorized in the sessions of 1895, 1896 and 1898.

Albert Southern Railway Company.

(See Annual Report of 1891-92.)

Atlantic and North-west Railway Company.

(See Annual Report of 1889-90.)

Baie des Chaleurs Railway Company.

(See Annual Report of 1895-96.)

Beauharnois Junction Railway Company.

(See Annual Report of 1895-96.)

Belleville and North Hastings Railway Company.

(See Annual Report of 1888-89.)

Boston and Nova Scotia Coal Company.

(See Annual Report of 1895-96.)

Brockville, Westport and Sault Ste. Marie Railway Company.

(See Annual Report of 1896-97.)

Brantford, Waterloo and Lake Erie Railway Company.

(See Annual Report for 1895-96.)

Buctouche and Moncton Railway Company.

(See Annual Report for 1893-94.)

Canada Atlantic Railway Company.

(See Annual Report for 1888-89.)

Canada Eastern Railway Company.

(See Annual Report for 1894-95.)

Canadian Pacific Railway Company.

Revelstoke to Arrow Lake.

(See Annual Report for 1896-97.)

Canadian Pacific Railway Company.

(Crow's Nest Pass Railway.)

(See No. 415.)

By the special Act 60-61 Vic., ch. 5 (1897), authority was given for the grant to the Canadian Pacific Railway Company, of a subsidy towards the construction of a railway from Lethbridge, through the Crow's Nest Pass, to Nelson, such subsidy being to the extent of $11,000 a mile, not exceeding in the whole $3,630,000. A contract for this work was entered into with the company, on September 6, 1897, the line to be completed to the South end of Kootenay Lake, by December 31, 1898, and to Nelson, by December 31, 1900. These dates were subsequently extended, by order in council, to June 30, 1900, and December 31, 1901, respectively. The total payments made up to June 30, 1899, amount to $2,776,250.

Cap de la Madeleine Railway Company.

(See Annual Report of 1896-97.)

Cape Breton Railway Extension Company.

(See Annual Report of 1895-96.)

Caraquet Railway Company.

(See Annual Report of 1888-89.)

Central Railway Company of New Brunswick.

(See Nos. 40, 143, 156, 205, 353 and 382.)

By the Act of 1884, 47 Vic., ch. 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 the 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 June 5, 1886, a contract was made with the Central Railway Company, on July 7, 1886, for a line from Salmon River, at the head of Grand Lake, to Norton, on the Intercolonial Railway; work to be completed by July 1, 1888. Certain work has been executed, but the contract obligations had not been carried out, and no portion of the subsidy was paid. The subsidy lapsed, but was revived by the Subsidy Act, 52 Vic., ch. 3 (1889.)

On December 1, 1890, a new contract was made with the company for this work under the Subsidy Act of 1889, the limit of subsidy being $128,000: this contract covered also a subsidy for 4½ miles, the limit of which was $14,400, authorized by the Act, 53 Vic., ch. 2, making a total subsidy of $142,400; the total length of road subsidized being 44½ miles. The date for completion was fixed as December 1, 1891.

By the Act 51 Vic., ch. 3, a grant as a subsidy to this company was authorized of used iron rails to the value $83,612.54, loaned to the St. Martin's and Upham Railway Company (which railway has been acquired by the Central Railway Company; the sale being approved by an Order in Council of November 15, 1887), the condition of the grant being that such rails should first be replaced by new steel rails. The new steel rails were substituted, and an Order in Council of October 18, 1889, authorized the transfer of the rails to the company.

By the Subsidy Act of 1894, 57-58 Vic., ch. 4, the grant of a subsidy, not exceeding $48,000, to this company was authorized for 15 miles of their railway from Chipman station to the Newcastle coal fields, and a contract for the work was made with the company on September 7, 1895.

By the Subsidy Act 60-61 Vic., ch. 4 (1897), the subsidy of 1894 for the said 15 miles was, in effect, revoted, with addition of 50 per cent of cost over $15,000 a mile, the total subsidy not to exceed $6,400 a mile.

Up to the end of the fiscal year 1891-92, there had been paid, including the value of the said rails, the sum of $159,251.54. During the past fiscal year the sum of $66,761 has been paid, making a total of $226,012.54 up to June 30, 1899.

Chatham Branch Railway Company.

(See Annnal Report of 1893-94.)

Chignecto Marine Transport Company.

(See Annual Report for 1894-95.)

Coast Railway Company of Nova Scotia.

(See No. 403.)

This company was incorporated by the Provincial Act of Nova Scotia, 56 Vic., ch. 154 (1893), to build a line of railway from Yarmouth to Lockeport; a subsequent Act, 59 Vic., ch. 103 (1896) extending its powers.

By the Dominion Subsidy Act 60–61 Vic., ch. 4 (1897), the grant of a subsidy to this company for 61 miles of their railway from Yarmouth to Port Clyde was authorized, the amount being $3,200 a mile, with an addition of 50 per cent on the cost in excess of $15,000 a mile, the whole subsidy not to exceed $6,400 a mile.

The company were admitted to contract on the 26th of August, 1897, the road to be completed by September 1, 1899.

During the year 1897–98 they were paid the sum of $90,400. No further payments have been made during the past fiscal year.

Cobourg, Northumberland and Pacific Railway Company.

(See Nos. 301, 249, 275 and 378.)

This company was incorporated by the Act 52 Vic., ch. 62 (1889), for the construction of a line of railway from Cobourg Harbour to the River Trent, to the Ontario and Quebec Railway, and to the mining regions of Marmora and Belmont.

By subsequent legislation in 1891, 1892 and 1894, the company's charter has been revived, and powers given for extension to the mineral lands of the county of Hastings, and for leasing the road to the Canadian Pacific Railway Company; the time for completion being extended to July 9, 1898.

By the Subsidy Act of 1890, assistance to the extent of $96,000 was authorized for 30 miles of the company's railway from Cobourg to the Ontario and Quebec Railway, and by the Subsidy Act of 1892, an additional subsidy of $60,800 was authorized for 19 miles. By the same Act the subsidy voted in 1890, was revoted.

A contract for the construction of the 49 miles subsidized was entered into with the company on June 16, 1894, the date for completion being fixed as August 1, 1896.

By an Order in Council of December 28, 1894, approval has been given to an agreement between the company and the Canadian Pacific Railway Company, dated June 30, 1894, for the lease of the road to the latter company, when completed, for a term of 999 years.

By the Subsidy Act of 1897, 60-61 Vic., ch. 4, in lieu of the subsidies granted by the Act of 1892, a subsidy was authorized for 50 miles of railway from Cobourg to the Ontario and Quebec Railway, namely $3,200 a mile, with a further subsidy of 50 per cent on cost in excess of $15,000 a mile, the total subsidy not to exceed $6,400 a mile.

Under date April 25, 1898, a contract was entered into with the company for this work, the date for completion to be July 1, 1900.

No payments have been made up to June 30, 1899.

Columbia and Kootenay Railway and Navigation Company,

(Leased to the Canadian Pacific Railway Company.)

(See Annual Report for 1891-92.)

Cornwallis Valley Railway Company.

(See Annual Report for 1891-92.)

Cumberland Railway and Coal Company.

(See Annual Report for 1894-95.)

Dominion Atlantic Railway Company.

(See Western Counties Railway Company.)

Dominion Eastern Railway Company.

(No. 399.)

By the Subsidy Act 60-61 Vic., ch. 4 (1897), the grant of a subsidy was authorized for a railway from Sunny Brae to Country Harbour, and from a point at or near Country Harbour Cross Roads to Guysborough, N.S., 65 miles, namely $3,200 a mile, with an addition of 50 per cent on the cost in excess of $15,000 a mile, not exceeding in all $6,400 a mile.

The Dominion Eastern Railway Company having applied, they were admitted to contract on March 25, 1898, for the work so subsidized, the date for completion being fixed as July 1, 1901. No payments have been made up to June 30, 1899.

Dominion Lime Company.

(See Annual Report for 1888-89.)

Dominion Coal Company.

(See Annual Report for 1895-96.)

Drummond County Railway Company.

(See Nos. 99, 175, 214, 292, 339 and 406.)

SESSIONAL PAPER No. 10

By the Railway Subsidy Act of 1888, 50-51 Vic., ch. 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, Quebec.

Under the authority of an Order in Council of November 12, 1887, a contract was made with the company on December 1, 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 August 1, 1891.

On May 2, 1889, the company were admitted to contract for the balance, 17½ miles, of the 30 miles subsidized.

By the Subsidy Act of 1889, 52 Vic., ch. 3, the company were further subsidized for 4½ miles from the end of the line already subsidized, to Ball's Wharf, on the River St. Lawrence, to the extent of $14,400, and were admitted to contract on January 21, 1890.

By the Subsidy Act, 53 Vic., ch. 2 (1890), authority was given for the grant of a subsidy, the limit of which was $76,800, for 24 miles of the railway of the company from Drummondville to Ste. Rosalie. Under date of February 2, 1891, the company were admitted to contract for this work.

By the Subsidy Act, 55-56 Vic., ch. 5 (1892), authority was given for the grant of a subsidy to the company for 4 6/10 miles from Ball's Wharf, to Ste. Rosalie Junction, not exceeding $14,720.

By the Subsidy Act, 57-58 Vic., ch. 4 (1894), authority was given for the grant of a subsidy to this company for 30 miles of railway from St. Leonard northerly towards a junction with the Intercolonial at Chaudière Junction; the limit being fixed at $96,000, and a contract for the work was made with the company on November 14, 1894.

By the Subsidy Act, 60-61 Vic., ch. 4 (1897), the grant of a subsidy to this company of $3,200 a mile for 42½ miles from Moose Park to Chaudière was authorized, with an addition of 50 per cent on the cost exceeding $15,000 a mile, the amount of such subsidy to be refunded to the Government in the event of its purchasing or leasing for a term of years their railway from Ste. Rosalie to Chaudière River. A contract was made with the company for this work on December 13, 1897; work to be completed by September 1, 1898.

Under an agreement dated February 25, 1898, the Government, in connection with the extension of the Intercolonial Railway traffic into Montreal, leased from the company their line from Ste. Rosalie to Chaudière, for the period between March 1, and June 30, 1898, with option of renewal for one year, and also option of purchase.

The total payments up to June 30, 1895, amounted to $287,936. During the past fiscal year the further sum of $136,000 was paid, making a total $423,936 up to June 30, 1899.

East Richelieu Valley Railway Company.

(No. 395.)

By the Subsidy Act, 60-61 Vic., ch. 4 (1897), the grant of a subsidy to the East Richelieu Valley Railway Company was authorized, namely, for 24 miles of their railway from Iberville to St. Thomas, P.Q., $3,200 a mile, with an addition of 50 per cent on cost in excess of $15,000 a mile, the whole not exceeding $6,400 a mile.

A contract was entered into with the company for the work so subsidized on March 1, 1898, and during the past fiscal year the sum of $69,952 has been paid up to June 30, 1899.

Elgin, Petitcodiac and Havelock Railway Company.

(See Annual Report for 1885-86 and 1890-91.)

Erie and Huron Railway Company.

(See Annual Report for 1886-87.)

Esquimalt and Nanaimo Railway Company.

(See Annual Report for 1886-87.)

Fredericton and St. Mary's Bridge Company.

(See Annual Report for 1888-89.)

Grand Trunk, Georgian Bay and Lake Erie Railway Company.

(See Annual Report for 1893-94.)

Grand Trunk Railway Company.

(See No. 410.)

By the Subsidy Act, 60-61 Vic., ch. 4 (1897), the grant of a subsidy to the Grand Trunk Railway Company towards the rebuilding and enlargement of the Victoria Bridge over the River St. Lawrence at Montreal was authorized, namely, 15 per cent of the cost of the work, not exceeding $300,000, and a contract to this effect was made with the company on January 14, 1898.

The work undertaken is the removal of the old tubular iron bridge (a single track bridge) and the erection, without interruption to traffic, of a new steel truss bridge to carry four railway tracks—two for steam locomotives and ordinary railway trains, and two for electric railway purposes—and also two sidewalks, the superstructure to consist of 24 spans of through steel trusses, each 254 feet long ,and one span of 348 feet.

During the past fiscal year the sum of $68,331.05 was paid, making, up to June 30, 1899, a total of $199,599.57.

Great Eastern Railway Company.

(See Annual Report for 1896-97.)

Great Northern Railway Company.

(See Nos. 33, 37, 72, 79, 154, 215, 231, 308, 309, 346, 371, 380, 405, 407, and 413.)

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.

Under the authority of an Order in Council of February 3, 1885, a contract for the work was entered into with the company on the 14th of that month, the road to be completed by July 1, 1885.

The line was duly completed and inspected. Under an Order in Council of March 2, 1885, payment was made therefor, namely 7·84 miles, $25,088.

SESSIONAL PAPER No. 10

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 July 18, 1887, which also approved of the location. The contract was made on August 19, 1887, the road to be completed by August 1, 1890.

By the Act 49 Vic., ch 10, a subsidy not exceeding $22,400 was granted for a line from St. Andrews to Lachute, Que., 7 miles. For this subsidy the above named company applied, but no contract was made. The same subsidy was again voted by the Act of 1889, 52 Vic., ch. 3, and under date October 8, 1890, a contract was entered into with them for the work, calling for completion by August 1, 1891. The road was built and allowed to be opened for public traffic in January, 1892.

By the Act 53 Vic., ch. 2 (1890), the grant of a subsidy was authorized, limited to $48,000, for a line from, at or near Montcalm to the Canadian Pacific Railway, between Joliette and St. Félix de Valois, fifteen miles.

By the Act 54-55 Vic., ch. 2 (1891), the unpaid balance, $28,100 of the subsidy granted in 1886, was revoted.

By the Act 56 Vic., ch. 8 (1893), the unpaid balance, $25,600 of the subsidy granted in 1891, was revoted, and a new contract for this work was entered into with the company on June 16, 1894.

Also, by the same Act, the subsidy not exceeding $48,000 granted to the company for 15 miles of their railway from Montcalm to the Canadian Pacific Railway, between Joliette and St. Félix de Valois, by 53 Vic., ch. 2, was revoted, and a contract for this work was entered into with them on June 16, 1894.

By the Subsidy Act 57-58 Vic., ch. 4 (1894), the grant to this company of a subsidy limited to $96,000, was authorized for 30 miles of railway from a junction with the Lower Laurentian Railway near St. Tite, westwards, in lieu of a subsidy previously granted to the Maskinongé and Nipissing Railway Company. A contract was entered into with the company for this work on September 16, 1895, the railway to be completed by November 30, 1896.

By the Subsidy Act, 60-61 Vic., ch. 4, (1897), payment was authorized of unpaid balances for 67 miles of railway, between Montcalm and the junction with the Lower Laurentian Railway near St. Tite, not exceeding $182,400; also a subsidy of 15 per cent, not exceeding $52,500, of the cost of a bridge over the River Ottawa at Hawkesbury. Also, for 9 miles shortage in distance between Montcalm and St. Tite; also, for 35 miles from St. Jérôme to Hawkesbury; the last two being subsidies of $3,200 per mile with 50 per cent of expenditure in excess of $15,000 per mile, the total not to exceed $6,400 per mile.

The total payments to this company, up to June 30, 1896, amount to $142,688. During the past fiscal year the sum of $32,000 was paid, making a total of $174,688 up to June 30, 1899.

Gulf Shore Railway Company of New Brunswick.

(See Nos. 374 and 383.)

This company was incorporated by the New Brunswick Act 48 Vic., ch. 49 (1885), with powers to construct a railway from some point on the Caraquet Railway to the village of Tracadie or to some point in the parish of Sumarey, county of Gloucester. The Charter Act was revived by the Act 57 Vic., ch. 73 (1894).

By the Dominion Subsidy Act 57–58 Vic., ch. 4 (1894), assistance was authorized to the extent of $38,400 for a railway from a point on the Caraquet Railway at or near Pokemouche siding towards Tracadie village, 12 miles.

The above company having applied, they were admitted to contract for the work on April 22, 1896, and were paid during the fiscal year 1896–7, $28,635.05.

By the Subsidy Act, 60–61 Vic., ch. 4 (1897), authority was given for the grant to them of a subsidy for 5½ miles from the end of the section subsidized to Tracadie and thence to Big Tracadie, namely $3,200 a mile with an additional 50 per cent of expenditure in excess of $15,000 a mile, to a limit, in all, of $6,400. The company were admitted to contract on the 29th of October, 1897. No further payments have been made during the past fiscal year. The total paid up to June 30, 1898, was $53,699.20.

Guelph Junction Railway Company.

(See Annual Report of 1888–89.)

Harvey Branch Railway Company.

(See Annual Report of 1889–90).

Hereford Railway Company (formerly Hereford Branch Railway Company).

(See Annual Report of 1891–92.)

International Railway Company.

(See Annual Reports of 1887–88 and 1889–90.)

Inverness and Richmond Railway Company.

(See Nos. 208, 357, and 400.)

This company was incorporated by the Act of the province of Nova Scotia, 50 Vic., ch. 60 (1887), with powers for the construction of a line of railway between Hawkesbury and a point in the district of Margaree. By the Act of 1888, ch. 79, the location of the line was authorized as from Port Hawkesbury, through Port Hastings, Judique, Port Hood, Mabou and Margaree, to a point at Eastern Harbour, Cheticamp.

By the Subsidy Act, 57-58 Vic., ch. 4 (1894), assistance to the extent of $80,000 was authorized for 25 miles of railway from Port Hawkesbury towards Cheticamp, and the above company was admitted to contract for the work on November 23, 1894, the time for completion being fixed for December 1, 1896.

By the Subsidy Act of 1897, 60-61 Vic., ch. 4, in lieu of the subsidy granted in 1894, a subsidy of $3,200 a mile with an addition of 50 per cent on expenditure in excess of $15,000 a mile, such subsidy in all not to exceed $6,400 a mile, was authorized for a railway from Port Hawkesbury to Port Hood and Broad Cove, 53 miles, and the company were admitted to contract thereunder on April 29, 1898.

No payments have been made up to June 30, 1899.

Irondale, Bancroft and Ottawa Railway Company.

(See Nos. 24, 159, 301, and 412.)

By the Act 47 Vic., ch. 8 (1894), 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 July 10, 1886, a contract was made with the company on August 19, 1886.

The unpaid balance of subsidy, $145,000, which had lapsed, was revoted by the Act 52 Vic., ch. 3 (1889), and was again revoted by the Act 56 Vic., ch. 2 (1893).

By the Subsidy Act, 60-61 Vic., ch. 4 (1897), in lieu of the subsidy voted in 1893, the sum of $16,000 was voted for the last five miles of this railway as the unpaid balance. The company were admitted to contract on the 20th of September, 1897.

The total payments amounted to $144,000, up to June 30, 1897. No payments were made during the past fiscal year.

Joggins Railway Company.

(See Annual Report for 1891-92.)

Kingston, Napanee and Western Railway Company.

(See Napanee, Tamworth and Quebec Railway.)

Kingston and Pembroke Railway Company.

(See Annual Report for 1884-85.)

Lake Erie and Detroit River Railway Company.

Formerly "the Lake Erie, Essex and Detroit Railway Company." Name changed by Dominion Act, 54-55 Vic., ch. 88 (1891).

(See Annual Report for 1893-94).

L'Assomption Railway Company.

(See Annual Report of 1886-7.)

Leamington and St. Clair Railway Company.

(See Annual Report of 1888-9.)

Lake Tesmiscamingue Colonization Railway Company.

(See Annual Report 1896-7.)

Lotbinière and Mégantic Railway Company.

(See Annual Report of 1896-7.)

Midland Railway Company.

(No. 336.)

This company was incorporated by the Act of the province of Nova Scotia, 59 Vic., ch. 85 (1896,) with powers to build a railway from Windsor to a point at or near

Maitland, thence via Clifton to a point between Truro and Stewiacke, on the Intercolonial; thence to Eastville; with extensions and branches to coal and iron fields, and shipping ports.

By the Dominion Subsidy Act, 57-58 Vic., ch. 4 (1894), authority was given for the grant of a subsidy of $3,200 per mile for 90 miles of railway, from Newport or Windsor to Truro, or to a point between Truro and Stewiacke, and from a point on the said railway to a point at or near Eastville, and from Eastville, through the valley of Musquodoboit River, towards a point on the Dartmouth branch of the Intercolonial, in lieu of a subsidy authorized in 1892; also for a railway bridge over the River Shubenacadie, a subsidy of 15 per cent on the value of the structure; the total of the subsidies not to exceed $300,000.

The Midland Railway Company having applied, were admitted to contract for these works on July 30, 1896; the date for completion being fixed as August 1, 1898.

No payments have been made up to June 30, 1899.

Montfort Colonization Railway Company.

(See Nos. 245, 310, 373 and 411.)

This company was incorporated by the Quebec Act, 53 Vic., ch. 107 (1890), for the construction of a railway from a point on the Canadian Pacific Railway, or the Montreal and Occidental Railway, either from Lachute, St. Jérôme or St. Sauveur, or near the same, to Montfort, and for the continuation of the road to a point on the Rivière Rouge, in the township of Arundel.

By the Subsidy Act, 55-56 Vic., ch. 5 (1892,) the grant of a subsidy to this company to the extent of $67,200 was authorized for 21 miles of railway from Lachute, St. Jérôme, or a point at or near St. Sauveur, on the line of the Montreal and Western Railway to Montfort and westward.

By the Subsidy Act, 56 Vic. (1893), this subsidy was revoted, with an addition specifying the gauge as three feet.

On May 16, 1893, a contract was entered into with this company for the construction of 21 miles of railway from St. Sauveur to Montfort and westward, the road to be completed by September 1, 1895.

By the Subsidy Act, 57-58 Vic., ch. 4 (1894), a subsidy to the company was authorized to the extent of $38,400 for 12 miles from the end of the 21 miles previously subsidized, and the company were admitted to contract on July 30, 1896; the River Rouge being the terminal point for the distance subsidized.

By the Subsidy Act, 60-61 Vic., ch. 4 (1897), authority was given for the grant to this company of a subsidy of $2,000 a mile for 33 miles of their railway from Montfort Junction to Arundel; and the company were admitted to contract on December 29, 1887.

During the past fiscal year the sum of $64,400 was paid, making the total payments $167,440 up to the 30th of June, 1899.

Montreal and Champlain Junction Railway Company.

(See Annual Report for 1892-93.)

Montreal and Lake Maskinongé Railway Company.

(See Annual Report for 1890-91.)

Montreal and Sorel Railway Company.

(See Annual Report for 1892-93.)

Montreal and Western Railway Company.

(See Annual Report for 1893-94.)

Montreal and Ottawa Railway Company.

(Formerly 'the Vaudreuil and Prescott Railway Company.' Name changed by 53 Vic., ch. 58.)

(See Nos. 97, 186, 237 and 320.)

By the Railway Subsidy Act of 1887, 50-51 Vic., ch. 24, the grant of a subsidy to the above company was authorized for 30 miles of their railway from Vaudreuil towards Hawkesbury, the extent of such subsidy being $96,000.

A contract was made with the company on the 11th of February, 1889, for the distance named, starting from the Grand Trunk Railway at Vaudreuil. The date for completion was fixed as the 1st August, 1891.

The company, on the 4th of October, 1890, were authorized to open the portion of their road between Vaudreuil and Rigaud, 16 miles, for public traffic.

By the Act 53 Vic., ch. 2 (1890), a subsidy for a further distance of 30 miles towards Ottawa, $96,000, was authorized.

By the Act 54-55 Vic., ch. 8 (1891), the unpaid balance, $46,040, of the subsidy granted in 1887, was revoted.

In September, 1892, after inspection, permission was given to open for traffic the portion of the road between Vaudreuil and Pointe Fortune, 23½ miles.

By the Subsidy Act 57–58 Vic., ch. 4 (1894), the unpaid balances of subsidies granted in 1887 and 1890 were revoted, and a contract under this Act was made with the company, dated June 26, 1896, the date for completion being fixed as August 1, 1898.

During the past fiscal year the sum of $46,400 was paid, making the total payments $192,000 up June 30, 1899.

This railway has been leased in perpetuity to the Canadian Pacific Railway Company.

Napanee, Tamworth and Quebec Railway Company.

(Name changed to the **Kingston, Napanee and Western Railway Company** *by the Act 53 Vic., ch. 62.)*

(See Annual Report of 1895–96.)

Nakusp and Slocan Railway Company.

(See Annual Report for 1894–95.)

New Brunswick and Prince Edward Island Railway Company.

(See Annual Report for 1888–89.)

New Glasgow Iron, Coal and Railway Company.

(See Annual Report for 1895-96.)

Northern and Pacific Junction Railway Company.

(See Annual Report of 1890-91.)

Northern and Western Railway Company.

(See Annual Report of 1889-90.)

Also under the head 'Canada Eastern Railway' in Annual Report of 1894-95.

Nova Scotia Central Railway Company.

(See Nos. 129, 135 and 307.)

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 September 16, 1887, the company were admitted to contract on October 17, 1887, the works 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 spur, about ¾ mile long, to Bridgewater Railway wharf, the whole to be completed by December 31, 1889.

By the Act 51 Vic., ch. 3 (1888), the grant of further subsidy, not exceeding $147,200, was authorized for 46 miles of the company's railway, and under an Order in Council of October 9, 1888, a contract, dated October 15, 1888, was executed, covering a line of railway, 39½ miles, starting from a point 33½ miles from Lunenburg, and running to Middleton, on the Windsor and Annapolis Railway; the work to be completed by December, 1890.

By the Subsidy Act, 56 Vic., ch. 2 (1893), the unpaid balance, $4,500, was revoted. Up to the close of the fiscal year 1891-92, the total payments to this company amounted to $230,700, covering the distance from Lunenburg to Middleton and the spur to Bridgewater, a total of 73½ miles. Authority for payment of the said balance of $4,500 has been given by an Order in Council dated July 2, 1894, but further payment was withheld pending decision on certain matters in litigation. During the past fiscal year the said balance was paid, making the total payments up to June 30, 1899, $235,200, the full amount of the subsidy earned.

Nova Scotia Southern Railway Company.

(See Annual Report for 1896-97.)

Ontario and Pacific Railway Company.

(Name changed to Ottawa and New York Railway Company, by 60-61 Vic., ch. 57, 1897.)

(See Nos. 31, 115, 150, 288 and 375.)

By the Act 47 Vic., ch. 8 (1884), the grant of a subsidy to the Ontario and Pacific Railway Company was authorized, namely, to the extent of $262,400, on an estimated distance of 82 miles, for a line from Cornwall to Perth; and on July 27, 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, via Newington, Chrysler,

Manotick and Franktown; the road to be completed by July 1, 1888. This subsidy lapsed on July 1, 1888.

By the Act 50–51 Vic., ch. 24, a further subsidy of $19,200 for a further distance of 6 miles was granted.

By the Act 52 Vic., ch. 3 (1889), a subsidy not exceeding $172,400 was authorized to this company for a line from Cornwall to Ottawa.

By the Subsidy Act of 1892, 55–56 Vic., ch. 5, the subsidy granted in 1889 was revoted, the length being set down as $53\frac{87}{100}$ miles. Under date June 1, 1895, a contract was entered into with the company for the construction of this line from Cornwall to Ottawa, 53·87 miles; the work to be completed by August 1, 1896.

By the special Act 60–61 Vic., ch. 57, the name of the company was changed to 'The Ottawa and New York Railway Company,' and its construction powers were extended to July 1, 1901.

By the Subsidy Act, 60–61 Vic., ch. 4 (1897), in lieu of the subsidy voted in 1892, a subsidy was authorized of $3,200 a mile, for 53·87 miles from Cornwall to Ottawa, with a further subsidy for expenditure in excess of $15,000 a mile, to an extent of 50 per cent of such expenditure, the total subsidies not to exceed $6,400 per mile.

The company were admitted to contract for the above on December 4, 1897.

During the fiscal year they have been paid $138,784; making the total payments up to June 30, 1899, $172,384.

Ontario and Quebec Railway Company.

(See West Ontario Pacific Railway Company, and Annual Report for 1891–92.)

Ontario, Belmont and Northern Railway Company.

(See Annual Report for 1896–97.)

Orford Mountain Railway Company.

(See Annual Reports for 1893–94 and 1894–95.)

Ottawa and New York Railway Company.

(See Ontario Pacific Railway Company,)

Ottawa, Arnprior and Parry Sound Railway Company.

Now the **Canada Atlantic Railway Company,** *by amalgamation, under the Act 62-63 Vic., ch. 81 (1899.)*

(See Nos. 92, 134, 199, 242, 276, 277 and 388.)

This company was formed by the amalgamation, under the Act 54-55 Vic., ch. 93, of the Ottawa and Parry Sound Railway Company, incorporated by the Act 51 Vic., ch. 35, and the Ottawa, Arnprior and Renfrew Railway Company, incorporated by the Act 51 Vic., ch. 71. The company has powers to build a line of railway from the city of Ottawa through Arnprior, Renfrew, Eganville and Killaloe, to a point on the Georgian Bay at or near the village of Parry Sound.

By the Subsidy Act, 55-56 Vic., ch. 5 (1892), there were granted to this company the following subsidies (in lieu of subsidies previously granted but not utilized) :—

(*a.*) For 22 miles of railway from a point on the Canadian Pacific Railway to Eganville, a subsidy limited to $70,400.

(*b.*) For 30 miles of railway from Eganville to Barry's Bay, a subsidy limited to $96,000,

(*c.*) For 55 miles of railway from Barry's Bay towards the Northern Pacific Junction Railway, a subsidy limited to $6,400 a mile on the first half of that division, and to $3,200 a mile on the second half, not exceeding in the whole $264,000.

The first two subsidies were covered by a contract dated September 29, 1892 ; the starting point on the Canadian Pacific Railway being Renfrew, and the date for completion being fixed as August 1, 1896.

The third subsidy, from Barry's Bay towards the Northern Pacific Junction Railway, was covered by a contract with the company, dated November 8, 1892, for which was substituted a contract dated September 20, 1894.

By the end of the fiscal year 1895-96, the total payments to the company aggregated $430,400, the whole amount of the subsidies. The distance covered thereby was to the end of the 55th mile west from Barry's Bay, or a total of 107 miles west from Renfrew, the whole distance subsidized.

By the Act 60 Vic., ch. 8 (1896), the company became amalgamated, under its own name, with the Parry Sound Colonization Railway Company.

A portion, the westerly 47¾ miles of the amalgamated company's railway, namely between the crossing of the Northern Pacific Junction Railway and Parry Sound, had been subsidized under the name of the Parry Sound Colonization Railway Company, and at the close of the fiscal year 1895–96, there had been paid to that company a total of $152,800.

By the Subsidy Act, 60-61 Vic., ch. 4 (1897), a subsidy was authorized for the portion, 52 miles, of the company's railway from the crossing of the Northern Pacific Junction Railway (at Scotia) to the point, 55 miles west of Barry's Bay, up to which previous subsidies had been granted ; also for 4 miles of railway across Parry Island.

The new subsidy is $3,200 per mile, with a further subsidy of 50 per cent on expenditure in excess of $15,000 per mile ; the total subsidies not to exceed $6,400 per mile.

The company were admitted to contract under this Subsidy Act on August 7, 1897 ; the work to be completed by September 1, 1899.

During the past fiscal year they have been paid the sum of $22,080, making the total payments to this company $779,712 up to June 30, 1899.

Ottawa and Gatineau Valley Railway Company.

Name changed to the **Ottawa and Gatineau Railway Company** (by the Act 57-58 Vic., ch. 87, which consolidated and amended Acts relating to the company).

(See Nos. 8, 26, 58, 151, 305, 349, 379 and 409.)

By the Act 48-49 Vic., ch. 29 (1885), the grant of a subsidy to this company was authorized (in lieu of subsidies granted in previous years), namely, for a line of railway from Hull station towards the village of Le Désert, 62 miles, the amount being $320,000. The subsidy having lapsed, it was revoted by the Act 52 Vic., ch. 3 (1889).

Under authority of an Order in Council of July 10, 1889, a contract with the company for the work in question, 62 miles, was signed on August 19, 1889.

By the Subsidy Act 56 Vic., ch. 2 (1893), the unpaid balance, $89,248, was revoted.

By the Subsidy Act 57-58 Vic., ch. 6 (1894), authority was given for subsidizing, to the extent of $64,000, a further distance of 20 miles from the end of the 62 miles already subsidized, and a contract for the work was entered into with the company on October 7, 1895.

By the Subsidy Act of 1897 (ch. 4) in lieu of this subsidy, the said 20 miles were subsidized to the extent of $3,200 per mile, with a further subsidy of 50 per cent of the expenditure in excess of $15,000 a mile; the total subsidy not to exceed $6,400 a mile.

By the Subsidy Act 60-61 Vic., ch. 4 (1897), the unpaid balance, $35,872, of the vote of 1893 was revoted.

The total payments up to June 30, 1894, amounted to $284,128. No further payments have been made up to June 30, 1899.

Oshawa Railway and Navigation Company.

Name changed to the **Oshawa Railway Company** by 54-55 Vic., ch. 91.

(See Annual Report for 1895-96.)

Parry Sound Colonization Railway Company.

(See Annual Report for 1895-96.)

Pembroke Southern Railway Company.

(See No. 389.)

This company was incorporated by the Act of the Province of Ontario, 56 Vic., ch. 96, 1893; with powers to build a line of railway from Pembroke to Douglas, and by the Ontario Act 59 Vic., ch. 107 (1896), were allowed the option of building from Pembroke to Golden Lake.

By the Railway Subsidy Act 60-61 Vic., ch. 4 (1897), the grant of a subsidy to this company was authorized for 20 miles of their railway from Pembroke to Golden Lake, namely, $3,200 a mile with an addition of 50 per cent on the average cost in excess of $15,000 a mile, the whole limited to $6,400 a mile.

The company having applied for the said subsidy, an agreement was entered into with them on August 22, 1898, for the construction of the 20 miles in question.

No portion of the subsidy has been paid up to June 30, 1899.

Philipsburg Junction Railway and Quarry Company.

(See Annual Report for 1894-95.)

Port Arthur, Duluth and Western Railway Company.

(Formerly the **Thunder Bay Colonization Railway Company.**)

(See Annual Report for 1892-93.)

Pontiac and Renfrew Railway Company.

(See Annual Report for 1889-90.)

Pontiac Pacific Junction Railway Company.

(See Nos. 25, 138, 211, 294, 329, 330, 331, 385 and 408.)

This company was incorporated by the Dominion Act 43 Vic., ch. 55 (1880), with powers to construct a railway from a point on the line of the Quebec, Montreal, Ottawa and Occidental Railway, at or near Hull or Aylmer, to a point in the county of Pontiac, suitable for crossing the River Ottawa, thence to Pembroke to connect with the Canada Central Railway.

The Act 45 Vic., ch. 69, gave authority for the construction of a bridge across the River Ottawa.

This line was subsidized in 1884, by 49 Vic., ch. 8, to the extent of $3,200 a mile, not exceeding $272,000.

Under authority of an Order in Council, dated December 12, 1884, a contract, dated the 22nd of that month, was made with this company for the building of the line subsidized, namely, from Aylmer to Pembroke, crossing the River Ottawa at a point 'not east of Lapasse;' the first twenty-seven miles to be completed by September 1, 1885 (extended to December 15, by an Order in Council of August 13, 1895), the second twenty-seven miles by July 1, 1886, and the whole road, estimated at eighty-five miles west of Aylmer, by July 1, 1887.

By the Act 51 Vic., ch. 3 (1888), a subsidy to this company of $31,500 was authorized for the bridging of the River Ottawa at Culbute; also a subsidy of $9,600 for 3 miles of their railway from a point 3 miles east of Pembroke to Pembroke, provided that the entire work subsidized on this railway be completed within four years from May 22, 1888.

By the Act 53 Vic., ch. 2 (1890), a subsidy, limited to $24,000, was authorized for 7½ miles of this railway, between Hull and Aylmer.

By the Act 63 Vic., ch. 69 (1890), the time for completion of the railway to the town of Pembroke, and of the bridge over the River Ottawa, at or near the city of Ottawa, which the company were empowered to construct by the Act 45 Vic., ch. 69, was extended to May 22, 1892. The same Act gave the company power to extend their line from the said bridge to the canal basin in the city of Ottawa.

The Act 53 Vic., ch. 69 (1890), gave to this company power to purchase from the Canadian Pacific Railway Company the section between Hull and Aylmer, or any part thereof.

By the Subsidy Act 55-56 Vic., ch. 5, clause 4 (1892), the balance unpaid of the subsidy voted in 1884 was revoted; and by the special Act of 1892, ch. 56, the time for the commencement of a bridge over the River Ottawa, at or near Ottawa, was extended for two years, and its completion for five years from July 9, 1892. The time for the completion of the line to Pembroke was also extended for four years from that date.

By the Subsidy Act 57-58 Vic., ch. 4 (1894), the subsidies voted in 1888 were revoted, subject to the condition that the entire work subsidized on this railway should

be completed within four years. The time for completion was thus extended, so far as subsidy is concerned, to July 23, 1898.

By the same Act the unpaid balance of the subsidy voted by ch. 8 of the Act of 1884, less $24,000 for the 7½ miles from Hull to Aylmer, was revoted, namely, $73,172.

By the same Act the sum of $24,000, voted for the road from Hull to Aylmer in 1890, was, in effect, revoted.

By the Subsidy Act 60-61 Vic., ch. 4 (1897), the unpaid balances of the subsidies granted by the Acts of 1894, amounting to $114,272, were revoted.

By the same Act the subsidy for 7½ miles from Hull to Aylmer, revoted by the Act of 1894, was, in effect, revoted, with the addition of 50 per cent on expenditure in excess of $15,000 per mile, the total of the subsidies not to exceed $6,400 per mile.

Up to the close of the fiscal year 1887-88, a total of $174,828 had been paid out of the subsidy voted in 1884. During the fiscal year 1894-95 the sum of $18,750 was paid, making a total of $193,578. No further payments have been made up to June 30, 1899.

Quebec Central Railway Company.

(See Annual Report of 1895-96.)

Quebec and Lake St. John Railway Company.

(See Annual Report for 1895-96.)

Quebec, Montmorency and Charlevoix Railway Company.

(See Annual Report of 1894-95.)

Restigouche and Western Railway Company.

(See No. 384.)

This company was incorporated by the Act of the Province of New Brunswick, 60 Vic., ch. 82 (1897), with powers to construct a railway from Campbellton, to a point on the River Saint John between Grand Falls and Edmundston.

By the Subsidy Act 60-61 Vic., ch 4 (1897), there was authorized a subsidy for a railway from Campbellton, on the I. C. R., towards Grand Falls, N.B., 20 miles, $3,200 a mile, with an addition of 50 per cent on the cost in excess of $15,000 a mile; the whole not to exceed $6,400 a mile. This was in lieu of a previous subsidy to a specified company.

The Restigouche and Western Railway Company having applied were admitted to contract for the work on December 24, 1897, and during the past fiscal year, the sum of $32,000 was paid, the total payments up to June 30, 1899.

Shuswap and Okanagan Railway Company.

(See Annual Report of 1894-95.)

South Norfolk Railway Company.

(See Annual Report of 1888-89.)

South Shore Railway Company.

(See Annual Report of 1896-97.)

St. Catharines and Niagara Central Railway Company.

(See Annual Report for 1895-96.)

St. Clair Frontier Tunnel Company.

(See Annual Reports of 1890-91 and 1891-92.)

St. John Valley and Rivière du Loup Railway Company.

(See Annual Report for 1893-94.)

St. Stephen and Milltown Railway Company.

(See Annual Report for 1895-96.)

(No. 393.)

A further subsidy to this company was authorized by the Act 60-61 Vic., ch. 4 (1897), namely, for 41 miles of their railway from Milltown to St. Stephen, $3,200 a mile, with 50 per cent additional on the cost in excess of $15,000 a mile, not exceeding in all $6,400 a mile. The company were admitted to contract for this work on September 29, 1897. No payments were made during the past fiscal year, and the total paid is $14,848 up to June 30, 1899.

Stewiacke Valley and Lansdowne Railway Company.

(See Annual Report for 1895-96.)

St. Lawrence and Adirondack Railway Company.

(See Annual Report for 1893-94.)

(No. 394.)

A further subsidy to this company was authorized by the Act 60-61 Vic., ch. 4 (1897), namely, for 13½ miles of their railway from Beauharnois to Caughnawaga, $3,200 a mile, with an addition of 50 per cent on expenditure in excess of $15,000 a mile, such subsidy not to exceed in the whole $6,400 a mile.

The company were admitted to contract on October 16, 1897, and have been paid $149,481.60 up to June 30, 1899, no payments being made during the past fiscal year.

St. Lawrence, Lower Laurentian and Saguenay Railway Company.

Name changed to **'Laurentian Railway Company'** *by Provincial Act 51-52 Vic., ch. 108.*

(See Annual Report for 1891-92.)

St. Louis and Richibucto Railway Company.

(See Annual Report for 1884-85.)

Témiscouata Railway Company—Rivière du Loup to Edmundston.

(See Annual Report for 1892-93.)

Thousand Islands Railway Company.

(See Annual Report for 1895-96.)

Tilsonburg, Lake Erie and Pacific Railway Company.

(See Annual Report for 1895-96.)

(No. 387.)

A further subsidy to this company was authorized by the Act 60-61 Vic., ch. 4 (1897), namely, for 3·50 miles from the then present terminus, through Tilsonburg to the Michigan Central Railway, $3,200 a mile, with an addition of 50 per cent of the cost in excess of $15,000 a mile, the whole not to exceed $6,400 a mile.

Under date December 4, 1897, the company were admitted to contract. During the past fiscal year the sum of $10,912 was paid from this subsidy, making, with their previous subsidy of $51,200, paid in 1895-96, a total of $62,112 up to June 30, 1899.

Tobique Valley Railway Company.

(See Annual Report for 1893-94.)

Toronto, Grey and Bruce Railway Company.

(See Annual Report for 1887-88.)

United Counties Railway Company.

(See Nos. 297, 344 and 393.)

This company was incorporated by the Quebec Act 46 Vic., ch. 90 (1883), for the construction of a railway from a point on the line of the Montreal, Portland and Boston Railway, at Richelieu, to a point on the River Richelieu and the River St. Lawrence.

By the Subsidy Act 56 Vic., ch. 2 (1893), a subsidy to the extent of $102,400 for 32 miles between Iberville and St. Hyacinthe, and beyond, towards Sorel, was authorized.

On August 19, 1893, a contract was entered into with the company for this work.

By the Subsidy Act 57-58 Vic., ch. 4 (1894), a subsidy, limited to $102,400, was authorized for a further distance of 32 miles, and on October 23, 1894, a contract was made with the company for the work, covering the whole distance from St. Hyacinthe to Sorel.

By the Act 60-61 Vic., ch. 4 (1897), the grant of a subsidy of $3,200 a mile, with an addition of 50 per cent on the cost in excess of $15,000 a mile, not exceeding in all $6,400 a mile, was authorized for one mile of this company's railway from Johnson to St. Grégoire station.

During the past fiscal year, no payments were made, leaving the total payments $188,816 up to June 30, 1899.

Vaudreuil and Prescott Railway Company.

(See *Montreal and Ottawa Railway Company.)*

Waterloo Junction Railway Company.

(See Annual Report for 1891-92.)

Western Counties Railway Company.

(Name changed to **'The Yarmouth and Annapolis Railway Company'** *by 56 Vic., ch. 63.)*

(Name further changed to **'The Dominion Atlantic Railway Company'** *by 57-58 Vic., ch. 69.)*

(See Annual Report for 1894-95.)

West Ontario Pacific Railway Company.

(Leased to Ontario and Quebec Railway Company—C. P. R.)

(See Annual Report of 1890-91.)

Woodstock and Centreville Railway Company.

(See Annual Report for 1895-96.)

Yarmouth and Annapolis Railway Company.

(See *Western Counties Railway Company.*)

LAND SUBSIDIES.

A number of companies have been aided by subsidies in land, duly authorized by Parliament and granted by the Department of the Interior, to whose report reference must be had for information as to their position. Certain details in respect of these roads will, however, be found in the annual report of this department for 1896-97.

CANALS.

The total expenditure charged to capital account on the original construction and the enlargement of the several canals of the Dominion up to June 30, 1899, was $76,404,279.16. A further sum of $15,632,242.84* was expended on the repairs, maintenance and operation of these works, making a total of $92,036,522.* The total revenue derived, including tolls, and rentals of lands and water-powers, amounted to $12,079,274.46. (See the accountant's statement, Part II., p. 28.)

The total expenditure for the fiscal year ended on June 30, 1899, including 'canals in general,' was as follows: on construction and enlargement a total of $3,899,877.31, and a further sum of $633,315.61 for repairs, renewals, and operation, making a total for the year of $4,533,192.92.

The total net revenue collected for the fiscal year was $369,044.38, a decrease compared with the net revenue of the previous year of $38,618.43. The net canal tolls amounted to $322,285.12, a decrease of $21,672.01, and the rents received to $46,659.26, an increase of $2,608.87.

The total expenditure on canal staff and maintenance, repairs and renewals amounted, for the year, to $633,315.61, an increase of $8,559.65, and the total net receipts amounting, as above, to $369,044.38, the amount of expenditure in excess of receipts was $264,271.23, compared with an excess expenditure the previous year of $248,495.63.

The above figures relate to the *fiscal year* 1898-99, but very voluminous statistics relating to the canal traffic, and various commercial statistics for the *season of navigation* of the year 1898 will be found in Part V., 'Canal Statistics.'

* These figures are the aggregate expenditure on specific canals and do not comprise certain items charged to 'Canals in general.'

The following features of the principal canal traffic during the *season of navigation* of 1898 will be of interest :—

On the Welland Canal, 1,140,077 tons of freight were moved, a decrease of 134,215 tons ; of which 732,470 tons were agricultural products, a decrease of 92,015 tons, and 140,031 tons produce of the forest ; 916,671 tons passed eastward and 223,406 westward ; 1,120,730 tons were through freight, of which 902,519 tons passed eastward.

Of this through freight Canadian vessels carried 310,286 tons, a decrease of 35,691 tons, and United States vessels 810,444 tons, a decrease of 88,329 tons.

The total freight passed eastward and westward through this canal from United States ports to United States ports was 487,539 tons, a decrease of 77,155 tons compared with the year 1897.

The quantity of grain passed down the Welland and the St. Lawrence canals to Montreal was 519,532 tons, a decrease of 40,722 tons compared with the previous year ; of this 40,257 tons were transhipped at Ogdensburg, as against 89,659 tons transhipped in 1897. The further quantity of 55,565 tons of grain passed down the St. Lawrence canals, only, to Montreal, making the total 575,097 tons.

The rate of toll on grain for passage through the Welland (giving free passage through the St. Lawrence canals) was 10c. a ton.

On the St. Lawrence canals 1,439,134 tons of freight were moved, an increase of 207,769 ; of which 783,976 were east bound through freight, and 29,728 tons west bound through freight ; 952,150 tons were agricultural products, 348,081 tons merchandise, and 61,502 tons forest products.

Seven cargoes of grain, aggregating 2,436 tons, were taken down direct to Montreal through the Welland and St. Lawrence canals.

On the Ottawa River canals the total quantity of freight moved was 549,986 tons, a decrease of 12,384, of which 538,250 tons were produce of the forest.

On the Chambly Canal 271,336 tons were moved, a decrease of 80,800 of which 155,939 tons were the product of the forest.

On the Rideau Canal 54,946 tons were carried, a decrease of 22,330, 30,238 tons being the product of the forest.

On the St. Peter's Canal 64,490 tons were carried, a decrease of 2,603, of which 50,666 tons were merchandise.

On the Murray Canal 15,543 tons passed, an increase of 2,312, and 4,037 tons, of this were the product of the forest.

On the Trent Valley Canal 27,676 tons were moved, of which 26,606 tons were product of the forest.

On the Sault Ste. Marie Canal the total movement of freight was 3,055,287 tons, being a decrease of 891,776 tons, carried in 3,675 vessels, the number of lockages being 2,520. Of wheat 9,746,452 bushels, and of other grain 3,188,177 bushels were carried ; 847,048 barrels of flour, 1,831,731 tons of iron ore and 13,611,580 feet, board measure, of lumber ; all these items except lumber show a considerable decrease. The total traffic at this point, accommodated by the two canals, the American and Canadian, amounted to

21,239,438 tons, an increase of 2,252,749 tons, carried in 17,733 vessels, an increase of 653. The total quantity of wheat carried was 62,439,904 bushels, an increase of 6,508,125, and of other grain 26,139,117, an increase of 1,170,981. Of lumber the total was 898,787,580 feet, board measure, an increase of 96,547,424.

As having an interesting bearing on the question of canal *versus* railway transport of grain from the west, it may be noted that whereas grain and pease passed down to Montreal through the St. Lawrence canals to the extent of 519,532 tons, a decrease of 40,722 tons over the previous year, the quantity carried to Montreal via the Canadian Pacific and Grand Trunk Railways amounted to 293,391 tons, an increase of 64,780 tons. The quantity of grain carried to tide-water on the New York State canals was 459,404 tons, a decrease of 9,958 tons, while the quantity carried by the railways of the state to tide-water amounted to 5,371,500 tons, an increase of 238,760 tons.

Of the total freight carried by the canals and railways of the State of New York, respectively (amounting in 1898 to 49,311,030 tons—greater by 5,599,518 tons than in 1897), the proportion carried by the canals has fallen steadily from 68·9 per cent in 1859 and 47·0 per cent in 1869 to 6·8 per cent in 1898.

On the opening of navigation in the spring of 1900, by means of the enlarged canal systems and the intermediate water ways (though not fully completed), passage to vessels drawing 14 feet of water from Lake Superior to the head of ocean navigation at Montreal will be afforded.

The extent of the improved facilities of communication so to be obtained, and their value to commercial interests may be understood from the fact that in place of the old limit of lock dimensions, viz., length, 200 feet; width, 45 feet; depth of water on the sills, 9 feet; the enlarged locks are 270 feet in length, 45 feet in width, with 14 feet of water on the sills, accommodating vessels 255 feet long and 44 feet wide. As an index to the carrying power of the new canal works, it may be observed that a typical vessel, the propeller *Aragon*, whose length is 247 feet and width 42·6 feet, has passed through the enlarged Welland Canal, drawing 14 feet of water and carrying 2,212 tons of corn.

In the report of the Chief Engineer, and in the reports of the superintending engineers, will be found full details as to the operation of the various canals, and as to the progress and position of the works of enlargement and construction now being carried on.

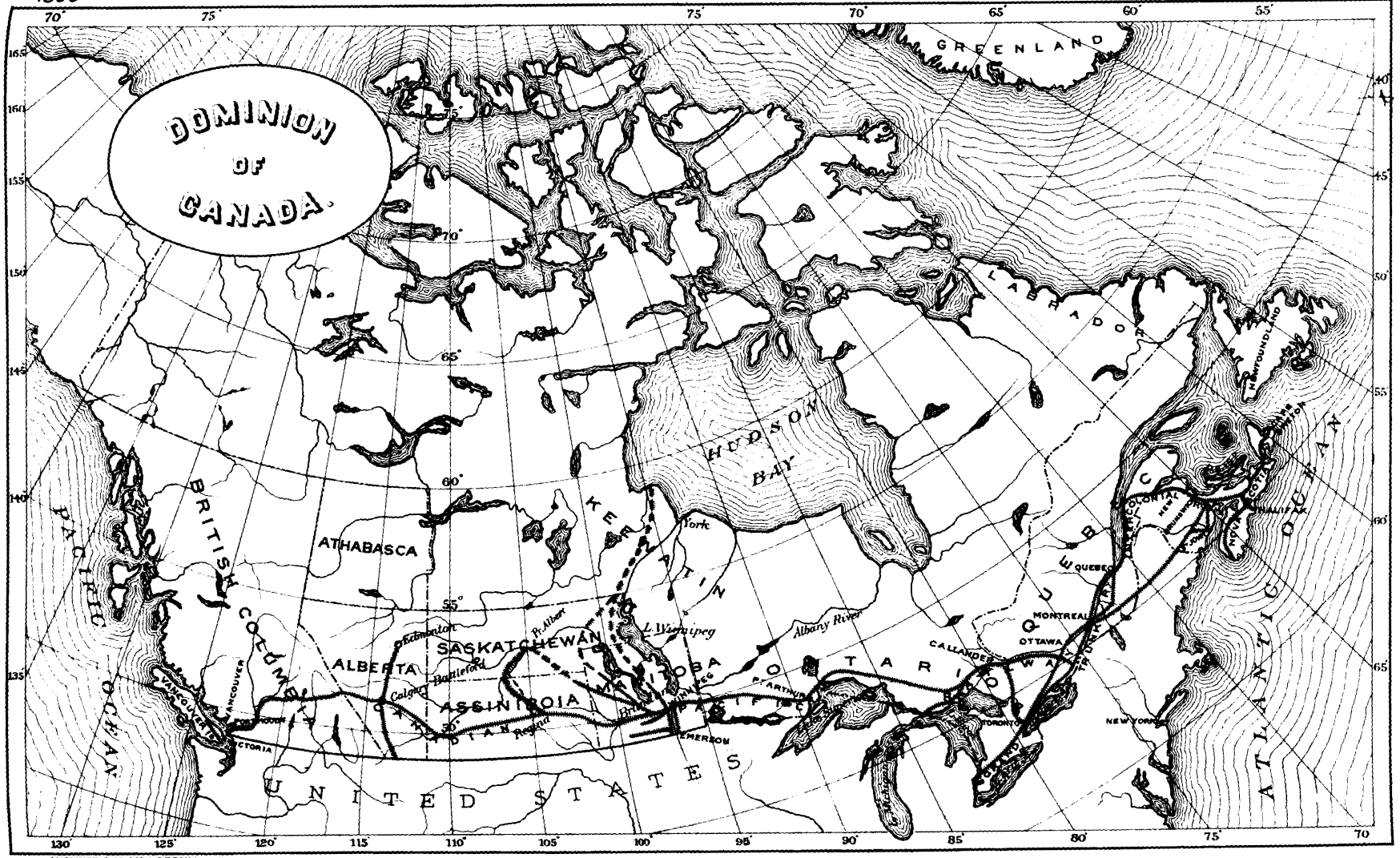
I have the honour to be, sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,
Deputy of the Minister of Railways and Canals.

1899

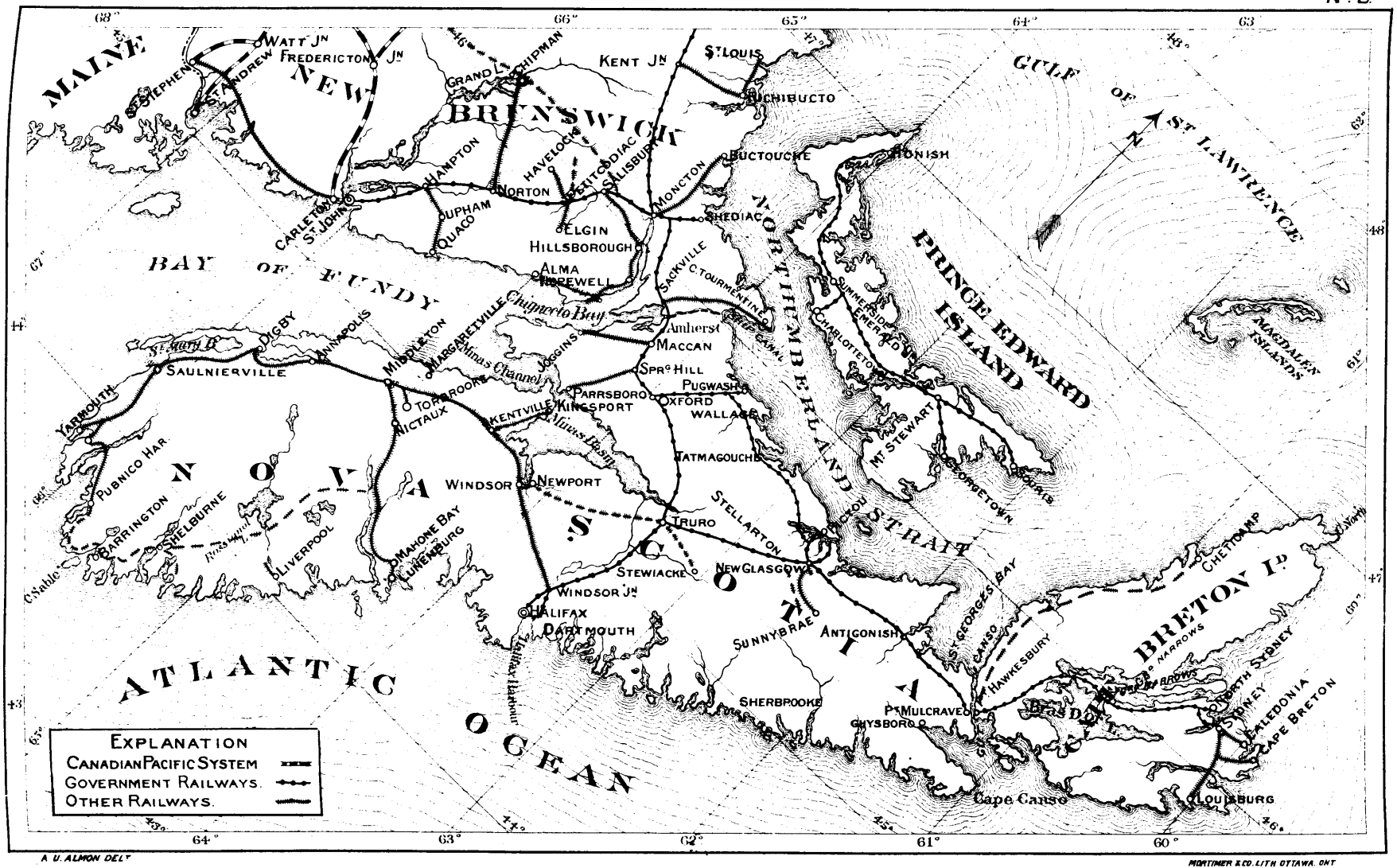
No. 1.



MORTIMER & CO LITH OTTAWA ONT

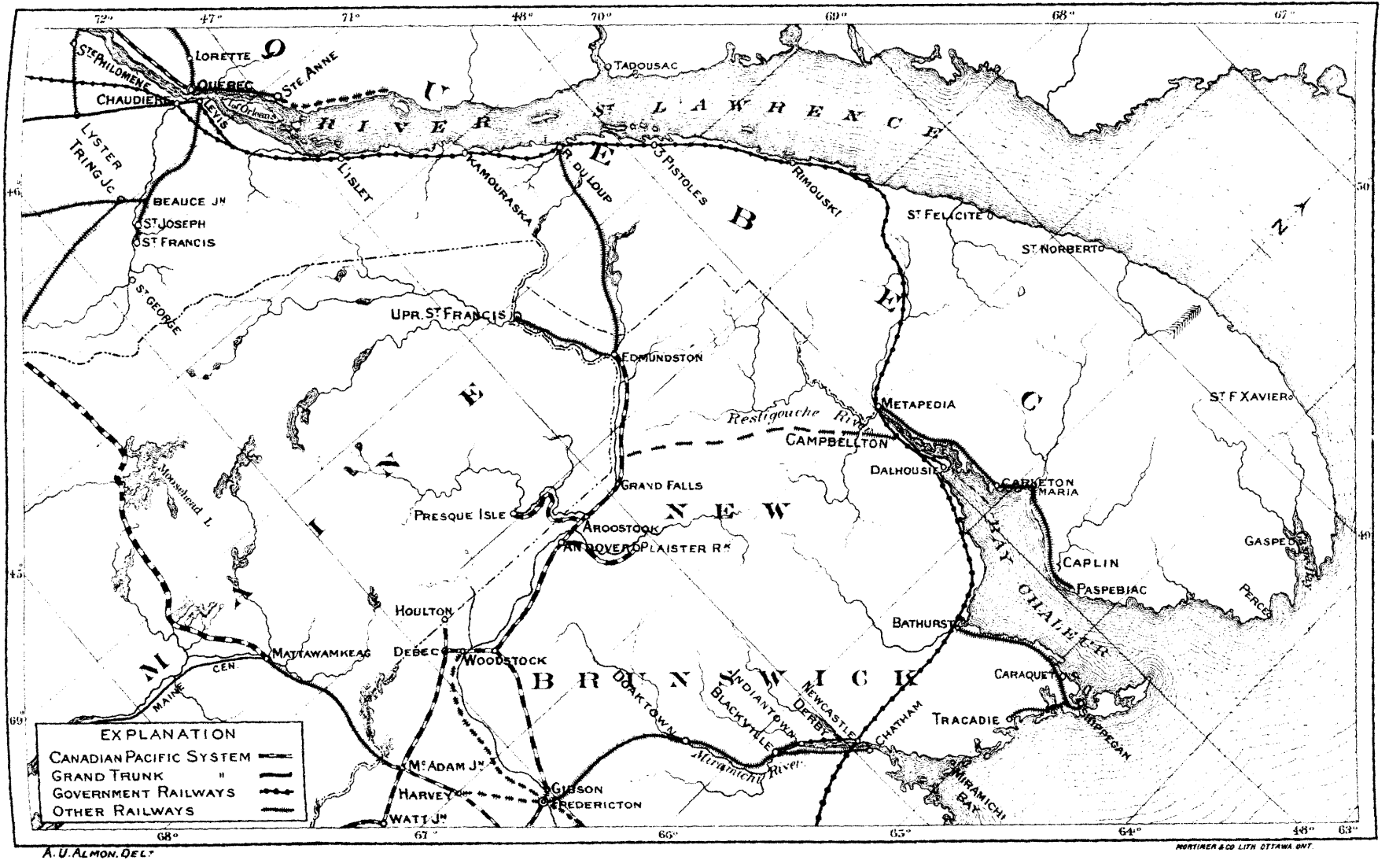
1899

No 2.



A. U. ALMON DEL.

MORTIMER & CO. LITH OTTAWA. ONT.



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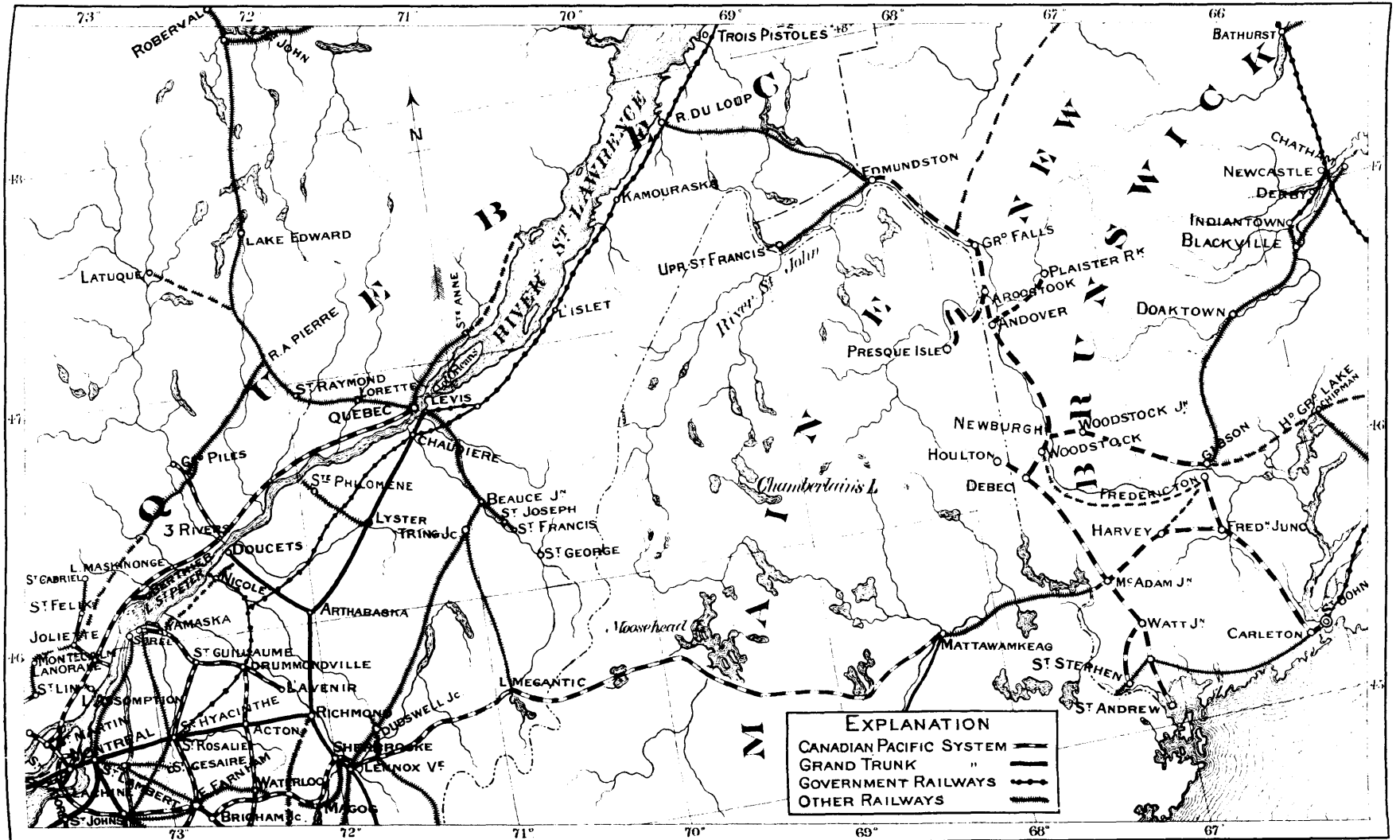

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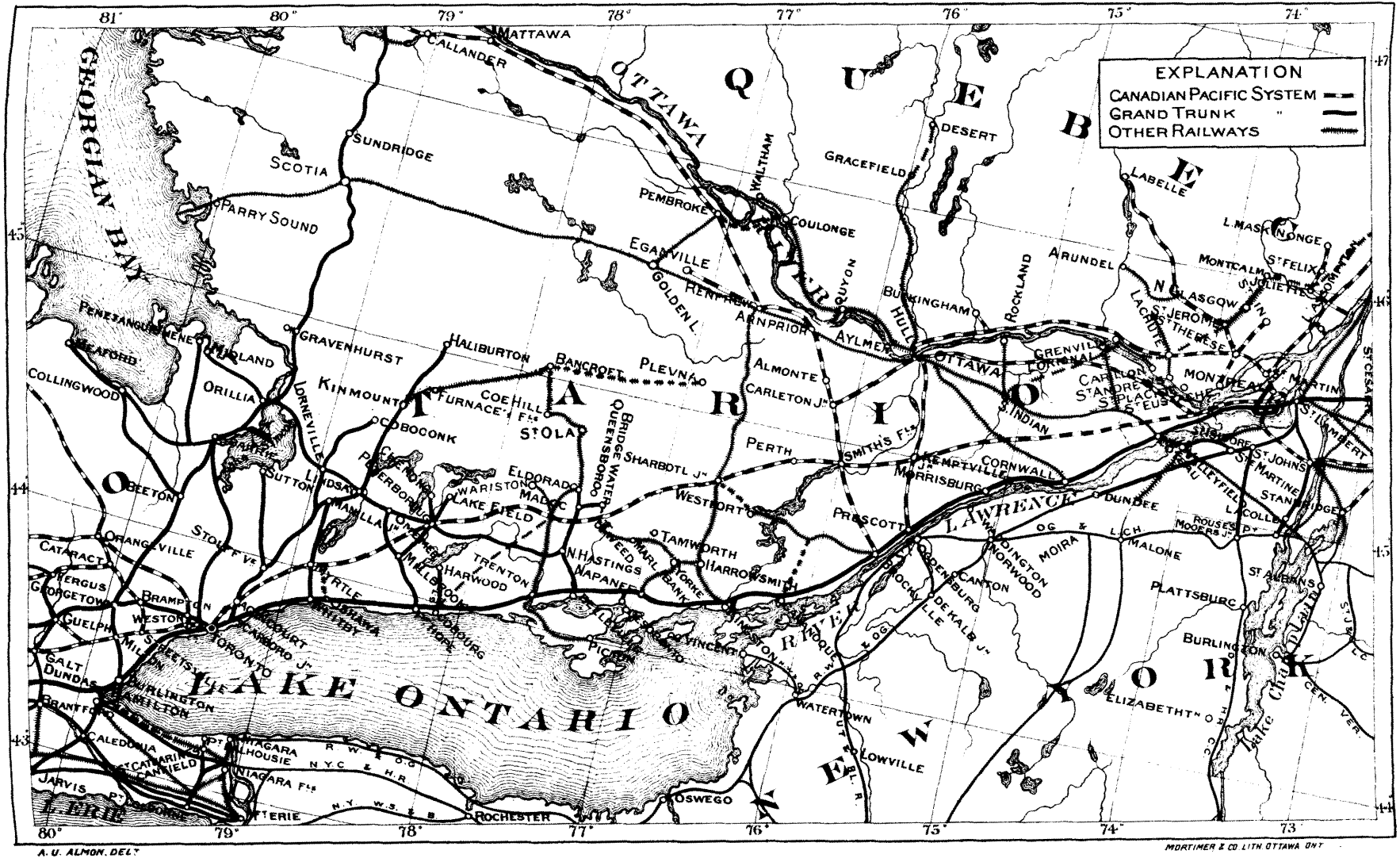
MORTIMER & CO. LITH. OTTAWA. ONT.



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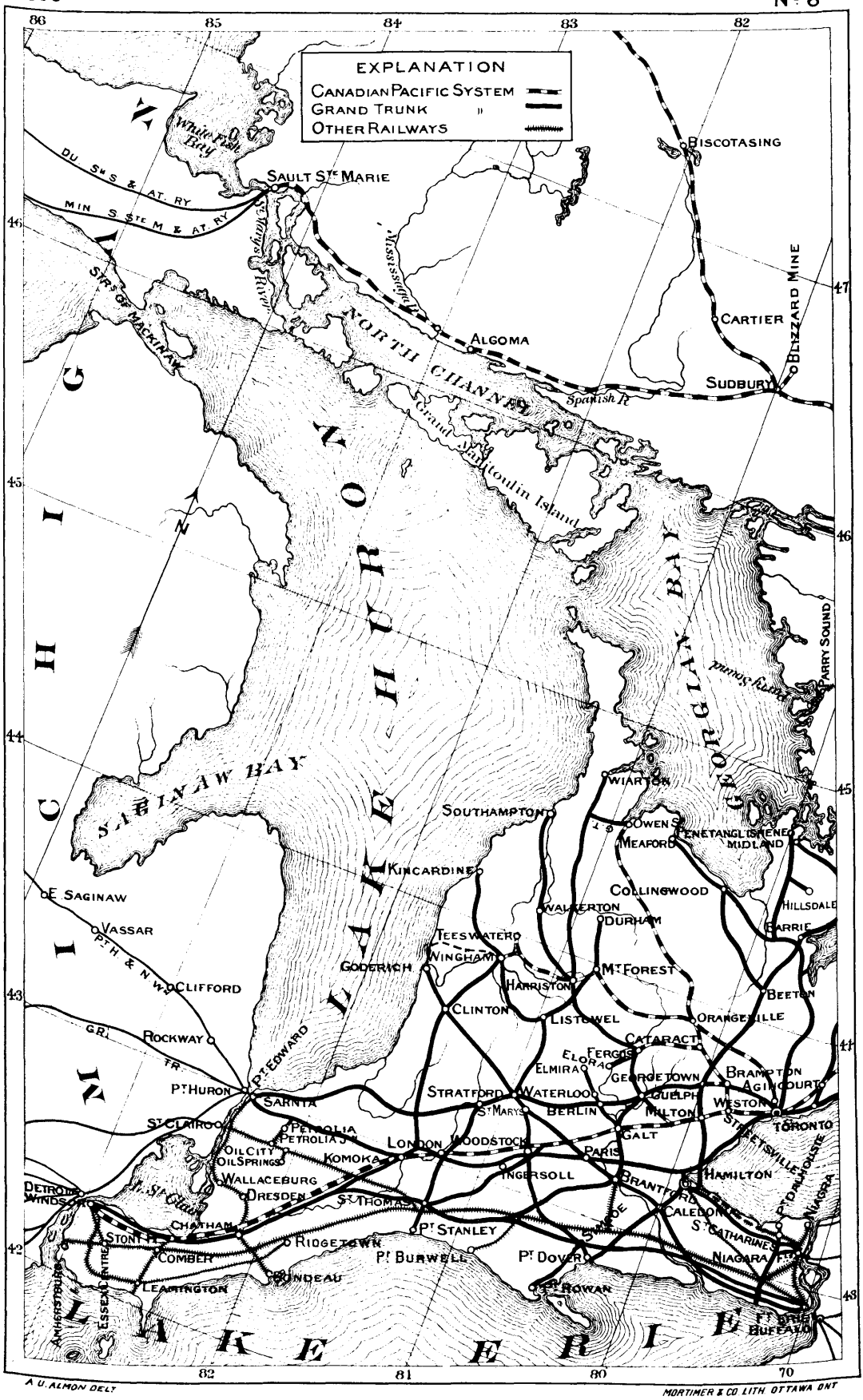
MORTIMER & CO. LITH. OTTAWA ONT.



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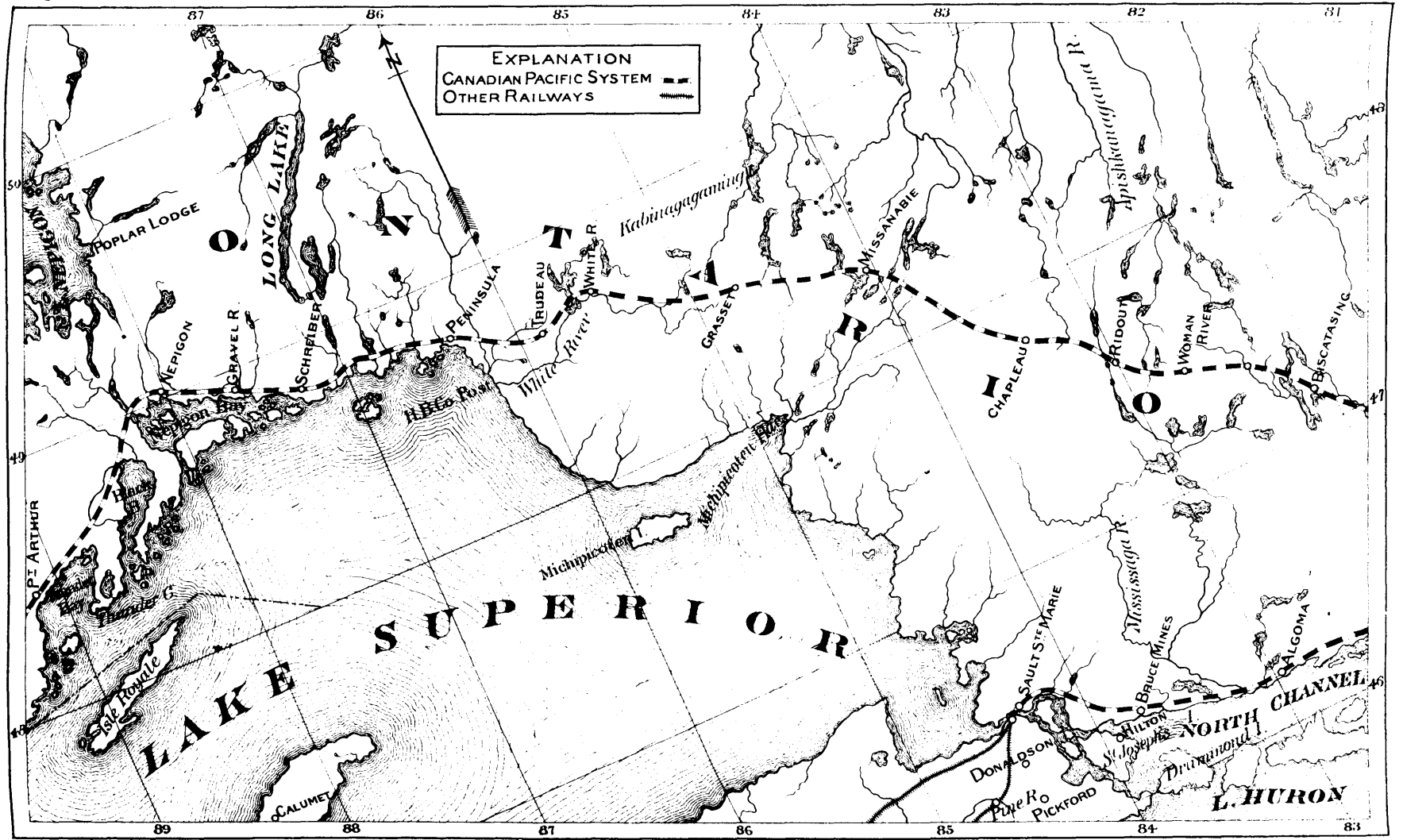
MORTIMER & CO. LITH. OTTAWA ONT.


EXPLANATION
CANADIAN PACIFIC SYSTEM
OTHER RAILWAYS
N
ONTARIO
LAKE SUPERIOR
L. HURON
NORTH CHANNEL
LONG LAKE
Kabinagagamiwin L.
Apishkinagamma R.
Missanabie
Peninsula
Trudeau
White River
Grasset
Ridout
Chapleau
Woman River
Biscatasing
Schreiber
Gravel R.
Nepigon
Poplar Lodge
Nepigon Bay
H.B.Co. Post
Michipicoten R.
Michipicoten I.
Pt Arthur
Thunder C.
Isle Royale
Calumet
Sault Ste Marie
Mississagui R.
Bruce Mines
Algoma
Hilton
St Joseph I.
Drummond I.
Donaldson
Pipe R.
Pickford
87
86
85
84
83
82
81
89
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87
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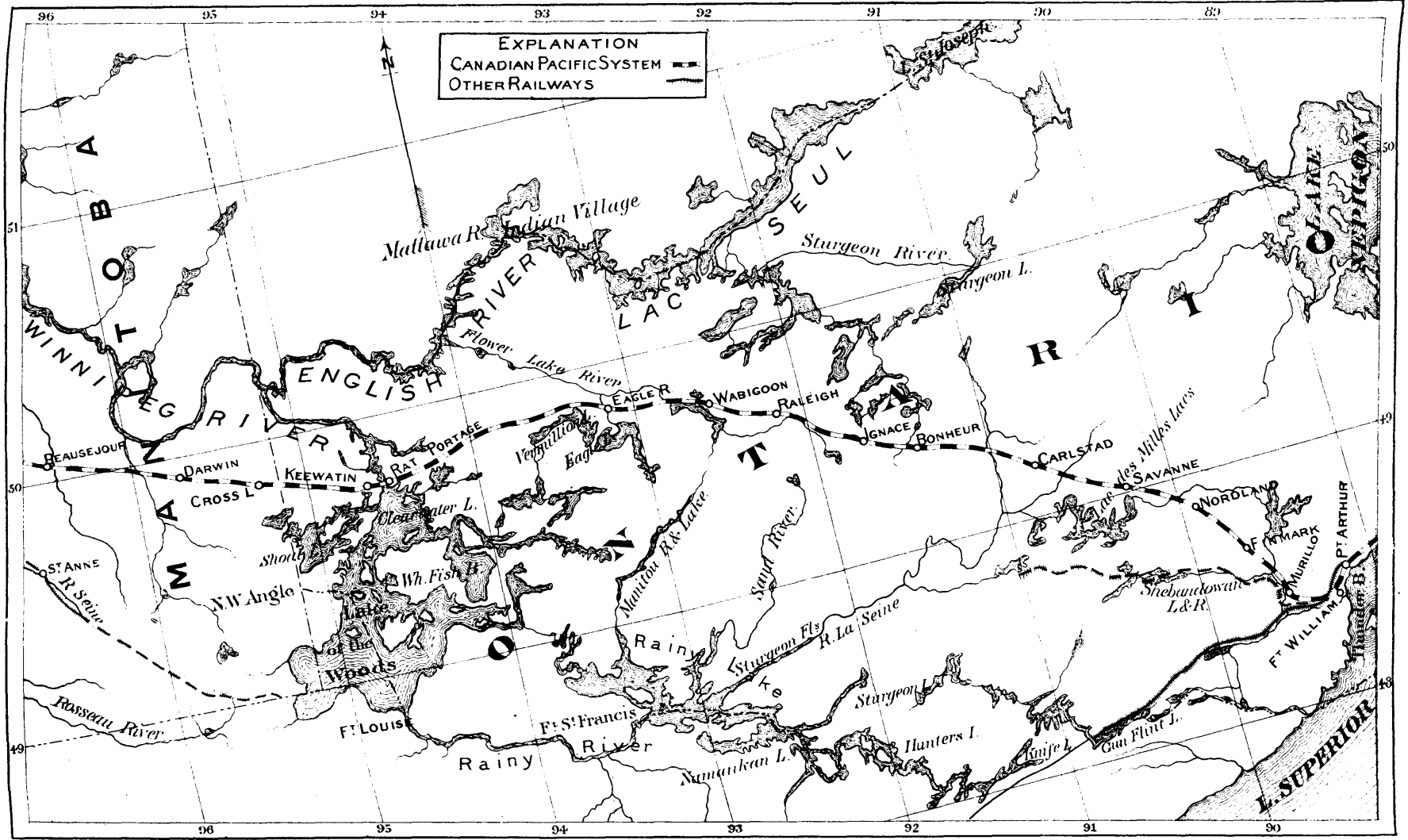
47
A U. ALMON DEL
MORTIMER & CO. LITH. OTTAWA, ONT.

1899

N°8



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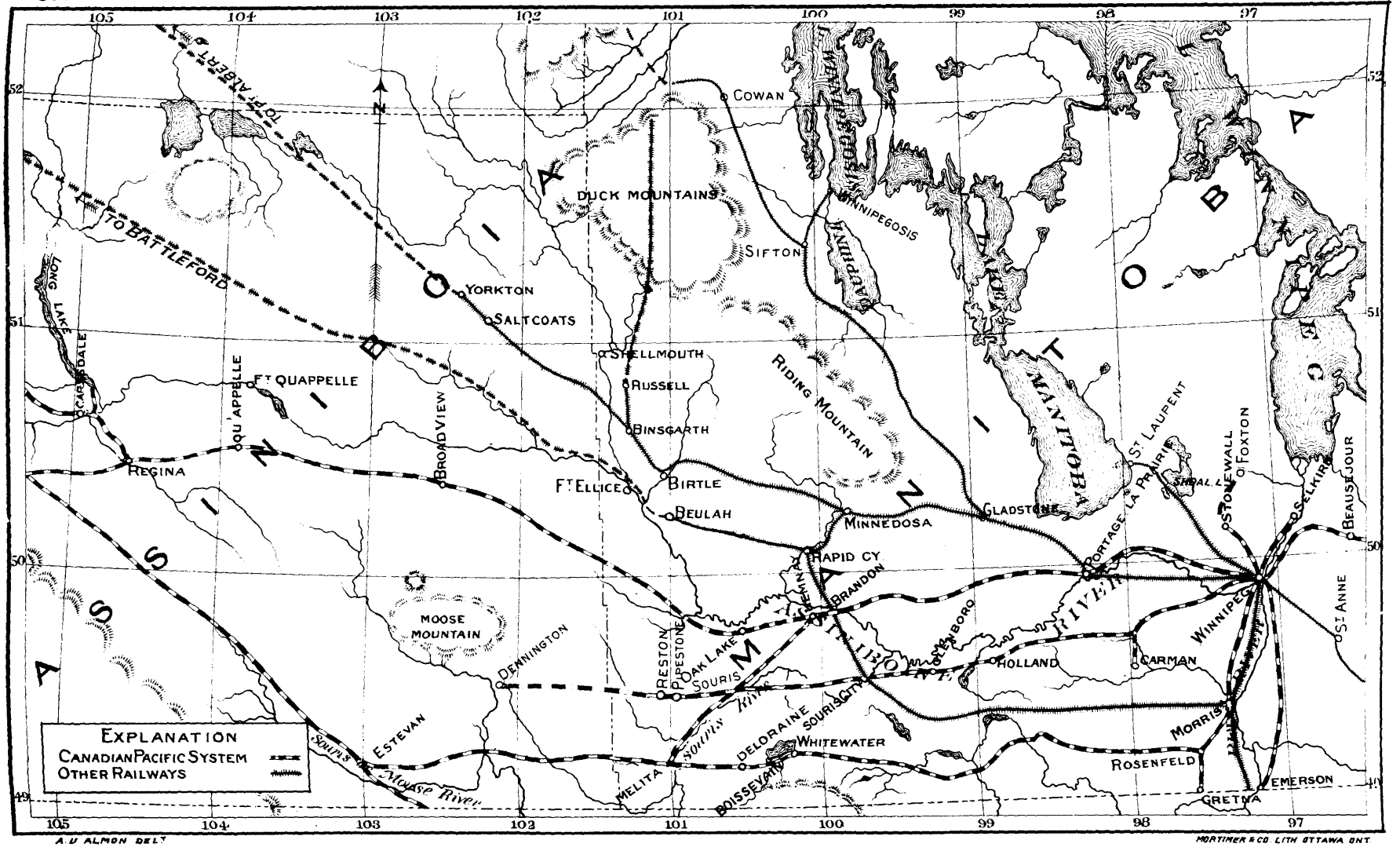
MORTIMER & CO. LITH. OTTAWA ONT.

1899

No 9



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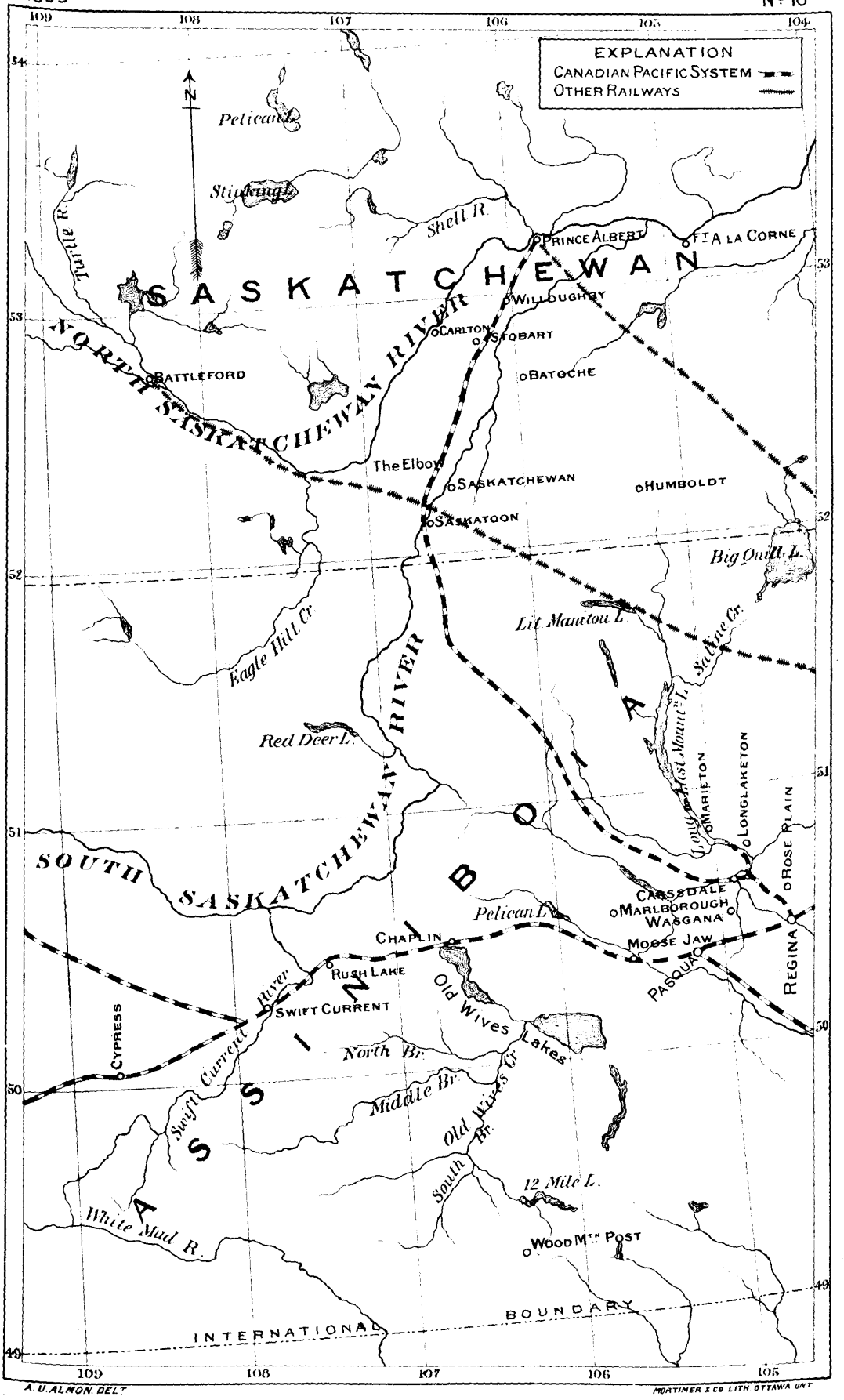

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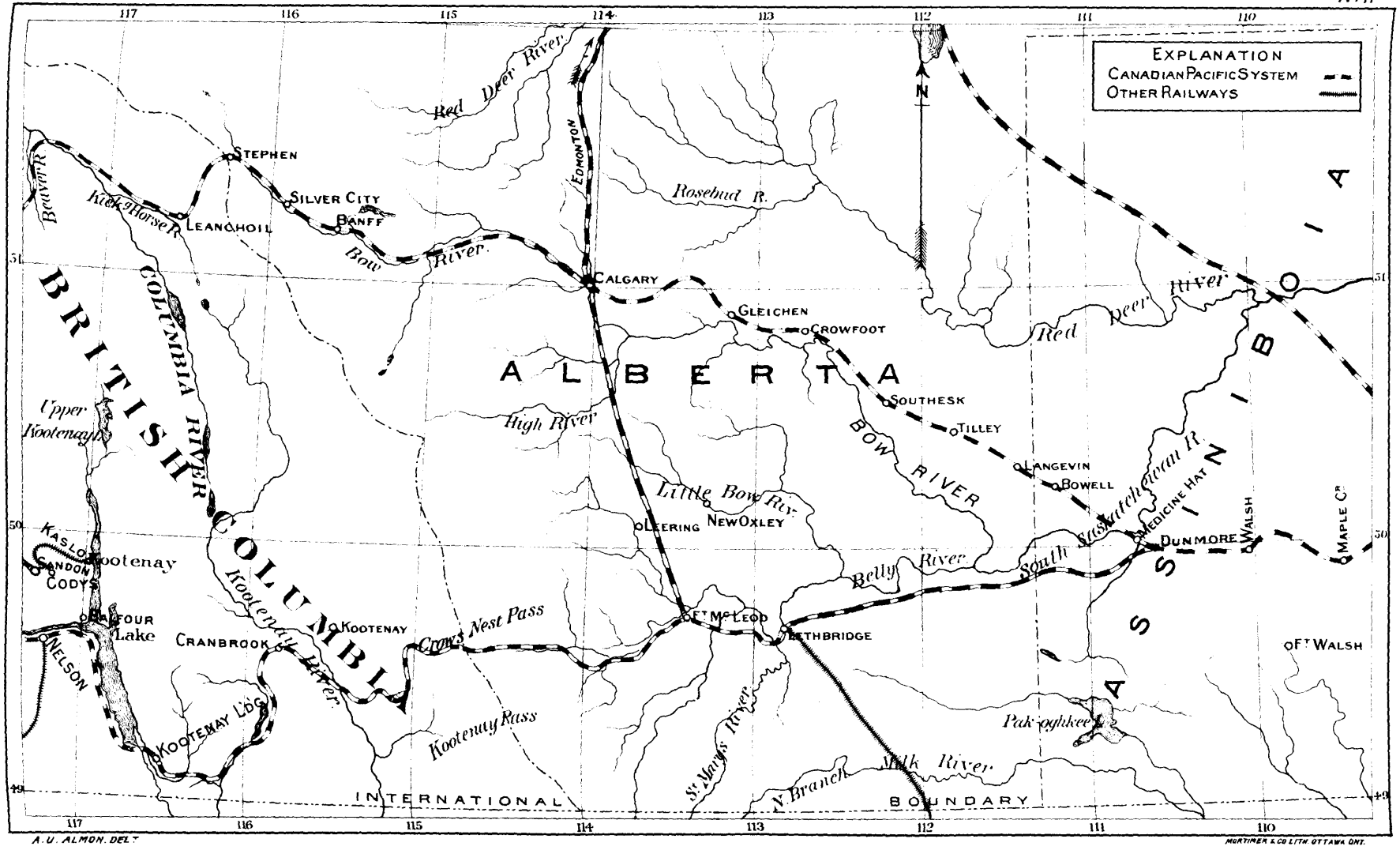
MORTIMER & CO. LITH. OTTAWA ONT.



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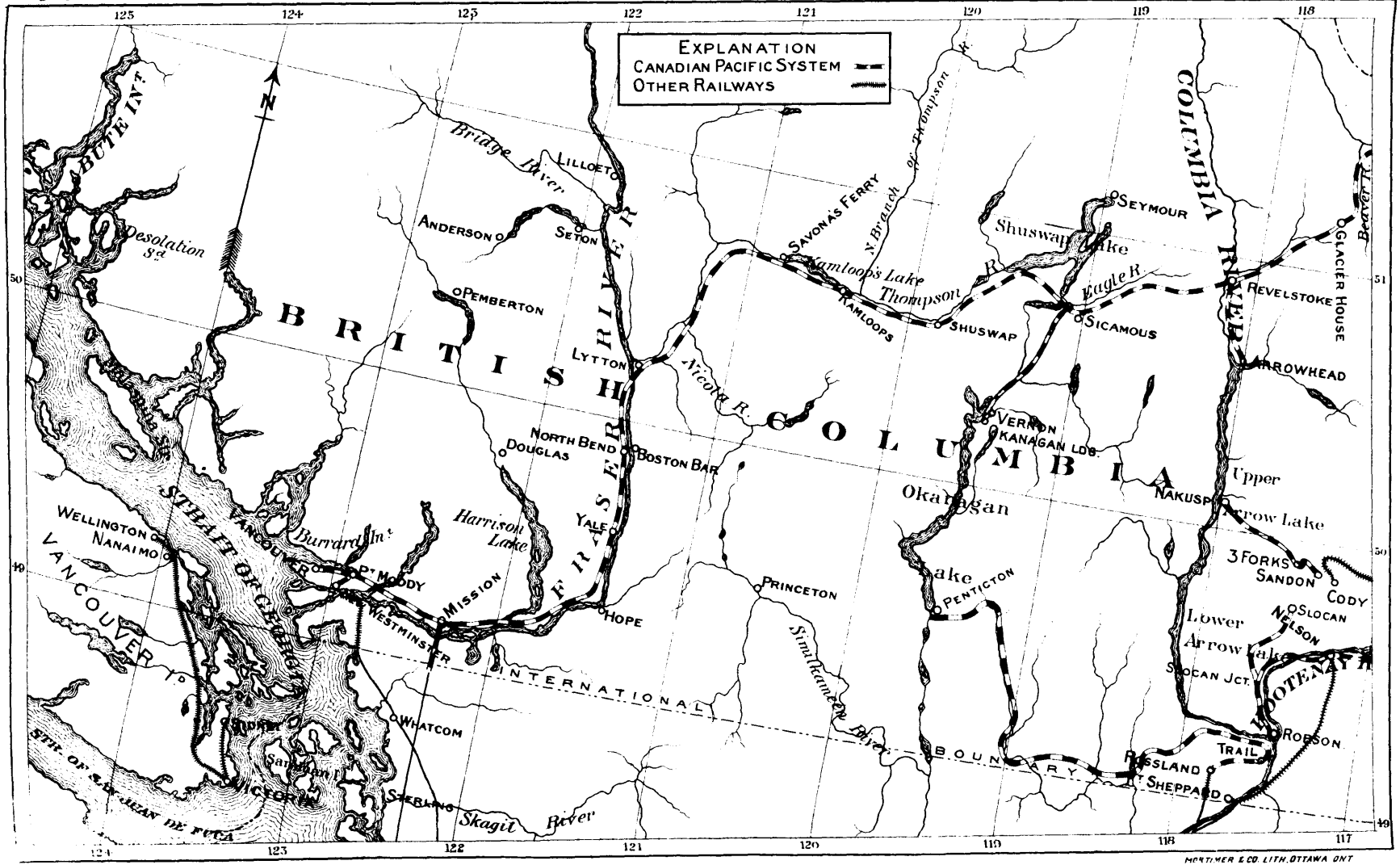

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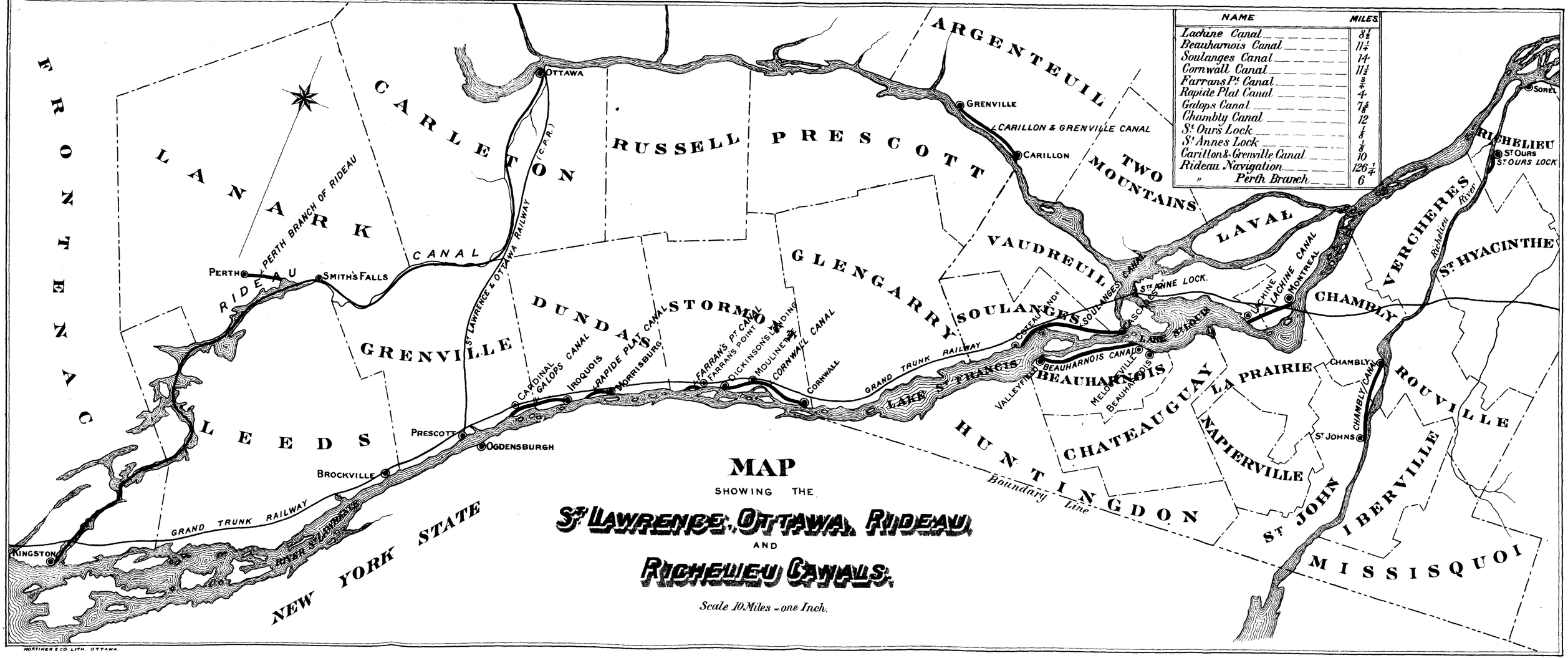
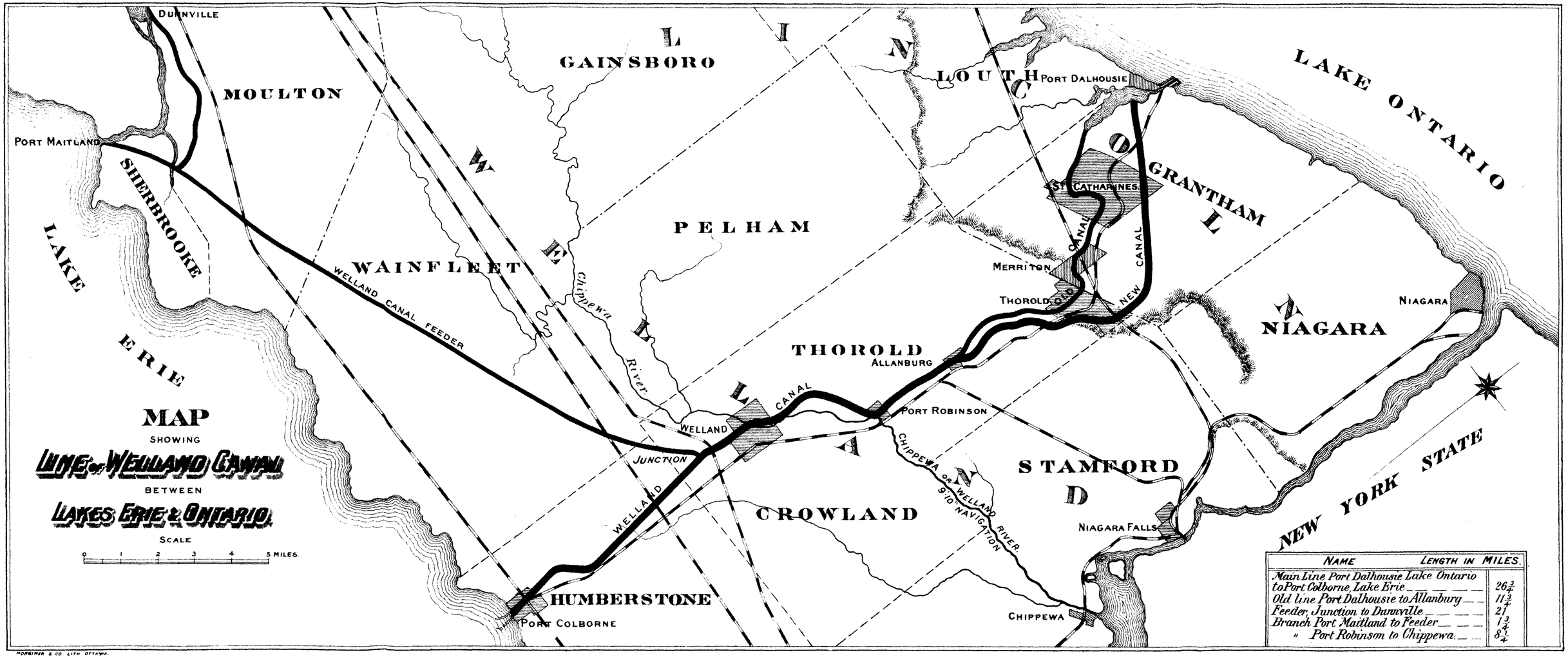

NAME MILES
Lachine Canal 8 1/2
Beauharnois Canal 11 1/4
Soulanges Canal 14
Cornwall Canal 11 1/2
Farrans Pt Canal 3/4
Rapide Plat Canal 4
Galops Canal 7 5/8
Chambly Canal 12
St Ours Lock 1/8
St Annes Lock 1/8
Carillon & Grenville Canal 10
Rideau Navigation 126 1/4
" Perth Branch 6
FRONTENAC
LANARK
CARLETON
RUSSELL
PRESCOTT
ARGENTEUIL
TWO MOUNTAINS
LAVAL
VERCHERES
RICHELIEU
ST HYACINTHE
CHAMBLY
ROUVILLE
IBERVILLE
MISSISQUOI
ST JOHN
NAPIERVILLE
LA PRAIRIE
CHATEAUGUAY
BEAUHARNOIS
HUNTINGDON
VAUDREUIL
SOULANGES
GLENGARRY
STORMONT
DUNDAS
GRENVILLE
LEEDS
NEW YORK STATE
Boundary line
PERTH BRANCH OF RIDEAU CANAL
RIDEAU
PERTH
SMITH'S FALLS
OTTAWA
St LAWRENCE & OTTAWA RAILWAY (C.P.R.)
GRENVILLE
CARILLON & GRENVILLE CANAL
CARILLON
SOREL
RICHELIEU
St OURS
St OURS LOCK
Richelieu River
LACHINE CANAL
LACHINE
MONTREAL
Ste ANNE LOCK
Ste ANNE
SOULANGES CANAL
COTEAU LANDING
COTEAU
LAKE St LOUIS
BEAUHARNOIS CANAL
VALLEYFIELD
MELOCHEVILLE
BEAUHARNOIS
CHAMBLY CANAL
CHAMBLY
St JOHNS
CARDINAL
GALOPS CANAL
IROQUOIS
RAPIDE PLAT CANAL
MORRISBURG
FARRAN'S Pt CANAL
FARRAN'S POINT
DICKINSON'S LANDING
MOULINETTE
CORNWALL CANAL
CORNWALL
GRAND TRUNK RAILWAY
PRESCOTT
OGDENSBURGH
BROCKVILLE
KINGSTON
RIVER St LAWRENCE
GRAND TRUNK RAILWAY
MAP
SHOWING THE
St LAWRENCE, OTTAWA, RIDEAU
AND
RICHELIEU CANALS.
Scale 10 Miles = one Inch.
MORTIMER & CO. LITH. OTTAWA.



NAME	LENGTH IN MILES.
Main Line Port Dalhousie Lake Ontario to Port Colborne, Lake Erie	26 3/4
Old line Port Dalhousie to Allanbury	11 3/4
Feeder, Junction to Dunville	21
Branch Port Maitland to Feeder	1 3/4
" Port Robinson to Chippewa.	8 1/4

MORRISON & CO. LITH. OTTAWA.

MAP
SHOWING
TRENT NAVIGATION AND MURRAY CANAL.

Scale 10 Miles = one Inch.

MURRAY CANAL length 5 1/6 Miles.

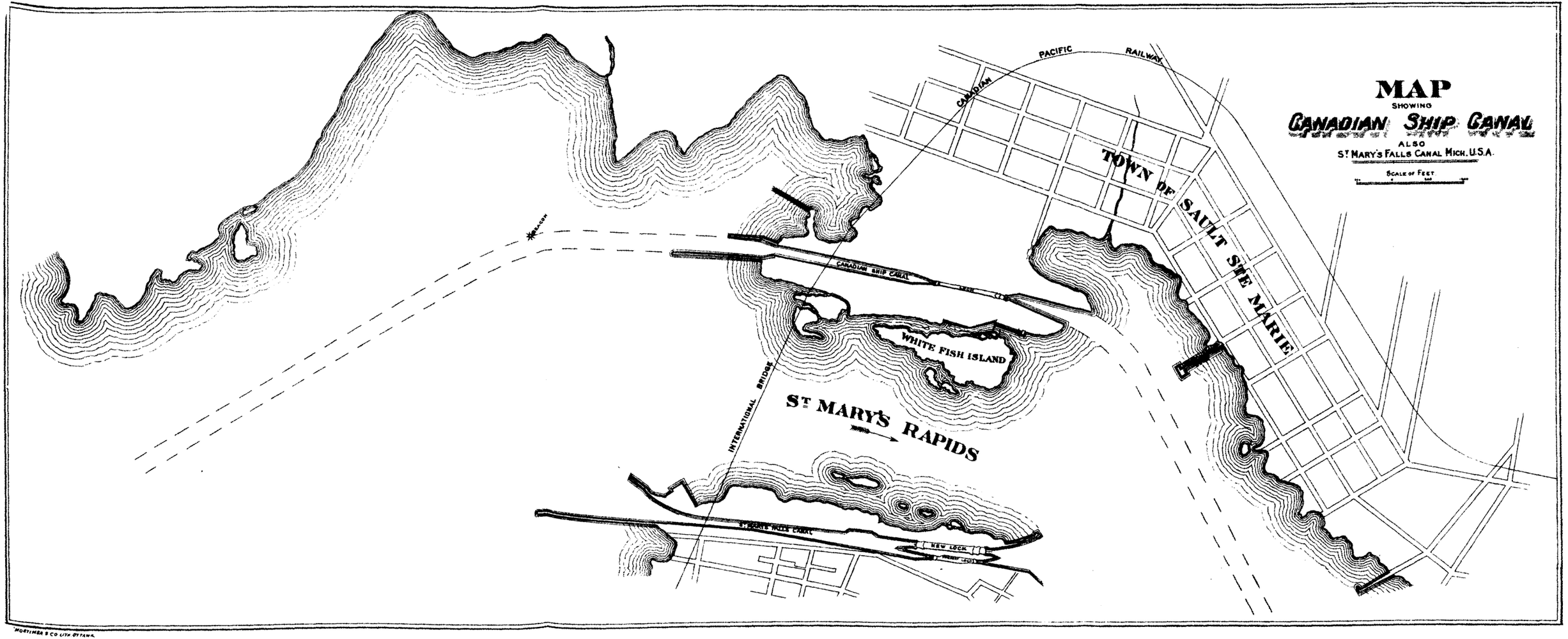
Constructed
Under Contract
Survey

SIMCOE
VICTORIA
PETERBOROUGH
HASTINGS
ADDINGTON
LENNOX
PRINCE EDWARD
NORTHUMBERLAND
DURHAM
ONTARIO
YORK

LAKE SIMCOE
LAKE ONTARIO
BAY OF QUINTE

Severn River
Lake Couchiching
Orillia
Barrie
Kempenfelt Bay
Cameron Lake
Cameron Lake
Cameron Lake
Cambridge
Talbot River
Kirkfield
Rosedale
Lock. Ontario Gov.
2 Locks & Dam
Fenelon Falls
Bobcaygeon
1 Lock & Dams
1 Lock & Dam
Buckhorn
Lovesick
1 Lock & 3 Dams
Burleigh Falls
2 Locks 2 Dams.
Young's Pt.
Dam.
Dam
Lakefield
Dam
Lindsay
Lock. Ontario Gov.
Peterborough
1 Lock & Dam
Hastings
1 Lock & Dam.
Trent River
Campbellford
Dam.
Healy's Falls
1 Lock & Dam.
Chisholms Rapids
Otonabee R.
Rice Lake
Frankford
Murray Canal
Belleville
Trenton
Brighton
Port Hope
Cobourg
Whitby
Oshawa
Bowmanville

MORTIMER & CO. LITH, OTTAWA.


MAP
SHOWING
CANADIAN SHIP CANAL
ALSO
St MARY'S FALLS CANAL MICH. U.S.A.
SCALE OF FEET
CANADIAN PACIFIC RAILWAY
TOWN OF SAULT STE MARIE
CANADIAN SHIP CANAL
WHITE FISH ISLAND
INTERNATIONAL BRIDGE
St MARY'S RAPIDS
NEW LOCK
MORTIMER & CO LITH OTTAWA

PART I

SKETCH MAPS OF DOMINION RAILWAYS AND CANALS

ALSO INFORMATION AS TO

TRANSCONTINENTAL RAILWAY COMMUNICATION AND AS TO ROUTES OF CANAL NAVIGATION

AND

REPORT OF THE CHIEF ENGINEER

COMPRISING REPORTS OF

GENERAL MANAGER OF GOVERNMENT RAILWAYS AND SUPERINTENDENTS OF CANALS

ALSO

DECISIONS OF THE RAILWAY COMMITTEE OF THE PRIVY COUNCIL

CANADIAN TRANSCONTINENTAL RAILWAY COMMUNICATION.

HALIFAX OR ST. JOHN TO MONTREAL.

The routes available between Halifax and Montreal are four in number; in all of which the Intercolonial is used, either in whole or in part, as follows: (the names adopted are those of the dominating roads):—

Intercolonial Railway Route—

	Miles.	
By Intercolonial Railway to Point Lévis	675	
" " Lévis to Montreal	173	
		848

(Or by ferry across the St. Lawrence to Quebec, thence by Canadian Pacific Railway, also 173 miles.)

Canadian Pacific Railway Route—

By Intercolonial Railway to St. John, N.B	275	
Canadian Pacific Railway and Maine Central Railway to Mattawamkeag	146	
Canadian Pacific Railway to Montreal	334	
		775

Grand Trunk Railway Route—

By Intercolonial Railway to St. John, N.B	275	
Canadian Pacific Railway	90	
Maine Central Railway	224	
Total up to Danville Junction	589	
By Grand Trunk Railway to Montreal	270	
		859

Témiscouata Railway Route—

By Intercolonial Railway to St. John, N.B	275	
Canadian Pacific Railway to Edmundston	170	
Témiscouata Railway to Rivière du Loup	81	
Intercolonial Railway to Montreal	282	
		808

MONTREAL TO THE PACIFIC COAST, CANADIAN PACIFIC RAILWAY.

Trunk Line.

	Miles.	Miles.
Quebec to St. Martin's Junction (13 miles north of Montreal).		159
Montreal (at head of Atlantic Ocean Navigation to St. Martin's Junction)		13
St. Martin's Junction to Callander		331
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	
		2,547
Port Moody to Vancouver		15
Total, Montreal to Vancouver		2,906

This railway was opened for through traffic on June 28, 1886.

INTERCOLONIAL RAILWAY.

The Intercolonial Railway touches six Atlantic Ocean ports, namely, Pointe du Chêne, Pictou, Halifax, St. John, Sydney and North Sydney, as well as the ports of Quebec and Montreal on the St. Lawrence River.

The total length of the road operated during the year ended June 30, 1899, was 1,315 miles, and for freight branches 12½ miles, making a total of 1,327½ miles.

The following are the through distances:—

		Miles.
Montreal via St. Joseph and St. Charles Junction (14 miles) to Halifax		838
Montreal to St. John		741
Montreal via Truro	to Sydney	990
	to North Sydney	983

NOTE.—At Montreal the passengers make connection with the Canadian Pacific Railway and with the Grand Trunk Railway. Freight is carried direct along the line between Chaudière Junction and St. Charles Junction (17 miles), instead of round by Lévis to St. Charles Junction, a total distance of 24 miles, thence to Montreal.

WINDSOR BRANCH.

This road is 32 miles in length. It extends from Windsor Junction, on the Intercolonial Railway, to Windsor.

PRINCE EDWARD ISLAND RAILWAY.

LENGTH OF LINE.

	Miles.
Souris to Tignish	168
Mount Stewart to Georgetown	24
Charlottetown to Royalty Junction	5
Emerald Junction to Cape Traverse	13
Alberton to Cascumpec Wharf	1
	211

Communication between the Prince Edward Island Railway and the Intercolonial is afforded in summer by steamer between Summerside and Pointe du Chêne, between Charlottetown and Pictou, and between Georgetown and Pictou, and in winter by specially-built steamers between Georgetown and Pictou and between Charlottetown and Pictou; there is also further provision made for communication by iceboats from Cape Traverse. These cross the Strait to Cape Tormentine, on the mainland, a distance of about 9 miles. Here, by the line of New Brunswick and Prince Edward Railway, about 40 miles in length, connection is made with the Intercolonial Railway at Sackville. This winter service across the Straits is conducted by the Marine Department, the mails being taken to and met at Cape Traverse by special trains, whenever required by the Post Office Department.

CANALS.

The canal systems of the Dominion, under Government control, in connection with lakes and navigable rivers, are as follow:—

First.—Montreal to Port Arthur at head of Lake Superior.

1. Lachine Canal.
2. Soulanges "
3. Cornwall "
4. Farran's Point Canal.
5. Rapide Plat "
6. Galops "
7. Murray "
8. Welland "
9. Sault Ste. Marie "

Second.—Ottawa to Lake Champlain.

1. Grenville Canal.
2. Carillon "
3. St. Anne's "
4. Chambly "
5. St. Ours "

Third.—Ottawa to Kingston and Perth.

1. Rideau Canal.

Fourth.—

1. Trent Canal.

Fifth.—Ocean to the Bras d'Or Lakes.

1. St. Peter's Canal.

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 Isle to Port Arthur, at the head of Lake Superior, a distance of 2,260 statute miles. The distance to Duluth is 2,384 miles.

From the Straits of Belle Isle, at the mouth of the St. Lawrence, to Montreal the distance is 986 miles. From Quebec to Montreal the distance is 160 miles. Owing to the shallowness of the waters on a portion of the river between these two places, particularly through Lake St. Peter, vessels drawing more than from ten to twelve feet were formerly barred from passage for the greater part of the season of navigation. In 1826, the question of deepening the channel was first definitely mooted, but it was not until 1844 that any dredging operations were begun. In that year, the deepening of a new straight channel was commenced, but the scheme was abandoned in 1847. In 1851 the deepening of the present channel was begun. At that time the depth of the channel at low water was 10 feet 6 inches. By the year 1869 this depth had been increased to 20 feet, by 1882 to 25 feet, and by the close of 1888 the depth of 27½ feet, at low water, was attained for a distance of 108 miles from Montreal to a point within tidal influence. This work is now being continued by the Government of Canada, which in 1888, under the provisions of the Act 51 Vic., ch. 5, of that year, assumed the indebtedness incurred. The channel has a minimum width of 300 feet, extending to 550 feet at points of curvature. The channel is lighted and buoyed.

Navigation, which is closed by ice during the winter months, opens about the end of April.

Montreal has by this work been placed at the head of ocean navigation, and here the canal systems of the River St. Lawrence begin, overcoming the various rapids by which the river channel upwards is obstructed, and giving access, through the St. Lawrence Canals, the Welland Canal, the Great Lakes and the Sault Ste. Marie Canal, to the head of Lake Superior.

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

The Dominion canals, constructed between Montreal and Lake Superior are the Lachine, Soulanges, Beauharnois, Cornwall, Farran's Point, Rapide Plat, Galops, Murray,

Welland and Sault Ste. Marie. Their aggregate length is 85 miles; total lockage (or height directly overcome by locks), 551 feet. The number of locks through which a vessel would pass in its passage from Montreal, at the head of ocean navigation, to the head of Lake Superior is 47. The Soulanges Canal takes the place of the Beauharnois Canal, the latter may be abandoned for navigation purposes.

Communication between Lakes Huron and Superior is obtained by means of the Canadian Sault Ste. Marie Canal, and also by the St. Mary's Falls Canal situated on the United States side of the River St. Mary. Both these canals are free of toll.

It is important to note that the enlargement of the canals on the main route between Montreal and Lake Erie comprises locks of the following minimum dimensions:—Length 270 feet, width 45 feet, depth of water on sills 14 feet. *The length of the vessels to be accommodated is limited to 255 feet.* At Farran's Point, in the canal of that name, the lock is 800 feet long. A similar lock is built at Iroquois on the Galops Canal, the object being to pass a full tow at one lockage.

LACHINE CANAL.

Length of canal	8½ statute miles.
Number of locks	5
Dimensions of locks	270 feet by 45 feet.
Total rise or lockage	45 "
Depth of water on sills { at two locks	18 "
{ at three locks	14 "
Mean width of new canal	150 "

The old lift locks, 200 feet by 45 feet, are still available with 9 feet of water on mitre sills.

The depth of the canal between locks is now adapted to vessels of 14 feet draught.

The canal consists of one channel, with two distinct systems of locks, the old and the enlarged. The old locks are 200 feet by 45 feet. There are two lock entrances at each end.

The canal extends from the city of Montreal to the town 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 Isle.

BEAUHARNOIS CANAL.

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

This canal commences on the south side of the St. Lawrence, 15¼ miles from the head of the Lachine Canal. It connects Lakes St. Louis and St. Francis, and passes the three rapids known, respectively, as the Cascades, the Cedars and the Coteau. This canal will no longer form a link in the chain of canals on the through route.

The Soulanges canal, on the north side of the river, is now open for navigation purposes.

CORNWALL CANAL.

Length of canal	11 statute miles.
Number of locks	6
Dimensions of locks	270 by 45 feet.
Total rise or lockage	48 feet.
Depth of water on sills	14 "
Breadth of canal at bottom	100 "
Breadth of canal at water surface	164 "

The old lift locks, 200 feet by 45 feet, are also available with 9 feet of water on the mitre sills.

From the head of the Soulanges to the foot of the Cornwall Canal there is a stretch, through Lake St. Francis, of 32¾ miles, which is being made navigable for vessels drawing 14 feet.

The Cornwall Canal extends past the Long Sault Rapids from the town of Cornwall to Dickenson's Landing.

WILLIAMSBURG CANALS.

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

FARRAN'S POINT CANAL.

Length of canal	1 mile.
Number of locks	1
New lock	800 feet by 45 feet.
Old lock	200 " 45 "
Total rise or lockage	3½ "
Depth of water on sills of new lock at ordinary water level	14 "
Depth of water on sills of old lock at ordinary water level	9 "
Breadth of canal at bottom	90 "
Breadth of canal at water surface	154 "

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, passing the full tow at one lockage. Descending vessels run the rapids with ease and safety.

Rapide Plat Canal.

Length of canal	$3\frac{2}{3}$ miles.
Number of locks	2
Dimensions of locks	270 feet by 45 feet.
Total rise or lockage	$11\frac{1}{2}$ "
Depth of water on sills	14 "
Breadth of canal at bottom	80 "
Breadth of canal at surface of water	152 "

The old lift lock, 200 feet by 45, is also available with 9 feet water on mitre sills.

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 rapids at that place. Descending vessels run the rapids safely.

Galops Canal.

Length of canal	$7\frac{1}{3}$ miles.
Number of locks	3
Dimensions of locks	2—270 by 45. 1—800 by 45.
Total rise or lockage	$15\frac{1}{2}$ feet.
Depth of water on sills	14 "
Breadth of canal at bottom	80 "
Breadth of canal at surface of water	144 "

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, Point Cardinal and the Galops.

MURRAY CANAL.

Length between eastern and western pier heads	$5\frac{1}{6}$ miles.
Breadth at bottom	80 feet.
Breadth at water surface	120 "
Depth below lowest known lake level	11 "

No locks.

This canal extends through the Isthmus of Murray, giving connection westward between the head waters of the Bay of Quinté and Lake Ontario, and thus enabling vessels to avoid the open lake navigation.

WELLAND CANAL.

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

—	Old Line.	Enlarged or New Line.
Length of canal	27½ miles.	26¾ miles.
Pairs of guard-gates (formerly 3)		2
Number of locks { lift	26	lift 25
Number of locks { guard	1	guard 1
Dimensions	1 lock 200 x 45 1 " 200 x 45 1 (tidal) 230 x 45 24 locks 150 x 45	270 feet x 45 feet.
Total rise or lockage	326¾ feet.	326¾ feet.
Depth of water on sills	10½ feet.	14 "

WELLAND RIVER BRANCHES.

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

GRAND RIVER FEEDER.

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

PORT MAITLAND BRANCH.

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

The Welland Canal has two entrances from Lake Ontario, at Port Dalhousie, one for the old, the other for the new canal.

From Port Dalhousie to Allanburgh, 11¾ miles, there are 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.

From the head of the Welland Canal there is a deep water navigation through Lake Erie, the Detroit River, Lake St. Clair, the St. Clair River, Lake Huron and River St. Mary to the Sault Canal, a distance of about 394 miles. From the Sault the distance through Lake Superior to Port Arthur is 266 miles, and to Duluth 390 miles.

SAULT STE. MARIE CANAL.

Length of canal, between the extreme ends of the entrance piers	5,967 feet.
Number of locks	1
Dimensions of lock	900 feet by 60 feet.
Depth of water on sills (at lowest known water level)	20 feet 3 inches.
Total rise or lockage	18 feet.
Breadth of canal at bottom	141 feet 8 inches.
Breadth at surface of water	150 feet.

This canal has been constructed through St. Mary's Island, on the north side of the rapids of the River St. Mary, and, with that river, gives communication on Canadian territory between Lakes Huron and Superior. The masonry pier of the bridge carrying the Canadian Pacific Railway over the canal which stood in the channel of the canal forming an obstruction to navigation, has been removed, the swing now spanning the full width of the channel or prism of the canal.

MONTREAL, OTTAWA AND KINGSTON.

This route extends from the harbour of Montreal to the port of Kingston, passing through the Lachine Canal, the navigation section of the lower River Ottawa, and the Ottawa Canals, to the city of Ottawa; thence by the River Rideau and the Rideau Canal to Kingston, on Lake Ontario—a total distance of 245⅝ miles.

After leaving the Lachine Canal the works constructed to overcome difficulties of navigation are:—

The Ste. Anne's Lock,
Carillon Canal,
Grenvillle Canal,
Rideau Canal,
} Ottawa River Canals.

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 distances.	Total distance from Montreal.
	Miles.	Miles.
The Lachine Canal	8½	
From Lachine to Ste. Anne's Lock	15	23½
Ste. Anne's Lock and piers	⅛	23⅝
From Ste. Anne's Lock to Carillon Canal	27	50⅝
The Carillon Canal	¾	51⅜
From Carillon Canal to Grenville Canal	6¼	57⅝
The Grenville Canal	¾	63⅜
From the Grenville Canal to entrance of Rideau navigation	56	119⅜
Rideau navigation, ending at Kingston	126¼	245⅝

STE. ANNE'S LOCK.

	Old Lock.	New Lock.
Length of canal	⅛ mile	⅛ mile.
Number of locks	1	1
Dimensions of locks	190 x 45 feet.	200 x 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 River Ottawa which forms the Lake of Two Mountains, 23½ miles from Montreal harbour.

THE CARILLON CANAL.

Length of canal	¾ mile.
Number of locks	2
Dimensions of locks	200 x 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.

By the construction of the Carillon dam across the River Ottawa the water at that point is raised 9 feet, enabling the river above to be used for navigation.

GRENVILLE CANAL.

Length of canal	5¾ miles.
Number of locks	5
Dimensions of locks	200 x 45 feet.
Total rise or lockage	43¾ feet.
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 "

This canal, by which the Long Sault Rapids are avoided, is about 56 miles below the city of Ottawa, up to which point the River Ottawa affords unimpeded navigation.

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	126¼ miles.
Number of locks going from Ottawa to Kingston.	35 ascending. 14 descending.
Total lockage.... 446¼ feet.	282¼ rise and 164 fall. at high water.
Dimensions of locks	134 x 33 feet.
Depth of water on sills, 5 feet; navigation depth through the several reaches	4½ feet.
Breadth at canal reaches at bottom	60 " in earth. 54 " in rock.
Breadth at surface of water	80 " in earth.

PERTH BRANCH.

Length of canal	6 miles.
Number of locks	2
Dimensions of locks	134 feet x 32 feet.
Total rise or lockage	26 "
Depth of water on sills	5 " 6 inches.
Length of dam	200 "
Breadth of canal at bottom	40 "
Breadth of canal at surface of water	40 " in rock. 60 " in clay.

The Perth branch on the Rideau Canal affords communication between Beveridge's Bay, on Lake Rideau, and the town of Perth.

The summit level of the Rideau 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 Rideau River, and that towards Kingston follows the River Cataraqui. The supply of water for the canal is derived from 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 Openicon.

Lake Openicon 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 outlet, forms the River Cataraqui. The river, rendered navigable by dams at various points, affords a line of navigation to Kingston.

RICHELIEU AND LAKE CHAMPLAIN.

This system, commencing at Sorel, at the confluence of the River St. Lawrence and Richelieu, 46 miles below Montreal, extends along the River Richelieu, through the St. Ours Lock to the basin of Chambly, thence by the Chambly Canal to St. Johns and the River Richelieu and Lake Champlain. The distance from Sorel to the boundary line is 81 miles.

At Whitehall, the southern end of Lake 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 distances between Sorel and New York :—

Section of Navigation.	Intermediate Distances 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	$\frac{1}{8}$	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, 14 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 in the Richelieu of 7 feet between St. Ours Lock and Chambly Basin, a distance of 32 miles.

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 "	

This canal succeeds the 32 miles of navigable water between St. Ours Lock and Chambly Basin. The canal overcomes the rapids between Chambly and St. Johns.

TRENT CANAL.

The term "Trent Canal" 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. By various works, this local use has been extended, and by others, now in progress and contemplation, this will become a through route between Lake Ontario and Lake Huron.

The series is composed of a chain of lakes and rivers, extending from Trenton, at the mouth of the River 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, as originally contemplated and modified, is as follows:—

Through the River Trent, Rice Lake, the River Otonabee, and Lakes Clear, Stony, Lovesick, Deer, Buckhorn, Chemong, Pigeon, Sturgeon and Cameron to Lake Balsam, the summit water, about 165 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 200 miles, of which only about 15 or 20 miles will be actual canal.

The full execution of the scheme, commenced by the Imperial Government in 1837, was deferred. By certain works, however, below specified, sections of these waters have been made practicable for navigation, and the whole scheme is now being carried

out. A branch of the main route, 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.

The following table gives the distance 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 Heeley's Falls Dam.....	....	14½
" Heeley's Falls Dam to Peterborough.....	51¾	
" Peterborough to Lakefield.....	....	9
" Lakefield to a point across Balsam Lake.....	61	
	132¼	32¾
Total distance, Bay of Quinté to a point across Balsam Lake.....	....	165
From Sturgeon Point on Sturgeon Lake, 48¾ miles from Lakefield, the branch through the town of Lindsay to Port Perry at the head of Lake Scugog..	....	27½

The works by which the Trent navigation has been improved comprise canals, with locks and bridges, at Burleigh Rapids, Buckhorn Rapids and Fenelon Falls ; also dams at Lakefield and Young's Point. By these works there is afforded communication between Lakefield, 9½ miles from Peterborough and Balsam Lake, the headwaters of the system ; opening up a total of about 160 miles of direct and lateral navigation.

At Lakefield, 9½ miles from Peterborough, the dam, at the head of the Nine Mile Rapids of the River Otonabee, maintains navigation on Lake Katchiwannoe up to Young's Point.

At Young's Point, five miles from Lakefield, the dam between Lake Katchiwannoe 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 about 2¼ miles in length, passes the Burleigh and Lovesick Rapids, and gives communication between Stony Lake and Deer Bay.

At Buckhorn Rapids, seven miles from Burleigh Rapids, there is a canal about one fourth of a mile long.

At Bobcaygeon, 15¾ miles from Buckhorn Rapids, a dam, 553 feet long, controls the water level up to Fenelon Falls.

At Fenelon Falls, 15 miles from Bobcaygeon, a canal about one-third of a mile in length connects Sturgeon Lake with Cameron Lake.

The following is a list of the locks, with their dimensions :—

1 lock at Rosedale (maintained by the Ontario Government). .....100′ x 30′ x 4′ 6′ to 6′ 6″ depth water on mitre sill.
2 locks at Fenelon..... 134′ x 33′ x 5′ 0″ to 7′ 6″ depth water on mitre sill.
1 " Lindsay . ... " 5′ 0″ to 7′ 0″ " "
1 " Bobcaygeon ... " 5′ 8″ to 7′ 6″ " "
1 " Buckhorn .... " 5′ 0″ to 9′ 0″ " "
1 " Lovesick.. ... " 5′ 0″ to 9′ 4″ " "
2 " Burleigh..... " 2′ 4″ to 7′ 0″ " "
1 " Young's Point (a Provincial Government work) 134′ x 33′ x 5′ 0″ to 14′ 0″ depth water on mitre sill.
1 " Peterborough. 134′ x 33′ x 5′ 0″ to 10′ 0″ depth water on mitre sill.
1 " Hastings .... " 7′ 0″ to 10′ 6″ " "
1 " Chisholms ... " 5′ 0″ to 8′ 6″ " "

13

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 48 feet.
Depth of water on sills.....	18 " 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.

SOULANGES CANAL.

This work is being constructed on the north side of the River St. Lawrence in place of enlarging the Beauharnois Canal on the south side. It follows a line extending upwards from Cascades Point to Macdonald's Point, near Côteau Landing. The scheme contemplates a canal on a practically straight line, 14 miles long, comprising one guard and four lift locks, overcoming a total rise of 82½ feet. (The number of locks on the Beauharnois Canal, including the guard-lock, is nine.) The dimensions of the Soulanges locks are, length 270 feet, width 45 feet, depth of water on sills 14 feet.

CHIEF ENGINEER'S REPORT.

DEPARTMENT OF RAILWAYS AND CANALS,
OFFICE OF THE CHIEF ENGINEER,
OTTAWA, December 6, 1899.

SIR,—I have the honour to submit my annual report for the fiscal year ended June 30, 1899, covering, however, works of construction up to November 1, instant. Accompanying it are the following :—

First.—The annual report of the General Manager of the Government Railways, attached to which are the reports of the Chief Engineer and Mechanical Superintendent of the Intercolonial Division, and the report of the Superintendent of the Prince Edward Island Division, with statements of accounts prepared by the Accountants of these Roads. (Part I.)

Second.—The report of the Engineer who inspected the Crow's Nest Pass Railway. (Part I.)

Third.—The reports of the Engineers on the exploratory surveys to ascertain the most practicable route for an all Canadian railway from some point on an existing railway into the Yukon District, also between the Stikine River and an ocean port in British Columbia. (Part I.)

Fourth.—The annual reports of the Superintending Engineers of the several canals. (Part I.)

Fifth.—A statement of the condition of the subsidies granted in aid of the construction of railways ; also a list of Railway Subsidy Acts. (Part III.)

Sixth.—Statement of contracts entered into during the year, prepared by Mr. Ruel. (Part IV.)

Seventh.—Statement of water powers and other public property leased by the department during the year, prepared by Mr. Ruel. (Part IV.)

Eighth.—Statement of property purchased or damaged during the year, prepared by Mr. Ruel. (Part IV.)

Ninth.—Agreements respecting subsidies in aid of construction of railways entered into during the year, prepared by Mr. Ruel. (Part IV.)

Tenth.—The canal statistics for the season of navigation of 1898, compiled by Mr. Devlin. (Part V.)

Eleventh.—The railway statistics for the year ended June 30, 1899, compiled by Mr. Ridout, from returns prepared by the railway companies. (Part VI.)

The following table shows the length of the Government railways in operation on June 30, 1899 :—

INTERCOLONIAL DIVISION.

	Miles.	Total Miles.
Montreal to Halifax	840	
Moncton to St. John	89	
Truro to Sydney	217	
Oxford Junction to Pictou	70	
Chaudière Junction to Lévis	8	
Lévis to St. Charles Junction via Harlaka	16	
Dalhousie Junction to Dalhousie	7	
Derby Junction to Indiantown	14	
Painsec Junction to Pointe du Chene	12	
Pugwash Junction to Pugwash	5	
Stellarton Junction to Brown's Point	12	
North Sydney Junction to North Sydney	5	
New Glasgow to Pictou Landing	7	
Dartmouth Branch	13	
	——	1,315·00

Freight Branches.

Nicolet Branch		14	76
Rivière du Loup Wharf Branch		4	
Rimouski	"	2	
Newcastle	"	2	
Dorchester	"	1	
Courtney Bay	"	1	
Sackville	"		·50
Stewiacke	"	1	
Halifax Cotton Factory Branch		1	
		——	27·26
Total			1,342·26

WINDSOR BRANCH.

Windsor Junction to Windsor	32

PRINCE EDWARD ISLAND RAILWAY.

Souris to Tignish	168	
Mount Stewart to Georgetown	24	
Charlottetown to Royalty Junction	5	
Emerald Junction to Cape Traverse	13	
Alberton to Cascumpec Wharf	1	
	——	211
Total length of Government railways		1,585·26

The result of the year's operations of the Government railways may be stated as follows:—

Name of Railway.	Mileage in operation.	——	Amount.	Profit.	Loss.
			$ cts.	$ cts.	$ cts.
Intercolonial Division	1,315	Working expenses	3,465,686 21		
		Earnings	3,738,331 34	272,645 23	
Windsor Branch	32	½ earnings	42,474 03		
		Maintenance	12,873 09	29,600 94	
Prince Edward Island Division	211	Earnings	165,012 03		
		Working expenses	218,053 01		53,040 98
				302,246 17	53,040 98
		Deduct loss from profit		53,040 98	
Total miles	1,388	Net profit		249,205 19	

The maintenance of the roads and rolling stock has received careful attention, and both roads and rolling stock continue to be in efficient condition.

The gross earnings of the Government railways for the last two years compare as follows:—

——	1897-98.	1898-99.
	$ cts.	$ cts.
Intercolonial Division	3,117,669 85	3,738,331 34
Windsor Branch	37,226 64	42,474 03
Prince Edward Island Division	158,950 61	165,012 03
Total	3,313,847 10	3,945,817 40

Showing an increase in the gross earnings of $631,970.30.

The gross working expenses of the Government railways for the last two years compare as follows:—

——	1897-98.	1898-99.
	$ cts.	$ cts.
Intercolonial Division	3,327,648 51	3,465,686 21
Windsor Branch	18,181 63	12,873 09
Prince Edward Island Division	231,418 74	218,053 01
Total	3,577,248 88	3,696,612 31

Showing an increase in working expenses for the year, compared with the previous year, of $329,363.43, which is made up of the following :—

—	1897-98.	1898-99.	Difference.	
			Increase.	Decrease.
	$ cts.	$ cts.	$ cts.	$ cts.
Locomotive power	1,088,151 47	1,158,655 18	70,503 71	
Car expenses	772,194 02	679,729 95		2,464 07
Maintenance of way and works	974,242 76	942,382 20		31,860 56
Station expenses	429,241 20	483,886 87	54,645 67	
General charges	222,207 79	269,062 00	46,854 21	
Car mileage	21,211 64	72,896 11	51,684 47	
Rental of leased lines	70,000 00	210,000 00	140,000 00	
	3,577,248 88	3,906,612 31	363,688 06	34,324 63
Deduct decrease			34,324 63	
Net increase			329,363 43	

INTERCOLONIAL DIVISION.

The ocean passenger and freight traffic via the port of Halifax shows a considerable increase for the winter season of 1898-99, as compared with the previous winter season.

COMPARATIVE STATEMENT of ocean-borne passenger business done at the port of Halifax during the winter seasons of 1897-98 and 1898-99.

Name of Steamer.	897-98. No. of Passengers.			Name of Steamer.	1898-99. No. of Passengers.		
	1st Class.	2nd Class.	Total.		1st Class.	2nd Class.	Total.
Gallia	25	239	264	Vancouver	75	298	373
Lake Winnipeg	15	180	195	Parisian	41	110	151
Lake Ontario	13	90	103	Tongario	7	108	115
Lake Huron	17	112	129	Labrador	41	213	254
Lake Superior	21	125	146	Carthaginian	7	300	307
Numidian	34	270	304	Laurentian	34	219	253
Parisian	37	463	500	Scotsman	48	256	304
Siberian	2	22	24	Siberian	4	158	162
Assyrian		13	13	Californian	46	492	538
Mongolian	19	130	148	Numidian	12	135	147
Vancouver	15	144	159	Castilian	14	98	112
Roumanian		4	4	Lake Ontario		9	9
Laurentian	6	39	45	Dominion	34	207	241
Scotsman	32	223	255	Mongolian	21	204	225
Carthaginian	13	44	57	Armenian		554	554
Labrador	41	333	374	Corean		25	25
Sarmatian		47	47	Brazilia		1,792	1,792
Californian	33	341	374	Phœnicia		1,308	1,308
La Champagne	90		90	Bulgaria		771	771
Bulgaria	91	614	705				
Palatia		441	441				
Pisa		468	468				
Italia		738	738				
Christiana		527	527				
Sorrenta		78	78				
Total	503	5,685	6,188	Total	384	7,257	7,641

Of the 6,188 passengers in 1897-98, 5,364 travelled via St. John by the Canadian Pacific Railway, and 622 travelled via Chaudière by the Grand Trunk Railway.

Of the 7,641 passengers in 1898-99, 7,180 travelled via St. John by the Canadian Pacific Railway, and 461 travelled by the Intercolonial Railway to Montreal.

COMPARATIVE STATEMENT of ocean-borne freight traffic during the winter seasons of 1897-98 and 1898-99.

Name of line of Steamers.	Winter of 1897-98. Measurement tons.	Weight tons.	Total tons.	Name of line of Steamers.	Winter of 1898-99. Measurement tons.	Weight tons.	Total tons.
Allan Line from Liverpool	907	1,302	2,209	Allan Line from Liverpool	1,265	1,030	2,295
Beaver Line from Liverpool	195	111	306	Beaver Line from Liverpool	401	69	470
Canada & Newfoundland from Liverpool	67	882	949	Canada & Newfoundland from Liverpool	Nil.	Nil.	Nil.
Furness Line from London	744	2,543	3,133	Furness Line from London	650	1,460	2,110
				Dominion Line from Liverpool	382	69½	451½
Total	1,913	4,838	6,597	Total	2,698	2,628½	5,326½

The above statement shows a decrease of 1,270 tons of ocean-borne freight traffic for the winter season of 1898-99, as compared with the winter season of 1897-98.

The following is a statement of the quantity and classes of the rolling stock purchased on capital account up to June 30, 1899 :—

	Engines.	Passenger Car Stock. 1st Class Sleeping and Parlour.	1st Class.	2nd Class Sleepers.	2nd Class.	Baggage and Mail.	Conductors' Van.	Box and Cattle Cars.	Platform Cars.	Coal Cars of three several kinds.	Snow Ploughs.	Wing Ploughs.	Flangers.	Rotary Snow Ploughs.
	227	23	95	7	94	25	99	2,321	2,209	999	49	10	21	2
		5	....	....	....	42	....	103	110	329	....	....	....	....
										747				
Total	227	28	95	7	94	67	99	2,424	2,319	2,075	49	10	21	2

SESSIONAL PAPER No. 10

The following is a statement of the quantity and classes of rolling stocks which have been rebuilt during the year ended June 30, 1899, at the cost of revenue to maintain the work :—

	Engines.	Passenger Car Stock.					Box and Cattle Cars.	Platform Cars.	Coal Cars of three several kinds.	Snow Ploughs.	Wing Ploughs.	Flangers.	Rotary Snow Ploughs.
		1st Class Sleeping and Parlour.	1st Class.	2nd Class Sleepers.	2nd Class.	Baggage and Mail.	Conductors' Van.							
Total	3	....	2	....	....	....	....	2	131	71	....	....	....	....

The following table shows the working expenses, gross earnings, the tonnage of freight and number of passengers carried each year since July 1, 1876, when the road was first opened as a through line to the west :—

Year.	Average Miles in Operation.	Working Expenses.	Gross Earnings.	Profit.	Loss.	Tons of Freight carried.	No of Passengers carried.
		$ cts.	$ cts.	$ cts.	$ cts.		
1876-77	714	1,661,673 55	1,154,445 33	....	507,228 22	421,327	613,420
1877-78	714	1,816,273 56	1,378,946 78	....	432,326 78	522,710	618,957
1878-79	714	2,010,183 22	1,294,009 69	.... ..	716,083 53	510,861	640,101
1879-80	829	1,603,429 71	1,506,298 48	....	97,131 23	561,924	581,483
1880-81	840	1,759,851 27	1,760,393 92	542 65	....	725,777	631,245
1881-82	840	2,069,657 48	2,079,262 66	9,605 18	....	838,956	779,994
1882-83	840	2,360,373 27	2,370,910 10	10,547 83	.... ..	970,961	878,600
1883-84	887	2,377,433 62	2,384,414 92	6,981 30	....	1,009,237	944,636
1884-85	941	2,519,751 56	2,441,203 66	....	78,547 90	989,936	957,228
1885-86	946	2,583,999 67	2,450,093 88	....	133,905 79	1,023,788	932,880
1886-87	966	2,922,369 62	2,660,116 93	.. ....	262,252 69	1,143,020	942,784
1887-88	971	3,366,781 74	2,983,336 05	....	383,445 69	1,288,823	1,040,163
1888-89	971	3,244,647 73	2,967,801 00	....	276,846 73	1,218,877	1,136,272
1889-90	971	3,560,575 74	3,012,739 87	....	547,835 87	1,368,819	1,219,233
1890-91	1,094	3,662,341 94	2,977,395 38	....	684,946 56	1,304,534	1,298,304
1891-92	1,142	3,439,377 00	2,945,441 97	....	493,935 03	1,264,575	1,297,732
1892-93	1,142	3,045,317 50	3,065,499 09	20,181 59	....	1,388,080	1,292,878
1893-94	1,142	2,981,671 98	2,987,510 27	5,838 29	....	1,342,710	1,301,062
1894-95	1,142	2,936,902 74	2,940,717 95	3,815 21	....	1,267,816	1,352,667
1895-96	1,142	3,012,827 62	2,957,640 10	....	55,187 52	1,379,618	1,471,866
1896-97	1,145	2,925,968 67	2,866,028 02	....	59,940 65	1,296,028	1,501,690
1897-98		3,327,648 51	3 117,669 85	....	209,978 66	1,434,576	1,528,444
1898-99		3,465,686 21	3,738,331 44	272,645 23	....	1,750,761	1,603,095

The following table shows the number of tons of coal carried over the Intercolonial Railway from the Nova Scotia collieries to Chaudière Junction and St. John for points west thereof, and to local stations in each year since the road was opened as a through line :—

Year.	For the West.		To Local Stations.	Total.
	Via Chaudière.	Via St. John.		
1876-77	.....	.....	103,420	103,420
1877-78	.....	.....	97,043	97,043
1878-79	300	.....	112,232	112,532
1879-80	1,097	.....	135,369	136,466
1880-81	6,102	4,022	174,483	184,607
1881-82	18,015	11,779	218,364	248,158
1882-83	12,837	22,206	227,380	262,423
1883-84	22,014	19,534	252,014	293,562
1884-85	133,440	1,773	213,791	349,004
1885-86	171,170	21,150	215,272	407,592
1886-87	192,871	27,536	233,178	453,585
1887-88	183,704	36,228	309,727	529,659
1888-89	160,026	27,923	338,538	526,487
1889-90	164,453	25,126	366,967	556,546
1890-91	113,996	39,213	344,829	498,038
1891-92	35,447	5,918	392,441	433,806
1892-93	136,868	3,775	402,653	543,296
1893-94	102,273	8,028	367,390	478,691
1894-95	67,082	7,865	310,253	385,200
1895-96	53,124	9,681	369,708	432,513
1896-97	38,395	12,305	331,469	382,172
1897-98	9,084	9,796	351,069	369,949
1898-99	4,644	5,399	484,163	494,206

It thus appears that the largest tonnage of coal carried over the road for the west was in the year 1886-87, when it reached 220,407 tons, since which the through coal traffic for points west of the Intercolonial Railway has greatly declined.

TABLE showing the number of bushels of grain carried during each year for shipment at Halifax since the road was opened as a through line to the west.

Year.	Bushels.		Total.	Year.	Bushels.		Total.
	Via Chaudière.	Via St. John.			Via Chaudière.	Via St. John.	
1876-77	.....	.....	.....	1888-89	129,725	.....	129,725
1877-78	.....	.....	.....	1889-90	502,012	.....	502,012
1878-79	.....	.....	.....	1890-91	148,803	59,534	218,337
1879-80	.....	.....	.....	1891-92	745,997	519,500	1,265,497
1880-81	.....	.....	.....	1892-93	155,306	197,669	352,975
1881-82	.....	.....	.....	1893-94	Nil.	8,026	8,026
1882-83	31,011	.....	31,011	1894-95	Nil.	Nil.	Nil.
1883-84	73,389	.....	73,389	1895-96	Nil.	Nil.	Nil.
1884-85	300,901	.....	300,901	1896-97	Nil.	Nil.	Nil.
1885-86	389,122	.....	389,122	1897-98	8,000	Nil.	8,000
1886-87	575,880	.....	575,880	1898-99	30,000	Nil.	30,000
1887-88	69,021	.....	69,021				

TABLE showing the number of barrels of flour carried during each year since the road was first opened as a through line to the west.

Year.	Barrels.	Year.	Barrels.
1876-77	254,710	1888-89	948,514
1877-78	657,778	1889-90	1,116,050
1878-79	630,329	1890-91	1,013,129
1879-80	533,248	1891-92	954,015
1880-81	672,310	1892-93	856,913
1881-82	692,095	1893-94	944,967
1882-83	983,916	1894-95	938,351
1883-84	817,134	1895-96	922,097
1884-85	935,977	1896-97	847,701
1885-86	761,127	1897-98	987,408
1886-87	763,894	1898-99	1,157,250
1887-88	871,838		

TABLE showing the number of bushels of grain carried during each year since the road was first opened as a through line to the west.

Year.	Bushels.	Year.	Bushels.
1876-77	292,852	1888-89	1,526,158
1877-78	331,170	1889-90	2,610,202
1878-79	302,921	1890-91	2,890,921
1879-80	534,021	1891-92	3,776,677
1880-81	565,678	1892-93	1,514,619
1881-82	560,253	1893-94	1,304,684
1882-83	1,195,601	1894-95	1,036,384
1883-84	654,673	1895-96	1,064,385
1884-85	734,902	1896-97	1,093,499
1885-86	849,800	1897-98	1,551,372
1886-87	1,018,395	1898-99	2,595,353
1887-88	1,219,035		

TABLE showing the quantity of lumber in feet carried during each year over the road since it was first opened for traffic as a through line to the west.

Year.	Feet.	Year.	Feet.
1876-77	58,096,474	1888-89	199,507,777
1877-78	56,626,547	1889-90	210,886,071
1878-79	55,626,696	1890-91	184,188,324
1879-80	55,462,654	1891-92	175,474,340
1880-81	72,841,388	1892-93	181,211,013
1881-82	78,356,418	1893-94	200,507,949
1882-83	104,633,417	1894-95	202,247,269
1883-84	131,120,948	1895-96	226,332,715
1884-85	138,493,675	1896-97	243,355,725
1885-86	117,186,512	1897-98	354,093,816
1886-87	161,801,763	1898-99	306,554,031
1887-88	197,755,272		

TABLE showing the number of live stock carried during each year over the road since it was first opened for traffic as a through line to the west.

Year.	Number.	Year.	Number.
1876-77	34,414	1888-89	85,960
1877-78	46,498	1889-90	86,771
1878-79	47,584	1890-91	95,529
1879-80	70,990	1891-92	87,889
1880-81	61,574	1892-93	93,369
1881-82	73,479	1893-94	79,203
1882-83	68,338	1894-95	72,106
1883-84	60,090	1895-96	64,051
1884-85	70,785	1896-97	72,082
1885-86	74,498	1897-98	89,301
1886-87	82,896	1898-99	109,821
1887-88	98,302		

TABLE showing the number of tons of ocean-borne goods to and from Europe, via the port of Halifax, carried over the road during each year since it was first opened for traffic as a through line.

Year.	Via Chaudière to and from the West.	Via St. John to and from the West.	To and from local Stations.	Total.
	Tons.	Tons.	Tons.	Tons.
1876-77				
1877-78	14,949		3,405	18,354
1878-79	21,628		2,643	24,271
1879-80	21,073		4,952	26,025
1880-81	15,454		3,334	18,788
1881-82	21,607		4,168	25,775
1882-83	24,875		7,911	32,786
1883-84	19,696		6,533	26,229
1884-85	22,787		8,405	31,192
1885-86	13,464		8,216	21,680
1886-87	16,923		9,811	26,734
1887-88	41,864		8,878	50,742
1888-89	17,340		11,481	28,821
1889-90	9,895		11,730	21,625
1890-91	9,923		10,764	20,687
1891-92	9,719	17	23,825	33,571
1892-93	7,295	100	12,319	19,714
1893-94	3,023	204	13,455	16,682
1894-95	6,749	213	10,399	17,361
1895-96	3,767	314	16,748	20,829
1896-97	2,654	263	17,239	20,156
1897-98	5,950	1,637	18,633	26,220
1898-99	2,465	243	31,555	34,263

The above statement does not include deals, which amounted to 82,260 tons for the year 1898-99.

SESSIONAL PAPER No. 10

TABLE showing the number of tons of raw and refined sugar carried over the road during each year since it was first opened as a through line.

Year.	Raw Sugar.				Refined Sugar.			
	To Chaudière for the West.	To St. John for the West.	To Local Stations.	Total.	To Chaudière for the West.	To St. John for the West.	To Local Stations.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1876-77	340			340				
1877-78	186			186				
1878-79	1,041			1,041				
1879-80	12,220			12,220				
1880-81	13,872			13,872	4,022		2,902	6,924
1881-82	14,256		1,290	15,546	7,146		3,607	10,753
1882-83	9,465		508	9,973	11,126		5,497	16,623
1883-84	13,778		3,068	16,846	14,543		7,265	21,808
1884-85	10,381		3,661	14,042	18,024		8,445	26,469
1885-86	4,394		3,998	8,392	7,660		5,858	13,518
1886-87	20,450		8,500	28,950	15,044		8,395	23,439
1887-88	14,320		14,085	28,405	21,641		7,133	28,774
1888-89	24,358		7,160	31,518	12,955		11,120	24,075
1889-90	7,390		8,913	16,303	6,778		6,125	12,903
1890-91	5,088	4,670	8,215	17,973	10,130	468	5,996	16,594
1891-92	7,142	3,960	10,535	21,637	12,633	7,674	12,414	32,721
1892-93	Nil.	Nil.	10,137	10,137	8,327	6,456	7,840	22,623
1893-94	Nil.	Nil.	6,775	6,775	17,729	6,967	8,885	33,581
1894-95	Nil.	Nil.	10,342	10,342	13,351	15,819	4,695	33,865
1895-96	Nil.	Nil.	9,824	9,824	15,138	13,734	11,309	40,181
1896-97	Nil.	Nil.	4,925	4,925	5,694	8,069	6,957	20,720
1897-98	Nil.	Nil.	Nil.	Nil.	6,624	8,821	10,989	26,534
1898-99	Nil.	Nil.	Nil.	Nil.	8,138	2,193	15,833	26,164

TABLE showing the number of tons of fresh and salt fish carried over the road during each year since it was opened as a through line.

Year.	Fresh Fish.				Salt Fish.			
	To Chaudière for the West.	To St. John for the West.	To Local Stations.	Total.	To Chaudière for the West.	To St. John for the West.	To Local Stations.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1876-77	530	921	527	1,978	551	1,848	802	3,201
1877-78	596	1,015	474	2,085	898	1,644	805	3,347
1878-79	471	1,336	817	2,624	988	1,038	1,048	2,974
1879-80	519	1,362	453	2,334	1,612	2,238	959	4,809
1880-81	498	1,879	920	3,297	2,418	937	1,051	4,406
1881-82	475	1,619	957	3,051	4,031	1,066	2,487	7,584
1882-83	542	384	393	1,319	3,299	759	1,354	5,412
1883-84	838	1,682	412	2,932	1,322	1,143	1,224	3,689
1884-85	1,062	1,885	484	3,431	3,563	3,600	1,596	8,759
1885-86	1,669	1,645	902	4,216	1,680	2,047	3,376	7,103
1886-87	1,278	1,572	2,008	4,858	3,236	569	1,747	5,552
1887-88	1,533	1,477	1,031	4,041	2,617	476	1,099	4,193
1888-89	2,474	2,000	1,870	6,344	3,070	7,746	2,994	13,810
1889-90	2,235	1,787	2,111	6,223	2,449	847	3,288	6,584
1890-91	2,029	2,788	1,848	6,665	1,953	1,917	3,236	7,106
1891-92	1,367	1,746	547	3,660	1,946	928	1,889	4,763
1892-93	1,683	1,875	3,340	6,898	3,262	1,811	2,176	7,249
1893-94	1,959	2,192	2,224	6,375	2,921	1,814	2,962	7,697
1894-95	2,006	3,726	1,160	6,892	2,975	1,849	5,285	10,209
1895-96	1,966	3,059	1,319	6,344	1,863	1,087	2,791	5,741
1896-97	3,307	3,115	1,286	7,708	2,168	1,176	2,536	5,880
1897-98	3,575	3,703	1,052	8,330	1,729	1,066	2,210	5,005
1898-99	1,210	2,070	3,305	6,583	1,651	1,198	3,625	5,474

Four miles of the 56-lb. steel rails have been lifted and replaced at the cost of revenue by 67-lb. steel rails, and 490,368 ties have been renewed.

Capital Account.

Total cost of road and equipment up to June 30, 1899 :—

Road, &c	$48,222,729 86
Rolling stock	8,528,114 03
Total	$56,750,843 89

The increased accommodation provided at the deep water terminus at Halifax greatly facilitates the business.

Both the road and rolling stock have been efficiently maintained during the year.

WINDSOR BRANCH.

This road continues to be operated by the Dominion Atlantic Railway Company, formerly the Windsor and Annapolis Railway Company, the company receiving two-thirds of the gross earnings for working the traffic, and the Government one-third of the gross earnings for maintaining the way and works.

The road has been maintained in efficient condition.

Table showing the earnings and its division between the Windsor Branch and the Main Line of the Intercolonial Railway between Windsor and Halifax, the maintenance expenses and net earnings of the Windsor Branch for each year since 1880 :—

Year.	Miles in Operation.	One-third Gross Earnings.	Proportion of one-third Gross Earnings credited to Line Windsor Junction to Halifax.	Proportion of one-third Gross Earnings credited to the Windsor Branch.	Maintenance Expenses.	Profit.	Loss.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1880-81	32	28,434 29	7,217 76	21,216 53	20,502 26	714 27	
1881-82	32	28,461 07	7,407 88	21,053 19	13,099 55	7,953 64	
1882-83	32	31,199 77	8,085 88	24,113 89	23,103 93	1,009 96	
1883-84	32	30,428 39	7,409 46	23,018 93	22,140 86	878 07	
1884-85	32	32,246 30	7,794 95	24,451 35	18,751 96	5,699 39	
1885-86	32	31,185 63	7,527 52	23,658 11	19,229 49	4,428 62	
1886-87	32	33,564 58	8,237 00	25,327 58	26,042 33		714 75
1887-88	32	32,242 85	6,689 30	24,553 55	24,040 33	513 22	
1888-89	32	37,313 43	8,941 32	28,372 11	20,856 50	7,515 61	
1889-90	32	39,544 19	9,381 73	30,162 46	18,982 82	11,179 64	
1890-91	32	39,519 56	9,284 43	30,235 13	28,931 71	1,303 42	
1891-92	32	42,891 23	9,382 38	33,508 85	19,514 37	13,994 48	
1892-93	32	43,901 28	9,585 17	34,316 11	16,889 95	17,426 16	
1893-94	32	41,834 70	8,859 23	32,975 47	17,645 09	15,330 38	
1894-95	32	50,703 84	11,626 20	39,077 64	14,640 07	24,437 57	
1895-96	32	47,456 74	10,894 91	36,561 83	16,476 46	20,085 37	
1896-97	32	54,208 81	13,605 58	40,603 23	10,821 04	29,782 19	
1897-98	32	48,892 21	11,665 57	37,226 64	18,181 63	19,045 01	
1898-99	32	56,314 51	13,840 48	42,474 03	12,873 09	29,600 94	

PRINCE EDWARD ISLAND RAILWAY.

CAPITAL ACCOUNT.

Total cost of road and rolling stock up to June 30, 1899 :—

Road, &c.	$3,327,878 26
Rolling stock	462,229 00
Total	$3,790,107 26

The rolling stock provided on capital account consists of :—

Engines	Passenger Car Stock.				Box, Cattle and Refrigerator Cars.	Platform Car.	Conductors' Vans.	Pay Car.	Snow Ploughs	Flangers.
	1st Class Car.	2nd Class Car.	Baggage, Smoking and Postal Cars.	Official Car.						
21	17	13	6	1	183	125	3	1	8	7

Owing to converting of one class of car to another the stock now stands :—

21	17	11	9	1	183	125	3	1	8	7

Statement of rolling stock rebuilt during the year—1 first-class car, 1 postal and smoking car, 1 refrigerator car, 4 platform cars. Converted 2 second-class cars into baggage.

The following table shows the working expenses, the gross and net earnings, the tons of freight and number of persons carried each year since June 30, 1875, when the road was first opened for traffic :—

Year.	Miles in Operation.	Working Expenses.	Gross Earnings.	Loss.	Tons of Freight carried.	No. of Passengers carried.
		$ cts.	$ cts.	$ cts.		
1875-76	199	214,930 43	118,060 96	96,869 47	28,358	93,964
1876-77	199	228,595 25	130,664 92	97,930 33	41,039	93,478
1877-78	199	221,599 49	135,899 60	85,699 89	38,923	111,428
1878-79	199	223,313 12	125,855 99	97,457 21	38,668	105,046
1879-80	199	164,640 55	113,851 11	50,789 44	37,208	90,533
1880-81	199	203,122 88	131,131 43	71,991 45	45,336	102,937
1881-82	199	228,259 97	137,267 54	90,922 43	48,315	118,436
1882-83	199	252,808 41	146,170 42	106,637 99	51,920	117,162
1883-84	199	236,428 13	144,504 12	91,924 01	51,841	118,988
1884-85	211	211,207 01	158,588 06	52,618 95	57,346	130,423
1885-86	211	216,744 34	155,584 36	61,159 98	57,913	120,374
1886-87	211	204,237 37	155,303 37	48,934 00	53,589	103,067
1887-88	211	229,639 95	158,363 62	71,276 33	59,603	131,246
1888-89	211	247,559 44	171,369 56	76,189 89	55,682	152,780
1889-90	211	266,485 85	160,971 78	105,514 07	51,604	133,099
1890-91	211	257,990 08	174,258 05	83,732 03	59,511	145,508
1891-92	211	289,706 38	157,442 69	132,263 69	51,065	139,389
1892-93	211	226,422 17	162,690 42	63,731 75	56,718	132,111
1893-94	211	226,891 06	158,533 83	68,357 23	53,577	123,727
1894-95	211	232,905 19	149,654 71	83,250 41	48,325	125,089
1895-96	211	225,138 56	146,476 54	78,662 02	46,395	122,586
1896-97	211	240,489 90	153,443 13	87,046 77	52,151	121,498
1897-98	211	231,418 74	158,950 61	72,468 13	57,539	126,510
1898-99	211	218,053 01	165,012 03	53,040 98	57,968	129,667

The track stands the same as at date of my last annual report.

Steel rails (50 lbs. to yard)	151½
Iron rails (40 lbs. to yard)	59½
Total length of road	211

The road and rolling stock are in good running condition.

CROW'S NEST PASS RAILWAY.

The construction of this road being considered a necessity for the successful development of the mining interests of British Columbia, Parliament by 60–61 Victoria, chapter 5, 1897, granted a subsidy of $11,000 per mile in aid of it. Under this Act the Canadian Pacific Railway Company undertook the work of construction and entered into a contract, breaking ground on July 15, 1897, since which the works of construction have been prosecuted continuously, up to date there remaining only work to the value of $60,000 to complete the section between Lethbridge and Kootenay Lake.

The length of road under contract is:

	Miles.
Lethbridge to Knoknoack Station (Kootenay Lake)	290
Knoknoack Station to Nelson	54
Total length	344

The maximum grade is one per cent of $52\frac{80}{100}$ per mile, severest curves 10 and 12 degrees, except in one instance, where a 15 degree curve has been introduced.

The work of construction has so far been confined to the section between Lethbridge and Knoknoack Station 290 miles, which section of road is being successfully operated to the great benefit of the country. A train transfer landing has been constructed on Kootenay Lake at Knoknoack, so that cars with their loads are transferred without transhipment from that point to Nelson.

The amount of subsidy paid up to December 1, 1899, is $3,116,250.

CAPITAL ACCOUNT.

Canadian Pacific Railway.

The full amount of the arbitrators' award on the division between Savona's Ferry and Emory's Bar, has been earned and paid to the Company amounting to $579,255.20.

General Remarks.

The improvements made on the road and rolling stock in the last few years enabled the company to increase the speed of their transcontinental express trains during the past summer, which was greatly appreciated by the travelling public. The company now have equipped with self couplers 8,456 freight cars, and have fitted 6,601 freight cars with automatic brakes.

The following are the traffic operations of the Canadian Pacific Railway for each year ended June 30, since the road was first opened through to the Pacific Coast, for traffic, in June, 1886 :—

	1886-87. Miles, 4,274.	1887-88 Miles, 4,662.	1888-89. Miles, 4,974.	1889-90. Miles, 5,086.	1890-91. Miles, 5,537.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Earnings	10,650,254 08	12,711,010 01	13,016,611 81	15,572,985 62	18,672,174 04
Working expenses	7,299,045 16	9,034,360 27	8,997,312 05	9,424,166 45	11,538,133 53
Net revenue	$3,351,208 82	$3,676,649 74	$4,019,299 76	$6,148,819 17	$7,134,040 51
Number passengers carried	1,949,215	2,135,735	2,457,306	2,685,730	2,971,774
Tons freight carried	2,118,319	2,321,957	2,636,121	3,006,684	3,675,113

	1891-92. Miles, 5,537.	1892-93. Miles, 5,782.	1893-94. Miles, 6,094.	1894-95. Miles, 6,159.	1895-96. Miles, 6,211.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Earnings	20,789,104 17	20,795,304 66	19,357,098 05	17,912,273 60	20,175,384 99
Working expenses	12,441,126 28	12,665,5 7 12	12,447,808 03	11,282,506 00	12,202,360 50
Net revenue	$8,347,977 89	$8,129,717 54	$6,909,290 02	$6,629,767 60	$7,973,024 49
Number passengers carried	3,150,684	3,335,598	3,153,340	2,892,995	3,036,619
Tons freight carried	4,058,575	4,266,348	4,014,915	3,720,567	4,576,632

	1896-97. Miles, 6,314.	1897-98. Miles, 6,334.	1898-99. Miles, 6,719.		
	$ cts.	$ cts.	$ cts.		
Earnings	21,242,638 75	25,470,796 18	26,745,970 11		
Working expenses	12,576,800 42	14,684,790 65	15,454,173 45		
Net revenue	$8,665,838 33	$10,786,005 53	$11,291,797 16		
Number passengers carried	2,987,163	3,327,318	3,483,843		
Tons freight carried	4,640,578	5,493,030	5,971,205		

As the Government's dealings with the construction of the trunk line are closed with the payment in full of the arbitrators' award on the British Columbia section, this probably closes my reference to this road in my annual reports, except as they appear in the railway statistics.

SURVEYS FOR A RAILWAY TO THE YUKON DISTRICT FROM A POINT ON AN EXISTING RAILWAY, AND ALSO FROM AN OCEAN PORT.

Under express provisions made by Parliament in the sessions of 1898 and 1899, surveys have been conducted with a view to ascertaining the feasibility and approximate cost of a line of railway to be constructed entirely on Canadian territory, in order to give communication with the Yukon district from a point on an existing Canadian railway, and also from a Canadian port on the Pacific coast, three surveying parties having been engaged in the work, under the charge, respectively, of Mr. V. H. Dupont, Mr. C. F. K. Dibble, and Mr. J. S. O'Dwyer, whose reports, together with an explanatory map, will be found in the appendices hereto.

The results may be briefly summarized as follows :—

The most northerly point on an existing railway system is Edmonton, the present terminus of the Calgary and Edmonton Railway (leased to the Canadian Pacific Railway Company), at a distance of 192 miles north of Calgary on the Canadian Pacific Railway main line. This place was accordingly adopted as the objective point from which the projected line should start, and here two of the expeditions were orgainzed.

The point of commencement of actual survey, however, must be regarded as in the neighbourhood of the eastern boundary of British Columbia, a distance of about 500 miles from Edmonton by the existing trail via the Lesser Slave Lake, to the Peace River and thence following the course of that river. The intervening country is known, and is understood to present no serious obstacles to railway construction.

Starting from a point about nine miles east of the said boundary, a possible location has been found, which practically runs in a westerly direction along the southerly side of the Peace River for a distance of about 199 miles to the junction of the Rivers Parsnip on the south, and Finlay on the north, this junction of waters forming the Peace River. In this distance there occurs a stretch of about ten miles, where the waters of the Peace lie in a cañon the walls of which are about 400 feet high, pierced by numerous gullies or creeks which would require to be bridged. At the junction, it is necessary either to cross the Parnsip, which would be effected by a bridge at a point about two miles above the junction, the length of which would be 950 feet, with a height of about 32 feet above low water (a work for which the bed of the river, composed of very compact gravel, would offer good foundation) or by a bridge, below the junction, at Finlay Rapids, where the bed of the river, the Peace, is rock. This crossing would, however, necessitate the bridging, also, of the Finlay, which is about the same width as the Parnsip.

The work to be executed comprises 135 miles of light, 46 miles of medium, and 20 miles of heavy construction.

The estimated cost of this 201 miles, up to and including the crossing of the Parsnip, is at the average rate of $19,721.47 per mile, or a total of $3,964,016.88, including 16 bridges, varying in length from 25 to 950 feet. This estimate is based on prices for similar work in Eastern Canada, to which must, therefore, be added the cost

of transport of labourers, plant and material, and whatever difference there may be in rate of wages. Good sandstone for masonry work is abundant, but black and white spruce, which is plentiful, would be the only timber avilable.

From this junction of the Rivers Parsnip and Finlay the line for some 25 miles crosses the wide valley lying between the Rocky Mountains and the Cariboo Range. It follows the west bank of the Finlay 16 miles to the mouth of the Omenica, thence along the south bank of the latter 9 miles to the west border of the above mentioned valley. From this point it continues westward, following the Omenica to the mouth of the Osilinca, thence along this river to its headwaters, a distance of 90 miles from the Parsnip. These 90 miles are estimated to cost $15,600 per mile, including steel bridges, or a total of $1,404,000.

From this 90th mile a line will need to be obtained via Sestoot Lake and River—(passing a few miles north of Fort Connolly)—to the junction of the Sestoot with the main Skeena River. At this point the railway would probably turn to the north, following the valley of the Skeena, but the season was too far advanced to admit of full exploration; from information obtained, however, there does not appear to be any serious obstacle to construction. From a point about 28 miles lower down on the main River Skeena, an exploring party travelled about 53 miles in a northerly direction and up the valley of the Nass, to a point where the main waters of the Skeena were met. Here is a union of two parallel valleys formed by a high hilly range running for a distance of about 45 miles, north-west, in both of which are the summit waters of the Skeena, flowing south, and of the Stikine, flowing north. Either would appear to offer a feasible route for a railway. By the westerly one the distance would be about 6 miles longer than by the other. The gradients also of the westerly are more severe, being 54 feet to the mile against 22 feet. At this northerly end these two valleys join, and the waters which have traversed them become the main River Stikine. From this point of junction for a distance of about 130 miles down the Stikine, there appear to be no features of difficulty, considering the country traversed; but as the descent of the river continues, its waters pass through so severe and extensive a cañon district—the Great Cañon of the Stikine—that it was considered advisable to ascertain whether a less difficult route could not be found.

From information gained from various competent and reliable sources it appeared likely that by leaving the Stikine valley and following a north-westerly course to Dease Lake, not only would a better location be discovered, but that from Dease Lake a comparatively easy route could be followed to the head of Teslin Lake, along an existing trail between the two lakes, which would, approximately, be the route adopted, and which had been traversed by prospectors the previous winter in seven days. From Teslin, the river navigation to Dawson is, of course, that at present followed.

Exploration was accordingly carried on with the view to a railway location to Dease Lake in the auriferous Cassiar district *, and the results show that a practical route can be obtained from a point (Beaver Creek) above the Great Cañon of the Stikine to that lake, about 59 miles, with but a limited amount of heavy work. An

* Dr. G. M. Dawson, in his report on the economic minerals of British Columbia published as an appendix (R.p. 218) to Mr. (now Sir) Sandford Fleming's report of 1877 on the Canadian Pacific Railway surveys, refers to "rich deposits" of gold discovered on the sources of the River Dease and about Lake Dease—the upper end of which he states is separated by only a few miles of low country from a part of the Stikine.

estimate of the cost of the last 111 miles, comprised in 52 miles down the Stikine Valley to Beaver Creek, and the 59 miles from that creek to Dease Lake has been furnished, based on prices in Eastern Canada (to which has, therefore, to be added the cost of labour, transport, supplies and whatever difference there may be in wages) as follows : 74 miles of light work at an average cost of $14,000 per mile ; 32 miles at $23,000, and 5 miles at $35,000, which together with provision for bridges, $75,000, aggregates the sum of $2,022,000 as the estimated cost of this section.

Should the line indicated above be followed, the approximate distance from the easterly boundary of British Columbia to the southerly end of Dease Lake would be 646 miles, and a further distance of 136 miles would bring the railway to the head of Lake Teslin, making a total of 782 miles to the navigable waters of the Yukon district. From Edmonton to the boundary the approximate distance would be 500 miles, making the total approximate distance from an existing railway system to the head of Lake Teslin 1,282 miles. Of this distance much remains necessarily undetermined : connecting links of surveys have to be made ; alternative routes on certain portions have to be carefully considered ; and possible improvements may be found hereafter by which the location, even where now regarded as clearly defined, may be modified to advantage. Still a good deal of valuable information has been obtained, and the feasibility of constructing the railway without inordinate cost has been demonstrated. It appears, however, highly probable that a very much shorter line of no difficult character can be obtained from the head waters of the Stikine to Dease Lake by following down the valley of the River Clappan (or third south fork of the Stikine) and crossing the main Stikine above the Grand Cañon.

Ocean Port Surveys.

Explorations with a view to location of a railway from a Canadian Pacific Ocean port into the Yukon district were carried on, the general results of which may be summarized as follows :—

The known ports calling for attention are Port Essington, near the mouth of the River Skeena on its south side, and Port Simpson near the entrance to Portland Inlet.

These ports and the possible routes from them eastwards up the Skeena have been made the subject of examination in connection with the early surveys for the Canadian Pacific Railway, and the object of the present surveys being to obtain information as to the practicability of a line leaving the River Skeena at some point where its construction northwards would be feasible, Hazelton at the forks of the River Skeena, a distance of about 150 miles from Port Essington (which is navigable for steamers of light draught at stages of mean water) was made the starting point for an exploration which extended for a distance of about 130 miles to the point of junction of the waters of the Skeena and Sestoot, above mentioned as on the suggested line from Edmonton, from which point the line of railway might follow the route of that location to the northward as already described.

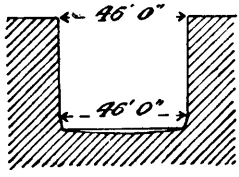
Port Simpson, the most northerly of the harbours of British Columbia, is about 50 miles north of Port Essington, and from it a survey was made in 1879, southerly to the River Skeena, about 40 miles ; thence up the river on its north side, in a north-easterly direction ; the first 60 miles was actually located, the work on the first 32 miles being

classed as very heavy. Port Simpson itself, however, which, in common with other possible ports, received in 1879 careful examination, has been pronounced both by naval and engineering experts to be an exceptionally fine, deep harbour, well protected from winds; easy of access from the sea; free from fogs and ice; never freezing over even during the winter of 1878, which was an extremely severe one; while the average winter snowfall does not exceed 18 inches, and this does not remain more than a day or two. The officer of the Hudson's Bay Company records the budding of trees and the blooming of garden flowers on February 10, 1878. These climatic advantages are, of course, due to the Japan current.

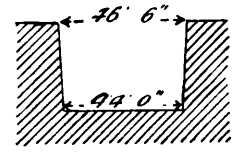
Port Essington, about 450 miles from Victoria, is situated on the south side of the Skeena about 11 miles from its mouth. It is not a good harbour, the access from the sea being bad, while it is exposed to winds and the action of masses of ice from the Skeena, which drifting up and down with the tide render it practically ice-bound for the winter months. A good harbour, however, exists beyond the mouth of the river, to which the name of Port Fleming has been given.

A third port might possibly be found on Kitimat Inlet, up the Douglas Channel. At the head of this inlet is the mouth of the River Kitimat, the valley of which, though not fully explored, was to some extent examined by the survey parties of 1876, resulting in the opinion that an easy route could be found up to the River Skeena. It would possibly join that river at a point about half way between Port Essington and Hazelton, considerably reducing the distance for traffic coming up from Victoria and Vancouver and greatly decreasing the cost of railway construction as compared with a line from Port Simpson. It may be observed that in the sessions of 1898 and 1899 powers were given by the province of British Columbia to a railway company for the building of a line from the Kitimat Inlet with an objective point, east of Lake Babine, on the River Omenica.

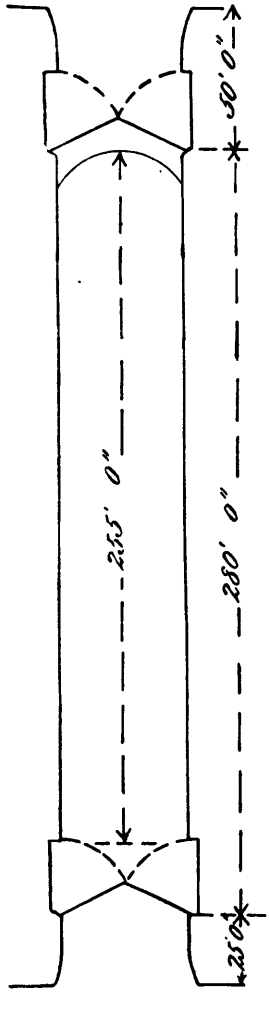
It might also be desirable that a route should be explored up the valley of the Nass, the mouth of which is on the south side of Portland Inlet, and which may be found to afford a practicable means of communication with Telegraph Creek on the Stikine, whence an easy location, with the exception of a small portion, can be found along the present trail to Dease Lake, distant about 72 miles.



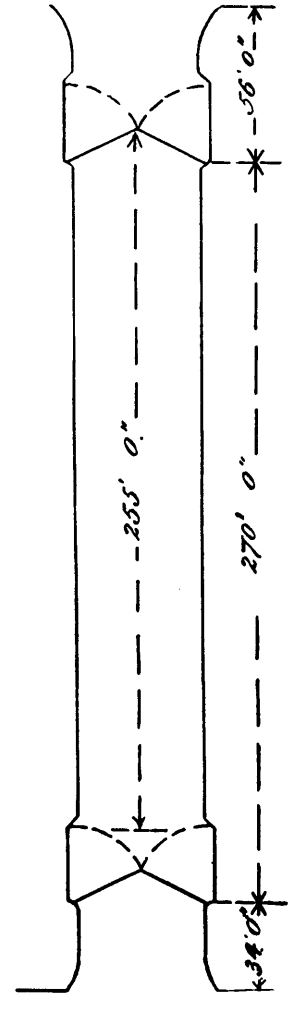
SECTION OF SOULANGES CANAL LOCK.



SECTION OF WELLAND CANAL LOCK



SOULANGES CANAL LOCK.



WELLAND CANAL LOCK

CANALS—CAPITAL ACCOUNT.

SAULT STE. MARIE CANAL.

The pier of the Canadian Pacific Railway bridge which stood in the centre of the prism of the canal having been found to be a source of danger to navigation, causing frequent complaints to be made by captains of vessels using the canal, it was decided that the obstruction must be removed, accordingly the work of its removal was undertaken and the work is now completed; the new swing bridge, now spanning the full width of the channel of the canal, is favourably commented on by the transportation companies. In addition to the work of removing the pier of the bridge some filling, grading and levelling of the canal grounds has been done, which greatly improves their appearance. The lower entrance channel at the bend has been widened and straightened at a cost of $12,806.94, which will prove a great benefit.

It is desirable for the improvement of the general appearance of the property that the work of levelling the grounds and the planting of ornamental trees be continued next season.

As regards its facilities for navigation, the canal in its upper entrance channel has a depth of water of 18 feet with 20 feet 4 inches on the mitre sill of the lock and 18 feet 6 inches in the lower entrance channel; these figures apply to the lowest known stages of water level.

The total cost of construction and equipment up to June 30, 1898 is	$3,678,578 21
Expenditure during year ending June 30, 1899	63,935 48
Total cost of construction and equipment up to June 30, 1899	$3,742,513 69
Expended from June 30, 1899, to November 1, 1899	332 25
Total cost of construction and equipment up to November, 1899	$3,742,845 94

SOULANGES CANAL.

I am pleased to be able to report the works of construction so far advanced towards completion as to make the canal available for traffic on October 10 last, on which day the first boat was passed through the canal. Instructions then issued that only vessels drawing over nine feet and up to fourteen feet of water would be allowed to pass through this canal this season, as to let the smaller craft, such as could utilize the Beauharnois Canal, pass through the Soulanges Canal would interfere with the work of stone lining of the slopes, now in progress. Up to November 23, 1899, only one vessel has offered for passage.

The work under contract upon the thirteen sections into which the canal was divided for construction purposes are so far advanced as to enable vessels drawing fourteen feet of water to navigate it. But there yet remains to be done to fully complete the canal a large amount of stone lining of slopes and sodding, the macadamizing

a considerable length of road along the canal bank and the trimming up of the works generally, as well as completing the electrical works. These works will entail a considerable amount of expenditure to carry them through to absolute completion. For further detailed particulars, I must refer you to the report of Mr. Thomas Munro, superintending engineer.

The following gives a statement of the position of each contract;—

Sections Nos. 1 and 2—

Approximate value of work under contract	$1,200,000 00
Gross amount of progress estimate for October, 1899..	1,012,358 55
Balance	$ 187,641 45

Section No. 3 (completed)—

Approximate value of work under contract	$ 200,000 00
Gross amount of last progress estimate	193,852 61
Balance	$ 6,147 39

Sections Nos. 4, 5, 6 and 7—

Approximate value of work under contract	$1,000,000 00
Gross amount of progress estimate for October, 1899..	923,672 58
Balance	$ 76,327 42

Section No. 8—

Approximate value of work under contract	$ 350,000 00
Gross amount of progress estimate for October, 1899..	300,609 09
Balance	$ 49,390 91

Section No. 9—

Approximate value of work under contract	$ 220,000 00
Gross amount of progress estimate for October, 1899..	169,809 88
Balance	$ 50,190 12

Section No. 10 (completed)—

Approximate value of work under contract	$ 300,000 00
Gross amount of last progress estimate	290,667 95
Balance	$ 9,332 05

Section No. 11—

Approximate value of work under contract	$ 370,000 00
Gross amount of progress estimate for last estimate...	325,639 75
Balance	$ 44,360 25

SESSIONAL PAPER No. 10

Section No. 12—

Approximate value of work under contract	$ 270,000 00
Gross amount of progress estimate for October, 1899	237,611 71
Balance	$ 32,388 29

Section No. 13—

Approximate value of work under contract	$ 670,000 00
Gross amount of progress estimate for October, 1899	639,778 05
Balance	$ 30,221 95

The contractors for these thirteen sections of the canal have been paid for work executed up to November 1, 1899, as follows :—

Sections 1 & 2	Archibald Stewart	$500,296 10	
	Ryan & McDonnell	458,710 00	
			$ 959,006 10
Section 3	O'Leary Bros.		193,852 61
Sections 4,5,6 & 7	George Goodwin	$356,726 85	
	Andrew Onderdonk	526,840 84	
			883,567 69
Section 8	Charles Raynor		294,550 00
" 9	Manning & McDonald		167,820 00
" 10	Rogers & Taylor		290,281 80
" 11	George Goodwin	$ 42,020 00	
	Thomas Feeney	53,780 00	
	Poupore & Fraser	228,373 00	
			324,173 00
Section 12	O'Brien & Sons	$ 25,367 50	
	George Goodwin	8,100 00	
	M. J. Hogan	180,900 00	
			214,367 50
Section 13	Manning & McDonald		635,800 00
Total payment for October, 1899, estimates			$3,963,418 70

Based on the contract prices, the estimated cost of thi canal including land purchases and damages is	$6,100,000 00
Total payment to Nov. 1, 1899, including September estimates	5,383,411 54
Balance	$ 716,588 46

The payments are divided as follows, viz. :

For works and expenses of supervision	$5,041,777 59
For land and damages	341,633 95
Total	$5,383,411 54

A further increase in the cost of construction has arisen owing to a break in one of the banks of the canal which occurred at the time the full head of water was let into the canal in October last, and to the numerous heavy land slides which have occurred from time to time.

LACHINE CANAL.

The works of enlargement for 14 feet navigation are completed.

ENLARGEMENT.

Messrs. McNamee & Mann, who are the contractors for deepening of the prism to a depth of 15 feet, have completed their work. The work of deepening has necessitated the rebuilding of the stone walls along the side of the canal in many places; this work is now being carried on above water line, and will be continued below water level when the canal is unwatered.

The approximate value of work under McNamee & Mann's contract is	$576,000 00
Gross amount of progress estimates for Oct., 1899	568,590 44
Balance	$ 7,409 56

The total amount expended on the works of enlargement of this canal, including progress estimates for October, 1899, $8,229,290.66.

LAKE ST. LOUIS.

CONSTRUCTION

The Weddell Dredging Company have completed the formation of this channel, which has a width of 300 feet and a depth of 16 feet, there remaining only a few boulders to be picked up. The forwarders, however, do not appear to be satisfied, and they have petitioned to have a shoal removed, which is located on one side of it and outside its limits; giving as a reason that there is a cross current which will make it difficult and dangerous to navigate long tows.

The approximate value of work under contract is	$251,000 00
Gross amount of progress estimates for Oct., 1899	236,926 85
Balance	$ 14,073 15

GRENVILLE CANAL.

ENLARGEMENT.

Messrs. Piggot & Ingles, the contractors for this enlargement, have made more satisfactory progress with the work than they had previously done, and it is hoped they will complete the work covered by their contract by next spring.

The approximate value of work under contract is	$ 100,000 00
Gross amount of progress estimate for Oct., 1899	82,065 03
Balance	$ 18,934 97

TRENT CANAL.

CONSTRUCTION.

No further section has been placed under contract since my report of last year, but tenders are now being invited for the section from Trenton to Frankford, a distance of about nine miles. Work on the three sections under contract has advanced very slowly. It is, however, anticipated that these three sections—Ashburnham to Nassau, Nassau to Lakefield and Balsam Lake to Kirkfield—will be completed next season.

Section No. 1—Lakefield end.

The approximate value of work under contract with Brown, Love & Aylmer is	$ 384,000 00
Gross amount of progress estimate for Oct., 1899	350,583 62
Balance	$ 33,416 38

Section No. 2—Peterborough end.

The approximate value of work under contract with Corry & Laverdure is	$ 453,000 00
Gross amount of progress estimate for Oct., 1899	227,264 40
Balance	$ 225,735 60

Two Wells for Main Press of Hydraulic Lock.

The approximate value of work under contract with Corry & Laverdure is	$ 23,000 00
Gross amount of progress estimate	Nil.
Balance	$ 23,000 00

Section No. 1—Balsam Lake end.

Approximate value of work under contract with A. Onderdonk is	$ 447,800 00
Gross amount of progress estimate of Oct., 1899	437,691 92
Balance	$ 10,108 08

The steel superstructure of the hydraulic lock is under contract with the Dominion Bridge Co., the contract price being $244,000. The work is in progress at Lachine, but inasmuch as the substructure is not ready to receive it they are not being pushed for its completion, but are being allowed to pile it on ground at Lachine leased to the Government. No payment has yet been made.

Section No. 1, Peterborough to Nassau.—The work on this section has progressed very slowly during the last past working season, appearances indicating that it will take

the greater part of next summer to complete the work, the most of which remaining to be done consisting of works in connection with the hydraulic lift lock, composed of concrete walls, the putting down of the wells for the hydraulic rams, the making up of the bank approach and taking out of cutting. There are other minor works to be done in connection with lock No. 6 and the entrance piers, &c.

Section No. 2, Nassau to Lakefield.—This section of work is practically completed, there remaining only the completing of the entrance piers and the deepening of the entrance channel, all of which should be easily finished early next season.

Section No. 1, Balsam Lake to Kirkfield.—Very little energy has been displayed during the working season about closing with the prosecution of this work. As a consequence, the contract will not be completed this year. It is true, the work remaining to be done is very small compared with the work undertaken, it being chiefly cleaning, repairing damage suffered by the delay in completing the section, and the building of the dam at Victoria road.

CORNWALL CANAL.

CONSTRUCTION AND ENLARGEMENT.

The works of construction and enlargement on this canal are completed with the exception of the works of improvement at the upper entrance which are under contract with the Weddell Dredging Company, who commenced operations a few weeks ago. There is now a clear way for vessels drawing 14 feet of water to pass through this canal, the works in progress at the upper entrance causing no impediment, and the canal proper being completed.

The following works were under contract to Wm. Davis & Sons:—Sections 2, 3, 4, and Sheik's Island Dams.

The approximate value of work under contract is..	$ 2,720,000 00
Gross amount of the last estimates..... ...	2,634,971 04
Balance	$ 85,028 96

Sections Nos. 5, 6, 7 and 8, under contract with the Gilbert Blasting and Dredging Company, are finished.

The approximate value of work under contract is....	$ 550,000 00
Gross amount of last estimate...	499,903 66
Balance.....	$ 50,096 34

Section No. 10, upper entrance, was executed by Messrs. Jocks, DeLorimier & Co. They have been paid their final estimate, amounting to $439,854.60, which was the cost of the work under this contract.

The contractors for the enlargement of this canal and construction of the Sheik's Island Dams have been paid the following amounts up to November 1, 1899:—

Section 2	Wm. Davis & Sons	$ 922,448 97
" 3	"	553,877 17
" 4	"	723,213 61
" 5	Gilbert Blasting & Dredging Co	138,306 73
Sheik's Island Dam,	Wm. Davis & Sons	429,067 00
Section 6	Gilbert Blasting & Dredging Co.	47,721 37
" 7	"	96,832 88
" 8	"	216,270 21
" 10	Jocks, DeLorimier & Co	439,854 60
	Total	$3,567,592 54

The estimated cost of enlargement of the canal and construction of the Sheik's Island Dams is	$4,837,000 00
The amount expended up to Nov. 1, 1899	4,637,637 11
Balance	$199,362 89

with the addition of $150,000, if the work of improving the upper entrance is to be proceeded with.

FARRAN'S POINT CANAL.

ENLARGEMENT.

The works of enlargement of this canal are under contract with the Canadian Construction Co. of Montreal. The principal works to be executed were entrance piers at both ends of the canal, a masonry lock 800 feet in length. and the widening, deepening and straightening of the prism.

The contractors have so far advanced with their work, which may be said to be practically completed, as to give a safe passage through the canal to vessels drawing 14 feet of water. The work has been executed in a substantial workmanlike manner which does the contractors credit.

The approximate value of work under contract is	$ 750,000 00
Gross amount of progress estimate for Oct., 1899	599,823 35
Balance	$ 150,176 65

Estimated cost of enlargement	$ 830,000 00
Amount expended up to Nov. 1, 1899	656,976 45
Balance	$ 173,023 55

RAPIDE PLAT CANAL.

ENLARGEMENT.

The works of enlargement on this canal are completed, and the canal is ready for the passage of vessels drawing 14 feet of water.

The estimated cost of the enlargement is	$1,940,000 00
Amount expended to Nov. 1, 1899, is	1,876,479 60
Balance	$ 63,520 40

The following statement shows the amount of the last progress estimates and the amounts the contractors have been paid up to November 1, 1899:

	Gross Amt. Oct. Est.	Paid.
Section 1, Poupore & Fraser	$ 910,795 11	$ 909,530 96
" 2, Weddell Dredging Co	223,419 80	223,419 80
" 3, Poupore & Fraser	263,442 10	263,442 10
Total	$1,397,657 01	$1,396,392 86

GALOPS CANAL.

ENLARGEMENT.

For enlargement purposes this canal is divided into three sections, as follows, viz., the Iroquois section, the Cardinal section, and the upper entrance section.

The Iroquois Section extends from Iroquois to Presqu'île. Messrs. Larkin & Sangster are the contractors for this work. The chief works of construction undertaken were the building of crib entrance piers, a masonry lock 800 feet long, and bridge abutments, the cutting of new prism for some distance and the widening of the old prism at the west end. These contractors prosecuted their work vigorously, with the result that the work is now practically completed, and the section of the canal is ready for the passage of vessels drawing 14 feet of water.

The approximate value of work under contract is	$1,200,000 00
Gross amount of progress estimate for October, 1899	1,082,890 23
Balance	$ 117,109 77

Cardinal Section.—This section extends from Presqu'île through Cardinal, a point near to the locks at the upper entrance. Messrs. William Davis & Sons are the contractors. This contract, amongst other things, covered the taking out of a cutting about a mile long and 65 feet deep at the highest point, the building of cribwork with masonry walls thereon through it, &c., the cutting is now taken out down to grade,

there remaining only the dams at each end to be removed, and the cribwork is far advancing, so that it is hoped that this section of the canal will be available for the passage of vessels drawing 14 feet of water early next season.

Approximate value of work under contract is	$1,300,000 00
Gross amount of progress estimate for October, 1899	762,737 08
Balance	$ 537,262 92

Upper entrance enlargement.—Messrs. Murray & Cleveland are the contractors for this section of work. The work is almost completed.

Approximate value of work under contract	$1,470,000 00
Gross amount of progress estimate for October, 1899	1,429,169 24
Balance	$ 40,830 76
Total estimated cost of enlargement	$4,300,600 00
Amount paid up to November 1, 1899	3,662,651 13
Balance	$ 637,948 87

NORTH CHANNEL.

STRAIGHTENING AND DEEPENING.

Mr. M. A. Cleveland is the contractor for this work. The work consists of cutting through earth and rock a channel 300 feet wide with 17 feet of water. The work has so far advanced as to give a clear channel 200 feet wide, so that vessels drawing 14 feet of water can now pass safely through the channel.

Approximate value of work under contract	$ 1,116,000 00
Gross amount of progress estimate for October, 1899	767,937 93
Balance	$ 348,062 07

RIVER REACHES.

IMPROVEMENT OF CHANNEL OF LAKE ST. FRANCIS, ST. RÉGIS BAR, 2½ MILES EAST OF CORNWALL.

Messrs. Manning & McDonald entered into a contract for this work on May 24, 1898. It consists of the cutting and straightening of the channel. The work, though not completed, is sufficiently advanced to enable vessels drawing 14 feet of water to pass with safety.

Approximate value of work under contract	$ 51,399 00
Gross amount of progress estimate for October, 1899	35,627 75
Balance	$ 15,771 25

HAMILTON ISLAND BAR, 10½ MILES EAST OF CORNWALL.

Messrs. Manning & McDonald entered into a contract for this work on May 24, 1898. A channel is now available for the passage of vessels drawing 14 feet of water, but the work is not completed.

Approximate value of work under contract	$	13,823 60
Gross amount of progress estimate for October, 1899		4,921 10
Balance	$	8,902 50

GALOPS RAPIDS IMPROVEMENTS.

The Gilbert Brothers Engineering Company have their special plant employed to clean out, at a certain figure per day, the channel of 200 feet in width and 17 feet deep, which was cut in 1888 and previous years. The work has been prosecuted during the past summer, but is not yet completed.

Estimated cost of forming and cleaning out channel	$	194,000 00
Amount paid up to November 1, 1899		94,800 00
Balance	$	99,200 00

GENERAL REMARKS.

Although the work of construction and enlargement of the chain of canals on the St. Lawrence River are not fully completed, they are in that advanced stage which enables vessels drawing 14 feet of water, to pass between Port Arthur, at the head of Lake Superior, and Montreal.

CANADIAN GOVERNMENT CANALS.

MEMORANDUM of Expenditure on Construction up to December 1, 1899.

Canal.	Original construction up to June 30, 1899.	Enlargement up to June 30, 1899.	Enlargement from June 30, 1899, up to December 1, 1899.	Total cost of Enlargement up to December 1, 1899.	Total expenditure on Original Construction and Enlargement up to December 1, 1899.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Lake St. Francis		26,530 00	14,890 31	41,420 31	41,420 31
Lachine	2,589,532 85	8,197,561 16	34,493 41	8,232,054 47	10,821,587 32
Lake St. Louis		250,066 48	3,497 92	253,564 40	253,564 40
Soulanges	5,098,259 83				5,098,259 83
Beauharnois	1,636,690 26				1,636,690 26
Cornwall	1,945,624 73	4,617,383 27	12,974 86	4,630,358 13	6,575,982 86
Farran's Point	80,041 21	586,111 74	78,554 71	664,666 45	744,707 66
Rapide Plat	426,882 15	1,875,500 92	1,273 03	1,876,774 00	2,303,656 15
Galops	813,732 18	3,385,837 38	344,696 84	3,730,534 22	4,544,266 40
Galops Channel		813,618 54	26,550 00	840,168 54	840,168 54
North Channel		633,316 15	62,860 00	696,176 15	696,176 15
Murray	1,247,470 26				1,247,470 26
St. Lawrence River and Canals	18,442 85	419,416 32	40,661 62	460,077 94	478,520 79
Welland	7,693,824 03	16,077,811 73		16,077,811 73	23,771,635 76
Sault Ste. Marie	3,742,513 69				3,742,513 69
Chambly	637,056 76				637,056 76
Carillon and Grenville	*63,053 64	4,091,306 40	2,854 72	4,094,167 12	4,157,214 76
Trent	2,543,240 47				2,543,240 47
Rideau	4,095,043 87				4,095,043 87
Tay	476,128 73				476,128 73
St. Ours	121,537 65				121,537 65
Culbute (canal abandoned)	379,494 46				379,494 46
Ste. Anne's	134,456 51	1,035,759 12		1,035,759 12	1,170,215 63
St. Peter's	248,762 84	399,784 30		399,784 30	648,547 14
	33,991,788 97	42,410,003 56	623,307 32	43,033,310 88	77,025,099 85

* Construction by Imperial Government not included, records relating to same were kept in Ordnance Office, Montreal, and were destroyed by fire in 1852.

CANALS.

OPERATION AND MAINTENANCE.

The canals have been successfully operated throughout the year, no serious delays to traffic having occurred, with the exception of the Lachine Canal to which I refer in its proper place. The necessary repairs and renewals have been executed.

STATEMENT showing the dates of closing and opening canals.

Name of Canal.	Closed.	Opened.	Closed.	Opened.
	1897.	1898.	1898.	1899.
Sault Ste. Marie	14th December	11th April	9th December	26th April.
Lachine	1st December	25th April	1st December	1st May.
Beauharnois	30th November	24th April	1st December	1st May.
Cornwall	8th December	23rd April	9th December	24th April.
Williamsburg	8th December	23rd April	13th December	13th April.
Welland	14th December	20th April	13th December	22nd April.
Chambly	1st December	2nd May	1st December	1st May.
St. Ours	27th November	3rd April	26th November	22nd April.
Ste. Anne's	30th November	11th April	27th November	27th April.
Carillon and Grenville	30th November	30th April	26th November	1st May.
Rideau — at Kingston	23rd November	1st May	23rd November	2nd May.
Rideau — at Ottawa	25th November	1st May	29th November	2nd May.
Trent — on Central Reach	20th November	7th April	17th November	1st May.
Trent — on Lower Reach	24th November	7th April	26th November	21st April.
Murray	3rd December	30th March	6th December	13th April.
	1898.		1899.	
St. Peter's	3rd January	2nd April	7th January	2nd April.

STATEMENT showing the dimensions of the locks of the canals.

—	Existing System.				Under Construction.			
	No. of Locks.	Length.	Width.	Depth of water on mitre sill.	No. of Locks.	Length.	Width.	Depth of water on mitre sill.
		Feet.	Ft.	Ft.		Feet.	Ft.	Ft.
Lachine	5	270	45	14				
Beauharnois	9	200	45	9				
Chambly	9	118-125	22·6·24	7				
St. Ours	1	200	45	7				
St. Anne's	1	200	45	9				
Carillon and Grenville	7	200	45	9				
Trent	13	134	33	5	6	134	33	6
Rideau	49	134	33	5				
Rideau, Perth Branch	2	134	32	5·6				
Murray (no locks)				11				
Cornwall (Old)	5	200	55	9				
Cornwall (New)	5	270	45	14				
	1	270	45	Guard.				
Farran's Point (Old)	1	200	45	9	1	800	45	14
Rapide Plat (Old)	1	200	45	9				
Rapide (New)	1	270	45	14				
	1	270	45	Guard.				
Galops (Old)	2	200	45	9				
Galops (New)	1	270	45	14	1	800	45	14
	1	270	45	Guard.				
Welland (Old)	24	150	45	10·3				
	2	200	45	10·3				
	1	230	45	10·3				
Welland (New)	26	270	45	14				
Welland Feeder	1	150	26·6	9				
	1	200	45	9				
Welland, Port Robinson Branch	2	150	26·6	9				
Welland, Maitland Branch	1	185	45	11				
Sault Ste. Marie	1	900	60	20·3				
Soulanges					4	270	45	14
					1	270	45	Guard.
St. Peter's	1	200	48	18				

NOTE.—The enlarged locks on the St. Lawrence and the Welland canals wil accommodate vessels not exceeding 255 feet in length.

LACHINE CANAL.

OPERATION.

There has been no serious interruption to traffic in this canal during the year. The *Turret Court* struck Blacks bridge causing considerable damage to the structure, the cost of repairs of which was borne by the owners of the steamer, amounting to $3,104.00. A short interruption to traffic in canal only took place. The canal has been satisfactorily operated throughout.

MAINTENANCE.

The superintending engineer's report gives particulars of the repairs executed.

The cost of these repairs for the year ended June 30, 1899, is as follows :

Ordinary repairs under the head of Staff and Repairs		$35,776 90
Special repairs under the head of Income :		
Renewing Blacks Bridge	3,103 99	
Total		$38,880 89

BEAUHARNOIS CANAL.

OPERATION.

The traffic was passed through this canal satisfactorily, with the exception of the delay to navigation of 48 hours caused by the steamer *Sir L. Tilley* on June 6 last, breaking the gates at lock No. 12. The accident cost the owner of the boat $2,707.33.

MAINTENANCE.

The following is a statement showing the cost of repairs for the year 1898-99 :

The cost of ordinary repairs was as follows :—

Ordinary repairs under head of Staff and Repairs		$ 13,463 01
Special repairs under head of Income :		
To purchase land for material to repair dyke	1,000 00	
Total		$ 14,463 01

CHAMBLY CANAL.

OPERATION.

The traffic on this canal was conducted satisfactorily and without interruption during the year.

MAINTENANCE.

The following is a statement of the necessary repairs executed during the year:

Ordinary repairs under head of Staff and Repairs	$ 11,997 51
Special repairs under head of Income :—	
To continue and complete the drainage works and culverts at St. Johns, P.Q	12,689 02
To build bridge at Ste. Thérèse Island	1,866 40
Double metallic telephone line	700 00
	$ 27,252 93

ST. OURS LOCK.

OPERATION.

This lock was worked without accident during the year.

MAINTENANCE.

The cost of the work of repairs for the year was as follows :—

Ordinary repairs under head of Staff and Repairs	$ 1,494 93
There were no special repairs under the head of Income.	Nil.
Total	$ 1,494 93

STE. ANNE'S LOCK.

OPERATION.

No interruption to traffic occurred on this lock during the year.

MAINTENANCE.

The cost of maintaining the lock in good condition has been as follows :—

Ordinary repairs under head of Staff and Repairs	$ 1,997 96
There were no ordinary repairs under the head of Income	Nil
Total	$ 1,997 96

CARILLON AND GRENVILLE CANALS.

OPERATION.

These canals were operated successfully, without accident, during the year.

MAINTENANCE.

The cost of repairs executed during the year was as follows :—

Ordinary repairs under the head of Staff and Repairs	$11,478 88

There were no special repairs under head of Income.

TRENT CANAL.

OPERATION.

The canal works are in a good state of repair, and no interruption occurred to traffic during the year.

MAINTENANCE.

The cost of repairs for the year was as follows :—

Ordinary repairs under head of Staff and Repairs	$ 6,454 49
Special repairs under head of Income :—	
To construct a dump scow	681 94
To construct three sluices in dam, Hastings.	2,999 41
To remove blasted rock, Hastings..	2,498 44
Totals	$ 12,634 28

RIDEAU CANAL.

OPERATION.

No difficulty has occurred in navigating the canal during the year and the traffic has been worked satisfactorily.

MAINTENANCE.

The cost of maintaining the canal for the year has been as follows :—

Ordinary repairs under the head of Staff and Repairs	$28,199 49
Special repairs under head of Income :—	
To renew and widen bulkhead, Kilmarnock	576 29
Portland cement for foundation, Kilmarnock	124 00
Total	$28,899 78

MURRAY CANAL.

OPERATION.

Vessels passed through the canal during the year without accident of any kind. It was closed to traffic on December 6, 1898, and reopened on April 13, 1899.

MAINTENANCE.

The canal is in good condition and repair. The cost of repairs was as follows :—

Ordinary repairs under head of Staff and Repairs	$ 3,533 68
Special repairs under head of Income	Nil.
Total	$ 3,533 68

CORNWALL CANAL.

OPERATION.

The canal was closed for the season on December 9, 1898, and reopened for traffic on April 24, 1899. This canal was operated during the year without any accident occurring to interfere with navigation.

MAINTENANCE.

Large necessary repairs were made during the year and the canal is now in efficient working condition. The cost of the repairs is as follows :—

Ordinary repairs under head of Staff and Repairs	$ 14,623 90
Special repairs under head of Income :—	
To repair recess platforms	15,960 80
Total	$ 30,584 70

WILLIAMSBURG CANALS.

OPERATION.

These canals were closed to traffic on December 13, 1898, and opened for the season of 1899 on April 13, 1899.

These canals have been operated during the year without accident.

MAINTENANCE.

The canal works are in good condition, the necessary repairs thereto having been executed during the year. The cost of the repairs is as follows :—

Ordinary repairs under head of Staff and Repairs	$10,000 00
Special repairs under head of Income :—	
Combined gate and stone lifter	3,410 00
Building one pair lock gates	4,000 00
Total	$17,410 00

WELLAND CANAL.

OPERATION.

This canal was closed to traffic on December 14, 1898, and reopened on April 24, 1899.

MAINTENANCE.

The works of repairs necessary on this canal were not fully carried out, owing to the pressure brought to bear by the transportation companies and others to have the canal opened for navigation at such an early date.

The cost of repairs during the year was as follows :—

Ordinary repairs under the head of Staff and Repairs	$56,270 60
Special repairs under the head of Income :—	
To renew superstructure, west pier at Pt. Dalhousie	16,872 15
To renew fender works of bridges in new canal	8,205 13
To renew bridge over Welland Raceway	1,482 12
To improve the feeder back ditches	784 77
To renew Dunnville dam and bridge	80 10
To remove slides	2,675 57
Total	$86,370 44

ST. PETER'S CANAL.

OPERATION.

This canal was closed to navigation on January 7, 1899, and reopened on April 24, 1899. There have passed through the canal during the year 1,702 vessels.

MAINTENANCE.

Some repairs are required on this canal which have been postponed to next year. The canal, however, generally is in good repair. The cost of repairs during the year amounted to :—

Ordinary repairs under head of Staff and Repairs	$ 456 61
Special repairs under head of Income :	Nil.
Total	$ 456 61

GENERAL OBSERVATIONS RESPECTING GOVERNMENT CANALS.

There will be a 14-foot navigation available next season from Lake Erie to Montreal. The sections of the Trent Canal under construction will, no doubt, be completed next season, which will be a convenience for the movement of local traffic. The works of enlargement of the Grenville Canal have progressed so slowly that there is little hope of these improvements being made available for navigation for another year at least. The removal of the railway bridge pier from the centre of the prism of the Sault Ste. Marie Canal will greatly facilitate traffic passing through the canal, and obviate risk of accidents to vessels.

No capital expenditure has been made during the past year on the Welland, Rideau, Carillon, Chambly, Beauharnois, Ste. Anne's or St. Ours Canals. Supplies

and materials for the several canals continue to be purchased, for the most part, by competition, and books are kept on the canals showing the receipts and issues of materials and supplies.

Cost of maintenance and operation of the canal system for the year ended June 30, 1899	$ 633,315 61
Net revenue of canals after deducting refunds	369,044 38
Excess of cost of maintenance and operation over revenue	$ 264,271 23

RAILWAY SUBSIDIES.

Subsidies to railways were granted at the last session of Parliament, but as I have before mentioned, under the terms of the Subsidy Act of the previous session it is not possible to show clearly the amount of cash subidy granted, as the amount of subsidy payable will, in several cases, be based upon the cost of each road. For the same reason, I am unable to give the amount of each subsidy available, but I shall, as heretofore, show the amount actually paid ; also the number of miles of railway for which subsidy granted per mile was available on the 1st July, 1898, and the number of miles of railway for which cash subsidy per mile was granted, built up to the 30th of June, 1899. There will also be found the amount of subsidy paid up to the 1st of November, 1899.

There also appears a statement of the cash subsidy per annum paid up to the 30th of June, 1899, with the number of miles built ; also a statement showing the railways which have been granted aid in land.

Amount of cash subsidy per mile paid up to June 30, 1899	$ 18,858,592.16
Number of miles of railway on which cash subsidy per mile was paid up to June 30, 1899	5,863·71
Amount of subsidy paid up to November 1, 1899	$ 19,010,785.27
Cash subidy per annum paid up to June 30, 1899	$ 1,766,000.00
Number of miles built on cash subsidy per annum up to June 30, 1899	252
Number of miles of railway to which aid in land has been authorized	2,937·21
Number of acres of land, the grant of which in aid of railways has been authorized	39,725,130

The foregoing statements do not include the grants in cash and land to the Canadian Pacific Railway, the Canada Central Railway and the Esquimalt and Nanaimo Railway.

These roads received in cash as follows :—

Canadian Pacific Railway	$ 25,000,000
Canada Central Railway	1,525,250
Esquimalt and Nanaimo Railway	750,000
	$ 27,275,250

In land as follows :—

	Acres.
Canadian Pacific Railway	25,000,000
Esquimalt and Nanaimo Railway	1,900,000
Total	26,900,000

CANAL STATISTICS.

These statistics are for the season of 1898; they have been prepared by Mr. R. Devlin, the officer in charge of the Canal Statistics office.

TABLES showing the tons of freight passing through each canal, the tolls collected, and the number of trips of vessels passing through each canal, for the year ending December 31, 1898 :—

Name of Canal.	Tons of Traffic passing through.	Tolls collected.	Number of trips of vessels passing through.
Lachine, Beauharnois, Cornwall, Williamsburg — St. Lawrence Canals	1,439,134	$ 90,854 93	11,548
Welland	1,140,077	168,598 07	2,384
Chambly	271,336	19,326 06	2,341
Ste. Anne's, Carillon, Grenville — Ottawa River Canals	549,986	36,920 62	2,401
Rideau	54,946	4,794 01	2,367
Murray	15,543	684 01	677
Trent	27,676	1,094 63	2,363
St. Peter's	64,490	2,876 32	1,692
*Sault Ste. Marie	3,055,287	Free.	3,675

* This canal was opened for traffic on 9th September, 1895.

RAILWAY STATISTICS.

Great difficulty has been experienced, year by year, in getting out the Annual Report of the department, owing to many of the railway companies failing to make the returns required by law and taking no notice whatever of the communications addressed to them from time to time, urging them to forward their returns. I suggest that in future legal proceedings be taken to compel the delinquent railway companies to comply with the law; the costs of the suits to be collected from them.

SESSIONAL PAPER No. 10

TABLE showing the growth of Railways from year to year, since the opening of the first line in 1836.

Year.	Miles in Operation.	Year.	Miles in Operation.
1835	0	1868	2,278
1836	16	1869	2,524
1837	16	1870	2,617
1838	16	1871	2,695
1839	16	1872	2,899
1840	16	1873	3,613
1841	16	1874	3,832
1842	16	1875	4,331
1843	16	1876	4,804
1844	16	1877	5,218
1845	16	1878	5,782
1846	16	1879	6,126
1847	54	1880	6,858
1848	54	1881	7,194
1849	54	1882	7,331
1850	66	1883	8,697
1851	159	1884	9,577
1852	205	1885	10,275
1853	506	1886	10,773
1854	764	1887	11,793
1855	877	1888	12,184
1856	1,414	1889	12,585
1857	1,444	1890	13,151
1858	1,863	1891	13,838
1859	1,994	1892	14,564
1860	2,065	1893	15,005
1861	2,146	1894	15,627
1862	2,189	1895	15,977
1863	2,189	1896	16,270
1864	2,189	1897	16,550
1865	2,240	1898	16,718
1866	2,278	1899	17,250
1867	2,278		

FATAL ACCIDENTS for Year ended June 30, 1899.

	Passengers Killed.	Employees Killed.	Others Killed.	Total Killed.
Falling from cars or engines	2	17	6	25
Getting on or off trains in motion	2	9	13	24
At work making up trains	.....	13	.....	13
Putting heads or arms out of windows	.....	.....	.....	.....
Coupling cars	.....	10	.....	10
Collisions and derailments	12	18	1	31
Striking bridges	.....	1	.....	1
Walking or being on track	.....	25	88	113
Explosions	.....	2	.....	2
Other causes	4	24	37	65
Total	20	119	145	284

The summary of tables for the years ended June 30, 1898, and June 30, 1899, is as follows, viz. :—

—	Comparative Statement.	
	June 30, 1898.	June 30, 1899.
Miles of railway completed (track laid)	16,870	17,358
" sidings	2,248	2,402
" iron rails in main line	248	178
" steel "	16,622	17,180
" " " double track	553	562
Capital paid (including the four following items	$941,297,037	$964,699,784
Government (Dominion and Provincial) bonuses paid	$161,136,218	$165,534,900
" " " loans paid	$21,569,149	$20,468,245
" (Provincial only) subscription to shares paid)	$300,000	$300,000
Municipal aid paid	$15,660,668	$15,740,668
Miles in operation	16,718	17,250
Gross earnings	$59,715,105	$62,243,784
Working expenses	$39,137,549	$40,706,217
Net earnings	$20,577,556	$21,537,567
Passengers carried	18,444,049	19,133,365
Freight carried (tons)	28,785,903	31,211,753
Train mileage	50,658,283	52,215,207
Passengers killed	5	20
Number of elevators	108	163
" guarded level crossings—public roads	171	197
" unguarded " "	11,646	11,813
" overhead bridges	432	430
" level crossings of other railways	243	276
" junctions with other railways	349	347
" " branch lines	227	234
" engines owned	2,026	2,142
" " hired	86	75
" sleepers and parlour cars owned	188	231
" " " hired	38	37
" first class cars owned	1,176	1,170
" " hired	38	69
" second class and immigrant cars owned	623	621
" " " hired	5	19
" baggage, mail and express cars owned	647	639
" " " hired	21	29
" refrigerator cars owned	398	665
" " hired	122	122
" cattle and box freight car owned	35,459	38,839
" " " hired	3,361	3,112
" platform cars owned	15,864	15,434
" " hired	442	377
" coal and dump cars owned	5,181	5,540
" " hired	.....	42
" conductors vans owned	1,017	1,008
" " hired	7	5
" tool cars owned	202	910*
" " hired	3	8
" snow ploughs owned	292	302
" " hired	2	2
" flangers owned	154	186
" " hired	1	1

* Including steam shovels, pile drivers, water tank cars, store cars, gravel cars, boarding cars, &c.

I have the honour to be, sir, your obedient servant,

COLLINGWOOD SCHREIBER,

Deputy Minister and Chief Engineer of Railways and Canals.

The Honourable A. G. BLAIR,

Minister of Railways and Canals.

No. 1

RAILWAYS

INTERCOLONIAL RAILWAY OF CANADA,
OFFICE OF THE GENERAL MANAGER,
MONCTON, N.B., November 7, 1899.

SIR,—I have the honour to submit the following report on the working of the Intercolonial Railway during the fiscal year ended June 30, 1899.

I inclose 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.
4. Car Expenses.
5. Maintenance of Way and Works.
6. Station Expenses.
7. General Charges.
8. General Stores Account.
9. General Balance.
10. Comparative Statement of Averages.
11. Special Votes.

The length of railway in operation during the year was 1,314·67 miles. Of this 1,145·46 was owned by the Government, the balance 169·21 was operated under lease.

CAPITAL ACCOUNT.

The total cost of road and equipment on June 30, 1898, by last report, was $55,668,913.95.

The additions during the year were as follows :—

Increased accommodation at Halifax	$63,945 04
" " at Mulgrave	981 29
" " at Moncton	20,000 00
" " at St. John	195,534 59
" " at Levis	13,886 46
" " various points	4,909 26
Extension to deep water at North Sydney,	21,258 68
To increase the strength of iron bridges	49,990 39
Land damages Oxford and New Glasgow and Cape Breton divisions	426 26
To build an elevator at St. John	17,358 96
" " at Halifax	41,203 83
To dredge at Pictou wharf	999 75
" at Pictou Landing wharf	26 80
To provide a station house and siding at Humphreys	1,015 99
To build bridge over the rock cut north of Elm Tree River	899 57

Passenger and freight shed at Richmond	$	1,500 00
To provide new machinery and appliances at Moncton shops		5,053 66
Electric light apparatus for steamer *Mulgrave*		3,000 15
Rolling stock		619,999 26
Rolling stock fittings, freight cars		20,000 00
	$	1,081,989 94
Deduct Indiantown Branch, credit		60 00
	$	1,081,929 94
Making the total cost on the 30th June, 1899		56,750,843 89

Increased accommodation at Halifax.—Some dredging was done. A wharf 600 feet long and 160 feet broad was built of creosoted piles and southern pitch pine timber. A warehouse 525 feet long and 126 feet broad was built on this wharf. Railway tracks were laid in the warehouse on each side of it, also on the approaches to the wharf.

Increased accommodation at Mulgrave.—A cribwork retaining wall was built, some filling in was done, and additional sidings were laid.

Increased accommodation at Moncton.—This was for completing the work of building a passenger station and rearranging the yard; for plumbing, fitting for electric light, asphalt platforms, sidings, grading and sewers.

Increased accommodation at St. John.—This is for the purchase of property at St. John harbour on which to build a large wharf for export and import traffic. On the wharf there will a warehouse for freight. The whole work is under contract and is progressing.

Increased accommodation at Levis.—This is for the purchase of land to enlarge the railway yard there.

Increased accommodation at various points.—This expenditure was made at Antigonish, moving freight shed, extending sidings, rearranging and improving the yard; at Jubilee, building a station and freight house; at Ross Road, for land and for building a freight shed and platform; at College Bridge, for additional land; and at Sylvester for an extension of platform.

Extension to deep water at North Sydney.—This is a continuation of the work commenced last year of extending the railway to the harbour, and constructing a wharf 265 feet long and 58 feet wide, with a warehouse on it 80 feet long and 30 feet wide. The wharf and warehouse are in use.

To increase the strength of iron bridges.—Eight new steel bridges were purchased, and the eight spans which they replaced were added to other bridges to increase their strength, so that a total of eighteen spans of bridging were permanently strengthened.

Land damages Oxford and New Glasgow and Cape Breton divisions.—This is for land taken and for legal services in connection with land.

To build an elevator at St. John.—This work is under contract, the greater part of the timber is on the ground and the foundation is partly built.

To build an elevator at Halifax.—The work is under contract and is progressing. The expenditure is for timber and for payments to the contractors. The city of Halifax contributed in land and money $49,907 to the railway for this work.

To dredge at Pictou wharf.—This work was done by a dredge of the Public Works Department, but was not completed at the close of the year.

To dredge at Pictou Landing wharf.—No work was done during the year except to prepare a plan. There was a good deal of difficulty in getting a dredge.

To provide a station house and siding at Humphreys.—This is the cost of construct ing the siding.

To build bridge over the rock cut north of Elm Tree River.—This work is completed, an iron bridge placed on concrete abutments being provided to carry the road over the railway.

Passenger and freight shed at Richmond.—This is a new building 62 feet by 24 feet, and it is in use.

To provide new machinery and appliances at Moncton Shops.—This is for special machines and tools and the fitting of them up.

Electric light apparatus for steamer "Mulgrave".—An engine and dynamo, a search light and other lights were fitted on board the steamer; also lamps on the wharfs which are lighted by the dynamo in the steamer.

Rolling Stock.—This is for the purchase of locomotives, sleeping and dining cars, passenger cars for day use, baggage cars, postal cars and freight cars, snow ploughs and a flanger required in consequence of the extension of the railway and the increase of business.

Rolling stock fittings for freight cars.—This is for the purchase of air-brake apparatus for freight cars, and for applying the same to cars. Three hundred and fifty cars were so equipped during the year, making a total of 1,868 equipped.

REVENUE ACCOUNT.

The gross earnings and working expenses for the year compare as follows:—

Gross earnings	$3,738,331 44
Working expenses	3,465,686 21
Surplus	$ 272,645 23

The gross earnings compare as follows with those of the previous year:—

In 1898-99	$ 3,738,331 44
In 1897-98	3,117,669 85
Increase	$ 620,661 59

The earnings from passenger traffic compare as follows:—

In 1898-99	$ 1,167,453 16
In 1897-98	1,053,864 64
Increase	$ 113,588 52

The earnings from freight traffic compare as follows:—

In 1898-99	$ 2,348,096 58
In 1897-98	1,857,740 06
Increase	$ 490,356 52

The earnings from mails and express freight compare as follows :—

In 1898–99	$	222,781 70
In 1897–88		206,065 15
Increase	$	16,716 5

The earnings by mile of railway compare as follows :—

In 1898–99	$	2,843 55
In 1897–98		2,594 53
Increase	$	249 02

The earnings by train mile compare as follows :—

	cents.
In 1898–99	76·57
In 1897–98	78·82

The number of passengers carried compares as follows :—

In 1898–99	1,603,095
In 1897–98	1,528,444
Increase	74,651

The increase was in both local and through passengers.

The weight of freight carried compares as follows :—

	Tons.
In 1898–99	1,750,761
In 1897–98	1,434,576
Increase	316,185

The increase was in both local and through freight.

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 :—

Articles.	1897–98.	1898–99.	Increase.	Decrease.
Barrels of flour and meal	987,408	1,157,250	169,842	
Bushels of grain	1,551,372	2,595,353	1,043,981	
Lumber in superficial feet	254,093,816	306,554,031	52,460,215	
Head of live stock	89,301	109,821	20,520	
Coal in tons	369,949	494,206	124,257	
Manufactured goods in tons	319,608	399,527	79,919	
Cords of firewood	29,896	58,960	29,064	
All other articles in tons	234,278	198,571		35,707

There was an increase over last year in the quantity of the following articles carried : Flour and meal, grain, lumber, firewood, live stock, coal, extract of hemlock bark, clay, stone, sand, ore, lime and cement, gypsum, iron and other metals, butter and cheese, hay and straw, fresh dried and salted fish, oysters, sugar, fresh and salted pork, hides, leather, dry goods, hardware, groceries ; and a decrease in the quantity of the following : Bricks, potatoes, turnips, beets, carrots, canned lobsters, molasses, fresh and salted beef.

WORKING EXPENSES.

The working expenses compare as follows with the previous year :—

In 1898–99	$3,465,686 21
In 1897–98	3,257,648 51
Increase	$ 208,037 70

The averages compare with those of last year as follows :—

	cents.
Per mile run by engines :—	
In 1898–99	58·02
In 1897–98	66·87
Per mile run by trains :—	
In 1898–99	70·99
In 1897–98	82·37
Expenditure per mile of railway :—	
In 1898–99	$ 2,636 16
In 1897–98	2,711 02

The rent payable to the Drummond County Railway Company and to the Grand Trunk Railway Company is not included in the above, as it would disturb the comparison with previous years; no corresponding charge relating to the cost of any portion of the railway having ever before been included in the working expenses.

The permanent way and structures received necessary repairs, and all the works of the railway are in good order.

The number of ties renewed was 490,368.

Ninety miles of track were reballasted.

Eight and two-third miles of new sidings were laid at various places.

The bridges received necessary repairs, and seven wooden bridges were taken out of the track and seven steel bridges substituted.

The fences received necessary repairs, and sixty and a half miles of new fences were erected.

The snow sheds and snow fences were repaired, and eight hundred and sixty rods of new snow fences were erected.

The wharfs at various places received necessary repairs.

The buildings on all parts of the line received necessary repairs.

The rolling stock received necessary repairs and is in good order.

One locomotive was purchased, two were rebuilt in the railway shops, and one hundred and eleven received heavy repairs.

The freight cars were repaired, and two hundred and four were rebuilt.

STORES.

The value of stores purchased was	$1,103,202 43
The value of stores used was	1,336,057 85
The value of old material sold was	98,852 32

The value of stores on hand at the end of the year was :—

Ordinary stores, including fuel	$ 352,299 87
Iron and steel rails and fastenings	179,613 91
Old material for sale	21,263 94
Total	$ 553,177 72

GENERAL.

There was a good deal of trouble with snow in the latter part of the winter of 1898–99, and the cost of clearing snow was over seventy thousand dollars.

The water tanks at St. Charles Junction and at Canaan were accidently destroyed by fire in January, 1899.

On January 25, 1899, there were three washouts of the track on the eastern part of the line, and on April 20, 1899, there was one on the western part of the line; in all these cases there was a little delay to but no stoppage of the traffic, and the damages were repaired soon after.

I have the honour to be, sir,
Your most obedient servant,

D. POTTINGER,
General Manager Government Railways.

COLLINGWOOD SCHREIBER, Esq., C.M.G.
Deputy Minister and Chief Engineer Railways and Canals.

No. 1.—INTERCOLONIAL RAILWAY.

DR. CAPITAL ACCOUNT, Year ended June 30, 1899. CR.

1898.		$ cts.	$ cts.	1898.		$ cts.
June 30.	To cost of Intercolonial Railway to date	48,397,445 15		June 30.	By Dominion of Canada	55,668,913 95
	" Eastern Extension Railway to date	1,324,042 81				
	" Oxford and New Glasgow Railway to date	1,950,820 60				
	" Cape Breton Railway to date	3,875,640 47				
	" Cape Breton and Oxford and New Glasgow Railways to date	57,501 89				
	" Ferry Service at Strait of Canso to date	63,463 03				
1899.			55,668,913 95			
June 30.	Expenditure for current year:—					
	Increased accommodation, Moncton	20,000 00				
	" " St. John	195,534 59				
	" " Lévis	13,886 46				
	" " Halifax	63,945 04				
	" " Mulgrave	981 29				
	" " at various places	4,909 26				
	Extension to deep water, North Sydney	21,258 98				
	To increase strength of iron bridges	49,990 39				
	Land and damages (O. & N. G. & C. B. Rys.)	426 26				
	Elevator at St. John	17,358 96				
	" Halifax	41,203 83				
	Rolling Stock	619,999 26				
	Station and siding at Humphreys	1,015 99				
	To build bridge over rock cut, north Elm Tree River	899 57				
	Rolling Stock fittings for freight cars	20,006 00				
	Passenger and freight shed at Richmond	1,500 00				
	Electric light apparatus ss. *Mulgrave*	3,000 15				
	To dredge Pictou Landing wharf	26 80				
	" " wharf	999 75				
	To provide new machinery, Moncton shops	5,053 66				
	CR.	1,081,989 94				
				1899.		
	By Indiantown Branch	60 00				
			1,081,929 94	June 30.	By Dominion of Canada	1,081,929 94
			56,750,843 89			56,750,843 89

E. & O. E.
MONCTON, N. B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 2.—INTERCOLONIAL RAILWAY.

DR. REVENUE ACCOUNT, Year ended June 30, 1899. CR.

Previous Year.	Expenditure.		Year ended June 30, 1899.	Previous Year.	Earnings.	Year ended June 30, 1899.
$ cts.			$ cts.	$ cts.		$ cts.
1,031,630 81	Locomotive power,	Abst. No. 1.	1,100,190 62	1,053,864 64	Passenger traffic	1,167,453 16
733,366 18	Car expenses	" 2.	731,266 31	1,857,740 06	Freight traffic	2,348,096 58
861,727 62	Maintenance way & works	" 3.	849,322 51	206,065 15	Mails and sundries	222,781 70
400,164 67	Station expenses	" 4.	453,971 00			
209,547 59	General charges	" 5.	258,039 66			
21,211 64	Car mileage		72,896 11			
3,257,648 51			3,465,686 21			
70,000 00	Rental of leased lines		210,000 00			
3,327,648 51			3,675,686 21	3,117,669 85		3,738,331 44
	Balance		62,645 23	209,978 66	Balance	
3,327,648 51			3,738,331 44	3,327,648 51		3,738,331 44

E. & O. E.

MONCTON, N.B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 3.—INTERCOLONIAL RAILWAY.

LOCOMOTIVE POWER. (Abstract No. 1.)

Previous Year.		Year ended June 30, 1899.
$ cts.		$ cts.
13,816 55	Mech'l. supt's salary, clerks, office and travelling expenses	13,168 13
276,117 52	Wages of drivers, firemen and cleaners	317,748 69
388,267 88	Fuel	467,480 30
31,424 28	Oil, tallow and waste and small stores	29,846 39
276,068 39	Repairs to engines, tenders and engine tools	221,150 55
29,371 80	Water, including pump and tank repairs	32,325 07
16,564 39	Miscellaneous	18,471 49
1,031,630 81		1,100,190 62

E. & O. E.

MONCTON, N. B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 4.—INTERCOLONIAL RAILWA *I*.

Car Expenses. (Abstract No. 2.)

Previous Year.		Year ended June 30, 1899.
$ cts.		$ cts.
86,371 77	Repairs to passenger cars	74,687 97
22,276 39	Repairs to postal, express and baggage cars	12,964 51
232,118 81	Repairs to freight cars and vans	172,634 33
6,308 67	Repairs to snow ploughs and flangers	5,090 40
265,557 31	Wages of conductors, train baggagemasters and brakemen	317,994 42
17,213 63	Oil and waste for packing	13,395 32
71,712 71	Small stores and fuel	91,442 71
31,806 89	Miscellaneous	43,056 65
733,366 18		731,266 31

E. & O. E.

T. WILLIAMS,

Moncton, N.B., June 30, 1899.

Chief Accountant and Treasurer.

No. 5.—INTERCOLONIAL RAILWAY.

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

Previous Year.		Year ended June 30, 1899.
$ cts.		$ cts.
7,854 32	Chief and asst. engineers' salaries, clerks, office and travelling expenses	10,041 95
404,230 28	Wages in repairing roadway, fences, semaphores, including new sidings laid in	425,872 93
67,139 13	Rails and fastenings, including new sidings laid in	38,624 71
143,932 70	Ties	99,163 35
99,540 05	Timber, lumber, &c., for repairs to bridges, cattle guards, snow sheds, fences, &c.	111,067 44
9,443 16	Repairs to wharfs	6,562 33
56,234 47	Repairs to buildings and platforms, including extensions and additions to same	69,404 53
11,495 07	Repairs to tools	14,516 00
58,370 90	Clearing snow and ice	70,104 71
3,487 54	Miscellaneous	3,964 56
861,727 62		849,322 51

E. & O. E.

T. WILLIAMS,

Moncton, N.B., June 30, 1899.

Chief Accountant and Treasurer.

No. 6.—INTERCOLONIAL RAILWAY.

STATION EXPENSES.—(Abstract No. 4)

Previous Year.	——	Year ended June 30, 1899.
$ cts.		$ cts.
313,414 89	Salaries and wages of station masters, agents, clerks, telegraph operators, station baggage-masters, yard-masters, switchmen and labourers	365,429 78
86,749 79	Fuel, oil and light, stationery, ticket and other incidental expenses	88,541 22
400,164 67		453,971 00

E. & O. E.
MONCTON, N.B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 7.—INTERCOLONIAL RAILWAY.

GENERAL CHARGES.—(Abstract No. 5.)

Previous Year.	——	Year ended June 30, 1899.
$ cts.		$ cts.
93,772 74	General manager, district superintendents, train despatchers, general freight agent, general passenger agent's salaries, clerks, office and travelling expenses	109,200 96
30,905 52	Chief accountant and treasurer, traffic auditor, paymaster, cashier's salaries, clerks, office and travelling expenses	33,820 42
8,348 66	Damages to men, animals and goods	14,871 25
24,513 00	Ferry service	28,712 42
3,213 34	Telegraph expenses, not including pay to operators	5,184 30
26,630 79	Miscellaneous, printing, advertising, &c	27,483 77
22,163 54	Agency expenses	38,766 54
209,547 59		258,039 66

E. & O. E.,
MONCTON, N.B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 8.—INTERCOLONIAL RAILWAY.

DR. GENERAL STORES ACCOUNT—Year ended June 30, 1899. CR.

1898.		$ cts.	$ cts.	1899.		$ cts.	$ cts.
June 30.	To Balance		468,462 20	June 30.	By Issues during year	1,336,057 85	
1899.					Sales, material, fuel, &c., to other railways, &c	23,875 29	
June 30.	To Purchases during the year	1,103,202 43			Sales, old material	98,852 32	
	Charges from other departments	385,015 41					1,458,785 46
	Labour, etc	43,499 80			By Balance :—		
	Staff pay rolls	11,783 34					
			1,543,500 98		Ordinary stores, including fuel	352,299 87	
					Iron and steel rails and fastenings	179,613 91	
					Old material for sale	21,263 94	
							553,177 72
			2,011,963 18				2,011,963 18

E. & O. E.
MONCTON, N.B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 9.—INTERCOLONIAL RAILWAY.

DR. GENERAL BALANCE, Year ended June 30, 1899. CR.

		$ cts.		$ cts.
To Cash		1,167 70	By Dominion of Canada	821,128 28
Stations		67,824 87	Suspense	4,222 74
General Stores—			Chatham Railway	0 07
Ordinary stores, including fuel	$352,299 87		Canadian Pacific Railway—traffic	6,386 01
Iron and steel rails and fastenings	179,613 91		Wagner Palace Car Company	661 42
Old material for sale	21,263 94		Canada Coals and Railway Company	57 66
		553,177 72	Central Railway of New Brunswick	72 08
Dept. Accounts—			Temiscouata Railway	14 64
Post Office	$ 38,428 23		Prince Edward Island Railway	497 06
Public Works	74 55		Charlottetown Steam Navigation Company	8 10
Marine and Fisheries	409 06		National Despatch Line	5 87
Militia and Defence	3,477 05		Canada Atlantic and P. Line	847 67
		42,388 89	Coldbrook Rolling Mills Company (new account)	247 30
Canadian Pacific Railway rolling stock		22,446 90		
Dominion Atlantic Railway—traffic	$ 962 09			
" " —general	494 07			
		1,456 16		
Canada Eastern Railway—traffic	$ 5,891 09			
" " —general	5,659 17			
		11,550 26		
Canadian Pacific Railway—general	$ 11,241 20			
" " (N. B. D.)—general	3,428 56			
		14,669 76		
Grand Trunk Railway—traffic	$ 1,366 74			
" " —general	6,517 40			
		7,884 14		
Rents		4,018 85		
Unclaimed freight		77 24		
Quebec Central Railway		4,280 12		
N. B. and P. E. I. Railway		17 90		
Caraquet Railway		750 16		
Kent Northern Railway		62 56		
Moncton and Buctouche Railway		73 05		
Bay Chaleur Railway		2,065 27		
Elgin and Havelock Railway		3 78		
Boston and Maine Railway		27 75		
Salisbury and Harvey Railway		0 65		
Great Eastern Fast Freight Line		2 43		
Swift Refrigerator Line		5 35		
Michigan Central Railway		9 66		
Pennsylvania Railway		0 69		
Central Vermont Railway		9 02		
Nova Scotia Central Railway		1 81		

Tobique Valley Railway		2,739 25
Canada Atlantic Railway		176 40
New York Central and Hudson River Railway		3 56
Sherbrook Tank Line		1 21
Maine Central Railway		2 19
Detroit, Grand Haven and Mil. Railway		13 22
National Car Company		7 34
United Counties Railway		6 00
Lehigh Valley Railway		0 83
Galveston, Harrisburg and S. A. Railway		0 63
Southern Despatch Lumber Line		0 85
Pittsburg, Cincinnati, C. and St. Louis Railway		2 66
Duluth, South Shore and Atlantic Railway		0 55
Newfoundland Railway		443 06
Montreal and Atlantic Railway		0 76
Vermont and Province Line		0 57
Cincinnati, Hamilton and Dayton Railway		2 57
St. Louis and Cairo Short Line		0 49
Drummond County Railway		12,965 90
Western Counties Railway—General	15,893 35	
" " " —Traffic	64 57	
		15,957 92
Springhill and Parrsboro Railway		3,161 99
Halifax and Cape Breton Railway		1,151 42
Elgin Branch Railway		726 10
St. Martin's and Upham Railway		15 13
New York and New England Railway		2 57
Chicago and West Michigan Railway		0 72
Cleveland, Cin., Chic. and St. L. Railway		14 54
Banger and Aroostook Railway		0 36
Indiana, Illinois and Iowa Railway		5 00
Toronto, Hamilton and Buffalo Railway		1 60
Canadian Express Company		4,800 00
Allan Steamship Line		1,892 13
Acadia Coal Company		642 38
Intercolonial Coal Company		1,270 90
Cumberland Railway and Coal Company		209 10
Dominion Coal Company		90 56
I. C. R. Employees' R. and I. Association		204 99
Halifax Cotton Company Siding		5,801 97
Western Union Telegraph Company		724 88
Steamer "Admiral"		1,642 85
Car "Ottawa"		264 17
Car "Victoria"		372 31
Nova Scotia Steel Company		11 08
St. François Bridge Company		49 59
Great North-western Telegraph Company		21 48
Baldwin Locomotive Works		181 10
Schooner "Soudan" and owners		139 01
Town of Fraserville		48 13

No. 9.—INTERCOLONIAL RAILWAY—*Continued.*

DR. GENERAL BALANCE, Year ended June 30, 1899. CR.

		$ cts.		$ cts.
To SS. "Gallia"		24 54		
Record Foundry and Machine Company		64 30		
Polson Iron Works		273 25		
Town of Dartmouth		32,000 00		
St. John Street Railway Company		31 00		
Ontario Car and Foundry Company		1,276 00		
Remittances destroyed		788 81		
Schooner "Mary Jane"		71 30		
Coldbrook Rolling Mills Company		1,967 41		
SS. "Mayflower"		53 38		
Union Bearing Company		928 18		
Stations—				
Nauwigewauk	$ 3 00			
Glengarry	5 00			
Bloomfield	25 21			
Coal Branch	65 84			
Weldford	55 00			
Ste. Luce	80 00			
Bic	22 00			
St. Arsène	107 12			
Dalhousie	19 69			
Valley	6 65			
Iona	72 71			
Nappan	40 00			
Kent Junction	28 38			
Isle Verte	25 00			
Gloucester Junction	78 87			
Campbellton (freight)	25 00			
Derby Junction	231 04			
		890 51		
Individual accounts		6,035 60		
Total		834,148 90	Total	834,148 90

E. & O. E.
MONCTON, N. B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 10.—INTERCOLONIAL RAILWAY.

COMPARATIVE STATEMENT of Averages, Year ended June 30, 1899.

——	1898.	1899.
Mileage of railway	1,201·63	1,314·67
Engine mileage	4,871,387	5,974,170
Train mileage	3,955,009	4,881,695
Car mileage	43,189,745	53,422,606
Receipts per engine mile ..... Cents	64·00	62·57
Receipts per mile of railway ..... Dollars	2,594 53	2,843 55
Percentage of passenger earnings to gross earnings	33·80	31·23
" freight " "	59·59	62·81
" other " "	6·61	5·96
Expenses per engine mile :—		
Drivers, firemen and cleaners' wages ..... Cents	5·67	5·32
Fuel ..... "	7·97	7·83
Oil, tallow, waste and small stores ..... "	·65	·50
Repairs to engines ..... "	5·67	3·70
Water and tank repairs ..... "	·60	·54
Miscellaneous ..... "	·34	·31
Total	20·90	18·20
Mechanical superintendent's salary, office and travelling expenses	·28	·22
Total	21·18	18·42
Locomotive power per engine mile ..... Cents	21·18	18·42
Car expenses " ..... "	15·05	12·24
Maintenance way and works per engine mile ..... "	17·69	14·22
Station expenses " ..... "	8·21	7·60
General charges " ..... "	4·30	4·32
Car mileage " ..... "	·44	1·22
Total	66·87	58·02
Rental of leased lines	1·44	3·51
Total per engine mile	68·31	61·53
Locomotive power per train mile ..... Cents	26·08	22·53
Car expenses " ..... "	18·54	14·98
Maintenance way and works per train mile ..... "	21·79	17·40
Station expenses " ..... "	10·12	9·30
General charges " ..... "	5·30	5·29
Car mileage " ..... "	·54	1·49
Total	82·37	70·99
Rental of leased lines	1·17	4·30
Total per train mile	84 14	75·29
Working expenses per mile of railway :—		
Ordinary ..... Dollars	2,711 02	2,636 16
Rental of leased lines ..... "	58 25	159 74
	2,769 27	2,795 90

E. & O. E

MONCTON, N.B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 11.—INTERCOLONIAL RAILWAY.

SPECIAL VOTES—(Abstract No. 26).

4 months ended June 30, 1898.	Rental of Leased Lines.	Year ended June 30, 1899.
$ cts.		$ cts.
46,666 68	Rent of Grand Trunk Railway—Chaudière Curve to Chaudière, and Ste. Rosalie to Montreal, including the Victoria Bridge and terminals at Montreal....	140,000 00
23,333 32	Rent of Drummond County Railway—Chaudière to Ste. Rosalie and the Nicolet Branch..	70,000 00
70,000 00	Operated as part of the Intercolonial Railway.	210,000 00

E. & O. E.,
MONCTON, N. B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

INTERCOLONIAL RAILWAY OF CANADA,
OFFICE OF THE CHIEF ENGINEER,
MONCTON, N.B., July 27, 1899.

SIR,—I have the honour to submit the report of the engineering department for year ending June 30, 1899.

TRACK.

During the year, one mile of track laid with old four and quarter inch steel rails, weighing 58 pounds to the yard, was taken up and replaced with new four and a half inch rails, weighing 67 pounds to the yard,

Three miles of track laid with 67 pound rails, which had become worn at the ends, were taken up, cut, and relaid.

TIES.

During the year, 490,368 ordinary ties, and 247 sets of switch ties were renewed.

BALLASTING.

152,973 cubic yarks of ballast were distributed on the various divisions of the line throughout the past year.

SEMAPHORES AND SWITCHES.

New distant semaphore signals were erected at the following stations: Halifax (4), St. John (2), Norton, Penobsquis, Belledune, Charlo, Millstream, Cedar Hall, Moosepark (2), Foresdale (2), Maddington Falls (2), St. Leonard (2), Mitchell (2), St. Cyrille (2), St. Germain (2), St. Eugene (2), St. Edward (2), Ste. Rosalie.

New station signals were provided for the following stations: Kent Junction, Chatham Junction, Derby Junction, Beaver Brook, Bartibogue, Mitchell, Carmel, St. Germain and St. Edward.

One electric semaphore signal was put up at Truro.

All other semaphore, switches and station signals throughout the line, have been overhauled, repaired and painted where necessary.

SIDINGS.

During the year, eight and two third miles of additional siding accommodation has been provided at various points along the line*.

FENCING.

Sixty and one half miles of new barbed wire, woven wire and Page wire fencing were erected at different points of the line during the past year. Extensive repairs were also made to existing fences on the different divisions of the line. 600 feet of picket fence was erected at Halifax.

SNOW SHEDS AND SNOW FENCES.

During the year 14,189 feet of new snow fencing was erected, and heavy repairs were made to snow sheds and snow fences where found necessary thoughout the line. 560 feet of temporary snow fencing was put up on the Eastern Extension division.

*NOTE, This includes 5,000 feet laid in Moncton yard, and 4,670 feet laid down at the Deep Water Terminus, Halifax, in connection with increased accommodation provided at these places.

WHARFS AND TRESTLES.

At Pier No 4, deep water terminus, Halifax, the coal trestle was raised, and the planking, hatches and doors overhauled and repaired. Necessary repairs were also made to the cribwork in front of shed.

At Pier No. 5, deep water terminus, 20 new piles were driven, and the planking repaired.

At Richmond, piers 6, 7, and 8 were overhauled and repaired where found necessary.

Al Mulgrave, 6 new fenders were provided, and the sheathing of corner of wharf renewed. A wing 40 feet long 10 feet by 8 feet was built from the cribwork to the shore to strengthen cribwork and protect new siding from being damaged by heavy seas. 80 feet of the crib on the shore side of transfer dock was renewed.

At Pictou Landing, 351 feet by 21 feet of the north side of west wharf was renewed from half tide up to accommodate shipping.

At Point Tupper, repairs were made to the wharf where found necessary.

At Pictou, heavy repairs were made to the old station and freight house wharfs.

At Spring Hill Junction, additional bents were placed between the existing bents of coal trestle.

At Amherst and Dorchester, the trestles were overhauled and repaired.

At St. John, heavy repairs were made to the wharf at the deep water terminus.

At Point du Chene, 100 square feet of the wharf which was in a very bad state, was taken down and renewed. This work is not quite completed.

At Newcastle, extensive repairs were made to the wharf at this place for the better accommodation of shipping.

At Rimouski, necessary repairs were made to the approaches to wharf.

At Rivière du Loup, the wharf was overhauled and repaired.

At St. Charles, the coal shed and trestle were overhauled and repaired.

At Levis, the wharf was overhauled, and repaired where found necessary.

BUILDINGS AND PLATFORMS.

At North Street Station, Halifax, large repairs were made to the glass in roof of train shed ; necessary repairs were also made to platform, water closets, &c.

At No. 1 brick freight shed, deep water terminus, necessary repairs were made to the floor, and a thorough systen of drainage made with roof of building and connected with the sewer beneath the shed.

At Richmond, two sections of the roof of round house which gave way, were renewed, six new smoke jacks and hoods were provided, and repairs made to floor and engine pits.

The roof of tinsmith's shop was reshingled.

New stringers were provided for the pits in machine shop, and the planking repaired where necessary.

The cattle pens were overhauled and repaired.

The coal sheds at the deep water terminus and at Richmond, were overhauled and repaired, and a new floor was laid in the building used by the Dominion Atlantic Railway as an oil store.

At Millview, a new flag station and platform were provided.

At Bedford, a hardwood floor was laid in the station master's office.

At Windsor Junction, a new foundation was placed under the freight shed, and one side of the roof was reshingled.

At Elmsdale, necessary repairs were made to the passenger and loading platforms.

At Stewiacke, new sills were placed under the station building, and an addition of 35 feet was made to the freight house. An extension of 60 feet was made to the passenger platform, and 30 feet to the freight platform. A new cattle pen was also provided.

At Hilden, the roof of station was reshingled, and a storm door provided.

At Truro, a hardwood floor was laid in the ladies waiting room. The blacksmith shop overhauled and repaired. Number of the timbers of engine pits were renewed, and six new smoke jacks and hoods were placed on the engine house. New floors were laid in the oil room and shunter's room.

At West River, necessary repairs were made to the doors and windows of freight shed.

At Riversdale, the roofs of coal shed and tank house were reshingled.

At Glengarry, the roof of coal shed was reshingled, and four storm sashes were provided for the station.

At New Glasgow, portions of the passenger and freight platforms were renewed. and the roofs of freight shed and baggage room were overhauled, repaired and painted, The trimmings of station building were also painted.

At Stellarton, the roof of engine shed was overhauled and repaired, and other necessary repairs made to the building.

A number of storm sashes and a storm door were provided for the dwelling apartments of station. Necessary repairs were made to the station master's office and freight platform.

At Lourdes flag station, the platform was renewed, and the interior of station repaired.

At Pictou Landing, a number of rafters in the engine shed were renewed and other repairs made to roof.

At Trenton, necessary repairs were made to the doors of waiting room and freight shed.

At Piedmont, repairs were made to the roof of kitchen.

At Avondale, the platform was renewed.

At Marshy Hope, the roof of station was painted, the platform repaired and a storm door provided.

At Tracadie, the interior walls of station master's office, waiting room, dwelling apartments and roof of station were painted.

At Monastery, the freight shed was painted.

At Harbour au Bouche, a porch was provided at the rear of the station for the station master's use.

At Mulgrave, the freight shed was overhauled, repaired and painted. The roof of ice house was reshingled and the building repaired and painted. The roof of engine shed was overhauled, and recoated with tar and pitch.

Necessary repairs were made to all stations and platforms between Point Tupper and Sydney.

At Westville, the loading platform was overhauled and a new top put on.

At Pictou, repairs were made to the freight shed on wharf. A building was erected for the storage of ice, and the engine shed was overhauled and repaired where found necessary.

At Scotch Hill, the freight room of station was converted into a waiting room.

At Meadowville, a new cattle pen was provided, and the station building overhauled and repaired.

At Denmark, Tatamagouche and Oxford, new tops were placed on the loading platforms.

At Malagash, a freight shed was provided.

At Belmont and Folleigh, the roofs of station buildings and freight houses were overhauled, repaired and painted.

At Oxford Junction, the coal shed was overhauled and repaired. A new Sparham roof was put on roof of baggage room, and the roof of engine shed overhauled and repaired.

At Westchester, the roof of kitchen was raised, the station master's office enlarged, hardwood floors laid in the office and waiting room and the platforms overhauled and repaired. One side of the freight shed roof was reshingled. The exterior and interior woodwork of station was painted. The freight shed was also painted.

At Greenville, a loading platform 100 feet by 10 was provided.

At Thomson, the station building and freight shed were raised, new sills placed underneath and general repairs made to station. The new woodwork of station and freight house was painted.

At Spring Hill Junction, the roof of baggage room and freight shed were overhauled and repaired, and covered with Sparham roofing. New sills were placed under the station building. Necessary repairs were made to the passenger platform. The exterior walls of station building, freight house and baggage room were painted. The station master's office and waiting room were also painted.

At Athol, new sills were placed under the station and the building overhauled and repaired. The passenger platform was renewed.

At Maccan, the roof of station building was reshingled.

At Nappan, 100 feet of top of loading platform was renewed.

At Amherst, new down spouts were provided for the station building, freight house and restaurant. New sills were placed under the restaurant, the floor repaired, a water closet provided and the building painted. The passenger platform was renewed.

At Aulac, the interior walls of station building, office and waiting room were painted.

At Sackville, an extension of 100 by 12 feet was made to the passenger platform, and a new cattle pen was provided.

At Upper Dorchester, a loading platform with approaches was provided.

At Memramcook, the roof of station building was overhauled and repaired.

At Calhouns, the platform was renewed.

At Point du Chene, the round house roof was overhauled, repaired and covered with Sparham roofing. The roof of freight shed was reshingled.

At Moncton, the car inspector's buildings (2) were moved from the north to the south side of the tracks, and an addition of 24 feet was made to one end of the buildings for the shunters use.

The track blacksmith's shop, carpenters' shop and storehouse, were moved from the east to the west end of the yard near the Y. Necessary repairs were made to the buildings after removal.

A portion of the south side of roof of machine shop was recovered with shingles, and necessary repairs made to the roof of round house.

At Anagance, the passenger platform was overhauled and repaired.

At Penobsquis, the platform was renewed.

At Sussex, the roofs of engine shed, turntable shed and a part of the roof of station building were reshingled.

At Apohaqui, the passenger and freight platforms were overhauled and repaired where necessary.

At Norton, the station and loading platforms were renewed.

At Bloomfield, the station platform was renewed.

At Hampton and Nauwigewauk, one half of the roofs of station buildings were reshingled.

At Jubilee, a new station building was erected. A passenger platform 374 feet long was provided.

At Model Farm, the station platform was renewed.

At Quispamsis, the platform was overhauled and repaired.

At Rothesay, the roofs of station building, verandah and coal shed were reshingled and the platform repaired.

At Torryburn and Brookville, the roofs of station building were reshingled.

At Coldbrook, the station and freight house roofs were reshingled.

At St. John, the roof of round house was overhauled and repaired. One new engine pit was provided, and all the other pits were overhauled and repaired. New timbers were placed on top of each pit.

Necessary repairs were made to the stores building and coal shed. Two new section houses were provided for the section men. The freight loading platform was overhauled and repaired. The doors and windows of the local freight shed, C.P.R. freight shed, flour shed and English goods warehouse, were overhauled and repaired. New

hardwood floors were laid in the main hall, parlour and sitting room of station master's dwelling apartments, and other necessary repairs made where required. Extensive repairs were made to the sky-light of train shed.

Large repairs were made to all passenger and freight platforms between Moncton and Chatham Junction. At the latter station, a wooden box drain 800 feet long was laid from the station to the brook. Necessary repairs were made to the car house and pump house. A new hand car house was provided for the section men.

At Derby Junction, the station platform was overhauled and repaired.

At Newcastle, repairs were made to the station and freight house platforms. The floor of round house was overhauled and repaired. Necessary repairs were made to the coal shed and coal boxes.

At Millerton, the station platform received repairs.

At Indiantown, the roof of station was reshingled, and the floor of engine shed repaired where necessary.

At Bathurst, the platform was renewed.

At Nash's Creek, the roof of station was overhauled, repaired and painted.

At New Mills, the roofs of station building and freight houses received necessary repairs, and were painted.

At Charlo, the roof of freight house was reshingled.

At Dalhousie, the station building and freight house were overhauled, repaired and painted. Necessary repairs were made to dwelling apartments of station building.

At Dalhousie Junction, an extension of 175 feet was made to the station platform.

At Campbellton, a bathroom was provided for the station master, and the dwelling apartments in station received general repairs. The station master's office was also overhauled and repaired. A hardwood floor was laid in the locomotive foreman's dwelling apartments and the dining-room sheathed. An extension of 30 feet by 20 feet was made to the ice-house. The roofs of station building and ice-house were overhauled, repaired and painted. The district superintendent's dwelling house was overhauled and received general repairs.

Necessary repairs were also made to the machine shop and round house, and three terra cotta smoke jacks and 15 hoods were provided for the latter building.

The roof of blacksmith shop was reshingled. The station and loading platforms were renewed.

At Metapedia, the dwelling apartments of agent were overhauled and repaired, and a new hardwood floor put down. Necessary repairs were also made to the waiting room and office. The exterior walls of station building, freight house and section foreman's dwelling were overhauled, repaired and painted. A hardwood floor was laid down in the latter. An extension of 300 feet was made to the passenger platform.

At Assametquaghan, the roof of kitchen was reshingled and painted, the roof of station building was also overhauled, repaired and painted.

At Amqui, a new storm door was provided for the station, and the windows overhauled and repaired.

At Cedar Hall, the upper part of station building was converted into dwelling apartments for the agent; four storm sashes were provided.

At Sayabec, the station building was overhauled and repaired, and the station master's office sheathed.

At Little Metis, an extension of 100 feet was made to the station platform.

At St. Octave, a new floor was laid in the agent's kitchen.

All station and other platforms between Jacquet River and St. Octave received necessary repairs.

At Ste. Luce, and Rimouski, the station platforms were repaired.

At McKenzie Siding, a flag station and platform were provided.

At St. Fabien, a new engine shed was erected.

At St. Arsène, a kitchen was provided for the use of the station master.

At Rivière du Loup, the station platform was overhauled and repaired where necessary.

At St. Alexandre, the roof of station was reshingled, a hardwood floor was laid in the station and the platform renewed.

At Ste. Hélène, the station and freight platforms were overhauled and repaired.

At St. Paschal, necessary repairs were made to the freight shed and platform.

At St. Philip de Néri and River Ouelle, the station platforms were repaired.

At Ste. Anne, the freight shed received necessary repairs. The station platform was also overhauled and repaired.

At Ste. Louise, Montmagny and St. François, the station platforms were renewed.

At St. Pierre, the roof of station building was overhauled and repaired.

At St. Charles, the roof of station was reshingled, and repairs made to the freight shed and station platform. A new hardwood floor was laid in the station.

At Harlaka Jûnction, a hardwood floor was laid in the station.

At Chaudière Junction and at Lévis, the roofs of station buildings were overhauled and repaired where necessary.

At Chaudière, the interior walls of telegraph office were sheathed and a water closet provided.

At St. Nicholas, the roof of station building was painted, and a water closet provided.

At St. Appolinaire, the roof of station was painted. The interior of tank building was sheathed with matched lumber and the walls filled with sawdust. The tank tub was raised three feet, and a cedar foundation provided.

At St. Croix, the roof of station was painted.

At Rivière du Chêne, the station building and tank house were painted. The interior walls of tank house were sheathed and filled with sawdust, the tank tub raised two feet, and a cedar foundation provided. A water closet was provided.

At Kingsburg Junction, the walls and roof of station were painted and a water closet provided.

At Moose Park, the interior walls and roof of station were overhauled, repaired and painted. A platform 134 feet long and 12 feet wide was erected at this station.

At Forestdale, a platform 265 feet long and 12 feet wide was erected. The tank building was raised three feet and new flooring provided for same. The station building was raised two feet and a cedar foundation placed underneath. New floors were laid in the station, and the exterior walls of station house and tank building overhauled, repaired and painted. A water closet was provided for this station.

At Maddington Falls, the station building was raised two feet and a cedar foundation placed underneath. The roof of station was overhauled, repaired and painted. A platform 100 feet long and 12 feet wide was erected, and a water closet provided.

At Aston Junction, the roof of station building was overhauled, repaired and painted. The station building was raised two feet and a foundation of cedar provided. A platform 100 feet long and 6 feet wide was erected and a water closet provided.

At St. Leonard Junction, the station building was moved from the Nicolet Branch and placed on the main line. A cedar foundation was provided for the building, and the roof overhauled and painted. Three platforms, 115 feet long by 15 feet wide, 111 feet long by 8 feet wide, 176 feet long by 6 feet wide respectively, were erected at this station.

At Mitchell, a platform 133 feet long and 12 feet wide was erected, and a water closet provided.

At Carmel, the station building was moved from the old site and placed on the main line and a new cedar foundation provided for the building. Two platforms, one 50 feet long by 12 feet wide, and the other 38 feet long and 8 feet wide were erected at this place.

At St. Cyrille, the freight shed was extended 16 feet and the exterior walls shingled, and the building painted. The roof of station was also overhauled, repaired and painted. Two platforms, 120 feet long by 12 feet wide, and the other 128 feet long by 8 feet wide were erected. A water closet was provided.

A Drummondville, the roofs of station building and freight shed were overhauled, repaired and painted. The tank building was raised two feet. The interior walls of engine house were sheathed and filled with sawdust. Two platforms 278 feet long by 12 feet wide and 150 feet long by 8 feet wide respectfully, were erected at this station.

At St. Germain, the roof of station building was overhauled, repaired and painted. A platform 149 feet long by 12 feet wide, was erected and a water closet provided.

At St. Eugène, the roof of station building was overhauled, repaired and painted, and a water closet provided.

At Bagot, a platform 75 feet long and 6 feet wide was erected and a water closet provided.

At Ste. Rosalie, the interior walls of the telegraph office were covered with heavy paper and sheathed. A water closet was provided at this station.

At Nicolet, the exterior walls of station building and freight shed were shingled all round and painted. The engine house roof was reshingled, and the interior walls sheathed and filled with sawdust. Two platforms, one 80 feet long by 12 feet wide and the other 50 feet long by 8 feet wide were erected. A water closet was provided at this station.

At Ste. Monique, a platform 200 feet long and 12 feet wide was erected.

Hand car houses for the section men were provided at the following stations between Chaudière and Ste. Rosalie:—Chaudière, St. Nicholas, St. Appolinaire, St. Croix, Rivière du Chêne, Kingsburg Junction and Moosepark.

BRIDGES AND CULVERTS.

At Richmond, a cedar box drain 250 feet long was built from the round house to the harbour.

Necessary repairs were made to the wooden beam culverts on the Cotton Factory Siding.

At Lydia Brook near Truro, two trestle bents were put in, brush protection was provided for the abutments of bridge, and a large quantity of concrete placed under masonry of bridge.

A cage was provided at Stewiacke for the protection of the section men and others when working on the bridge.

A number of hard pine ties were renewed on Enfield Bridge.

At West River, four wooden farm crossing bridges of 23 feet span, were renewed with old rail girders.

At Doyle's Dump, a cribwork 150 feet long and 4 feet high, was constructed out of old timber and ties.

A highway bridge at Brookfield of 22 feet span and 13 feet wide, was renewed.

Near Elmsdale, one abutment of a 20 feet span was rebuilt.

At Barney's Brook, the paving of an arch culvert was renewed, and concrete three inches deep placed over the whole water way. A sill wall and apron were placed at the upper end to keep the water from getting under.

At Pine Tree, a temporary bent was placed under the west end of the bridge and three new corbels provided.

At Little Gut and Merigomish, a casing of cement was placed around the foot of abutments which had been damaged by frost and water.

At Avondale, a covered drain 35 feet long was provided, to drain the station grounds, and prevent water from overflowing the track.

Thirty feet rolled beam girders, with cedar abutments, were put in at Baxter's Trestle, McDonald's Trestle and Coulton's Trestle bridges.

Double stringers of 12 by 12 hemlock, were provided for the 20 feet beam culvert at Brierly Brook Station.

At McKinnon's Cove, the old trestle bridge was partly filled in and a 5 feet by 6 feet cedar box culvert was put in. This opening is found amply sufficient to vent the tide and surface water at this place,

At the big timber trestle at Tracadie road, near Mulgrave, additional bents and straining beams were put in between the existing bents of bridge.

At West River Bridge, Horne's Brook Bridge and River John Bridge, a number of hard pine ties were renewed.

A new cedar culvert was put in at Brown's Point to replace one which had broken down.

At Jamesville, a crossing was provided under the railway bridge.

At Nappan, a new floor was laid on the overhead bridge.

At Fowlie's Creek, a new cedar culvert 3 ft. 6 in. by 3 ft. by 66 ft. long was put in. New hard pine ties were placed on the two girder bridges built of old rails, on Dorchester grade.

The abutments of Harris' Bridge, near Millstream, were repaired, and a standard top put on.

New hard pine tops were placed on the following bridges: Pollet River and McCully's, near Torryburn,

Necessary repairs were made to a number of culverts between Moncton and St. John.

At Coal Branch Bridge, a number of the hard pine ties were renewed.

One cedar culvert was renewed, and several overhauled and repaired between Moncton and Jacquet River, on northern division No. 1.

At Metapedia, rip rap was placed around the piers of bridge to prevent them from scouring. A new sidewalk was placed on the bridge.

A number of hard pine ties were renewed on the Tobegote Bridge.

Several of the wooden beam and masonry culverts between Jacquet River and Ste. Flavie, northern division No. 2, were overhauled and repaired where necessary.

Necessary repairs were made during the past year to Boyer bridge.

Eight stone box culverts between Rivière du Loup and Levis were renewed during the past year, and four other received extensive repairs.

A number of wooden beam culverts were also overhauled and repaired.

At St. Leonard's Bridge, 250 hard pine ties were renewed, and two stone pedestals repaired.

A new standard hard pine top with guard rails was placed on White River bridge, and the flooring painted.

Drummondville and Mitchell bridges were each raised four feet, and the approaches graded at either end.

Black River Bridge was raised one foot, and the approaches graded.

The flooring of the bridges in the vicinity of the following stations was painted.—Ste. Rosalie, Moosepark, St. Appolinaire, St. Croix, Kingsburg Junction and Mitchell; also the flooring of Terrebonne bridge near Chaudière and the bridge over the St. François River.

The following bridges were overhauled, scraped and painted two coats.

Bic	1	span	20	feet.
Ste. Luce	1	"	23	"
Rimouski	4	"	50	"
St. Anaclet	1	"	23	"
Tartague	1	"	40	"
Metis	4	"	100	"
Sayabec	1	"	28	"
"	1	"	34	"
Indian Brook	3	"	50	"
Otter Brook	1	"	28	"
Adam's bridge	3	"	100	"
Doyles	1	"	31	"
McKinnon's	2	"	76	"
Clarkes Brook	1	"	60	"
Kain's Brook	1	"	19	"
Gilmour's	1	"	60	"
Moffat's mill	8	"	60	"
Millstream	4	"	100	"
Charlo River	3	"	50	"
Morton's mill race	1	"	30	"

Louison Brook	1	span	60 feet.
Belledune River	2	"	60 "
Red Pine River	3	"	40 "
Upper Nelson	1	"	30 "
Barnaby River, (2nd crossing)	1	"	80 "
Barnaby River (3rd crossing	1	"	80 "
South Coal branch	3	"	40 "
St. John (draw span)	2	"	50 "
Brookville	1	"	49 "
Lawlor's Lake	1	"	60 "
Torryburn	1	"	30 "
Rothesay	1	"	31 "
Trout Creek	3	"	85 "
Anagance	1	"	30 "
Moncton (west)	1	"	41 "
Missequash River	1	"	100 "
La Planche	1	"	100 "
Folleigh Lake	1	"	10 "
Folleigh River	6	"	100 "
Debert	2	"	100 "
Elmsdale	1	"	150 "
Enfield	1	"	112 "
Beaver River	4	"	19 "
Rawdon River	3	"	26 "
Sackville River (Windsor branch)	3	"	33 "
Glengarry	1	"	23 "
Sutherlands River	1	"	160 "
Grant's Brook	2	"	22 & 34 "
Murphy's mill pond	1	"	28 "
Pomquet	1	"	85 "
"	1	"	60 "
Pirate Cove	1	"	60 "
Coal road under crossing	1	"	34 "
Freshwater Creek	1	"	34 "
Sydney River	1	"	100 "
Campbell's Brook	1	"	54 "
Leach's Creek	3	"	100 "
Ball's Creek	1	"	35 "

One 70 feet and one 34 feet deck plate girder bridge, was put in over the mill race and road, St. François River near Drummondville.

One 24 feet beam bridge was put in near Drummondville.

GENERAL.

The boat landing stages at the deep water terminus, Halifax, were overhauled and repaired.

At Amherst, a sewer 1,100 feet long, from 8 to 16 feet deep, was dug to carry off the water which accumulates in the yard during the spring freshets. A new public road crossing was also provided at this station.

At Metapedia, a large warehouse scale was placed in the freight shed.

The track scales located at different points along the line have been overhauled from time to time, and put in repair.

A large number of cattle guards were renewed throughout the line during the past year, and repairs made to others where necessary.

At Mulgrave, a considerable amount of dredging was done in the dock at that place, by dredge belonging to the Public Works Department, to facilitate the working of the transfer barge.

CAPITAL ACCOUNT.

INCREASED ACCOMMODATION AT MONCTON.

The work required in connection with the finishing of the new station has been done. The grounds about the station laid out, and approaches made. The re-arrangement of the tracks in the yard has been completed.

EXTENSION TO DEEP WATER, NORTH SYDNEY, C.B.

This extension is about ·6 of a mile long, and is an extension of the North Sydney Branch to deep water, where a crib wharf 265 by 58 feet with creosoted sheathing was built. On the wharf, a freight house 30 by 80 feet was placed and to protect the road to the wharf, a crib breastwork about 250 feet long was also built. Considerable dredging was done both for the foundation of the wharf and for the docks on either side. Two good berths at the sides of the wharf are now provided, and one at the end for short vessels. The work was done by contract with the exception of the dredging, which was done by the clam shell dredge belonging to the Track Department.

INCREASED ACCOMMODATION AT ST. JOHN.

In connection with this vote, the land required has either been bought, expropriated, or in course of expropriation.

A temporary trestle was built to carry the line of the St. John Bridge and Railway Company, and the work of moving the permanent line to the new location was commenced, and is now being carried on. This work is being done by contract.

The wharf known as the Long Wharf, is being removed, and the dredging required in connection with the new wharf and docks has been going on night and day since the contract was let. The excavating the rock for the site of the elevator is about half done.

ELEVATOR AT ST. JOHN.

A contract has been let for this work, and the contractor has finished a part of the concrete foundation. The timber is nearly all on the ground, and a mill for framing and planing the timber, &c., has been erected on the ground. The site of the elevator is on the "Harris Property," purchased some years ago.

TO INCREASE THE STRENGTH OF IRON BRIDGES

On this account, seven Warren through girder bridges 108 feet over all were built by the Hamilton Bridge Works Co., Ltd., under contract, and one deck plate girder 65 feet over all, by the Dominion Bridge Company, Ltd.

The seven through spans were to replace seven old lattice girders, and were erected at the following places :—

3 spans at Salmon River, near Truro.
2 " North River "
2 " Isgoinish River, near Belmont.

By the terms of the contract, the bridge company erected the bridges. The work of removing the old spans, and the necessary false work was done by the railway department. The old spans were used to double up deck spans of the same length and were used at the following bridges :—

6 spans at Folleigh bridge, near East Mines.
1 span at Little Forks, near Athol.

The work on the Folleigh bridge is not quite completed. The work of removing, transporting and bracing these bridges was done by the railway department.

The plate girder span was placed at Memramcook River, near Calhoun's Station. The old span is on hand, and will probably be used on the P.E.I. Railway. It was necessary to strengthen the stone abutments at Calhoun's.

New standard tops of long-leaf yellow pine were put on Folleigh, one span, Little Forks and Memramcook River bridges.

A third girder was placed in centre of two 40-feet spans, between Truro and Folleigh Stations.

Temporary wooden bents were placed under Barnaby River bridge, 80-feet span; Weschester bridge, 60-feet span; Sodom bridge, 50 feet span; Debert bridge, 100-feet span; Mud Creek, 50-feet span; Gordon's Brook bridge, 40-feet span; Clark's Brook, 60-feet span, and Gilmour's Brook, 60-feet span.

The floor system of East River bridge near New Glasgow—4 spans of 83 feet—was strengthened with the old floor beams from the bridges at Salmon River and North River, near Truro. The remaining iron floor beams from the old bridges are being used for beam culverts, having spans of about 14 feet. It is intended to put close floors of old rails over these beams on open culverts, of 12 to 15-feet spans, and carry the ballast across the full width of the roadway, thus closing what might be dangerous openings in the track, and making the roadbed continuous.

From the above it will be seen that 18 spans were permanently strengthened and 8 temporarily.

INCREASED ACCOMMODATION AT LÉVIS.

No work has been done this year, and only a part of the vote was expended in purchasing the land required.

INCREASED ACCOMMODATION AT HALIFAX.

Chargeable to this account, a crosoted pile wharf about 600 feet by 160 feet, with a warehouse 525 feet by 126 feet, was built by contract. The necessary dredging in the docks was done by a dredge belonging to the Public Works Department, and necessary sidings to the wharf laid down.

At North Street, the rock was excavated, and additional siding room provided.

At Richmond, the coal trestle was extended 75 feet, and an additional coal chute built.

ELEVATOR AT HALIFAX.

The land required for the elevator and tracks on the west side of Water Street has been acquired, and the houses thereon sold or removed. The earth and rock excavation for foundation was done by contract. The chimney and power house are completed and also the foundation for elevater. The walls of the building are now up about 45 feet.

TO IMPROVE THE ACCOMMODATION AT MULGRAVE.

A crib retaining wall and extra siding room was provided on this account.

To build bridge over rock cut north of Elm Tree River, new concrete abutments were built and approaches made on the railway property. An old rail bow-string bridge of 40 feet span was constructed and erected by contract. The work is completed.

INCREASED ACCOMMODATION AT VARIOUS PLACES.

At Antigonish, freight shed was moved, platform provided and necessary grading done. Increased siding accommodation was also provided.

At Ross Road, extra land required for the extension of station yard was purchased, and a freight house 30 by 20 feet was built by contract.

At Sylvester, the loading platform was extended 40 feet.

At Jubilee, a new station and freight house combined was built. Dimensions of station, 30 feet by 16 feet, and ell, 17 by 24 feet. In the building, dwelling apartments were provided for the agent.

At Richmond, a new station and freight house combined, 62 feet by 24 feet was erected. The work was done by contract.

Dredging at Pictou wharf. The amount voted on this account, $1,000.00, was expended in dredging.

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

WM. B. MACKENZIE,
Chief Engineer.

D. POTTINGER, Esq.,
General Manager,
Canadian Government Railways,
Moncton, N.B.

INTERCOLONIAL RAILWAY OF CANADA,
OFFICE OF THE MECHANICAL SUPERINTENDENT,
MONCTON, N.B., September 26, 1899.

SIR,—I beg to submit for your information the following statements prepared by the mechanical accountant:—

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

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

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.

The following is a summary of the principal work done:—

DRAWING OFFICE.

Designed arrangement for rebuilding four Mogul engines with detailed drawings. Further details for rebuilding engines Nos. 188 and 189. General arrangement of postal and baggage cars, with detailed drawings. General arrangement of second class colonist cars with detailed drawings; detail drawings for first class cars; detail drawings for new 60,000 lb. box and freight cars; 82 additional drawings for locomotives, car repair, and general work; new baggage truck for stations; new front to rotary snow plough; new ice storage arrangement for refrigerator cars; re-adjustment of shop machine pulleys at Richmond.

Specifications for passenger cars.

Register of locomotive repairs and water service kept.

Specifications and special drawings supplied to stores for ordering on, and all material so ordered, checked and tested.

MONCTON LOCOMOTIVE SHOPS.

One new engine No. 167 was purchased from the Canadian Locomotive Works, and charged to revenue. One passenger locomotive No. 159 was rebuilt with new boiler complete. All boiler mountings, sight feed lubricators and injectors new; 2 new driving axles; new axle boxes and spring gear; 2 new main rods; 4 new crank pins; 2 new engine front frames; new half saddle and cylinders, new pistons and glands, balance

valves, cross-heads and guides complete; new metallic packing; one new W. A. brake, new cab and C. I. running boards, new pilot, new engine truck, new smoke stack, new sand box and pipe; new ash pan and grates. Engine and tender painted and varnished. One freight locomotive, No 142, was rebuilt with a second-hand repaired boiler; new half-saddle cylinders. Tubes pieced; 4 new driving tires, 2 new side rods, new cross-heads and guides, new American balance valves, new pistons and glands; 2 new engine front frames. Old springs set up with all new gear. New cab, new pilot, new smoke stack. Engine and tender painted and varnished. One shunting engine No. 188, was rebuilt with a new boiler complete. All boiler mountings new, sight feed lubricator. One new driving box. Westinghouse A. B. new, new steam heater. New dry steam and exhaust pipes. New smoke stacks. New tender frame. Engine and tender painted.

Seventy-two locomotives received heavy repairs, and 84 had specific repairs. The following new parts being supplied:—One new inside fire box, 5 new half saddle cylinders, 66 new driving wheels, 35 new driving tires, 27 new driving axles, 14 new truck axles, one new engine truck, 2 new main rods, 63 new crank pins, 2 new Westinghouse air brakes, 7 new cabs, 23 new tender frames, 19 new pilots, 1,757 new tubes put in locomotive boilers, 4 new tender tanks complete. 96 boilers were tested, 57 fireboxes were patched, 9,587 tubes were pieced.

One hundred and seventy-three pairs of driving tires were turned, and 219 truck wheels were retired.

Eighty-four locomotives were repainted and varnished. Five new pilot snow ploughs were constructed. One rotary plough was repaired.

MONCTON BRASS FOUNDRY.

Output:—85,015 lbs brass castings, and 143,405 lbs. brass bearings.

MONCTON CAR SHOP.

One hundred new platform cars of 60,000 lbs. capacity were purchased to replace an equal number of 20,000 lbs. cars and charged to revenue.

Three steam shovel cars were built new complete, and one new snow plough.

Ninety freight cars were rebuilt, and 10 cars converted.

The following received heavy repairs:—Governor General's car *Victoria*, 3 parlours, 17 sleepers, 8 second class sleepers, 63 first class cars, 54 second class cars, 8 postal cars, 26 baggage cars, 21 vans, 1 snow plough, 674 freight cars.

The following received light repairs:—10 parlours, 7 sleepers, 58 first-class cars, 45 second-class cars, 13 postal cars, 18 baggage cars, 36 vans, 9 second class sleeping cars, 2,491 freight cars, 5 snow ploughs, one flanger car.

The following were repainted or stained and varnished:—One sleeper, 27 first class cars, 32 second class cars, 9 baggage cars, 3 postal cars, one second class sleeper.

The following were renovated and varnished:—14 sleeepers, 2 parlours, 49 first class cars, 25 second class cars, 22 baggage cars, 26 postal cars, 7 second class sleepers.

Special work was done as follows:—

Fifty-nine new trucks were built.

Nine hundred and eighty-five pair of steel tired wheels were turned.

Two hundred and fifty-four new axles turned.

One thousand six hundred and sixty-seven old axles were trued up.

Two thousand eight hundred and fifty-three new wheels pressed on.

Three thousand and seventy-two old wheels were pressed off.

One thousand three hundred and seventy-nine old wheels were pressed on.

A large amount of work was done to freight and baggage trucks, chairs, safes, ticket cases, footboards, and other articles for out-stations, also large quantities of lumber prepared at the machines for engineer department.

RIVIÈRE DU LOUP SHOPS.

Twenty-seven locomotives received heavy repairs, and 39 had specific repairs, the following new parts being supplied :—4 new crank pins, one new half saddle cylinder, 18 new driving tires, one new engine truck, 2 new cabs, 5 new pilots, 4 new tender frames, one boiler received new half side sheets, 1029 new tubes were put in locomotive boilers, 2 locomotives were equipped with new steam heaters.

Sixty-four locomotives were tested, and 8 fire-boxes patched.

Fifty-five pair of driving tires turned, 92 pair of engine truck tires, and 86 car truck tires were turned.

Eighteen engines and tenders were repainted and varnished.

RICHMOND SHOPS.

Eleven locomotives received heavy repairs, 50 had specific, and one had medium repairs, the following new parts being supplied :—One new driving box, one boiler had new half side sheets; 8 new driving tires.

Twelve locomotives and 3 stationary boilers were tested, 4 fire boxes patched, one set of tubes repaired, 3 tender tanks patched.

Twenty-six pair of driving tires were turned, and 13 engines and tenders were repainted and varnished.

WATER SERVICE.

Alton.—Repaired tank pipe.

Amherst.—Water crane repaired.

Antigonish.—Four joints 7 in. galvanized pipe, repaired tank pipe. Took up 500 ft. of galvanized pipe and shipped to Point Tupper.

Armours Road.—Repaired hand pump.

Assametquaghan.—Cleaned out reservoir, and repaired tank pipe.

Bathurst.—Tested boiler, one new lubricator for steam pump, new lubricator and pipe to steam gauge, and new tank stove.

Bayfield Road.—Repaired tank pipe.

Belledune.—Put in 1¼ in. blow off cock in boiler, repaired tank pipe.

Beaver Brook.—New steam gauge, new lubricator for steam pump.

Bagot.—New tank 17,000 gallons, new boiler No. 32, new tank pipe, and repaired duplex steam pump.

Boisdale.—Four new sails in wind mill.

Calhouns.—One new No. 16 globe stove.

Campbellton.—Put in two 6 in. water gates, one 6 in. tee, one 6 in. sleeve, cleaned out reservoir and painted it, put in 100 feet of 1½ in. pipe for washing ice.

Canaan.—Put in repaired boiler, and repaired steam pump.

Charlo.—Put in a repaired boiler, one new 1¼ in. blow-off cock, 12 lengths and 3 elbows 7 in. galvanized pipe.

Causapscal.—Repaired tank pipe.

Elmsdale.—Put in new boiler No. 33, new boiler base and grate.

Drummondville.—New tank pipe, put connection under tank for washing out engines.

Forrestdale.—New tank pipe.

Hampton.—Repaired reservoir, new chain on tank valve.

Hadlow.—New packing in water piston, new valves and springs, cleaned out reservoir and repaired steam pump, and put in 1,000 feet 4 in. galvanized pipe.

Tatamagouche—One new No. 16 globe stove.

Trois Pistoles.—Rebuilt reservoir.

Jacquet River.—Cleaned out reservoir and ditched to spring.

West Bay Road.—Two new sails in windmill, raised tank and rivetted the hoops, painted tank, new tank pipe.

Metapedia.—Cleaned out reservoir.

Moncton.—Put in new hydrant, and repaired water cranes.

Millerton.—Cleaned and repaired reservior, and rebuilt fence around reservoir.

New Glasgow.—New 4 in. water gate, new spindle in crane.

West River.—Cleaned out reservoir.

Petitcodiac.—Put in and repaired boiler.

Point Tupper.—Repaired windmill, raised tank 3½ feet, repaired tank and trestle, painted tank trestle and windmill tower, new tank pipe.

Pictou.—Repaired water pipe, and put in a new 2-in. ball cock.

L'Islet.—Put new tubes in boiler, new steam pipe to pump.

Sacré Cœur.—New trestle and joists under tank, cut and rivetted hoops. Painted tank.

Rivière du Loup.—Built well in river 4 feet higher, put new tubes in boiler.

Rivière John.—Repaired windmill.

Rivière du Chêne.—Put in new steam pump and new boiler No. 31, 170 feet of 3 in. galvanized pipe, and 35 feet 2½ in. galvanized pipe.

Springhill Junction.—Cleaned out reservoir.

St. Fabien.—Put in boiler No. 3, new tube sheet and tubes, put in a repaired steam pump.

Ste. Luce.—Repaired windmill pump.

St. Pierre.—Cleaned out well.

Ste. Flavie.—Cleaned out reservoir, and repaired water pipe.

Millstream.—Cleaned out reservoir.

Cedar Hall.—Cleaned out reservoir and repaired water pipe.

Dalhousie.—Repaired reservoir.

St. Charles.—Put in boiler and steam pump.

Stellarton.—One new No. 16 globe stove, put in 525 feet of 3-in. galvanized pipe.

McKinnons Harbour.—Raised tank 3½ feet, cut and rivetted the hoops, new trestle, repaired wind milltower new sills, painted tank and windmill tower.

West Bay Road.—Tank raised 3½ feet, new trestle, hoops cut and rivetted, repaired windmill tower, painted tank, windmill and tower.

St. Appolinaire—Tested boiler No. 30, repaired tank valve and raised the tank two feet.

TURNTABLE REPAIRS.

Rivière du Loup.—Two new trucks.

Ste. Flavie—Three new patches, 38 rivets and 12 bolts put in arm; four new straps; two new stirrups and one long bolt put in truck.

Mulgrave.—Trucks repaired; 8 new centre bolts; foundation under race rail repaired; circle trued.

Antigonish.—Trucks repaired and strengthened; new set of centre bolts; 2 new wheels and 2 new turned bolts 15 in. long; table strengthened.

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

G. R. JOUGHINS,
Mechanical Superintendent.

D. POTTINGER, Esq.,
General Manager Government Railways,
Moncton, N.B.

A.—INTERCOLONIAL RAILWAY.

STAEMENT showing the number of Locomotives and of the Various Classes of Cars, and other Rolling Stock on July 1, 1898, and on June 30, 1899.

—	Locomotives.	The Various Classes of Cars.																Snow Ploughs and Flangers.				
		First Class Sleepers.	Second Class Sleepers.	Parlour Cars.	Dining Cars.	First Class Passenger.	Second Class Passenger.	Postal and Smoking.	Express and Baggage.	Box and Refrigerator.	Platform, 10, 15, 20 and 30 tons.	Hoppers, 6 tons.	Gondolas, 20 tons.	Coal Cars, 20 tons.	Cattle.	Vans.	Total.	Snow Ploughs.	Wing Ploughs.	Flangers.	Steam Ploughs.	Total.
On hand, July, 1898, serviceable	208	15	7	5	....	92	94	24	39	2,069	2,152	979	238	697	101	98	6,610	44	10	21	2	77
Condemned July 1, 1898	....	....	....	....	....	....	....	....	....	2	167	20	91	50	2	1	333	....	....	....	....	....
Total	208	15	7	5	....	92	94	24	39	2,071	2,319	999	329	747	103	99	6,943	44	10	21	2	77
Received during the year on capital account	19	8	....	....	4	3	....	1	3	250	....	....	....	....	....	....	269	5	....	1	....	6
Total	227	23	7	5	4	95	94	25	42	2,321	2,319	999	329	747	103	99	7,212	49	10	22	2	83
Condemned July 1, 1898	....	....	....	....	....	....	....	....	....	2	167	20	91	50	2	1	333	....	....	....	....	....
" during the year	3	....	....	....	....	2	....	....	....	45	100	75	86	85	8	....	401	....	....	....	....	....
Total condemned	3	....	....	....	....	2	....	....	....	47	267	95	177	135	10	1	734	....	....	....	....	....
Less rebuilt	3	....	....	....	....	2	....	....	....	2	131	59	....	12	....	....	207	....	....	....	....	....
To be rebuilt	....	....	....	....	....	....	....	....	....	45	136	36	177	123	10	1	528	....	....	....	....	....
Add serviceable and repairing	227	23	7	5	4	95	94	25	42	2,276	2,183	663	152	624	93	98	6,684	49	10	22	2	83
Total	227	23	7	5	4	95	94	25	42	2,321	2,319	999	327	747	103	99	7,212	49	10	22	2	83

MONCTON, June 30, 1899.

JOHN SUTTON,
Mechanical Accountant.

B.—INTERCOLONIAL RAILWAY.

STATEMENT of Locomotive and Car Mileage, Year ended June 30, 1899.

Months.	Locomotive Mileage.		Car Mileage.				Snow Ploughs.	Average Passenger	Freight.
	Passenger.	Freight.	Passenger.	Express, Postal and Baggage.	Freight.	Total.			
1898—July	136,616	246,713	708,413	329,186	3,018,703	4,056,302	17	7·55	13·19
August	142,876	239,328	743,920	326,640	2,954,086	4,024,646	19	7·55	12·34
September	142,553	266,864	772,589	337,771	3,328,026	4,438,386		7·77	12·47
October	125,075	288,017	619,379	322,655	3,694,951	4,636,985	378	7·52	12·82
November	124,812	303,958	582,179	303,451	3,909,990	4,795,620	774	7·09	12·86
December	133,340	307,401	615,771	311,734	3,818,897	4,746,402	4,948	6·96	12·42
1899—January	131,243	268,737	584,339	288,298	3,071,487	3,944,124	11,447	6·65	11·43
February	121,079	256,634	533,375	260,656	3,037,553	3,831,584	21,897	6·56	11·84
March	134,951	304,062	611,333	292,596	3,865,573	4,769,502	33,064	6·18	12·71
April	124,382	287,209	599,081	286,825	4,197,119	5,083,025	257	7·18	14·61
May	138,476	273,059	658,542	318,335	3,691,057	4,667,934	945	7·04	13 54
June	133,366	250,944	657,138	317,699	3,453,259	4,428,096	158	7·30	13·76
Total	1,588,769	3,292,926	7,686,059	3,695,846	42,040,701	53,422,606	73,904	7·16	12·77

MONCTON, June 30, 1899.

JOHN SUTTON,
Mechanical Accountant.

C.—INTERCOLONIAL RAILWAY.

ABSTRACT of Locomotive Returns for Year Ended June 30, 1899.

Months.	Hours in Steam.	Locomotive Mileage.	CONSUMPTION.				AVERAGE CONSUMPTION PER 100 MILES.				
			Tons of Coal.	Pints of Oil.	Pints of Valve Oil.	Pounds of Waste.	Miles run to 1 hour in Steam.	Pounds of Coal.	Pints of Oil.	Pints of Valve Oil.	Pounds of Waste.
1898—July	43,483	468,371	13,742	23,248	16,374	9,478	10·77	6,572	4·96	3·49	2·02
August	43,422	468,710	13,711	22,880	16,509	9,445	10·79	6,553	4·88	3·52	2·02
September	45,626	495,313	15,327	22,013	15,870	8,906	10·86	6,931	4·44	3·20	1·80
October	45,544	495,347	15,944	21,366	14,595	8,939	10·88	7,210	4·31	2·95	1·80
November	48,278	515,062	17,027	22,866	14,403	9,525	10·67	7,405	4·44	2·79	1·85
December	51,137	532,465	18,990	25,197	15,723	10,248	10·41	7,989	4·73	2·90	1·92
1899—January	47,333	492,217	17,480	23,960	14,353	9,150	10·40	7,955	4·87	2·89	1·86
February	46,354	468,224	17,071	23,316	14,987	8,865	10·10	8,167	4·98	3·20	1·89
March	56,041	551,816	19,946	28,874	18,384	10,391	9·85	8,097	5·23	3·33	1·88
April	48,180	504,152	16,904	28,333	17,810	10,667	10·46	7,511	5·62	3·53	2·12
May	47,391	504,820	14,964	22,907	13,364	10,015	10·65	6,640	4·54	2·65	1·98
June	45,520	477,673	14,202	16,735	9,055	7,709	10·05	6,660	3·50	1·90	1·82
	568,309	5,974,170	195,308	281,695	181,427	114,338	10·51	7,323	4·72	3·04	1·91

JOHN SUTTON,
Mechanical Accountant.

MONCTON, June 30, 1899.

STATEMENT of the Cost of Locomotive Power for each Month, July 1, 1898, to June 30, 1899.

Months.	Miles run by Engines.	Mechanical Superintendent's Salary, Clerks and Office Expenses.	Engine-men's Wages.	Fuel.	Oil Waste	Repairs to Engines, Tenders, and Tools.	Water.	Engine Houses and Turntables.	Total.	Average per 100 Miles.							
										Mech'l Supt., Salary.	Wages.	Fuel.	Oil and Waste.	Repairs.	Water.	Engine Houses & Turntables.	Total.
1898.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.								
July	468,371	1,005 01	25,625 59	37,456 49	3,216 72	22,221 59	1,652 07	736 89	91,914 36	·21	5·47	8·00	·69	4·74	·35	·16	19·62
August	468,710	1,041 90	25,863 19	32,188 15	3,112 75	27,848 53	3,092 39	1,106 10	94,253 01	·22	5·52	6·87	·66	5·94	·66	·24	20·11
September	495,313	1,121 40	26,375 84	36,836 13	2,984 75	21,596 36	3,869 63	971 45	93,755 56	·23	5·32	7·43	·60	4·36	·78	·20	18·92
October	495,347	1,085 81	25,755 85	37,243 60	2,760 99	26,600 93	2,217 43	1,526 22	97,190 83	·24	5·61	8·11	·60	5·79	·48	·33	21·16
November	515,062	1,008 88	26,426 23	39,368 19	2,343 59	17,057 41	2,947 34	1,520 47	90,672 11	·20	5·13	7·64	·45	3·31	·57	·30	17·60
December	532,465	1,004 23	27,416 74	44,860 41	2,755 27	12,510 10	3,681 74	1,473 24	93,701 73	·19	5·15	8·42	·52	2·35	·69	·28	17·60
1899.																	
January	492,217	1,041 71	26,481 57	42,277 04	2,630 47	16,596 77	1,926 32	2,428 40	93,382 28	·21	5·38	8·59	·54	3·37	....	·49	18·97
February	468,224	1,190 61	24,352 81	40,773 59	2,550 61	12,692 57	5,482 51	2,382 64	89,425 64	·25	5·20	8·71	·54	2·71	1·17	·51	19·09
March	551,816	1,060 76	28,955 22	47,096 05	1,693 87	11,695 41	1,014 62	2,746 03	94,261 96	·19	5·25	8·53	·31	2·12	·18	·50	17·08
April	504,152	1,117 47	26,998 29	41,359 91	3,181 73	20,647 03	2,308 40	1,707 28	97,320 11	·22	5·36	8·19	·63	4·10	·46	·34	19 30
May	504,820	1,260 20	27,298 21	34,779 00	786 13	12,327 06	1,932 34	652 96	79,035 90	·25	5·41	6·89	·16	2·44	·38	·13	15·66
June	477,673	1,230 15	26,199 15	33,241 74	1,829 51	19,356 79	2,199 98	1,219 81	85,277 13	·26	5·48	6 96	·38	4·05	·46	·26	17·85
Total	5,974,170	13,168 13	317,748 69	467,480 30	29,846 39	221,150 55	32,325 07	18,471 49	1,100,190 62	·22	5·32	7·83	·50	3·70	·54	·31	18·42

MONCTON, June 30, 1899.

JOHN SUTTON,
Mechanical Accountant.

E.—INTERCOLONIAL RAILWAY.

GENERAL STATEMENT of the Expenses of the Mechanical Department, year ended June 30, 1899.

The miles run by trains	4,881,695
" engines	5,974,170
" cars	53,422,606
" snow ploughs	73,904
	$ cts.
Cost of locomotive power	1,100,190 62
Cost of car repairs :—	
Repairs to passenger cars	74,687 97
" postal, express and baggage	12,964 51
" freight cars and vans	172,634 33
" snow ploughs and flangers	5,090 40
Oil and waste for packing	13,395 32
	278,772 53
The cost of locomotive power :—	
Per 100 miles run by trains	22·54
" " engines	18·42
" " cars and ploughs	2·06
The cost of repairs to cars and ploughs :—	
Per 100 miles run by trains	5·44
" " engines	4·44
" " cars and ploughs	0·50
The cost of oil and waste for packing :—	
Per 100 miles run by trains	0·27
" " engines	0·22
" " cars and ploughs	0·02½
The cost of repairs to cars per 100 miles run by them :—	
Passenger	0·97
Postal, express and baggage	0·35
Freight cars and vans	0·41
Ploughs and flangers	6·89

JOHN SUTTON,
Mechanical Accountant.

MONCTON, June 30, 1899.

INTERCOLONIAL RAILWAY

RETURN OF ACCIDENTS AND CASUALTIES

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada on the

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1898.						
July 5..	24·20	15	Freight	J. B. Pollock	D. Yould	201
" 5..	24·20	15	"	"	"	201
" 5..	24·20	15	"	"	"	201
" 5..	24·20	15	"	"	"	201
" 8..	16·00		Extra pilot	J. Colcombe	O. Halle	28
" 9..	21·10		Ballast		J. Bruce	192
" 9..	21·10		"		"	192
" 11..	16·52	13	Accommodation	F. Davison	W. A. Lovett	147
" 16..	5·50		Ballast	V. Roy	J. Dussault	254
" 17..	9·30		Special	A. Roy	Geo. Lamoth	14
" 19..	21·30	40	Freight	D. D. Brownell	J. Williamson	110
" 20..	24·00		Special	B. McLellan	L. Starratt	40
" 21..	10·15				M. Tobin	191
" 25..	15·15		Shunter		Geo. Currie	124
Aug. 8..	16·00		"	J. Lovett	"	124
					J. Walsh	93
" 20..	17·20	6	Freight	J. Day	J. T. Smith	137
" 23..	14·10	1	Express	W. Rainnie	J. H. Hunter	63
" 23..	14·10	1	"	"	"	63
" 23..	14·15		Special	I. L. Barnhill	M. White	101
Sept. 3..		40	Accommodation	M. Andre	John Gilker	80
" 5..	4·45		Special	H. Barreau	W. Fraser	111
" 5..	8·30	83	Accommodation	John Coffey	W. Hicks	110
" 8..	19·30	94	D. A. Ry. Acc	— Ritchie	— Mosher	19
" 8..	7·10		Special	J. C. Gillespie	N. Copeland	178
" 13..	10·20	39	Freight	D. Brownell	J. Williamson	111
" 13..	10·20	39	"	"	"	111
" 14..	17·00				S. Watson	123
" 17..	16·00		Special	S. Bernier	J. E. Smith	15
" 20..	1·00		"	I. L. Barnhill	R. Kennedy	208
" 21..	19·30		"	A. Davidson	Geo. W. Anderson	138
" 28..	5·30		"	W. W. Gordon	Jas. Sproull	117
" 28..	5·30		"	"	"	117
" 28..	5·30		"	A. McLeod	M. O'Brien	4
" 28..	5·30		"	"	"	4
" 28..	5·30		"	"	"	4
" 28..	5 30		"	"	"	4
" 28..	5·30		"	"	"	4
" 28..	5·30		"	W. W. Gordon	Jas. Sproull	117
" 28..	5·30		"	"	"	117

SESSIONAL PAPER No. 10

RAILWAY.

line of the Intercolonial Railway during the Year ended June 30, 1899.

Place of Accident.	Name of Person injured.	Whether Passenger or Employee.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Near Maccan	J. B. Pollock	Employee	Run off of No. 15 train	Slightly injured.	
"	F. A. Fowlie	"	" "	"	
"	J. H. Murray	"	" "	"	
"	Saml. Doyle	Passenger	" "	"	
Near Lévis	— Lemieux (boy)	Neither	Attempting to board train when in motion.	Considerably injured.	
One-half mile E. of Moose Park.	H. E. Dumond	Employee	While unloading ballast from cars, cable broke.	Fatal	Accidental.
"	E. R. Lockhart	"	" "	Leg broken	
Windsor Junct.	Mrs. Logan (age 72).	Neither	Attempting to cross track.	Head cut and hip bruised.	
Carmel Pit	J. Boisvert	Employee	While shunting	Finger smashed.	
Ste. Flavie	Jos. Sirois	"	While coupling	Hand injured	
Eel River	Thos. McGovern	Passenger	Got off train, and when leaving station fell into cattle guard.	Considerably injured; since died.	No inquest.
Salt Springs	H. Morgan	Employee	Jumped off flat car	Sprained ankle.	
D. W. terminus, Halifax.	E. Fahie	"	While loading freight, rough shunting.	Head and side injured.	
Halifax	Thos. Fenerty	"	While coupling.	Hand injured	
Halifax	H. Henderson (boy).	Neither	Attempting to jump on car in motion.	Leg cut off	
Dunsinane	Wm. Capson	Employee	While loading barrel of coal	Foot injured	
Near Palmer's Pond.	Alfred Bishop	Neither	Crossing track in team, struck by engine.	Fatal	Accidental.
"	Miss Josie Stiles	"	" "	"	"
Springhill Junct.	E. Mattatall	Employee	While shunting	Finger injured	
Near Assametquaghan.	John Caill	Passenger	Fell or jumped off train when in motion.	Very slightly injured.	
Rogersville	M. Haley	Employee	While shunting	Hand injured	
College Bridge	Rev. Father Langelier.	Passenger	Attempting to board train in motion, fell on platform.	Knee caps fractured.	
Rockingham	F. Power (boy)	"	Jumped off train in motion.	Hand cut off	
Folleigh	D. Ferguson	Employee	Hand trolley struck by engine.	Slightly injured.	
Hamilton's Siding.	Jas. McMillan	Neither	Crossing track in team	Not seriously injured.	
"	Mrs. McMillan	"	" "	Badly skaken up.	
Moncton	Edw. Stewart	Employee	Crossing track in front of engine.	Slightly injured.	
Sayabec	V. LeBrun	"	While coupling	Hand injured	
Thomson	J. W. Brown	"	Slipped and fell while shunting.	Side injured	
Moncton	Thos. A. Buckley	"	Foot caught in frog while shunting; leg cut off close to body.	Fatal	No inquest.
Near Acadia Siding, Westville.	Jas. Sproull	"	McLeod's Special and Gordon's Working Train colliding.	"	Accidental.
"	J. R. McKenzie.	"	" "	"	"
"	M. O'Brien	"	" "	"	"
"	W.D. Henderson	"	" "	"	"
"	Martin Cameron	Passenger	" "	"	"
"	John McDonald.	"	" "	"	"
"	Clifford McMillan.	"	" "	Leg broken and scratched.	
"	Wm. McKenzie.	"	" "	Slightly injured.	
"	Jas. Culton	"	" "	"	

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada on the

Date.		Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1898.							
Sept.	28..	5·30	....	Special. . .	W. W. Gordon	Jas. Sproull	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
"	28..	5·30	....	"	"	"	117
Oct.	8..	6·00	....	"	W. Papineau	C. Mercier	193
"	9..	22·25	....	"	J. A. Davidson	E. Hayward	177
"	9..	22·25	....	"	"	"	177
"	9..	22·25	....	"	"	"	177
"	11..	16·05	152	Express	B. Walker	J. Miller	197
"	12..	5·00	5	Freight	Jas. Daley	J. T. Smith	137
"	15..	3·30	....	Special	A. Desjardins	T. Matheson	179
"	21..	11·00	....	....	....	J. W. Boyd	27
"	27..	10·00	....	Shunter	G. Malcolm	M. Tobin	191
Nov.	2..	17·00	....	....	....	Geo. Cameron	197
"	6..	19·20	....	....	....	M. F. O'Brien	127
"	8..	23·00	....	....	....	....	.....
"	9..	16·10	....	Ballast	J. Roy	J. Dussault	1
"	10..	17·35	22	Accommodation	D. McIntosh	J. H. Campbell	49
"	17..	8·30	....	....	....	J. Moore	59
"	19..	9·30	....	Special	J. B. Crockett	J. McAulay	54
"	21..	9·00	....	"	A. Mitchell	D. Turpinet	101
"	23..	12·25	....	Working	H. P. Brand	F. Whitney	55
"	28..	7·00	5	Freight	Jas. Daly	J. T. Smith	137
"	28..	21·40	....	Special	C. Gillespie	N. Copeland	178
Dec.	2..	5·10	39	Freight	D. Brownell	O. McGinity	110

SESSIONAL PAPER No. 10

RAILWAY.

line of the Intercolonial Railway during the Year ended June 30, 1899—*Continued.*

Place of Accident.	Name of Person injured.	Whether Passenger or Employee.	Particulars of Accidents.	Extent of Injury.	Verdict of Coroner's Jury.
Near Acadia siding, Westville.	H. Fleming.....	Passenger...	McLeod's special and Gordon's working train colliding.	Considerably injured.	
" ..	J. Blackwood...	" ..	" " ..	" ..	
" ..	Geo. Burton....	" ..	" " ..	Slightly injured.	
" ..	D. McKay.....	" ..	" " ..	" ..	
" ..	J. Bain.....	" ..	" " ..	" ..	
" ..	John Baxter....	" ..	" " ..	" ..	
" ..	John Flinn.....	" ..	" " ..	" ..	
" ..	Jas. Flinn.....	" ..	" " ..	" ..	
" ..	J. McDonald...	" ..	" " ..	" ..	
" ..	T. Gregory.....	" ..	" " ..	" ..	
" ..	A. McDonald...	" ..	" " ..	" ..	
" ..	W. McLeod.....	" ..	" " ..	" ..	
" ..	O. McLeod.....	" ..	" " ..	" ..	
" ..	Jas. Fleming ...	" ..	" " ..	" ..	
" ..	Jos. McCormack	" ..	" " ..	" ..	
" ..	E. Riley.....	" ..	" " ..	" ..	
" ..	H. R. Fleming..	" ..	" " ..	" ..	
" ..	Jas. Fleming ...	" ..	" " ..	" ..	
" ..	W. W. Gordon .	Employee...	" " ..	" ..	
" ..	G. Crawford....	" ..	" " ..	" ..	
" ..	M. McGillivray.	" ..	" " ..	" ..	
L'Islet.....	W. Lacombe....	" .	While coupling.....	Hand badly crushed.	
Hodgson's siding	E. Hayward....	" ..	Run off of train. Caused by tie placed across the track.	Considerably injured.	
" ..	Geo. L. Smith..	" ..	" " ..	Slightly injured.	
" ..	J. Harvey	" ..	" " ..	" ..	
2½ miles west of L'Islet.	Adelard Belanger.	Neither.....	Walking on track, struck by engine.	Fatally injured .	Accidental.
Petitcodiac.....	J. Connor.....	Passenger...	Attempting to cross between cars while train was moving.	Foot injured....	
Metapedia	Nicolas Caron ..	Employee...	Fell from car while shunting.	Fatal	"
Truro Yard	Henry Marr....	" ..	While shunting.	Hand slightly injured.	
D. W. Terminus, Halifax.	Stephen Hubly .	" ..	Struck by train of cars on trestle.	Fatally injured .	No inquest.
Between Levis and Pt. Levis.	J. McBride.....	Neither.....	Struck by engine	Slightly injured.	
Moncton Yard..	J. H. Cochrane..	Employee...	Fell off gondola loaded with shingles.	Head badly injured.	
Truro Yard.....	C. J. Carter	" ..	Stepping off van	Sprained ankle ..	
Drummondville.	T Sinjohn.....	" ..	While coupling	Finger cut off...	
2½ miles west Pictou Ldg.	Campbell McArthur.	Neither.....	Supposed to have been struck by train.	Fatal	Accidental.
Pt. du Chene....	P. B. White....	Employee...	Fell from steps of engine when it was standing still.	Expired immediately.	No inquest.
Amherst..	W. C. Price	" ..	While coupling.....	Fingers smashed	
Trenton.....	J. H. Shaw.....	" ..	"	" ..	
St. John Yard..	James Brady ...	" ..	Coupling engine to car of ashes.	Hand smashed..	
Salisbury.....	Wm. Capson....	" .	While shunting.....	Hand badly injured.	
Ferrona Jct.....	J. W. McKenzie	" ..	"	" ..	
Gloucester Jct..	D. Brownell....	" ..	"	Considerably injured.	

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada on the

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1898.						
Dec. 2..	7·27	1	Express	R. G. Duncan	B. Cook	149
" 2..	9·45	....	Shunter	F. Fenerty	G. Currie	89
" 6..	21·30	.....	"	J. McEachern	W. Lovett	190
" 14..	5·00	.....	Special	N. Hopper.	R. Kennedy	160
" 24..	17·00	33	Express	F. Derouin	G. Cloutier	158
1899.						
Jan. 5..	21·50	.....	.....	.....	.....	.....
" 11..	24·55	159	Express	J. Boutillette	W. Kelly	6
" 11..	24·55	150	"	"	"	6
" 12..	8·20	.....	.....	.....	R. James	100
" 26..	2·30	.....	Special	G. Sears	J. Donald	17
" 26..	17·00	.....	"	F. Cote	G. Begin	113
Feb. 10..	9·53	33	Express	E. McKenna	C. Sawyer	173
" 19..	3·00	.....	Special	J. R, Fisher	R. Kennedy	8
" 21 .	22·40	.....	"	F. Cote	M. Houston	195
" 28..	17·15	15	Freight	J. Hughes	C. McArthy	201
Mar. 3..	5·45	.....	.....	.....	.....	.....
" 3..	7·30		No engine on train ; no employee near at time.			.....
" 4..	7·15	87	Accommodation	W. Foster	J. Ferguson	186
" 16..	5·43	.....	Special	A. Therriault	A. Berube L. Tardif.	204 223
" 18..	16·00	.....	Shunter	.....	H. Como	188
" 23..	14·03	46	Accommodation	H. Aubin	L. Sheedy	103
" 28..	1·00	15	Freight	J. Hughes	C. McCarthy	201
" 30..	5·40	.....	Special	W. W. Gordon.	A. Probart	87
" 31..	16·00	49	Freight	J. Dionne	A. Goulet	211
31..	20·00	35	Accommodation	D. R. Hunter	D. Pineo	141

SESSIONAL PAPER No. 10

RAILWAY.

line of the Intercolonial Railway during the year ended June 30, 1899—*Continued.*

Place of Accident.	Name of Person injured.	Whether Passenger or Employee.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Near 3 Mile House, Halifax	A. Sweeney.....	Neither.....	Crossing track with team..	Leg broken	
Young Street, Halifax.	Philip Howe....	Employee...	Caught between car and upright under sugar refinery chute.	Fatal	No inquest.
D. W. Terminus, Halifax.	J. McEachern..	" ..	While backing into elevator siding knocked off top of car by overhead crane.	Feet crushed and head injured.	
Sandy Cove.....	J. Simpson.....	" ..	While shunting.....	Foot slightly injured.	
¼ mile west St. Hyacinthe.	Adela Gosselin..	Neither.....	Struck by train.....	Right leg cut off.	
King St. Crossing Truro, N.S.	Nicolas (Indian)	" ..	Found on track. Supposed to have been struck by No. 26 train.	Shoulder broken, otherwise injured.	
Near St. Hyacinthe.	Frank St. Cyr..	Employee...	Collision G. T. R. special and I.C.R. train No. 150.	Head slightly injured.	
" ..	John Lynch	" ..	" " ..	Head and arm slightlyinjured	
St. John Yard..	J. A. Darrah....	" ..	While shunting..	End of finger cut off.	
St. John.....	Ambrose Cormier.	" ..	Fell off engine while running alarm line over train.	Foot considerably injured.	
Ste. Rosalie....	E. Cote.....	" ..	While uncoupling engine..	Finger cut off ..	
2 miles west Trois Pistoles.	Louis Bonnefois.	Neither....	Fell from train in motion .	Slightly injured.	
Stellarton	Everett Crowe..	Employee...	While coupling	Hand crushed...	
Chaudière	T. Sinjohn.....	" ..	Struck by G. T. R. coal chute and thrown off car.	Slightly injured.	
Truro	Miss Cook.....	" ..	Attempting to board train in motion.	Leg crushed, amputation necessary.	
Hadlow	L. Langlais.....	" ..	Supposed to have been run over by train.	Fatal	Accidental.
Richmond Yard	Thomas Dancy..	Neither.....	Fell while carrying lump of coal from car.	Leg badly broken	
Near Brown's Point.	Mrs. Margaret M. Ryan.	Passenger ..	Died in seat of car.....	Death instantaneous.	Natural cause.
¼ 3 miles W. of St. Arsene.	C. Levesque....	Employee ..	Slipped on cow-catcher while special was pulling train out of snow.	Arm badly crushed.	
St. John Yard..	Chr'stoph'r Riley	Neither....	Run over by cars moved by engine No. 188.	Fatal	No inquest.
1 mile E. of St. Pierre.	A. Laberge.....	Temporary Employee.	Caught by snow plough and dragged to Montmagny.	One leg cut off, other badly injured.	
Springhill Jct..	J. T. Byran.....	Neither. ...	Stealing ride between box cars.	Foot crushed between drawbars.	
Between Stellarton & the mines. Asphalt platf'm.	Geo. Bain	"	Fell from train in motion..	Legs badly crushed. Since died.	Accidental.
Montmagny	Jos. Nadeau....	Employee...	Fell in van of Dionne's train	Considerably injured.	
Lansdowne crossing, 1½ miles E. of Campbellton.	Mrs. W. Parker.	Neither.....	Sleigh struck by train.	Fatal	"

63 VICTORIA, A. 1900

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada on the line

Date.	Time of Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1899.						
April 8..	6·10		Extra pilot	A. Vachon	D. Boucher	96
" 8..	19·20		Shunter		T. Wilkins	23
" 13..	18·15		Special	A. Frechette	G. Bégin	38
" 21..	10·50	56	Freight	J. Holmes	A. Dunbar	26
" 21..	18·30		Special	M. C. Daley	G. Morrison	149
" 22.						
May 1..	24·20		Mail Special	V. Carmel	D. Gallan	85
" 1..	18·15		Special	M. C. Daley	P. McKenna	227
" 17..	18·55	147	Accommodation	A. Legace	Jas. Fohy	136
" 25..						
" 27..	17·25		Special	A. Gamache	T. Henry	180
" 30..	6·00		Extra pilot	A. Vachon	G. Cloutier	96
June 2..	17·35		Special	E. Herritt	J. Stewart	40
" 4..	22·50		Special	J. Swetnam	W. J. Coffey	183
" 7..	15·14	35	Accommodation	P. Heine	O. McGinity	140
" 14..	15·35			— Hawker	— Howe (Q. C. Ry.)	14
" 14..	21·00		Special	S. Bernier	T. Matheson	211
" 16.	17·30		Special	M. Narville	R. Jamieson	28
" 19..	18·36	149	Accommodation	L. N. Letarte	J. Belleau R. Mitchell	114 61
" 20..	1·15		Special	W. Power	O. Power	60
" 26..	14·00		Special	E. Herritt	J. Starratt	35
" 27..	10·30			A. Wade	R. James	189

GENERAL MANAGER'S OFFICE,
September 28, 1899.

SESSIONAL PAPER No. 10

RAILWAY.

of the Intercolonial Railway during the Year ended June 30, 1899—*Concluded.*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employee.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Levis Yard	Jos. Proulx	Employee	While coupling	Hand injured	
St. John	Allen French	"	"	Finger smashed	
Chaudière Jct.	Jos. Charrier	"	Uncoupling car	Finger injured	
Lourdes Platform.	D. Stewart	Neither	Jumped fr'm train in motion	General shaking up.	
Petitcodiac	A. Stronach	Employee	Coupling cars	Thumb and part of finger taken off.	
Moncton Station	Geo. Cole	"	Fell from electric light pole	Seriously injured	
Rimouski	Jos. Martin	"	Squeezed between cars by draw-bars.	Slightly injured.	
Moncton	W. Furze	"	Making up train	Sprained ankle.	
Victoria Bridge	S. Stephen	Neither	Struck by train	Face cut and head injured.	
Campbellton	John McKenny	"	Supposed to have jumped from train while intoxicated.	Jaw broken and head injured.	
Price's Siding	Chas. Fournier	Employee	Jammed between cars while shunting.	Back and shoulder seriously injured.	
Near Levis	Julien Charrier	Neither	Struck by shunting engine	Slightly injured.	
Tatamagouche	W. McKean	Employee	Wheel of van ran over foot.	Toes badly bruised.	
Kent Junction	T. Anderson	"	Coupling cars	Collar bone brokn, arm and side injured.	
5 miles west of Newcastle.	Unknown man	Neither	Walking on track, struck by engine.	Fatal	Accidental.
Levis Yard	Ival Marins	"	Struck by Quebec Central engine.	"	"
Sayabec Mills	W. Rosseau	Employee	While shunting. Fell in ditch.	Arm injured	
Forrestdale	F. St. Cyr	"	While coupling	Thumb and fingers jammed	
½1 mile W. of Drum'ondv'lle	A. Dumont	"	Fell from top of train in motion.	3 ribs broken, internal injuries.	
Pt. Tupper	D. J. Bryden	"	While coupling	2 ribs broken. Other bruises.	
Scotsburn ballast pit.	J. J. Murray	"	Working in ballast pit; earth fell on him.	Head and face cut.	
Ballast Wharf, St. John.	W. McClusky (boy).	Neither	Trying to jump on rear of shunting engine.	Foot crushed, amputation necessary.	

WINDSOR BRANCH RAILWAY,
OFFICE OF THE GENERAL MANAGER OF GOVERNMENT RAILWAYS,
MONCTON, N. B., November 16, 1899.

SIR,—I have the honour to submit the following statements showing the results of the working of the Windsor Branch Railway for the year ended June 30, 1899.

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 maintenance and condition of the permanent way and works.

This line, 32 miles in length, was operated during the year by the Dominion Atlantic Railway Company on the same terms as last year, the company being allowed to retain two-thirds of the gross earnings, the balance, one-third, being paid over to the Government, the latter maintaining the line.

The gross earnings accruing to the Government were	$42,474 03
The expenses of maintenance	12,873 09
Net earnings	$29,600 94

There was an increase in earnings when compared with last year as follows:—

Earnings in 1898-99	$42,474 03
Earnings in 1897-98	37,226 64
Increase	$ 5,247 39

The earnings from passenger traffic increased $503.34, and the earnings from freight traffic increased $4,744.04.

There was a decrease in the cost of maintenance as follows:—

In 1897-98	$18,181 63
In 1898-99	12,873 09
Decrease	$ 5,308 54

Nine thousand and forty-two ties were renewed during the year.
Considerable ballasting was done.
A number of new sidings were laid, and some were extended.
Considerable repairs were done to bridges and buildings.
The permanent way and works are in good order.

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

D. POTTINGER,
General Manager, Government Railways.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer, Railways and Canals,
Ottawa, Ont.

INTERCOLONIAL RAILWAY,
CHIEF ENGINEER'S OFFICE,
MONCTON, N. B., July 27, 1899.

SIR,—I have the honour to submit herewith, the report of the maintenance of the Windsor Branch, for the year ending June 30, 1899.

TRACK.

During the year, 200 feet of new four and a quarter steel rails were laid in track to replace a like quantity that had become worn and not fit for the main line.

TIES.

Nine thousand and forty-two ordinary ties, and seven sets of switch ties were renewed during the year.

BALLASTING.

Four thousand one hundred cubic yards of ballast and ashes, were used on different parts of the branch throughout the year.

SEMAPHORES AND SWITCHES.

A number of new switches were provided during the year, and all others overhauled and repaired where found necessary.

SIDINGS.

During the year 2,839 feet of additional siding accommodation was provided.

FENCING.

Necessary repairs were made to fencing throughout the branch during the past year.

BUILDINGS AND PLATFORMS.

At Windsor Junction, the platform was overhauled and repaired.

At Ellershouse, the exterior walls of station building were overhauled, repaired and painted. A new door was provided for the freight shed.

At Newport, the freight platform was renewed, the station platform overhauled and repaired, and two new doors and windows placed in station.

At South Uniacke, the platform was renewed.

At Windsor, the interior and exterior walls of station were overhauled, repaired and painted. Hardwood floors were laid in the waiting rooms and station master's office, and glass repaired in the station where necessary.

The engine shed was overhauled and repaired, and provided with new window sashes.

BRIDGES AND CULVERTS.

The tops of four small bridges between Windsor Junction and Windsor were renewed with hard pine ties.

At St. Croix Bridge, the masonry was overhauled, repaired and pointed.

At Jordan Bridge, the abutments were overhauled and repaired where found necessary.

The girders of Sackville Bridge, were overhauled, scraped and painted.

Necessary repairs were made to a number of wooden culverts on the branch between Windsor Junction and Windsor.

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

WM. B. MACKENZIE,
Chief Engineer.

D. POTTINGER, Esq.
General Manager, Government Railways,
Moncton, N. B.

No. 1.—WINDSOR BRANCH RAILWAY.

REVENUE ACCOUNT, Year ended June 30, 1899.

Previous Year.	Expenditure.	Year ended June 30, 1899.	Previous Year.	Earnings.	Year ended June 30, 1899.
$ cts.		$ cts.	$ cts.		$ cts.
18,181 63	Maintenance way and works	12,873 09	15,165 23	Passenger traffic	15,668 57
			20,909 58	Freight traffic	25,653 62
19,045 01	Balance	29,600 94	1,151 83	Mails	1,151 84
37,226 64		42,474 03	37,226 64		42,474 03

E. & O. E.,
MONCTON, N. B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 2.—WINDSOR BRANCH RAILWAY.

MAINTENANCE of Way and Works, Year ending June 30, 1899.

Previous Year.	Details.	Year ended June 30, 1899.
$ cts.		$ cts.
7,736 99	Repairs of track	8,475 34
462 86	Rails and fastenings	285 10
7,013 44	Ties	1,308 50
366 65	Bridges	701 76
67 15	Signals	30 67
575 57	Culverts, cattle guards, etc	238 74
.....	Wharf at Windsor	13 00
309 90	Buildings and platforms	815 13
11 80	Hand cars and trollies	6 21
243 20	Removing snow and ice	319 72
124 00	Tools and repairs of same	149 70
263 34	Fencing	55 15
429 42	Accountant's office and expenses	461 78
577 31	Miscellaneous	12 29
18,181 63		12,873 09

E. & O. E.,
MONCTON, N.B., June 30, 1899.

T. WILLIAMS,
Chief Accountant and Treasurer.

No. 3.—WINDSOR BRANCH RAILWAY.

DR. GENERAL BALANCE, Year ended June 30, 1899. CR.

1899.	$ cts.	1899.		$ cts.
30 June... To stores...	453 40	30 June ..	By Dominion account.....	453 40

E. & O. E.

T. WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., June 30, 1899.

No. 4.—WINDSOR BRANCH RAILWAY.

MONTHLY STATEMENT of Receipts, one-third earnings.

Month.	Passenger Traffic.	Freight Traffic.	Mails.	Totals.
	$ cts.	$ cts.	$ cts.	$ cts.
1898—July...	1,641 92	1,605 09	96 91	3,343 92
August...	2,190 25	1,590 87	96 91	3,878 03
September ..	2,704 17	2,883 27	96 90	5,684 34
October	1,701 99	3,147 44	96 91	4,946 34
November	1,138 97	3,092 24	96 90	4,328 11
December	1,006 94	2,331 49	96 91	3,435 34
1899—January.	719 94	2,197 78	94 45	3,012 17
February	588 72	1,800 81	94 45	2,483 98
March	804 35	1,700 66	94 46	2,599 47
April	801 50	1,955 71	95 68	2,852 89
May	1,139 43	1,809 15	95 68	3,044 26
June	1,230 39	1,539 11	95 68	2,865 18
Totals.	15,668 57	25,653 62	1,151 84	42,474 03

E. & O. E.

T. WILLIAMS,
Chief Accountant and Treasurer.

MONCTON, N.B., June 30, 1899.

PRINCE EDWARD ISLAND RAILWAY,
OFFICE OF THE GENERAL MANAGER OF GOVERNMENT RAILWAYS,
MONCTON, N. B., November 7, 1899.

SIR,—I have the honour to submit the following report on the working of the Prince Edward Island Railway, for the fiscal year ended June 30, 1899

I also inclose the report of the superintendent, including statements of the various accounts.

The mileage of railway in operation was the same as last year, 210 miles.

There was expended on capital account a sum amounting to $22,000 for works at North Wiltshire and Colville for the purpose of straightening the main line, and for the purchase of a wharf at Mount Stewart, and the construction of additional rolling stock, making the total cost of the railway on June 30, 1899, $3,790,107.26.

The working expenses for the year were	$218,053 01
The gross earnings were	165,012 03
Deficiency	$ 53,040 98

The deficiency was $19,427.15 less than last year.

There was an increase of earnings over the previous year of $6,061.42 ; this increase was in both passenger and freight traffic.

There was an increase in the number of passengers carried and also in the quantity of freight.

There was an increase over last year in the quantity carried of flour and meal, mackerel, oysters, canned fish and meat, lumber, coal, live stock, fresh meat, butter and cheese, eggs and general merchandise ; and a decrease in grain, potatoes, salt, salted meat and starch.

The buildings and bridges on all parts of the line received necessary repairs.

One first class passenger car, one combined postal and first class smoking car, one refrigerator car and four platform cars were rebuilt in the workshops of the railway.

The necessary repairs were made and the rolling stock is in a state of efficiency.

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

D. POTTINGER,
General Manager, Government Railways.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer, Railways and Canals,
Ottawa, Ont.

PRINCE EDWARD ISLAND RAILWAY,
SUPERINTENDENT'S OFFICE,
CHARLOTTETOWN, P.E.I., August 12, 1899.

SIR,—I have the honour to submit the following report on the working of the Prince Edward Island Railway, for the fiscal year ended June 30, 1899.

I also inclose the following statements prepared by the accountant and auditor, and the mechanical accountant and storekeeper :—

No. 1. Capital account.
2. Revenue account.
3. Locomotive power (abstract No. 1).
4. Car expenses (abstract No. 2).
5. Maintenance of way and works (abstract No. 3).
6. Station expenses (abstract No. 4).
7. General charges (abstract No. 5).
8. General stores account.
9. General balance.
10. Comparative statement of averages.
A. Monthly statement of the cost of locomotive power.
B. Statement of performance and consumption of locomotives.
C. Monthly statement of car mileage.
D. Statement showing number of locomotives, cars, snow ploughs and flangers.
E. Comparative statement of the expenses of the mechanical department.

The mileage of railway in operation was the same as the preceding year, 210 miles.

CAPITAL ACCOUNT.

The total expenditure to June 30, 1898, was	$3,768,107	26
The additions during the year were as follows :—		
Purchase of wharf at Mount Stewart from the Provincial Government of P. E. Island	3,500	00
Additional rolling stock	3,500	00
Reducing curves and shortening the line between North Wiltshire and Colville	15,000	00
Making the total cost on June 30, 1899	$3,790,107	26

Purchase of wharf at Mount Stewart.—This was for the purpose of promoting the interests of the railway in increasing the traffic at this port. A track 900 feet in length was laid to the wharf last year.

Additional rolling stock.—This is the cost of seven new double deck stock cars, built for the purpose of handling the increased traffic in live hogs and sheep.

Reducing curves and shortening the line near North Wiltshire. About 60,000 cubic yards of earth were placed in an embankment, a cast iron culvert 150 feet in length and 42 inches in diameter was put in and the balance of the right of way was paid for. The work at this point was completed and the new line open for traffic, and used since November 21, 1898.

REVENUE ACCOUNT.

The earnings from passengers and freight show an increase, as compared with the previous year, notwithstanding the partial failure of the crops ; the improvement in the live stock trade, and the increased output from the cheese factories and creameries appear to have more than made good, in general, the losses sustained in other branches of the farming industry.

The gross earnings and working expenses for the year compare as follows :

Gross earnings	$ 165,012 03
Working expenses	218,053 01
Deficit	$ 53,040 98

The gross earnings compare with the previous year as follows :—

In 1898–99	$ 165,012 03
1897–98	158,950 61
Increase	$ 6,061 42

The earnings from passenger traffic compare as follows :—

In 1898–99	$ 65,383 11
1897–98	63,734 61
Increase	$ 1,648 50

The earning from freight traffic compare as follows :—

In 1898-99	$ 79,888 52
1897-98	75,845 60
Increase	$ 4,042 92

The earnings from mails and sundries compare as follows :—

In 1898-99	$ 19,740 40
1897-98	19,370 40
Increase	$ 370 00

The number of passengers carried compare as follows :—

In 1898-99	129,667
1897-98	126,510
Increase	3,157

The weight of freight carried compares as follows :—

	Tons.
In 1898-99	57,968
1897-98	57,539
Increase	429

WORKING EXPENSES.

The working expenses compare as follows with the previous year :—

In 1898-99	$ 218,053 01
1897-98	231,418 74
Decrease	$ 13,365 73

The averages compare with the previous year as follows :—

	Cents.
Per mile run by engines :—	
In 1898-99	64·74
1897-98	70 68
Per mile run by trains :—	
In 1898-99	82·80
1897-98	91·51
Per mile of railway :—	
In 1898-99	$1,038 35
1897-98	1,101 99

TRACK.

There are now 151½ miles of track laid with steel rails, 50 lbs. to the yard ; and 58½ miles old iron rails of 40 lbs. to the yard.

The latter require to be replaced with steel.

During the year 3,420 old iron rails (selected) were replaced in the track, taking the place of those condemned.

SIDINGS.

At Wellington the spur was lengthened 300 feet, and made a through siding.

At Pisquid the siding was lengthened 100 feet.

TIES.

There were renewed during the year 54,000 ordinary ties, 21 sets switch ties and 22 head-blocks and frames, besides 1,625 culled ties were used in yards and sidings.

BALLASTING.

During the year 24,220 cubic yards of ballast were distributed where most needed

FENCING.

Twelve and three-quarter miles of old fence were replaced by 60,720 feet of woven wire with posts and battens, and 6,600 feet with barbed wire, 13,200 feet of snow fence was rebuilt, general repairs to both snow and ordinary fence were made all along the line, and a large quantity of material was used.

One hundred farmers' gates, made of woven wire, were replaced.

BUILDINGS, PLATFORMS, ETC.

At Tignish the waiting room was painted.

At Alberton the freight shed had one side of the roof reshingled and one new door put in, and the agent's dwelling was painted and papered inside.

At O'Leary one side of the station building roof was reshingled.

At Coleman a combined waiting room and freight shed was built, and about 500 yards of earth were used to grade around the building.

At Ellerslie a new floor was put down in waiting room and a small kitchen was built.

At Summerside the walls and ceiling of the general waiting room were sheathed and painted, and a spruce floor was laid. The wharf freight shed was raised 3 feet 6 inches, foundation rebuilt with hemlock timber and floor relaid with hemlock plank.

At Emerald the waiting room and office were painted.

At Kinkora the station platform was rebuilt.

At Bradalbane the waiting room and office were painted.

At Hunter River the foundation and supports of the water tank were renewed and a new section tool house was built. The agent's dwelling was painted with two coats of paint outside, and the ticket office was painted inside.

At North Wiltshire the station was given two coats of paint outside, and the office and waiting room were painted.

At Charlottetown 7,000 feet of hemlock plank were used to repair engine house floor, the floor of the machine shop was partly relaid with plank and a room fitted up for the upholsterer. A concrete foundation and a hardwood floor were put in the superintendent's office, the wood work painted and the walls papered. The accountant's office was thoroughly renovated, a new floor put down and the walls sheathed. A coal shed for forge coal and a tool room in machine shop were built. An iron house and wood shed were rebuilt, a stationary engine coal shed was repaired, and a floor put down in paint shop, four pits renewed in round house and a new foundation put under the hydraulic press.

At Tracadie the station platform was rebuilt.

At Mount Stewart the station building was raised 3 feet 6 inches, the sills renewed, a new floor put down in freight shed, and all necessary repairs made, the outside of building was given two coats of paint, the office, waiting rooms and agent's dwelling renovated and painted. The station platform was rebuilt with cedar sills and hemlock plank covering.

At Peakes the station building was reshingled.

At St. Peters the agent's dwelling was raised 2 feet 6 inches, the foundation renewed and general repairs made.

At Souris the freight shed and engine house roofs were partly reshingled.

At Cardigan 1,000 cubic yards of earth were used to grade around the station building.

Stock pens were erected at the following places: Wellington, Port Hill, Emerald and St. Peters.

Fourteen water tanks were rebuilt.

A semaphore was rebuilt at Royalty Junction, and one at Summerside.

WHARFS AND BREASTWORKS.

At Summerside 500 tons of stone, 8 cars of brush, 60 tons of hemlock timber, and 300 cubic yards of ballast were used in repairing the wharf.

At Charlottetown 100 tons of stone, 40 tons of hemlock timber, 25 piles, 3 mooring posts, 25 cubic yards of ballast and 5 cars of brush were used in repairing the wharf and breastwork.

At Georgetown 30 tons of timber, 2 cars of brush and 60 tons of stone were used to repair the wharf.

At Morell 120 feet of breastwork were built at the bridge, which required 25 tons of timber, 50 tons of stone and 40 cubic yards of earth.

At St. Peter's 800 feet of breastwork were built 7 feet high; to do this it required 200 tons of timber, 25 cars of brush, 40 tons of stone and 300 cubic yards of earth.

At Souris to repair the wharf, 50 tons of stone, 4 cars of brush and 30 tons of timber were used.

BRIDGES AND CULVERTS.

At Morell, in preparation for a steel or iron bridge, 80 creosoted piles (1,380 lineal feet), 24,260 feet hard pine and 6,000 feet of princess pine were used in the construction of the approaches and bents.

At Naufrage the two centre stone piers were strapped with iron rods, and two feet of concrete built around them; in the construction of which sixty barrels of cement, 50 tons of stone and three cars of sand were used.

At Ellerslie the bridge had a new top put on it.

At Hunter River the bridge had a pile bent put under the centre span.

At Clyde two hard pine stringers were added, besides other necessary repairs made.

Several other bridges were repaired more or less.

Rolling Stock.

Following is a summary of the principal work done in the shops of the mechanical department:—

Locomotive Repairs.

Three locomotives, Nos. 3, 5 and 17, were practically rebuilt. New fire boxes were put in two, and the following new parts were supplied each of the above, viz.:—Tubes, piston and piston rods, front tube sheets, smoke boxes, driving axles, driving boxes, front truck boxes, crank pins, rod brasses, driving brasses, eccentrics and eccentric straps, metallic packing, balance valves, tender trucks, cylinder heads, valve motion, cab fronts, dry pipes, throttle valves, stand pipes, cab mountings, ejectors and pop valves.

Five locomotives received heavy repairs and nine locomotives received specific repairs.

The following new parts were supplied and work performed:—500 tubes were pieced, two cab fronts (frames rebolted), six driving wheel tires were turned; two sets locomotive truck wheel tires were turned; 1,600 stay bolts were turned and threaded; 260 car wheels were bored and pressed on axles; two driving axles were turned; 6,928 bolts were forged and threaded; 3,070 pounds of nuts were tapped; six smoke stacks were built; two track and four platform scales were repaired; one tender was rebuilt and four tenders repaired; six smoke jacks for engine house were rebuilt; two old condemned locomotives, (No. 20 and a stationary) were broken up; fourteen driving springs were made and forty springs were repaired.

For the road department 1,200 bolts were forged; 13,577 pounds of iron was forged; seven sets of switch gear were made; two new frogs were made and four repaired, besides a quantity of tools and other small parts were supplied.

Brass Foundry.

Output:—6,676 lbs. brass castings, and 600 brass bearings, and 320 lbs. battery zincs.

Car Shop.

One first class car and one first class smoking and postal car were built.

One first class car was converted into a second class, and one second class and baggage car was converted into a baggage, and one second class car was condemned.

Twenty box cars received thorough repairs, twelve of which had new canvas roofs put on them, and one fitted with standard drawbars.

One cold storage car, and seven stock cars were built.

Two platform cars were rebuilt.

Three fifteen ton coal cars were rebuilt to replace three ten ton coal cars condemned.

Five platform cars received thorough repairs.

Seventeen box cars, and twelve platform cars received general repairs.

One flanger received general repairs.

Three new engine cabs were rebuilt, and four repaired; three new running boards, buffer-beams, seats and boxes were rebuilt, and new trucks were made for one tender.

For the road and traffic departments the following work was done:—

Seven trollies, two semaphores and fourteen Haggis tanks were rebuilt.

Twenty-two loading platforms, seven cattle stages, twelve switch frames, five doors and frames, three pairs of sashes and frames, one freight truck, four kit boxes, four office boxes, one hundred farm gates and five Haggis tank pipe houses were built.

Paint Shop.

Two first-class, three second-class and two postal and baggage cars were painted and varnished.

Six first-class and four postal and baggage cars were cleaned and varnished.

Twenty-one box, one cold storage, seven stock, two platform, three coal and eight hand cars were painted.

The roofs of thirty-four box cars were painted.

Thirty crossing signs, twenty-nine sign boards, twenty switch frames, six semaphores, thirty-six water cans, five copying presses and eleven buildings were painted, and 300 panes of glass were put in.

Eight locomotives were painted and varnished and one locomotive was cleaned and varnished.

STORES.

The value of stores purchased was	$ 64,779 01
The value of stores used was	76,113 11
The value of old material sold was	7,135 65

The value of stores on hand at the end of the year was:—

Ordinary stores	$ 35,220 90
Fuel	1,821 01
Iron and steel rails and fastenings	4,997 89
Old material for sale	42,000 11
Total	$ 84,039 91

GENERAL.

The rolling stock, road bed and buildings have been maintained in a state of efficiency.

I inclose a return also of minor casualties which occurred during the year.

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

G. A. SHARP,
Superintendent.

D. POTTINGER, Esq.,
General Manager, Government Railways,
Moncton, N.B.

No. 1.—PRINCE EDWARD ISLAND RAILWAY.

DR. CAPITAL ACCOUNT. CR.

1898.		$ cts.	1898.		$ cts.
June 30	To cost of road and equipment to date	3,768,107 26	June 30	By Dominion of Canada	3,768,107 26
1899.			1899.		
June 30	To expenditure, year ended June 30, as follows:		June 30	" "	22,000 00
	Removing curves, main line $15,000 00				
	New stock cars 3,500 00				
	Wharf at Mount Stewart 3,500 00				
		22,000 00			
		3,790,107 26			3,790,107 26

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

No. 2.—PRINCE EDWARD ISLAND RAILWAY.

DR. REVENUE ACCOUNT for Year ended June 30, 1899. CR.

Previous Year.	Expenditure.	Year ended June 30, 1899.	Previous Year.	Receipts.	Year ended June 30, 1899.
$ cts.		$ cts.	$ cts.		$ cts.
56,520 66	Locomotive power, Abstract No. 1	58,464 56	63,734 61	Passenger traffic	65,383 11
			75,845 60	Freight traffic	79,888 52
38,827 84	Car expenses, Abstract No. 2	38,463 64	19,370 40	Mails and sundries	19,740 40
94,333 51	Maintenance of way and works, Abstract No. 3	80,186 60	158,950 61	Total receipts	165,012 03
			72,468 13	Balance	53,040 98
29,076 53	Station expenses, Abstract No. 4	29,915 87			
12,660 20	General charges, Abstract No. 5	11,022 34			
231,418 74	Totals	218,053 01	231,418 74	Totals	218,053 01

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

No. 3.—PRINCE EDWARD ISLAND RAILWAY.

Locomotive Power—(Abstract No. 1).

Previous Year.	Details.	Year ended June 30, 1899.
$ cts.		$ cts.
619 66	Mechanical superintendent's salary, clerks, office and travelling expenses	617 83
18,164 92	Wages of drivers, firemen and cleaners	18,732 54
14,514 29	Fuel	14,935 67
2,055 16	Oil, tallow, waste and small stores	2,257 61
19,033 40	Repairs to engines, tenders and engine tools	19,712 91
556 41	Water, including pump and tank repairs	639 20
1,576 82	Miscellaneous	1,568 80
56,520 66	Totals	58,464 56

W. T. HUGGAN,
Accountant and Auditor.

Charlottetown, P.E.I., June 30, 1899.

No. 4.—PRINCE EDWARD ISLAND RAILWAY.

Car Expenses—(Abstract No. 2).

Previous Year.	Details.	Year ended June 30, 1899.
$ cts.		$ cts.
7,885 15	Repairs to passenger cars	7,663 96
2,109 06	" postal and baggage cars	3,557 28
7,838 66	" freight cars and vans	5,728 66
1,059 60	" snow ploughs and flangers	347 43
15,700 30	Wages of conductors, train baggage-masters and brakesmen	16,815 85
798 25	Oil and waste for packing	770 24
2,545 33	Small stores and fuel	2,728 69
891 49	Miscellaneous	851 53
38,827 84		38,463 64

W. T. HUGGAN,
Accountant and Auditor.

Charlottetown, P.E.I., June 30, 1899.

No. 5.—PRINCE EDWARD ISLAND RAILWAY.

MAINTENANCE OF WAY AND WORKS—(Abstract No. 3).

Previous Year.	Details.	Year ended June 30, 1899.
$ cts.		$ cts.
295 64	Engineer's salary, clerks, office and travelling expenses	292 47
39,337 62	Wages in repairing roadway, fences and semaphores	39,726 59
1,721 81	Rails, chairs and spikes	2,407 62
17,394 37	Ties	17,887 56
9,461 29	Timber and lumber for repairs to bridges, cattle guards, &c	7,401 80
2,313 19	Repairs to wharfs	2,464 12
5,479 72	" buildings and platforms	6,604 55
1,047 97	" tools	1,108 58
2,221 72	Clearing ice and snow	2,243 51
79,273 33	Totals	80,136 80

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

No. 6.—PRINCE EDWARD ISLAND RAILWAY.

STATION EXPENSES—(Abstract No. 4.)

Previous Year.	Details.	Year ended June 30, 1899.
$ cts.		$ cts.
22,458 30	Salaries and wages of station masters, agents, clerks, telegraph operators, station baggage-masters, yard masters, switchmen, watchmen and labourers	22,864 90
6,618 23	Fuel oil light, stationery and other incidental expenses	7,050 97
29,076 53	Totals	29,915 87

W. T. HUGGAN.
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

No. 7.—PRINCE EDWARD ISLAND RAILWAY.

General Charges—(Abstract No. 5).

Previous Year.	Details.	Year ended June 30, 1899.
$ cts.		$ cts.
4,439 93	Superintendents' and train despatchers' salaries, clerks, office and travelling expenses	4,524 41
4,814 61	Accountant and auditor's, paymaster's and cashier's salaries, clerks, office and travelling expenses	5,077 24
697 85	Advertising	481 35
2,202 01	Damages to men, animals and goods	227 30
323 69	Telegraph expenses (not including pay to operators)	365 66
182 11	Miscellaneous	346 38
12,660 20	Totals	11,022 34

W. T. HUGGAN,
Accountant and Auditor.

Charlottetown, P.E.I., June 30, 1899.

No. 8.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT of General Stores Account, Year ended June 30, 1899.

1898.	Dr.	$ cts.	$ cts
June 30...	To balance brought forward		91,094 75
1899.			
June 30...	Purchases during the year	64,779 01	
	Charges from other deparments	10,182 45	
	Pay rolls	1,232 46	
			76,193 92
1899.	Cr.		167,288 67
June 30...	By issues during the year		83,248 76
	Balance — Ordinary stores	$31,938 41	
	Fuel	1,821 01	
	Rails and fastenings on hand	46,998 00	
	Old material serviceable	3,282 26	84,039 91

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

No. 9.—PRINCE EDWARD ISLAND RAILWAY.

DR. GENERAL BALANCE. CR.

	$ cts.		$ cts.
General stores	84,039 91	Dominion Account	87,117 29
Cash	1,899 96	Accident Insurance	1,045 58
Stations	1,328 76	Through Ticket Ledger	5,979 07
Post Office Department	3,974 10		
Militia Department	408 15		
Anglo-American Telegraph Co.	46 43		
Judge Weatherbie	30 00		
Sidney Grey	20 00		
Railway extension, Charlottetown	812 83		
Intercolonial Railway	1,505 60		
B. & M. Rattenbury	76 20		
Total	94,141 94	Total	94,141 94

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

No. 10.—PRINCE EDWARD ISLAND RAILWAY.

COMPARATIVE STATEMENT OF AVERAGES, for years ended June 30, 1899 and 1898.

Details.	1899.	1898.
Mileage of railway open	210	210
Engine mileage	336,830	327,424
Train mileage	263,335	252,894
Car mileage	1,427,479	1,340,114
Receipts per engine mile.....Cents.	48 99	48 54
" mile of railway.....Dollars.	785 87	756 91
Percentage of passenger earnings to gross receipts	39·62	40·10
" freight " "	48·41	47·71
" other " "	11·97	12·19
Expenses per engine mile :—		
Drivers, firemen and cleaners' wages	5·57	5·55
Fuel	4·43	4·44
Oil, tallow, waste and small stores	·67	·63
Repairs to engines	5·85	5·81
Water and tank repairs	·19	·16
Miscellaneous	·47	·48
	17·18	17·07
Mechanical superintendent's salary, office and travelling expenses	·18	·19
Total.....Cents.	17·36	17·26
Locomotive power, per engine mile	17·36	17·26
Car expenses "	11·42	11·85
Maintenance of way and works "	23·81	28·81
Station expenses	8·88	8·88
General charges	3·27	3·88
Total per engine mile.....Cents.	64·74	70·68
Locomotive power, per train mile	22·20	22·35
Car expenses "	14·61	15·35
Maintenance of way and works "	30·45	37·30
Station expenses	11·36	11·50
General charges	4·18	5·01
Total per train mile.....Cents.	82·80	91·51
Working expenses per mile of railway.....Dollars.	1,038·35	1,101·99

W. T. HUGGAN,
Accountant and Auditor.

CHARLOTTETOWN, P.E.I., June 30, 1899.

A.—PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

STATEMENT of Cost of Locomotive Power for the Year ended June 30, 1899.

Months.	Miles run by Engines, less Ballasting.	Cost of							Average per Mile Run.						
		Enginemen's Wages.	Fuel.	Oil, Tallow, Waste, &c.	Repairs.	Water, including Tank and Pump Repairs.	Miscellaneous, including Expenses of Office and Engine Houses.	Total.	Enginemen.	Fuel.	Oil, Tallow, &c.	Repairs.	Water.	Miscellaneous.	Total.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
1898—July	30,391	1,539 58	1,057 60	208 22	1,169 60	.. ..	148 03	4,123 03	5·07	3·48	0·68	3·85	0·00	0·49	13·57
August	30,026	1,496 21	1,007 86	241 47	1,732 47	1 30	166 73	4,346 04	4·98	3·36	0·80	5·77	0·01	0·55	15·47
September	31,229	1,746 08	1,141 07	238 33	1,541 18	54 98	164 71	4,886 35	5·59	3·65	0·76	4·94	0·18	0·52	15·64
October	29,278	1,693 74	1,267 75	217 36	1,659 23	3 90	153 45	4,995 43	5·78	4·33	0·74	5·67	0·01	0·53	17·06
November	33,080	1,609 03	1,342 98	217 07	1,598 39	119 44	155 22	5,042 13	4·86	4·06	0·66	4·83	0·36	0·47	15·24
December	28,795	1,562 98	1,404 95	232 54	1,777 35	179 14	198 59	5,355 55	5 43	4·88	0·80	6·17	0·62	0·69	18·59
1899—January	23,039	1,525 91	1,089 01	175 97	1,780 63	61 93	224 65	4,858 10	6·62	4·73	0·77	7·72	0·26	0·98	21·08
February	22,517	1,510 45	1,333 51	169 74	2,010 23	2 70	233 92	5,260 55	6·70	5·92	0·76	8 93	0·01	1·04	23·36
March	28,162	1,741 06	1,703 31	219 63	1,927 49	5 90	228 34	5,825 73	6·19	6·05	0·78	6·84	0·02	0·81	20·69
April	23,181	1,394 96	1,150 23	143 66	1,714 14	6 14	205 81	4,614 94	6·02	4·96	0·62	7·39	0·02	0·89	19·90
May	26,556	1,414 24	1,173 61	186 62	1,564 61	6 60	169 21	4,514 89	5·33	4·43	0·70	5·89	0·02	0·63	17·00
June	30,576	1,498 30	1,263 79	7 00	1,237 59	197 17	137 97	4,341 82	4·90	4·14	0·02	4·05	0·64	0·45	14·20
Totals	336,830	18,732 54	14,935 67	2,257 61	19,712 91	639 20	2,186 63	58,464 56	5·56	4·43	0·67	5·86	0·19	0·65	17·36

S. F. HODGSON,
Mechanical Accountant.

B.—PRINCE EDWARD

MECHANICAL

STATEMENT of the Performance and Consumption

Months.	Hours in Steam.	Train Mileage.				Mileage by Engines.			
		Passenger.	Freight and Mixed.	Ballasting.	Piloting.	With Train.	Light.	Shunting.	Total.
1898—July	3,704	11,960	11,744	1,402	382	25,488	81	6,774	32,343
August	3,619	11,803	12,037	1,481	81	25,402	95	6,445	31,942
September	3,993	12,438	11,574	3,257	220	27,489	92	7,140	34,721
October	3,808	10,467	13,044	3,707	46	27,264	87	6,689	34,040
November	3,810	11,055	15,493	2,367	.....	28,915	115	6,957	35,987
December	3,207	10,454	12,618	149	44	23,265	124	5,560	28,949
1899—January	3,071	4,629	12,083	.....	274	16,986	132	5,921	23,039
February	3,166	4,743	11,116	.....	1,562	17,421	82	5,014	22,517
March	3,713	5,458	14,314	.....	1,933	21,705	334	6,123	28,162
April	3,128	3,906	12,709	40	376	17,022	.....	6,199	23,221
May	3,461	5,428	14,751	1,244	120	21,543	194	6,263	28,000
June	4,003	10,452	14,008	2,832	22	27,314	62	6,477	33,853
Totals	42,683	102,793	155,482	16,479	5,060	279,814	1,398	75,562	356,774

SESSIONAL PAPER No. 10

ISLAND RAILWAY.

DEPARTMENT.

of Locomotives for the Year ended June 30, 1899.

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 Waste.	Bushels of Coal.	Pints of Oil.	Pounds of Waste.
133,565	.....	5·32	8·73	4·13	16,299	2,665	562	50·39	8·24	1·74
123,005	.....	4·86	8·82	3·85	15,615	2,989	639	48·89	9·36	2·00
141,602	.....	5·19	8·69	4·08	17,417	2,971	667	50·16	8·55	1·92
155,069	.....	5·69	8·94	4·56	19,308	2,610	637	56·72	7·67	1·87
161,154	.....	5·57	9·45	4·48	18,942	2,552	677	52·63	7·09	1·88
126,590	.....	5·45	9·02	4·37	17,889	2,558	613	61·80	8·83	2·12
87,568	136	5·24	7·50	3·80	13,292	1,769	397	57·69	7·68	1·72
82,402	4,981	5·19	7·11	3·66	14,564	1,867	413	64·68	8·29	1·83
110,066	44	5·56	7 58	3·91	17,847	2,390	523	63 37	8·49	1·86
107,162	.....	6·44	7·42	4·61	11,429	1,656	409	49·22	7·13	1·76
136,721	.....	6·38	8·09	4·88	13,485	2,179	497	48·16	7·78	1·77
160,708	.....	5·89	8·45	4·75	14,822	2,486	553	43·78	7·34	1·63
1,525,612	5,161	5·55	8·36	4·28	190,909	28,692	6,587	53·51	8·04	1·85

S. F. HODGSON,
Mechanical Accountant.

C.—PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

MONTHLY STATEMENT of Car Mileage for Year ended June 30, 1899.

Months.	First Class.	Second Class and Baggage.	Postal and Smoking.	Box and Stock.	Platform.	Total.
1898—July	30,962	22,238	24,935	42,463	12,967	133,565
August	25,822	22,498	22,780	37,820	14,085	123,005
September	27,331	24,208	22,172	42,410	25,481	141,602
October	22,822	24,198	25,557	49,138	33,354	155,069
November	24,226	25,284	28,238	58,237	25,169	161,154
December	21,923	18,417	25,242	49,285	11,723	126,590
1899—January	16,907	16,066	13,195	32,476	8,924	87,568
February	15,651	15,181	11,426	25,723	14,421	82,402
March	18,241	16,781	13,613	43,654	17,777	110,066
April	17,892	15,560	14,060	50,021	9,629	107,162
May	20,619	20,360	21,777	57,083	16,882	136,721
June	26,189	23,532	28,306	50,445	32,236	160,708
Total	268 585	244,323	251,301	538,755	222,648	1,525,612
Less ballasting			14,001	66	84,046	98,113
Balance	268,585	244,323	237,300	538,689	138,602	1,427,499

S. F. HODGSON,
Mechanical Accountant.

SESSIONAL PAPER No. 10

D.—PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

STATEMENT showing the number of Locomotives, and of the various classes of Cars and other Rolling Stock, on June 30, 1899.

	Locomotives.	CLASSIFICATION OF CARS.																
		1st Class.	2nd Class.	Combined 2nd and Baggage.	Postal and Smoking.	Combined Postal & Baggage.	Baggage.	Pay Car.	Vans.	Box Freight.	Refrigerator Car.	Stock.	Platform.	Total.	Snow Ploughs.	Flangers.	Totals.
On hand, serviceable, June 30, 1898	20	17	6	6	1	3	3	1	3	165	....	10	124	339	8	4	12
Condemned, July 1, 1898	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	3	3
Total	21	17	6	6	1	3	3	1	3	165	..	10	125	340	8	7	15
Transferred as follows:—																	
1st Class to 2nd Class	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Combined 2nd Class and Baggage to Baggage	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..
Total	21	16	7	5	1	3	4	1	3	165	..	10	125	340	8	7	15
Condemned July 1, 1898	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..
" during the year	..	..	1	..	..	..	..	..	..	..	..	..	5	6	..	..	..
	1	..	1	..	..	..	..	..	..	..	..	..	6	7	..	..	..
Built and charged to capital	..	..	..	..	..	..	..	..	..	..	..	7	..	7	..	..	..
Rebuilt and charged to renewals	..	1	..	..	1	..	..	..	..	..	1	..	4	7	..	..	..
To be rebuilt	1	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..	..
Serviceable and repairing	20	17	6	5	2	3	4	1	3	165	1	17	123	347	8	7	15
Total	21	17	6	5	2	3	4	1	3	165	1	17	125	349	8	7	15

S. F. HODGSON,
Mechanical Accountant.

E.—PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

COMPARATIVE STATEMENT of the Expenses of the Mechanical Department for the Year ended June 30, 1899.

—	1898.	1899.
The miles run by trains were	252,894	263,335
" engines were	327,424	336,830
" cars were	1,340,114	1,427,499
" snow-ploughs were	4,947	5,161
	$ cts.	$ cts.
The cost of locomotive power was	56,520 66	58,464,56
" repairs to cars was	19,690 72	16,949 90
" " passenger cars was	7,885 15	7,663 96
" " postal and smoking cars was	2,109 06	3,557 28
" " freight cars and vans was	7,838 66	5,728 66
" labour, oil and waste for packing was	798 25	770 24
" repairs to snow-ploughs and flangers was	1,059 60	347 43
The cost of locomotive power per 100 miles run by trains was	22 35	22 20
" " " " engines was	17 26	17 35
" " " " cars was	4 22	4 09
The cost of repairs to cars per 100 miles run by trains was	7 78	6 43
" " " " engines was	6 01	5 03
" " " " cars was	1 47	1 19
The cost of labour, oil and waste for packing per 100 miles run by trains was	0 31	0 29
" " " " engines was	0 24	0 23
" " " " cars was	0 06	0 05
The repairs to passenger cars per 100 miles run by trains were	3 12	2 91
" postal and smoking cars were	0 83	1 35
" freight cars and vans were	3 09	2 17

S. F. HODGSON,
Mechanical Accountant.

PRINCE EDWARD ISLAND RAILWAY.

RETURN of Accidents and Casualties which have occurred in Canada on the line of the Prince Edward Island Railway during the Year ended June 30, 1899.

Date.	Time of Day.	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 Employee.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
1898.												
Aug. 3.	12.10 p.m	.....	Mixed ..	F. Kelly.....	D. Pound.....	10	Ellerslie	Julius McDonald.	Employee	Fell between tender and car while shunting, died a few hours after (engine passed over one leg).	One leg severed from the body.	Accidental.
Nov. 7	5.15 a.m..	Special.	Freight...	G. Tanton...	J. Dalziel. ...	17	Royalty Jct ..	A. Stetson....	Employee	Sprained ankle while shunting.	....	
" 8	.....	8	Mixed	J. McDonald.	J. Hunter . ..	7	Alberton	J. Howatt....	Employee	Slipped while alighting from engine striking switch.	Side injured.	
Oct. 1	....	12	Express ..	T. K. Stanley.	H. Sutherland	18	On train.....	John McLauchlin	Employee	While unloading a trunk at St. Peters cut his hand with zinc covering.	Died from blood poison, October 30, 1898.	No inquest.

No. 2

CROW'S NEST RAILWAY

MACLEOD, ALTA., N.W.T., October 1, 1899.

SIR,—I have the honour to present my second annual report on the condition of the line and the works on the Crow's Nest Line Railway during the fiscal year of 1898-1899 and up to October 1, 1899.

The railway was given under contract to the Canadian Pacific Railway Company to be constructed and equipped for a subsidy of $11,000 per mile from Lethbridge to Nelson, the total amount of subsidy not exceeding the sum of $3,630,000.

The line to be opened for traffic on or before December 31, 1898, as far as the south end of Kootenay Lake, there providing train transfer facilities, without transhipment, not later than that date, from that point to Nelson, B.C., the service to be kept up until the balance of the road to Nelson was completed and put in operation for public traffic, the contract allowing them until December 31, 1900, to complete it.

The first portion of the contract was completed before the expiration of the time limit, the line was opened for traffic and operated on with a full and satisfactory equipment of rolling stock, with all necessary transfer steamers and barges carrying car-loads of freight unbroken to Nelson, as per contract.

The second division of the contract, which requires that portion of the line from the south end of Kootenay Lake to Nelson, B.C., to be built before December 31, 1900, was not sufficiently revised in its location until this date, to warrant the work being put under contract construction and owing as well to the wet and stormy effects of the past spring and summer weather on the constructed portions of the line, necessitating the holding of all labour to finish and give increased strength to the road-bed, so as to put it beyond all possibility of disturbance from such extraordinary severe rains as has this year been experienced; the consensus of opinion giving a decade to such visitations.

Since my last annual report, the finishing up of the work of construction has been vigorously carried on in the face of trying weather, it being nearly continuous into the month of September. The following are some of the results of the season's work:—

Previous to my last annual report the line and its sidings had rails laid over it from Lethbridge to Kootenay Lake, 26 per cent being of 73 lbs. to the lineal yard, and the balance of 56 and 60 lbs. This year the company have laid steel guard rails around maximum curves which terminated or ran onto bridges and trestles.

Three trestle bridges have been added during the past season to the structures required to pass extreme freshet water, between Pincher and Cowley sidings. In a number of cases extra end bracing of trestles has been done in addition to the standard design requirements, as well as being increased in length where the ends of embankments had suffered from rain, scour and shrinkage.

The concrete to support Howe truss span bridges, as well as where it is used in guard piers and river ice breakers, has shown no weakness or unstable qualities at any point. The bridges yet to be permanently supported with this artificial stone are well advanced; their completion before the end of the season is practically assured.

Permanent riprapping of all concrete structures is now going on, those in the larger rivers having been attended to and now about completed. I am pleased to say that under this year's severe test, have any of the culverts, trestles or bridges failed to do their designed work.

The last of the temporary trestle filling, which is at the east approach of the Elk River bridge, is well advanced and nearing completion.

A commencement has been made at the filling in of permanent trestles. Where some of them are used, the original surface of the depression crossed has had the appear-

ance of natural drainage, but having been severely tested this year and given no sign of drainage being required, the company are filling them in, the desire being to make as much solid embankment as it is possible to build.

Where temporary trestles have been filled, the embankments are being made much wider than is required in the contract, the ballasting as the consolidating goes on being very full. This work is in progress and about completed.

At all points near the Michel Creeks, Elk River and Duck Lake embankments that were likely to be touched by extreme high water, strong riprapping made from the large boulders that have accumulated in coarse gravel cuttings and which were drawn to the work by train service, has been built during the season.

All passenger stations, sectionmen's houses, repair and machine buildings, are well designed and suitable for an enlarged traffic. Elevated coal pocketted chutes and water tanks of 40,000 gallons capacity have been built at terminal points that are much beyond the present needs, in anticipation of an increased traffic.

Large ice houses were erected and filled during the past season. They store ice in quantities that cannot be used should the business of the road increase to four times its present volume.

Additional freight sheds have been built this year to accommodate the fast increasing requirements demanded at established growing centres.

The line is now fully served at the terminal points with the best standard turntables, as well as having auxiliary turning locations served with wyes. Among the appurtenances added during the season are oil buildings, sand houses, well equipped with drying apparatus. Supply railway store buildings and large commodious boarding houses have been put up, all of them being attractive in design and creditable in all respects. The requirements, as specified in the contract for buildings, have been more than filled over this line.

As the rise in the water of Kootenay Lake, in extreme years, has been known to reach 32 feet from its low water stage, the company have driven cluster piles on the upper side of the trestling that carries the line across the south end of the lake to its western terminus, so as to prevent the structural work being reached by any drift wood or floating objectional bodies. This system of protection has been used liberally around the ends and approaches of the transfer slip, which is situated at the main channel of the river discharge, with satisfactory success.

In excess of the stipulated clearing, according to contract, already done, the company have cut down during the past season various areas of timber at several points, over soils that are composed of clay gumbo, which is near and extends across the line of railway. This was done with a view of lessening the severe action of a sudden freshet, by giving the Chinook winds full play to minimize the depth of snow during the winter months, thereby leaving very little to be removed when the melting weather occurred.

In my previous annual report I stated that I was retaining part of the subsidy to cover the cost of flattening slopes should the pitch to which they were taken out to not be sufficient to prevent the sides of cuttings from coming in after being subjected to a yearly test.

The experience in the interim of my annual reports, owing to the severity of rains that this newly constructed railway has been subjected to, has shown the necessity of changing the prism side lines in similar soils where the physical features are different as they are on this long line of prairie and mountain railway. The reducing of slopes and making wider bases in cuttings, now about completed, necessitated during the past season the concentration of almost all available labour at this work, as well as at the road-bed proper, where composed of light prairie or clay gumbo soils. Although the season's work has been an expensive one, carrying on this work, it has resulted in the embankments being strongly consolidated having extra width, better slopes than diagram lines asked for in the contract, with the formation bases liberally covered with ballast and to a much greater depth than specified in their agreement.

Among some of the various soils that the cuttings have been made through, flatter slopes have had to be given to ensure permanent solidity and safety. Between Lethbridge and Macleod the cemented material that had to be blasted owing to its hard and

compact nature has stood well with its sharper slopes than 1½ to 1, the only weakness shown being in the loosened and fractured portions caused by the dynamite when liberating the prism contents, which eroded slightly through the force of the rain storms, the cleaning up of which was satisfactorily completed during the past season.

In all cuttings east of the Crow's Nest station where composed of firm dry compact soil the slopes that were taken out less than the general slope of 1½ to 1, have where they seemed weak been flattened and put beyond doubt as to their security and permanency. At present between Pincher and Cowley stations an outcrop of treacherous clay in the cuttings west of the South Fork of the Old Man River is having a further reduction given to its upper slopes.

West of the Crow's Nest station quite a number of cuttings that classed as being composed of cemented material have shown weaknesses from clay and filtering sand layers cutting into the general mass, which compelled the widening of bases and reducing the slopes as much as is possible to allow without affecting the mountain sides along which these cuttings lay. I may say that this class of work is now practically finished.

Where gumbo or running clay composed the soil that cuttings were made through the study of its action under different climatic changes to secure lasting results to the road-bed, had to be kept up throughout the season. The most obstinate case dealt with was in the Michel Loop where a steam shovel had to be worked all winter and well on to the summer. This cutting was properly drained on top of its slope, had its prism excavated below formation and its base made double the width called for by the terms of the contract, and had good slopes, yet under the continuous rain of the season it required attending to in order to keep its hill slope from being troublesome to the tie bearing supports at the centre line. In other cases cuttings composed of this soil have been successfully treated by having 12-inch sheet piling driven at the foot of the slope on the upper side of the cuttings resulting in a firm bearing for ballast and track; in some places it liberated filtering water below formation thereby lessening the danger of slips or disturbance under the ballast.

Where the soils at formation continued to keep moist, excavations below grade to the depth of three feet have been made and broken stone packed in over the full width of the bottom or base, with satisfactory results.

Since finishing the ballasting of the line. the steam plant with its train service has been at work mainly in cuttings composed of the gumbo soils. Their work has been used in widening cuttings at grade and cutting off the lower slope to formation along river shores, the benefit of this treatment giving the shortest and quickest drainage to freshet water in bad seasons by means of deep cross drains and drain boxes below formation.

In a great many cases where embankments have had to be made with a percentage of the clay soils from the adjoining cuttings, 12-inch sheet piling has been driven at the top of the slope of the low side with successful results.

In the finishing work that has been carried on lately has been the proper sloping and extra widening of gravel cuttings suitable for ballast, in some of them the widening has been all on one side of the centre line with a view of reducing still further the curvature in anticipation of swifter speeds, the material excavated being liberally used to improve earth embankments and give extra lifts to the permanency of the track.

Greater widths than specified by the contract have been given to embankments at points where the original surface in their vicinity has shrunk, cracked or su side caused evidently by the action of subterranean drainage.

In reference to the finish of the cutting slopes, I may say that owing to the good work done this season and the severe weathering they have undergone, that they are now the natural ones necessary for safety and permanency and come within the meaning of the clause governing the pitch.

In the greater part of the finishing work over the shrunken embankments carried on by trains hauling from pits of the best ballast, the lasting and substantial character is assured.

All the prairie fire-guards on both sides of the railway have been reconstructed as well as increased in width.

Lately a survey examination of the mountain spur which is near the junction of the east and south branches of Michel Creek, that forced the using of sharp curvature on the operated line, has been made with a view of benefiting the alignment and its feasibility in point of cost, the principal work to be done being an open cutting composed of mixed soils and rock spurs.

Since the line has been put into operation twelve spur sidings have been laid to lessen the cost of loading commodities at mines, sawmills and stock and hay centres.

Since the branch line was built at Fernie to its mines, two others have been put under construction which will be put into operation before the end of the year. One runs from Cranbrook up the St. Mary's River to the Sullivan and North Star group of mines, and the other from Sparwood to the lately opened coal mines on the south side of the Michel Creek.

Although the line has been in operation less than a year, coal mines at Fernie and Sparwood have been marketing their output and in a short time the newly developed Crow's Nest Lake coal mines will be in a position to ship its mined commodity.

At different points on this railway seven sawmills are working steadily. The developing of mineral mines is being prosecuted with energy at many points near the railway, three of them are already shipping ore to the Nelson and Trail smelters and before the year is out as many more will be sending their output to these smelters. A concentrator of 150 tons capacity per day is now starting to work near Moyie City, another as well as a compressor are in course of erection in the same district.

At Fernie, Cranbrook, Moyie City and Creston the population of these new business centres is established and is fast increasing, Fernie having at present about two thousand people.

The traffic facilities and available rolling stock is ample and if anything in excess of the present requirements.

The completion of all work requiring to be done in accordance with the terms of the first portion of the contract has been vigorously carried on and will be completed before the end of the year.

I have the honour to be,
Your obedient servant,

GEO. R. L. FELLOWES,
Supt. Engr. C. N. L. Ry.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer Railways and Canals,
Ottawa.

No. 3

RAILWAY ROUTE TO THE YUKON

NOTE.—The plan, profile and album of views referred to throughout this and following Reports on Surveys are on file in the Department of Railways and Canals.

OTTAWA, ONT., February 8, 1899.

SIR,—I have the honour to transmit you my report upon the explorations in connection with the western division of the proposed railway route to the Yukon district, carried out under your instructions during the past season.

Accompanying this report are:

1. Plan showing explorations from Dease Lake toward head of Stikine River.
2. Profile from Dease Lake to the Stikine River.
3. Album of photographs.
4. Sketch plan of country adjacent to proposed route from Finlay Rapids to Lake Teslin.

I left Ottawa on June 23, having received my instructions from you the previous day, and arrived at Vancouver on the 28th, travelling via Canadian Pacific Railway.

The interval while waiting for the sailing of Canadian Pacific Steamer *Tartar* for the north, was fully occupied in engaging men for my party, purchasing pack horses, camp outfit and supplies.

The *Tartar* left Vancouver at 2 a.m. on July 8, touched at Victoria en route, and reached Wrangel, Alaska, on the 11th. Close connection was made here with the river steamer *McConnell* of the Canadian Pacific Railway Company's line, which sailed the following morning at day-break, arriving at Glenora on the 13th, where she remained over night, and finally landed us at Telegraph the morning of July 14.

On pages three to fourteen of the album are photographs of some of the charming views and grand scenery on the Stikine River, between Wrangel and Glenora.

The river lies generally in a valley of one to two miles in width, bounded by hills and mountains with many snow capped peaks, while between the river and the foot hills are numerous well wooded bottom-lands. A few glaciers lie close to the river, the most remarkable being the 'Big Glacier,' several miles above the International boundary, of which a number of good views were obtained.

An idea of the difference between high and low water on the Stikine, at a point as near its mouth even as the boundary, may be had by comparing the two views of the North-west Mounted Police station, on page three, one taken on July 12, and the other on the first day of October.

Views 261 and 256, page 11, show the little steamer *Mono* on which we started from Glenora on our return trip, tied up in the beach below Little Cañon—having lost her wheel by reason of snags and low water in the river.

During the very low stage of the river in the latter part of September, the *Mono* was acting as relay, from Glenora to a point some five miles below Little Cañon, to the steamer *Casca* whose draught would not permit of her ascending the river beyond the latter point.

The accident to the *Mono* occurred fortunately near the point of relay, so that the transferring of passengers and cargo to the *Casca* was easily accomplished the following day.

The navigation of the lower Stikine is accompanied with considerable risk and danger even, during the latter part of the season, from snags and low water. During the high water period it becomes a question of the power of steamers plying on the river, to stem the large body of swift water, and make successfully the sharp narrow bends in the channel, while avoiding drifting trees and snags.

We were delayed some time at Telegraph, breaking-in and shoeing the pack horses, hunting for a number of the wilder ones that had got beyond control of the men and strayed among the hills and ravines, and getting things into shape generally for the trip inland. Here I secured as guide, a young Indian who had spent several seasons trapping and shooting on the upper Stikine, and was familiar with that country. He proved a reliable man, and rendered good service throughout the trip.

On the map accompanying my instructions, the railway route proposed for exploration is indicated as following down the Stikine River, from the head waters of the main stream, to the mouth of Tahltan River, ascends this river to its head, and thence proceeds northward by a series of small lakes and streams to Teslin Lake. A branch line to Telegraph and Glenora is also indicated, following the Stikine from the point of diversion of the main line at the Tahltan.

Making Telegraph the initial point of my track survey, and datum for barometric readings, I proceeded up the Stikine River by the pack trail on the right or north bank, leading to Dease Lake, with the intention of following this trail as far as the Tanzilla River, crossing this river as near its mouth as practicable, thence continuing up the Stikine as far as the length of the season would permit.

It was found expedient to change this programme on reaching the Tanzilla, as will be noted later on.

EXAMINATION OF THE STIKINE VALLEY BETWEEN GLENORA AND THE TANZILLA RIVER.

The section between Glenora and Telegraph, while not demanding excessively heavy work, would necessitate a considerable amount of side hill cutting in rock as well as earth, with trestling, if the line were brought into the vicinity of Telegraph Village.

Photos. on pages 15, 16 and 17, are views taken at different points on this section. Nos. 34 and 35 show the cañon through which the First South Forth enters the Stikine from the south, and the terraced banks of that side of the river. In No. 32, at the bend in the river, are seen the high cliffs (ramparts) of basalt that crop out along the right bank for half a mile at this point.

Telegraph Village, on a narrow flat at the mouth of Telegraph Creek, is shown in view 50, while Nos. 41 and 38 are views of the gorge through which this creek flows to the Stikine.

No. 44, page 16, is a view of the banks on the opposite (south) side of the river, and the snow tipped mountain range in the distance.

From Telegraph, following up the Stikine Valley, to the Tanzilla, the river flows through a series of cañon, generally with precipitous walls of basalt, from which terraces reach back to the mountains that hem in the valley. These terraces are more pronounced on the right bank, they lie at various heights, and are cut through by deep cañons carrying tributaries to the main river.

On pages 19 and 20 are views of the cañons between Telegraph and the Tahltan River, and on page 21 views showing the junction of the Stikine and Tahltan Rivers. The steep trail leading down the right bank of the Tahltan, and the bridge over this river at the trail crossing, Nos. 59 and 55, are shown on page 22, as well as the rocky cañon, nearly 200 feet deep, through which this river rushes just before reaching the Stikine (Nos. 60 and 245).

The cañon of the Stikine above the Tahltan is shown in the two pictures, 54 and 244, page 24; while page 23 gives three views of the left wall of this cañon, noted by Dr. Dawson as showing the different series of basaltic flows, and underlying older gravel deposits, through which the river has cut its way.

Photo. 239, page 24, is a view across the valley, a couple of miles above the Tahltan; in it can be seen the basaltic cliffs on the south bank of the river. Photo. 238, page 24, and 61 and 62, page 25, are other views of this valley, between the Tahltan and Tuya rivers.

The next river entering the Stikine Valley is the Tuya. In speaking of this river in his report on the 'Yukon District and Northern British Columbia,' Dr. G. M. Dawson says: 'The Tuya Valley, where it is crossed by the trail, is a great gorge, about 600 feet in depth, cut out through the terrace deposits. The river which is

spanned by a small bridge, is a wild torrent, almost a series of cascades. Its scarped banks show a section of about 400 feet of the terrace deposits.'

The photographs on page 26 are good views of what Dr. Dawson describes in this quotation.

The zig-zag trail up these scarped banks is well shown in photo. No. 66. Nos. 236 and 237, page 25, are views of this same cañon nearer the Stikine.

Some eight miles above the Tuya, the Tanzilla River cuts its way through a deep rocky gorge into the "Great Cañon of the Stikine," which may be said virtually to commence near Telegraph Creek, where photo. 30, page 17, was taken, looking up the river.

Photos. 85 and 86, page 27, are views of this cañon and the Stikine Valley immediately below the Tanzilla mouth. Photos. 87, 95 and 96, views of the cañon at the mouth, and 89 a view of the cañon a short distance above the entrance of the Tanzilla. Photo 91 shows the rock-walled Tanzilla gorge at its mouth.

The photographs I have referred to, give a good idea of the valley of the Stikine River from Glenora to the Tanzilla River.

Although the construction of a railway line over the section from Telegraph to the Tanzilla would not involve continuously heavy work, the crossings of the Tahoton, Tuya and Tanzilla rivers would demand very expensive structures if the line were located on the right bank of the Stikine; while if located on the left bank, a crossing of the Stikine would be necessary, probably above the Tahltan, and so involving also a crossing of this latter river, in the extension of the line to Telegraph and Glenora. In addition, this 'Great Cañon of the Stikine' is reported to extend eastward beyond the Tanzilla, fully 30 miles, and this portion of the Stikine Valley itself to be so difficult of passage, that Indian hunters ascending to the upper river waters, make a long detour, passing around these 30 miles by trails well inland, either north or south.

This part of the river is said to remain open throughout the coldest winters.

My examination of the Stikine Valley up to the Tanzilla River would alone have impelled me to search for some other more practical route. When with this is taken into consideration his 30 remaining miles of cañon extending up the Stikine, making in all some 60 miles from Telegraph, or 48 from the Tahltan, of cañon country, demanding very expensive work on the portion examined, with a probability of the other 30 miles being at least no more favourable for railway construction, I concluded that it was imperative some other and easier route should be looked for and obtained if possible, even though it should prove a radical departure from the one outlined in my instructions.

While at Telegraph I made inquiries regarding trails and possible railway routes to Lake Teslin, of several old residents of the Cassiar District, among them a Government official who had spent a number of years in the Dease Lake country. Later on I met a Hudson Bay official, who for some years had been stationed on Dease Lake, and had travelled across the intervening country to Teslin Lake.

From the information given me by these two officers, as well as from interviews with prospectors who had been up the Tuya River to its head waters, it appeared to me quite probable that a fairly good route could be obtained from the head or south end of Dease Lake to the head of Teslin Lake. This proposed route, as indicated on the sketch plan accompanying this report, would follow the west bank of Dease Lake to Thibert's Creek, ascend this creek to the Tuya watershed, cross the Tuya River at the lower end of the large lake where the river heads, thence across a low flat country to a branch of Fifteen-Mile River, and finally down this branch and river to Teslin Lake. A trail between these two lakes follows approximately the route outlined, over which prospectors have made the trip in seven days during the past winter.

Admitting that these favourable reports are to be relied on in a general way—a view I felt justified in taking—it remained for me to find a feasible route from the head of Dease Lake, south or south-eastward to some point on the Stikine River above the Great Cañon.

The season being too far advanced to allow of my examining the country between Dease and Teslin, and also that between Dease and the Stikine, I decided to proceed with the exploration of the latter section, particularly, as upon the result of this

exploration would depend the possibility even of using the Dease and Teslin section, as a link in the through railway route.

Accordingly, I continued the track survey and barometer readings, begun at Telegraph, to the head of Dease Lake, as this work did not retard the daily progress of the pack train. Here I found my barometer observations gave an altitude for the lake of 2,750 feet above the sea, a difference of ninety feet in excess of that given by Dr. Dawson; however, considering the distance from Telegraph—72 miles—this variation is not out of the way, and I therefore retained the altitude obtained by my barometer.

As noted, the track survey was continued from the vicinity of the mouth of Tanzilla River to Dease Lake, by way of the Government Pack trail, in the Tanzilla Valley. This valley is about a mile in width, and runs nearly N.E. and S.W., its southerly rim or border being formed by the foot hills of a prominent range of mountains, called by the Indians "Ho-tai-luh".

On the north too this valley is hemmed in by mountains extending from Dease Lake about 28 miles in S.W. direction, or to a couple of miles below Riley's, where this range turns north and forms the east rim of the Tuya Valley.

Between Dease and Riley's are four large creeks flowing into the Tanzilla from the north in narrow valleys cut through these mountains. The most easterly one being Eight Mile Creek, a wide rapid stream, lying in a valley of a quarter of a mile in width, that extends apparently a number of miles north-westerly.

From Caribou Camp, 36 miles from Dease Lake, a trail leads to the upper valley of the Tuya, but is reported to be swampy, rocky, and generally a hard one on pack animals.

On pages 29 and 30 of the album, are views in the vicinity of Caribou Camp, on pages 31-34 are views of the Tanzilla Valley, taken between Caribou and Dease Lake. In a number of these the Hotailuh mountains stand out prominently, especially in Nos. 99 and 100, taken at Riley's, where these mountains approach closely to the river, and present a particularly high, barren-topped member, whose height diminishes as we ascend the Tanzilla, until opposite Dease Lake, it has become a long, low ridge. (See photo. top of page 34).

Arrived at the head or south extremity of Dease Lake, I made this the initial point for the explorations to the Stikine River, and thence, following up the river, to a point 111 miles distant from the lake.

For purposes of description the route explored is divided into the following four sections, viz. :—

(*1.*) *Dease Lake—Tanzilla River Section*—15 miles—(Zero to the 15th mile.)
(*2.*) *Gnat Creek Section.*—18 miles—(15th to 33rd mile.)
(*3.*) *Ptarmigan and Moose Creek Section*—26 miles—(33rd to 59th mile.)
(*4.*) *Stikine River Section.*—52 miles—(59th to 111th mile.)

(*1.*) *Dease Lake and Tanzilla River Section.*—(*Zero to the 15th mile.*)

Dr. G. M. Dawson, Director of the Geological Survey of Canada, in his report on the 'Yukon District and Northern British Columbia.' writes as follows (p. 73):—'Dease Lake has an elevation of 2,660 feet above the sea, and lies nearly due north and south on the 130th meridian. It has a total length of twenty-four and a third miles, with an average width of rather less than one mile, being somewhat narrower at the northern, than at the southern end . . . . The country about the lake is everywhere wooded, though trees large enough for lumber are found only in sheltered valleys or on low land. It is not roughly mountainous, though several prominent summits occur. With the exception of these and some other nameless mountains, the country near the lake is merely hilly, or rises in long, light slopes from the shores to undulating wooded uplands, a few hundred feet only above it, which coalesce with the bases of the mountains. Only near the northern end of the lake do the mountains begin to crowd down more closely to the water's edge. The lake is shallow and marshy at both ends, but is elsewhere evidently very deep, though no soundings have been made in it. Rock exposures are infrequent along the margin of the lake, which, when scarped, generally shows only stratified, sandy, clayey and gravelly terrace deposite . . . . .'

From this description of the country bordering on Dease Lake, there are evidently no serious obstacles to railway construction along its west shore, where the proposed route to Teslin Lake would pass.

On page 35 of the album of photographs are views looking down the lake from its head—in No. 224 Mounts McLeod and Sullivan are seen to the left, while in the centre of the picture, faintly outlined, is Beady Mountain. These views give an idea of the topography on the upper or southern portion.

Mining operations in the northern part of the Cassiar district have centred round Dease Lake,—which is connected with Telegraph, at the head of the navigation on the Stikine River, by an excellent pack trail, while Dease River gives a good boat route northward into the Liard River country.

Should a railway route to Teslin be adopted via Dease Lake, this latter would become an important distributing centre—and contribute a large traffic to the road, possessing as it does easy communication with an extensive mining district.

With the initial point of section I at Dease Lake, as previously noted, the projected line starts on the hill-side just west of 'Lake House' (view No. 111, page 35) at a point 20 feet above the lake elevation, and follows the west or left bank of a small stream flowing into Dease Lake, on a rising grade of 28 feet per mile, for 3¼ miles, to the summit between the Tanzilla waters, going to the Pacific Ocean, and the Dease waters flowing to the Arctic. This divide is but a narrow low ridge of coarse gravel and old water worn stones, yet it has served to turn the Tanzilla River entirely from its previous course, which, if continued, would have carried the river directly into Dease Lake, whose waters lie 70 feet lower than the river bed at this point.

At this divide lies the big bend of the Tanzilla River, where emerging from among snow tipped mountains on a north-west course, the river swings sharply round to a west bearing, and then more gradually merges into its general south-west course to the Stikine River.

On page 34 of the album, is a view of this big bend of the river, and the wide Tanzilla Valley,—as seen from the hills north of the trail. Glimpses of the river through the trees can be seen along its course,—from the right of the picture towards the centre, where it has swung away from its mountain course leading towards Dease Lake, after cutting through the sharply outlined high gravel ridge, that here forms the eastern spur of the Hotailuh Mountains (photo. 229, page 34).

The Tanzilla Valley turns away from the river, at this bend, and veering to the north, merges into the wide basin of Dease Lake (photo. 222, page 34).

Passing over the divide at the 3¼ mile, the line ascends the Tanzilla, on its right or east bank, to the 12¼ mile, with a grade of 64 feet per mile to the 8th mile, and thence by one of 50 feet per mile. The line then crosses to the left bank of the river and gradually climbs the bluffs, on a grade of 127 feet per mile to the 15th mile, at the north entrance or lower end of Gnat Creek Valley.

On this section, up to the Tanzilla River crossing, the construction may be generally classed as fairly light earth work, material coarse gravel on the first 4 miles, with finer gravel and gravelly clay on the remainder.

At the 9½ mile, where the river passes through a short narrow cañon-like ravine, with steep sloping banks on the right, and a sharp wedge-shaped mass of basaltic rock on the left (photos. 115, 116 and 221, page 36) a rather heavy side-hill cut will be necessary for about 500 feet, with protection works at the foot of the slopes.

The river crossing will require two spans of 100 feet each, on masonry abutments and centre pier.

From the river crossing to the 15th mile, there will be considerable side-hill work, generally in light gravel, with rock, both loose debris and solid, at spurs of the hills. This rock is basaltic and apparently broken into irregular masses even in the ledges, making it comparatively easy to handle.

The timber on this section is small, poplar, spruce and black pine as a rule, although a considerable quantity of good fair sized spruce was seen on the river flats.

On page 36 are views of the little cañon at the 9½ mile and of the river just above it. The latter view shows some good timber on either side of the river. Photos.

118 and 224, page 37, give views of the upper part of the Tanzilla near the proposed river crossing. Where it is a rapid mountain stream, generally wide and shallow, rushing over a rock-strewn bed, with a grade of 50 to 65 feet per mile, fully double that observed on the lower part of the river.

The alignment of this section will not call for curves in excess of a possible maximum of 10 degrees.

(2.) *Gnat Creek Section.*—(15th to the 33rd mile.)

Entering the valley of Gnat Creek at the 15th mile, the projected line continues its ascent on the previous grade of 127 feet per mile to the 17½ mile, where the valley begins to broaden into the wide mountain-hemmed basin shown in photos. 122, page 37, and 124 and 219, page 38.

Through this basin the line is carried in the general direction of the creek, on a rising grade of 34 feet per mile to the 21st mile, near the upper end of Gnat Lake, thence it rises at the rate of 75 feet per mile to the 25th mile, then at 110 feet per mile up to the 27½ mile. There the basin which had begun to contract into a narrow valley at the 26th mile—(see photo. 130, page 30)—becomes still narrower, and somewhat tortuous in the creek bottom (photos. 131, page 38 and 132, page 39), as well as decidedly steeper, necessitating a grade of 158 feet per mile to the 30th mile, or head of the Creek Valley (photo. 133, page 39), where the stream splits into three small ones. At this point the line touches the margin of a wide treeless plateau, extending a long distance to the south (photo. 134, page 39) and skirting the edge of this plateau, in a south-east direction, follows the base of a series of high, bare hills to the 33rd mile, on a rising grade of 56 feet per mile. Here, with high treeless hills to the north, and rocky mountain sides and cañons on the south, the line attains its maximum elevation —5,300 feet above the sea, or 2,550 feet above Dease Lake.

The first two and a half miles of this section will call for fairly heavy work along the side hills, with occasional cuts through spurs of basaltic rock, and masses of rock debris. Thence to the 26th mile, the work will be light, clay and gravel, with a short cut through a ledge of basalt near the 22½ mile (see photo. 123, page 37) and a few crossings of the main creek and its tributary streams, by ordinary timber trestling. From the 26th to the 30th mile the work will be chiefly on the side hills, entailing considerable loose rock debris, as well as short cuts of solid rock at the little cañon (photo. 131, page 38), and through other spurs, in ascending the upper part of this narrow valley. Here a certain amount of trestling will be required to eliminate too sharp curvature. From the 30th to the 33rd mile the work can be classed as generally light, with the probability, however, of more or less loose rock on the last mile.

This section is practically through a treeless country, although timber of medium size was observed on the lower hill sides, bordering the wide basin portion of the valley to the west. Stunted spruce and poplar are found at spots along the creek, and occasionally on the side hills of the narrow valley.

The curvature on this portion of the line will be light, excepting between the 27th and 30th miles, where a moderate amount of sharp curvature will be required to lessen quantities in construction. This curvature, however, as previously noted, could be kept from becoming excessive by the introduction of trestling, but on account of the total absence of timber in this locality, it would probably be better to put in rather sharp curves during construction with a view of reducing them later on.

(3.) Ptarmigan and Moose Creek Section.—(33rd to the 59th mile.)

Leaving the main summit at the 33rd mile, on a falling grade of 50 feet per mile to 39th mile, the projected line reaches the rim of the valley of Ptarmigan Creek by a cañon-like ravine, in which lies a small lake emptying into the creek, passes round the south-east angle of the bare hills lying to the north, and descends along the south-west face of the valley to the head of Ptarmigan Creek. A bleaker and more desolate spot

than the head of this creek could not be found on the entire route, as the view of this point shown by photo. 218, page 39, forcibly testifies.

Turning through a half circle at the head of the creek, the line then descends the valley on benches that lie between the left bank of the creek and the bases of the mountains, on a grade of 157 feet per mile from the 39th to the 49th mile. Passing near the 44th mile, the mouth of a valley half a mile or more in width, that extends northward, between high, bold, rock-faced mountains, for a long distance. (See photos. 137 and 140, page 40.)

At the 49th mile the line crosses over into the valley of Moose Creek, on a falling grade of 33 feet per mile to the 50½ mile, and then begins the ascent of this valley, on the right or north bank of the creek, by a grade of 24 feet per mile to the 57½ mile, opposite Moose Lake, and a further rising grade of 43 feet per mile to the 59th mile. Here the line has reached the head of Moose Creek Valley, forming a low summit on this, its north side, while its south slope merges rapidly into the steep hill sides that here constitute the north walls of the Stikine River Valley.

Photos. 138 and 141, page 40, are views looking down Ptarmigan Creek. The first taken from the upper level of a bench at the 44th mile; the second, taken at the 46½ mile, shows the high mountain with patches of snow near its summit, lying south of the junction of Ptarmigan and Moose Creeks. A view down Moose Creek Valley towards the forks of these creeks is shown in photo 142, page 44, on the same page, photo 143 shows Moose Lake, a small pond at the 57¼ mile; and photo. 144 is a view over the low summit (59th mile) looking south towards the valley of the Stikine, with a glimpse of distant mountains on the far side of the valley.

On this section patches of loose rock will be encountered from the 33rd to the 36th mile; and between the 35th and 36th mile a large accumulation of rock debris occurs at the east angle of the mountains.

The next two miles along the hill side will entail mediumly heavy earth and rock cuttings.

Following down Ptarmigan Creek small deposits of rock debris are met with, but the benches are generally of clay and gravel, with rock near the surface in places.

Several smaller streams are crossed, requiring only ordinary trestling.

On that portion of this section lying in the valley of Moose Creek, the line will need to hug the hill sides pretty closely its whole distance, as the valley itself seems generally wet and boggy.

Masses of gray granite in irregular blocks, crop out occasionally on these slopes, and although this rock is nowhere far from the surface, yet no doubt a line can be obtained practically free from anything in excess of light rock work.

After passing the 40th mile, timber is abundant but is chiefly of small to medium size (see photos. on pages 40 and 41).

Low trestling only will be required for the stream crossings.

Good alignment can be had in general throughout this section, sharp curvature (10 degree to 15 degree curves) being necessary only between the 35th and 36th miles. The loop at the head of Ptarmigan Creek, involving a loss of distance, is introduced in order to keep the grade on this creek below 158 feet per mile (3 per cent).

The explorations to the end of section 3, that have just been noted, fully demonstrate that a practical route can be had from Dease Lake to a point on the Stikine River, above the Great Cañon, and one, too, demanding but a limited amount of construction work classed higher than mediumly heavy.

The portion between the 25th and 49th miles, which contains the severest grades, might possibly be eliminated, by a line striking more directly south towards the Stikine River from the vicinity of the 25th mile, through a valley coming in here from that direction. From the 30th mile too, there is apparently an opportunity of reaching the Stikine by way of the barren plateau, noted as extending south from this point. To decide this matter further explorations would have been demanded, which were not then considered necessary or expedient.

(4) Stikine River Section, 52 miles. (59th to 111th mile).

From the 59th mile the projected line descends, for a mile south, on the east side of a narrow valley through which Beaver Creek flows to the Stikine River, it then turns eastward following down the side hills, that here forms the north walls of the river valley, on an average grade of 143 feet per mile to the 64th mile. These slopes are well timbered, and excepting some short outcrops of gray granite, will not necessitate other than medium work. (Photos. 146 and 217, page 42 of album show views of these side hills).

At the 64th mile the line crosses Jones Creek (photo. 227, page 42) a wide rapid stream carrying a large volume of water, and reaching the level of the river flats, has not fairly entered the Stikine Valley. As compared with this same river valley between Telegraph and the mouth of the Tanzilla, a complete change in its topographical features has taken place. There the Stikine rushes through cañons and deep gorges with towering cliffs of basalt, here it flows quietly in a wide valley, with timbered flats, flanked by wooded banks rising to two hundred feet and more above the water. Beyond these on either side of the valley, the country appears broken and rough, without defined mountain ranges. A few isolated peaks are seen of which, Ben Nevis, shown in photo. 217, is the most prominent. Its southern peak could be seen, even from the river flats, at points many miles up the valley.

The Valley of Jones Creek, which enters the Stikine at the 64th mile, is about a mile wide at this point, and contains a considerable amount of white spruce reaching 18 and 24 inches in diameter. Here we found bushes of red and black currants in profusion, loaded with most delicious fruit. This valley is defined on its east side by three cone shaped mountains, named 'The Three Sisters,' with summits probably 1,200 feet above the river (see photos. 146 and 228, page 42). The crossing of Jones Creek will require two spans of 50 feet on masonry abutments and pier.

The Stikine River has a width of 300 feet opposite the 62nd mile where it first comes into view (photo. 217), flowing rapidly in a single channel. At the 64th mile it is spread out among numerous sand bars, with a bed fully quarter of a mile wide, and retains these conditions for the next two miles (photos 148 and 150, page 43).

From the 64th to the 65th mile the line crosses the south end of Jones' Creek Valley, cuts through a narrow ledge of gray granite at the 65th mile, and skirting one of the minor river channels for half a mile, enters a wide timbered flat (photos. 153 and 226, page 43), on which it continues to the 69¼ mile, passing round the south end of a sharply defined gravel terrace at the 68½ mile. Photos. 152 and 155, page 44, are views of this terrace, the broad flat lying on three sides of it, and the wide sweep of river inclosing them.

At the 69¼ mile (see photo. 154) the line strikes a land slide from the face of a prolongation of this same terrace eastward, extending up the river half a mile.

This mass of earth has evidently slipped bodily from the terrace onto a then existing narrow flat between the terrace and the river, as the river was not apparently blocked by the slide. It then settled into place without a general disturbance of its surface, where the trees are still erect, forming a secondary terrace 30 feet above the river, on this the road-bed could be placed with probable security from further displacement of the mass.

The picture shows a stratum of hard sand on the cut face, a few feet above the water, that has evidently retained its original horizontal position notwithstanding the disturbance.

Passing round the angle of this terrace the line crosses another flat to near the 71st mile, follows a narrow foreshore along the river for a half mile, then enters the flat seen in photo. 225, page 44. Near the 72¼ mile a low outcrop of granite forces the line again close to the river, near which it continues to the 73rd mile. Here the line cuts through a narrow ridge of gravel and sand, and leaving the river takes a nearly direct east course over an extensive flat to the 77¼ mile.

This flat, at its widest part, reaches a mile back from the river to a basaltic outcrop at the foot of the bluffs; it contains a considerable tract of fine white spruce, and

has several good hay meadows. Through its north-west portion a large shallow slough meanders, with quantities of coarse grass along its borders.

Beavers have made this slough by damming a small stream issuing from the hills near the 75th mile

Photos. 158, 159 and 160, page 45, are views of this slough from points on the line. No. 159 shows one of the beaver dams where recent work was evident, and where too the beavers have ingeniously built their dam so as to incorporate a large boulder in the structure.

At the 77¼ mile the line again strikes the river, which for the last 10 miles has run in a single channel of about 300 feet, but now widens, and for the next four miles occupies a bed, often half a mile in width, with numerous channels and many gravel bars, some bare, others covered with a dense growth of willows.

The line now passes over an old mud slide for about a mile in distance. Photo. 162, page 45, gives a general view of this slide, while photos. 163, 164 and 165, page 46, are detail views of the same.

As will be seen from these views, the slide lies in a nearly horizontal body from the cut banks at its head to the water's edge.

These cut banks (photos. 163 and 164) show a shallow deposit of clayey earth overlying a continuous series of hard sand strata that stand with an almost vertical face. From this it may be assumed that no further slip of consequence is likely to occur, except possibly into and along the bottom of the ravine in photo. 164, where the slide appears to have originated.

The main river channel touches the west portion only of this slide, and does not seem to have a marked errosive effect.

The whole mass is evidently solid and compact, and would safely carry the roadbed, which should be placed some distance back from the river edge, in view of a possible cutting of the slide by high water.

For the next half mile the line lies on the slope of the hill sides, which here extend down to a narrow channel of the river, dry except at extreme high water.

The foot of the bank may require light protection works at points on this channel. The line then crosses a mile of flat, containing considerable heavy cottonwood, and at the 79¾ mile cuts through a spur of the hills that reaches to the river. On the angle of this spur a recent earth slip has taken place (photo. 166, page 46), necessitating a short piece of medium heavy cutting.

At the 80th mile an older land slide of about 1,000 feet in length is crossed, as well as a short piece of another slide at the 80½ mile. These both appear settled and compact, and able to safely carry the road bed. On neither of them will more than light earthwork be required.

Photo. 169, page 47, is a view of the first of these slides, as seen from a short distance further up the river. The peculiar 'hummocks' into which the clay was thrown where these slips took place, are shown in photos. 168, 216 and 172. The mounds were originally sharp-edged pyramidal masses of hardened clay, now weathered into smooth cone-shaped forms.

Photo. 173, page 48, shows an angle with vertical faces of hard stratified sand, at the 80th mile, left at the top of the slide, where it broke away, a loamy gravel deposit caps the sand strata.

Photo. 170 is a view up the river from the 80¼ mile, showing the wide sand bars covered with low willows to the right and heavy timber on the main land to the left.

The line now traverses a flat from ten to fifteen chains deep, fairly well timbered with spruce, reaching to the 81½ mile, where a low outcrop of conglomerate is met with. This rock comes to the water's edge, shelves into the river below the water level, and extends along the bank some 500 feet. It lies nearly flat, with several strata of sandstone running horizontally through it, and is, in general, sufficiently low to allow of the road bed being carried on its surface, by making a few shallow cuttings.

Photo. 174 gives a view of this outcrop, reaching from the dark heavy timber, on the left of the picture, to the cut bank along the river edge above.

The line is then taken some 600 feet across the face of this cut bank, on which, at about 25 feet above the water level, appears a belt of stratified sand, resembling that

shown in photo. 173. This stratum of hard sand serves to check any further tendency of the bank to cut away, and would no doubt by its tendency to stand with a practically vertical face, greatly lessen the work in side-cutting, necessary to place the road bed along the face of this bank. Protection works at the foot of the bank slopes will be required here.

Photo. 175, page 49 taken from the trail, gives a better view of this cut bank, than the previous picture, being a half mile nearer.

The horizontal bed of sand just referred to, can be seen, faintly marked across the bank in this view. The flat, partly submerged bed of conglomerate, shows here, near the middle of the river channel, forming a long, shallow rapid.

The line then continues on the slopes and narrow foreshore, passing over a slide of some years since, as evidenced by trees four to six inches in diameter now growing on it, which appears safe, solid and reliable for the roadbed.

Near the 84th mile the line crosses Cottonwood Creek, a shallow, rapid stream with low gravel banks, flowing through a valley half a mile or more in width, that extends a considerable distance northwards.

Rising out of the heavily timbered flat at the mouth of this creek, the line passes over a low gravel terrace lightly timbered, and near the 85th mile cuts through a narrow ridge of sandy gravel, showing rock not far from the surface. At the 85th mile it is carried some 800 feet along the face of a cut bank (photo. 177, page 49), and then over half a mile of old land slide.

The photos. on page 50 give views of this cut bank and slide.

The slide has the same characteristics as those previously described, and like them will safely support the roadbed. At the foot of the cut bank protection works will be needed to guard the slopes during periods of high water.

Photo 179, page 51, gives a partial section of this bank, showing horizontally stratified sand overlaid by coarse gravel and earth.

From this slide the line follows the river closely up to the 88¼ mile, it then crosses a sparsely timbered flat reaching to the 89th mile. From the hill side at this point views 186 and 187, page 52, are taken, looking down the Stikine Valley, and view 188 looking across the river to the plateau and hills on the opposite bank.

At the 89th mile the side hills slope directly to the water's edge, and carry, low down, an outcrop of basalt and sandstone, extending to the 89½ mile. Over this half mile some shallow rock cuttings only will be necessary, as the roadbed can be placed generally on the surface of the outcrop. But at the 89½ mile a high irregular mass of conglomerate is met reaching well out into the water, and necessitating a heavy cut some 200 feet long.

Crossing a short bit of flat the line again strikes an outcrop of conglomerate, extending up the river for half a mile—fortunately its top is nearly flat, not over twenty feet above the water level—and so admitting of the roadbed being carried on its surface with light work in general.

Photo. 214, page 52, gives a view of this outcrop, with the river along its base, looking west down the valley.

The line now follows the river closely to near the 91st mile, then cuts across a bend, on a flat at the foot of high conglomerate cliffs, turns round the east angle of this bluff onto a narrow strip of flat and foreshore, which takes it to the 93rd mile. Here the line strikes a high bluff of conglomerate and sandstone, from 30 to 50 feet above the water at the river edge, requiring about 600 feet of mediumly heavy cutting in two sections of 200 and 400 feet respectively.

Photo. 190, page 53, gives a view of the down-stream face of this bluff. Opposite this point the river runs in a single channel of approximately 200 feet in width.

Emerging from this rock cut, the line is carried near the foot of the bluffs and close to the river for a quarter of a mile, when it turns away from the river, which here bends sharply to the south-east, but still follows the base of the now diminishing bluffs to the 94th mile, then crossing half a mile open, sparsely timbered flat it is again gradually hemmed in between the river and high cliffs of conglomerate, with ample room, however, up to the 95¼ mile.

At the 95½ mile, Schreiber Cañon is crossed. This is a deep ravine with high vertical cliffs of conglomerate at its mouth, changing to steep, partially wooded slopes and cut banks quarter of a mile further up. A small creek runs through the ravine to the river, carrying many boulders of granite, conglomerate and sandstone in its bed.

To reduce the quantities of rock excavation at the cañon mouth the grade of the line rises to it from the 95¼ mile, taking side hill work up to within 500 feet, then a heavy cut will be necessary east and west of the cañon, ten to twelve hundred feet in length, depending in quantity on the grade adopted.

This crossing will require a structure of 75 to 100 feet span.

Photographs 195 and 196, page 54, are views of this cañon, showing the rock walls at its mouth and the cut banks a short distance up the ravine, where the pack trail was made.

At the 96th mile two short cuts through another point of these conglomerate bluffs will be necessary. Thence to the 97th mile the line is carried on a low terrace, overlying this same conglomerate formation, which, however, is now cropping out only at the water level.

At the 97¼ mile the line crosses a river 150 to 180 feet wide, with a rapid current and clear cold water. This unnamed stream I have called Blair River. It issues from among the high mountains to the east-north-east, and from the volume of water discharged into the Stikine must drain a considerable watershed.

The Stikine River from the 64th mile, where the projected line first touches it, has a general course almost due east and west to the 91st mile, thence to the 96½ mile, it flows south-west, then having swung through an arc of 90 degrees, and received the waters of Blair River, it takes an average N. W. and S. E. course to the 111th mile.

Photo. 213, page 54, gives a comprehensive view of this big bend in the Stikine River, with the mouth of Blair River to the left, at the angle of the bend, and in the distance one of the mountains lying to the south of this last river.

Photos. 197, 198 and 199, page 55, give nearer views of the junction of these two rivers.

Photos. 191 and 194, page 53, show the wide flat around which the Stikine makes its big bend, and in the far distance the rugged mountains lying towards the upper waters of Blair River.

On an island opposite the 97th mile were found the only traces of white men seen during our explorations from Dease Lake. Half buried in sand and debris were the remains of a pair of rubber boots, a well-worn rocker-bottom of sheet iron, and a rusty gimblet of the old type. Evidently search for gold has been made in these upper waters of the Stikine, but with what success no one appears to have heard.

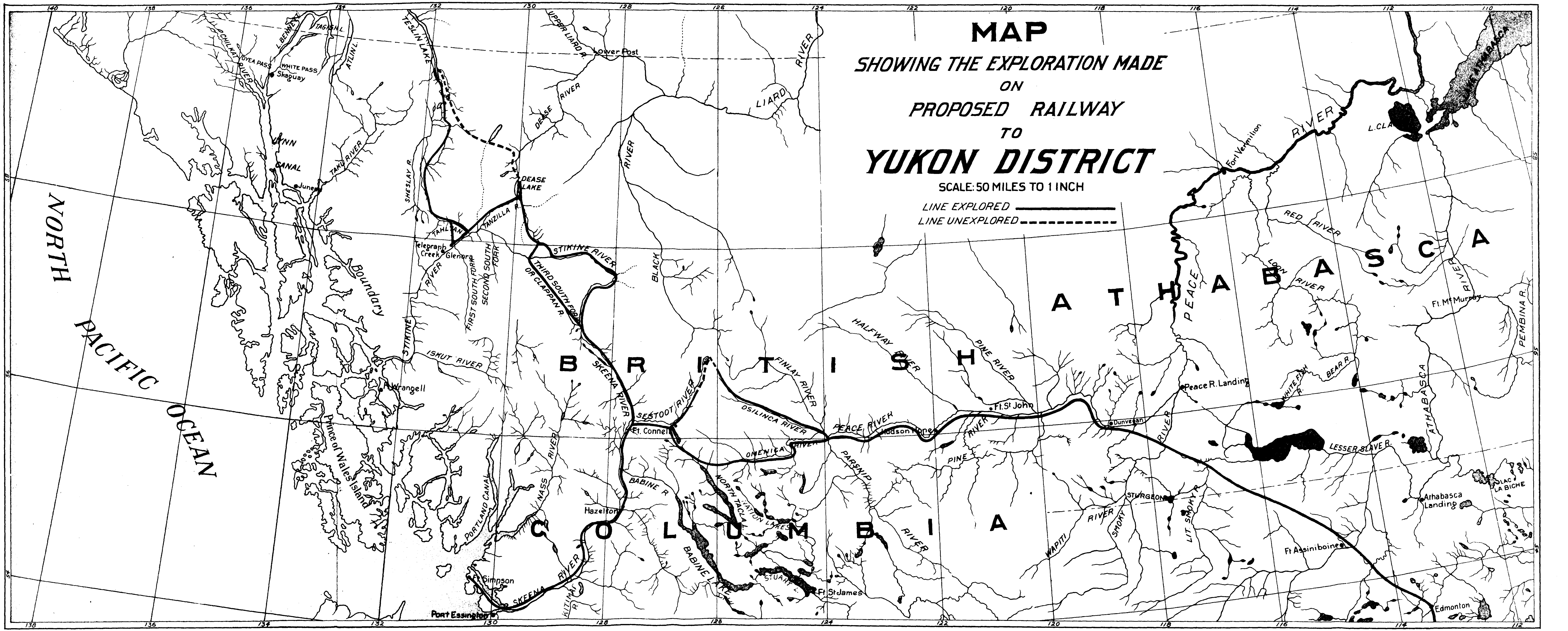
For the crossing of Blair River two spans of 100 feet will be necessary. From here the projected line takes a direct course to the 101st mile, over a wide timbered flat forming the delta of these two rivers. A considerable quantity of excellent timber is to be had here, and any amount of good feed for horses and cattle; the soil too seems generally of good quality.

Between the 97th and 101st mile there are no bluffs on the east or right bank of the Stikine—but on the left bank opposite the 99th mile, the hills forming the south margin of the big-bend plateau, again reach the river, this time in the form of a low rocky ridge, as shown on the photos. 201 and 211, page 56, and bending round to the direction of the river follow it closely up to and beyond the 111th mile—(photos. 201 and 211, page 56.)

At the 101st mile the bluffs that skirt the south and east limit of Blair River Valley reach the right bank of the Stikine with a sharp apex of high red granite cliffs near the river. These bluffs then follow the river closely to near the 106th mile, with similar high granite outcrops at several points.

From the cliffs at the 101st mile photos. 202 and 203, page 56, were taken. The timbered flat over which the line is carried from the 101st to the 102nd mile is shown in 202, while 203 is a view south across the river to a distant mountain with patches of snow or glaciers near its summit.

From the 102nd to the 105th mile the line keeps near the river on narrow flats or low terraces at the foot of the bluffs, without any feature of moment, excepting a short


MAP
SHOWING THE EXPLORATION MADE
ON
PROPOSED RAILWAY
TO
YUKON DISTRICT
SCALE: 50 MILES TO 1 INCH
LINE EXPLORED
LINE UNEXPLORED
NORTH PACIFIC OCEAN
BRITISH COLUMBIA
ATHABASCA
Boundary
Prince of Wales Island
TESLIN LAKE
UPPER LIARD R.
Lower Post
LIARD RIVER
DEASE RIVER
DEASE LAKE
TANZILLA R.
TAHLTAN
Telegraph Creek
Glenora
STIKINE RIVER
SHESLAY R.
FIRST SOUTH FORK
SECOND SOUTH FORK
THIRD SOUTH FORK OR CLAPPAN R.
ISHUT RIVER
Ft. Wrangell
SKEENA RIVER
SESTOOT RIVER
Ft. Connell
BLACK RIVER
FINLAY RIVER
OSILINCA RIVER
OMENICA RIVER
HALFWAY RIVER
PINE RIVER
PEACE RIVER
Hudson Hope
Ft. St. John
Peace R. Landing
Dunvegan
PARSNIP RIVER
BABINE R.
BABINE LAKE
NORTH TACLA
TATLA LAKES
ST. JUAN L.
Ft. St. James
Hazelton
NASS RIVER
PORTLAND CANAL
Ft. Simpson
Port Essington
KITIMAT R.
TAKU RIVER
LYNN CANAL
Juneau
CHILKAT RIVER
DYEA PASS
WHITE PASS
Skaguay
L. BENNETT
TAGISH L.
ATLIN L.
Fort Vermilion
L. CLAIRE
LAKE ATHABASCA
RED RIVER
LOON RIVER
WHITE FISH R.
BEAR R.
LESSER SLAVE R.
ATHABASCA RIVER
Ft. McMurray
PEMBINA R.
LAC LA BICHE
Athabasca Landing
Ft. Assiniboine
Edmonton
WAPITI RIVER
SMOKY RIVER
LIT. SMOKY R.
STURGEON
140
138
136
134
132
130
128
126
124
122
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114
112
110
58
56
54

cut through the toe of a granite cliff at the 103½ mile. At the 105th mile the line is forced for about 500 feet along the face of a cut gravel bank, necessitating heavy side hill work with protection at the foot of the slopes. Here, at the toe of the cut bank, although the bed of the river is wide, the main channel is contracted and the current very swift. An out-crop of rock just above the water's edge has prevented further encroachment of the river on the banks, and would form a foundation for what protection works are found necessary here.

At the 105¾ mile an outcrop of red granite reaches the water, requiring a side cutting of some 300 feet in length to carry the line through (photos. 205 and 206, page 57).

The projected line then passes on at the base of a high wooded terrace, to the 109¼ mile where it crosses a rapid mountain stream defining the eastern limit of this terrace.

Photos. 206 and 210, page 57, show views of part of this terrace, the first looking up the river towards it, the other looking down the river from a point on it, across the wide timbered flat lying on the opposite side of river, between the 107th and 108th miles.

From the 109¼ to the 111th mile the line is carried at the foot of the wooded bluffs, on low terrace-like narrow flats. At a few points the hill sides, reaching to the river edge, force the line into partial cuttings on their slopes through a generally gravel and clay formation.

The Stikine River from the 97th to the 111th mile has a general width of about 200 feet, increasing to 300 in places.

Photos. 207 and 208, page 58, are the most easterly views taken of the river, 208 looks up the river, nearly in a south direction from bluffs behind the 111th mile, showing in the distance no change in the general topographical features from those of the country recently traversed. My Indian guide stated that for 30 miles and more the river wound through a similar country, and then entered among mountains, reaching finally a low summit, on the other side of which was a large lake discharging to the eastward.

At this point, owing to the lateness of the season, I was forced to discontinue my explorations, and reluctantly leave unanswered for the present, the interesting question, 'To where will the head waters of the Stikine lead?'

Regarding the grades of the projected line over this section, it is sufficient at the present to state that the grades of the river vary from 11½ to 16 feet per mile (with small rapids at a number of points) and the topography of the valley is such that low grades can be obtained in general with light work.

Grades in excess of 26 feet per mile, but not necessarily over 52, could no doubt be advantageously introduced at a number of places on this section to lessen the quantities in construction.

The minor streams crossed do not call for other than ordinary trestling, the more important ones have been considered in the general description.

On this section there is a large amount of good sized timber, spruce and cottonwood, on the river flats. The side-hill timber is smaller, and chiefly poplar, with small pine scattered among the poplar on the higher terraces.

The explorations from the 64th mile have been, in a measure, confined to the right, or north and north-east banks of the Stikine, on which the track survey was made. However, I have taken note, as far as possible, of the conditions obtaining on the opposite banks, where it would seem there are fewer serious obstacles to a railway line, such as rock exposures and mud slides, over the portion between the 64th and 97th miles, than on the right bank. Still it would not be safe to assume that such is really the case. But above the 97th mile the work of construction would be more difficult on the left bank, where the flats are narrower and of less extent, the hill sides generally rocky and steep, and the conditions less favourable than on the right bank.

A more detailed examination of the left bank should be made, between the 68th and 99th miles, in connection with future preliminary instrumental surveys.

It is possible that the most economical location would be obtained by crossing over to the left bank below the 69th mile, and remaining on that side up to the vicinity of the 99th mile, then re-crossing to the right bank. By this change the crossings of Blair

River near the 97th mile, and of the mouth of Schreiber Cañon, about two miles lower down the river, would be eliminated. These would practically offset the crossing of the Stikine at the 99th mile, leaving the lower crossing of the Stikine, below the 69th mile, as the one heavy piece of bridging to be considered in comparing the relative cost of construction on the two sides of the river between the 68th and 99th miles.

In favour of the south bank must also be taken into account a considerable saving in distance by cutting off the big bend of the Stikine below the 99th mile, as the line in this case would keep along the base of the hills at the south margin of this flat.

GENERAL REMARKS COVERING THE WHOLE 111 MILES.

MATERIAL FOR CROSS-TIES.

An abundance of timber suitable for ties can be obtained at a number of points on the first fourteen miles south-east from Dease Lake, and adjacent to the proposed route. But from the 14th to the 40th mile there is no such timber nearer than one or two miles from the line. However, for this portion, ties would doubtless be hauled by construction trains from the nearest source on that portion of the line already built. From the 40th to 59th mile, there is a sufficiency of the timber near the route, and from the 59th to the 111th mile, an abundant supply can be obtained along the proposed line.

TRESTLE AND CULVERT TIMBER.

An ample supply of timber for these purposes can be had on the Stikine River flats, also on those of the Tanzilla River, although the supply on this latter river is much more limited. The timber referred to is spruce, of pine there is none whatever of sizes suitable for construction.

STONE.

Stone for construction purposes (bridge piers, abutments, &c.) can be had within reasonable distance of the site of the proposed crossings.

BALLAST.

Good gravel ballast was found at numerous points along the route.

GRADES.

The grades on the entire distance of 111 miles may be proportioned as follows :—

Level and up to 1 per cent—74 miles, or 67 per cent of the whole distance.

1	per cent	to	2	per cent—	11¾	"	10	"	"	"
2	"		2½	"	7¾	"	7	"	"	"
2½	"		3	"	17½	"	16	"	"	"

APPROXIMATE ESTIMATE OF COST.

An approximate estimate, based on prices in Eastern Canada, of the cost of construction (road-bed and permanent way) of these 211 miles, may be made at the following rates :—

74 miles at $14,000 per mile	$1,036,000
32 " 23,000 "	736,000
5 " 35,000 "	175,000
Steel bridges on masonry abutments and piers	75,000
Total	$2,022,000
Average per mile	$18,216

N.B.—It must be clearly understood that these figures are for similar work in the East. The uncertain prices for labour, transport and supplies in the North-west preclude the possibility of arriving at a definite price for construction in that part of Canada.

As already noted, the explorations were discontinued at a point distant 111 miles from the south end of Dease Lake, being approximately 247 miles from Lake Teslin via the Dease Lake route, and 286 miles via the Tahltan River route; showing some 39 miles in favour of the former route. In addition, it should be specially noted that the route via Dease Lake eliminates entirely that portion of the Stikine River valley known as the "Great Ca on," to which reference has been made in the earlier part of this report.

In conclusion I would state, that during the three months between sailing from Vancouver and returning there, my party covered 1,670 miles of travel by ocean and river steamers, and about 400 by trail.

183 miles of track survey were made in connection with the explorations.

The whole respectfully submitted.

JOHN S. O'DWYER,
M. Can. Soc., C. E.,
Engineer in Charge.

OTTAWA, February 8, 1899.

To COLLINGWOOD SCHREIBER, Esq.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals.

OTTAWA, April, 1899.

SIR,—In compliance with your instructions received on June 19, I left Ottawa for Edmonton on June 20, 1898, where I intended to complete the field outfit required, and arrange my party.

The trip by the Canadian Pacific Railway was very pleasant, and I arrived at Edmonton, on June 24, having suffered no delay.

Immediate steps were then taken to hire competent men and to complete my outfit, and during my stay in this place, I took every occasion afforded me to gather information of the country I was about to explore.

As part of the exploration was to be carried out by water and part by land, particular discrimination had to be exercised in the choice of hands; horses and their outfits had also to be obtained, the purchase of which demanded considerable time. However, everything was in readiness, when the greater part of my provisions bought in Ottawa, arrived in Edmonton, on July 6.

In the meantime, finding that I would have to purchase too many horses to carry my outfit and provisions, weighing about 9,500 pounds, through the whole distance, and being already late in the season, I decided to let my freighting out to contract, being certain to save considerable time and money. I accordingly, through the medium of the Edmonton *Bulletin*, asked for tenders, many of which were received.

The price asked ranged from 11 to 21 cents per pound, for transportation of goods to Hudson Hope, that is about half-way on my work.

As the lowest tenderers, who appeared to be traders on Peace River, offered to do the work in less time than the others, and with first class guarantee, I made arrangements with them, and a contract was accordingly signed with Messrs. Brick Bros. for transportation to St. John at the rate of 10 cents per pound, and at 11 cents to Hudson Hope.

On July 8 at 4 o'clock p.m. everything was on its way to these points and I was ready to start with my party, which consisted then of Messrs. A. T. Kerr, Assistant Engineer, F. de C. Davies and T. P. Heatherington, companions, besides a cook, three packers and two axemen, who were also supposed to be good boatmen.

I had twenty-one horses, three of which belonged to my packers.

On the verge of our departure from Edmonton a load of hay, which was being drawn into the corral where I kept my horses, caused a panic among them and five or six of them ran away through the streets and neighbourhood. It was 8 o'clock p.m. before we could set out, and we camped four miles from the town.

We left camp early on the 9th, hoping to make a good day's journey, but we had barely left St. Albert village, which is situated nine miles from Edmonton, when a dog frightened one of the horses and there was again a general stampede. We lost sight of some of our horses, and the remainder of the day was spent searching them. It was only next morning that we could resume our journey. Beside the delay thus occasioned, the loss of a certain quantity of provisions was also sustained, principally canned meat, carried away by thieves. Bacon was the only kind of meat left us for our journey as far as Lesser Slave Lake.

After travelling quietly all day on the 10th, we camped near Qui Barre River, on an Indian reserve, 29 miles from Edmonton.

On the morning of the 11th we left camp at 8 o'clock. The temperature was high all forenoon, and in the afternoon a frightful thunder and hail storm broke upon us. At 4 o'clock the first thunderbolts were heard, then it began to rain and hail, and shortly after the storm was raging. Hail the size of pigeon's eggs covered the ground to several inches thick; the wind was blowing with great violence, tearing and throwing down large trees by our sides. This was more than sufficient to start my nervous horses again, and many of them darted through the woods and quickly disappeared. Fortunately,

after the storm we found the horses with their packs undisturbed, resumed our march and in the evening reached Lake la Nonne, where we pitched our tents.

Having on the 11th travelled nearly 30 miles, on account of scarcity of water we stayed in camp all forenoon on the 12th to let the trail dry and allow the horses to take some rest. Advantage was taken of this delay to catch pickerel and pike, which abound in the lake, thus adding variety to our menu for a few meals.

Three miles from this lake we crossed Pembina River on a ferry. On the banks of this river I met a gentleman named G. McDonald, of Montana, who was established there since spring and had cleared enough land to cultivate a nice little vegetable garden. Upon examining same, I noticed some vegetables that were in a very promising condition. He gave me a few bunches of lettuce that were highly appreciated by the party.

Owing again to the scarcity of water in this region, we had to march till 10.45 p.m. before we could find water for the horses. We reached Paddle River and camped at an approximate distance of 72 miles from Edmonton.

Up to this date, July 13, we had travelled through a partly open prairie country, excellent for agriculture, a large wooded tract extending over 60 miles is now before us.

In the afternoon of the 14th we crossed Athabasca River on the ferry, a few miles below Old Fort Assiniboine. Notwithstanding that the water was very high and the current swift, the river was crossed without accident, but the water was rising fast and by the next morning, having attained 14 feet, the ferry rope broke and the scow was carried away by the current.

On the evening of the 19th we were camped at the foot of Swan Hill. Since the 14th we had travelled through swampy country and in many places had to rebuild bridges which had been carried away by the flood.

On July 20 we went over the Swan Hills, which rise about 1,100 feet above the neighbouring country. No serious difficulty would be experienced I believe in constructing a railway in this region until the Swan Hills are reached, but here is an almost insurmountable obstacle which, however, might be avoided by taking a westerly direction towards Smoky River, where I am informed the country is almost level.

At noon on the 25th we reached Lesser Slave Lake, having travelled about 235 miles from Edmonton, or an average of about 17 miles a day.

A few of my horses being sick and others not seeming fit to continue the journey, I traded three of them and bought two others.

A much needed rest was taken while awaiting my provisions, which reached this place on July 30 via Athabasca Landing, Athabasca River, Lesser Slave River and Lesser Slave Lake.

On August 1, having taken a new supply of provisions, we left Lesser Slave Lake for Peace River Landing and arrived there on the evening of the 4th.

On the 5th we swam the horses across the river. The width of the river at this point is about 500 yards and the current is swift, but we managed to reach safely across.

We arrived at Fort St. John on the evening of the 17th. Everybody was in good health and the horses in good condition.

At St. John we were delayed three days waiting for our provisions, about 3,000 pounds of which were stored here to finish the work on our return to Edmonton.

On the 20th, having taken a sufficient quantity of provisions, we resumed our march towards Hudson Hope, where we arrived on the 23rd, at 8.30 p.m., the remainder of our provisions reaching us at the same time. The greater part of these were left at Hudson Hope, taking only what was necessary to reach the point where I was to commence operation and back to Hudson Hope.

On the 24th we began portaging our provisions over Hudson Hope portage, a distance of about thirteen miles.

On the very first trip we had the misfortune of losing one of our horses, which was frightened by a dog and ran away on the bank, then over a cliff into the river, where it was lost with its pack in a rapid.

On the 29th we were ready to leave the west end, that is the head of the portage, having had the good luck of finding there a boat, that we were able to thoroughly repair in a day, and sufficiently large to carry all our goods.

My head packer was then sent back to Hudson Hope with the horses, to send them to pasturage. The Hudson Bay post was not yet opened, and there were miners camped in proximity to the place where I had left my provisions, and many others were going up and down the river, so I decided to leave another man to look after the provisions until our return.

On leaving Lesser Slave Lake, a man had been hired for the purpose of towing our boat later, before leaving the head of the portage, towing being a very laborious job, and fearing a want of help, I hired another man who had considerable experience about the navigation of that river.

On August 29 we set out on our journey to ascend Peace River as far as the Finlay Rapid, a distance of about 78 miles.

The 3rd of September we reached Parle-pas Rapid, which was ascended without difficulty.

At noon on the 6th we were opposite Mount Selwyn, which appeared to me the highest point in the vicinity.

Wishing to obtain a general view of the surrounding country, I ascended the mountain accompanied by my assistant and one of my men. No trouble was experienced up to an elevation of 1,000 feet, but then the slope became very steep in some places. Between the elevations of 1,200 feet and 1,900 feet above the river, blueberries of excellent quality and extraordinary size were found. At the elevation of 3,000 feet no more trees are to be seen.

The summit, according to my barometric observations, is at 4,210 feet above the river, is completely barren of all vegetation, and on the north side of the neighbouring peak a large quantity of snow was seen.

On the south side of Mount Selwyn many snow-capped peaks were observed, but no valley was seen, and on the north side the country was of the same character, except that no snow was visible, probably on account of having before us that side of the distant mountains exposed to the sun.

The Peace River valley could be seen for some miles towards the east, and on the west the valley at the forks of the Finlay and Parsnip and the beginning of the west range was also observed.

Our return to camp was rather difficult, on account of a sudden cloudiness that occurred while we were passing through bushy encampments covered with fallen trees; we arrived at 10.30, just as a severe rain storm broke upon us.

On September 8 at 11.30 we reached Finlay Rapids; this point was as far as I intended to ascend with the boat, it being about one mile from the place where my exploratory observations were to begin on our return trip.

It was exactly two months since we left Edmonton, having travelled over 700 miles by land and water without any serious accident.

Beginning of Exploration.

8. On the day of our arrival, at one o'clock a.m., my exploration, properly so called, was begun. Accompanied by my assistant, I left for the forks of the Finlay and the Parsnip, but, on account of the width of the basin at the forks, the flatness of the country towards the west, and the slow progress that we were making through the thick bushes, I decided to return to camp.

9. I left early the next morning with my assistant and one man, and ascended Parsnip River in a canvas canoe, about 3 miles from its mouth. Here was found a convenient place for constructing a bride across the river, but the increased length of the projected line would have to be taken into consideration.

Finlay River was then explored for a distance of 6 miles, and at a late hour the same day we returned to camp with some difficulty, owing to darkness.

10. On the 10th I continued my exploration on the Finlay, but crossing Peace River, just below the rapids, and opposite to my camp. I took a north-westerly direction until we reached the foot-hills, which were then followed towards the west, reaching Finlay, at that point where we observed the hills in close proximity of the river, for the first time.

The route just travelled was practically level, rising slightly in the direction of the mountains, and deep coulées or creeks were crossed; we were then about 100 feet above the level of the river. Some slides being seen at a distance of a quarter of a mile on each side of us, while I noticed that the opposite shore of the river was so low as to be flooded at high water to the extent of half a mile distant.

Finding no suitable place on this river for the construction of a bridge, we returned to camp at 8 p.m.

12. On Monday, the 12th, I returned to the same place that had been visited on the Parsnip a few days before, and by means of the sextant, measured the width of the river, which was found to be 960 feet wide at high water and 550 feet at low water.

The bed of the river is composed of very compact gravel, affording an excellent base for the building of a bridge, which would have to be 950 feet long and about 32 feet above low water level.

The maximum depth of the water at that place is 4 feet, and does not rise more than 15 feet at high water.

A flat exists on each side of the river, that of the west side rises to about 5 feet above high water, while on the east side it is 7 feet.

For a distance of two and one-half miles, the construction of a railroad would be very light and with very little grading, the ground being absolutely level, but curves of a small radius would have to be introduced, on a total distance of about three-quarters of a mile. After the 2nd mile, the line could be constructed easily and at little expense, on the slope of a somewhat irregular plateau elevation of about 300 feet above the river. The line could follow the river for a distance of one-quarter of a mile below Finlay Rapids, only one light cutting through friable rock being necessary.

From Finlay Rapids as far as the 7th mile, a practically straight and level line could be built at the foot of a plateau, rising 150 feet above the river, but, owing to the marshy and soft condition of the ground in certain places, for the distance of about half a mile, the road-bed would have to be consolidated.

An alternative is also possible, through the plateau just referred to, the grade in this case being uniformly 30 feet per mile, until the level of the plateau is reached.

The plateau is perfectly dry and level for a distance of two and one-half miles, but in descending to the lower level, the construction would be more difficult and expensive.

Between the 7th and 8th mile, a high mountain rises near the river, but there is sufficient room, at its base, to allow a railway to be cheaply built, the stony and and clayey slope being generally of an easy grade, not above 75 degrees.

Only two small creeks have been crossed up to this point.

No serious difficulty is apprehended on the 8th and 9th miles.

The construction would not be expensive, as the country is composed of several plateaus, varying slightly in elevation, that is about 40 feet above the level of the low water.

At the beginning of the 10th mile there is a creek, necessitating the construction of a bridge about 75 feet long and 10 feet above the water.

On the east side of this creek, a point of land trends towards the river, where it ends in solid rock, at a height of 40 feet above the water, but it rises quickly. On account of this point the line should follow a curve of 10 degrees and pass through a cutting of a few feet in the rock.

For the distance of 400 feet, the river has a coarse rocky shore, which, however, presents no serious difficulty and should be easily blasted.

At the beginning of the 11th mile the river turns at almost a right angle towards the east, and as the mountain is very close to the river, besides a 10 degree curve, the embankment would have to be protected from the action of the water for a distance of 200 feet.

Along the 12th mile considerable cutting is necessary and the line should follow slight curves on account of rock ledges which extend for half a mile, to the edge of the river. Then a slidebank of sand and gravel, 200 feet long and 150 feet high, would necessitate a heavy side cut, but the expense of this work would be compensated by the use of the gravel as ballast.

At about the middle of the 13th mile another gravel slide bank 300 feet long is met, sloping at 38 degrees to a height of 200 feet.

The gravel found there is of excellent quality for use as ballast. From this point the side of the mountains are very steep, almost perpendicular in places, and close to the river there is sufficient space, however, for a line to pass where no considerable trouble should be experienced as the slope is generally very close to the river.

At the foot of Mount Selwyn, that is to say, at the beginning of the 15th mile it might be necessary to bore a tunnel of about 150 feet in order to avoid a snow slide from the side of the mountain.

For the distance of three-quarters of a mile, rock ledges rising from 20 to 90 feet are passed, but the slope of the rocks being only 30 or 35 degrees, no great expense should be incurred.

From this point to the 22nd mile, the ground is composed of a succession of plateaus varying in height from 30 to 100 feet above the low water level, and the rocky portions might easily be avoided.

Three creeks are crossed, one of which requires a bridge of 70 feet span, the other two are unimportant.

On the 22nd mile, a cutting in the rock, varying in depth to 30 feet by 400 feet in length. At this point a gravel bank 1,200 feet long, sloping at 35 degrees to a height of 300 feet. would furnish another supply of ballast for the line.

From the 23rd mile to the middle of the 30th mile, the ground is most suitable for the construction of a railway.

The various plateaus would be successively passed without excessive grading.

Where the mountains approach the river the plateaus are naturally higher, and the slope is about 35 degrees. Rock is seen in some places on the shore, but may easily be avoided almost everywhere.

Four bridges, varying from 15 to 70 feet in length, would be required over creeks in this section.

In general, the creeks are not deep, especially at their mouths, on Peace River, where sand and gravel bars have been formed in many cases rising out of the water and dividing the creeks into small channels.

On account of the shallowness of the creeks, bridges could be built very low.

The last stream crossed is a small river 60 feet wide named Clear-water River. It should be crossed by the line as close to the mountains as possible, on account of a large flat gravel bar near its mouth which is often flooded by the waters of the Peace.

From the Clear-water River to Parle-pas Rapids, there is no difficult or expensive construction.

The general rise of the plateau above low water does not exceed 50 feet.

Above Parle-pas Rapids the elevation of the river, high and low water, was determined with regard to the sea level, and was found to be 1,945 and 1915 feet respectively, showing a difference of 30 feet.

From the initial point of my exploration of the Parsnip River the difference of high and low water is about 15 feet, and no change is noticed until we reach the Parle-pas Rapids. Just below the rapids I notice a slight decrease which keeps about the same until we reach the beginning of the 70th mile; here, I notice a slight increase, and continues to increase rapidly until we reach the beginning of the cañon; at this point I find high water mark to be 40 feet.

This is no doubt due to the enormous accumulation of drift-wood collected in the narrow passage at the beginning of the cañon, which at certain seasons of the year, I have sufficient proof that the water is forced back up the river, a distance of 7 miles. The distance between Parle-pas Rapids to the 68th mile affords an excellent site for the construction at a low cost of a first-class railway line. The valley stretches

out, the plateaus are wider and of a more uniform elevation, the hills are lower with an easier slope, and above all the rock disappears. Three small streams have been crossed. One which is called the Wide Valley River would require a 60-foot bridge, but the other two are of much less importance.

From the 68th mile, within one mile below the first creek flowing from the west into the cañon, the line could be built with little or no difficulty, and even as far as the entrance of the cañon it would entail little cost.

Half a mile further into the cañon a part of sandstone plateau about 1,200 feet long seems to have faulted and fallen into the river, leaving a wide open gap, at the bottom of which large pieces of rock are piled up, presenting a very wild aspect.

Here considerable filling would be necessary. From this depression in descending the river the ground is nearly level for the distance of about half a mile; then there is a hill which the river seems to have cut in two, and the ground correspondingly rises to the height of 300 feet. The river at this point flows between perpendicular walls about 450 feet high. These walls are covered with impure and friable clay, and the mountain rises with a slope of 45 degrees to a plateau about 350 higher, or about 800 feet above the river. This elevation is constant for a distance of some 3,000 feet.

A stream of the same appearance as the river, coming in from the south-west, is 50 feet wide, and banks at an elevation of 400 feet are 450 feet apart at the top. On the other side of this stream another plateau rises at 622 feet from the water. This plateau extends for a mile along the river, with perpendicular walls 200 feet high, then sloping at an angle of 45 degrees to the top of the plateau.

Below this point the ground quickly falls several hundred feet, and keeps a uniform elevation for about 1½ miles.

By the cursory examination of this section of the country, I am safe in asserting that, owing to the almost insuperable difficulties and excessive cost, the opening of a curved tunnel 1½ miles long being necessary, it would not be advisable to attempt building a railway line in close proximity on the south side of the cañon.

An alternative line, and perhaps a less expensive and otherwise preferable one, might be passed as indicated by a broken line on my plan, but it would necessitate the erection of two single-span bridges six hundred feet long, and the grade, although very light for the greater part, would be about three per cent for a distance of 3 miles from the second bridge.

Endeavouring to avoid all these difficulties, I examined the country at a greater distance from the river, and with great pains went over a large section without, however, meeting with very much better results. Four creeks would require bridges, and the increased length of the line would render it very expensive. The first stream crossed on the 77th mile would have to be spanned by a bridge 350 feet long, including approaches, at a height of 100 feet; at the second stream, which is 25 feet wide at the bottom, situated at the 80th mile, a single span, 400 feet long by 300 high, would also be required. The banks of these streams are much of the same character as that of Peace River, that is to say friable sandstone covered by a bed of clay several hundred feet deep.

The country next in view is a perfectly level plateau, and for a distance of 2 miles leaves nothing to be desired from the standpoint of economy for the construction of a railroad.

To maintain a uniform grade the line should follow a kind of bay more or less indented by shallow gullies, then, turning around a hill, gradually drawing closer to Peace River.

At the middle of the 87th mile a gully 50 feet wide and 40 feet deep was passed, and a cascade 100 feet high, formed by several falls of about 20 feet each, exists on a large creek on the 88th mile.

A bridge 300 feet long, including approaches, at a height of 200 feet would be required over the stream in order to preserve a uniform grade of one and one-half per cent.

From there the line would gradually reach a level but marshy flat at an elevation which, by observation, I have found to be 2,402 feet above the sea. The line which I

have indicated from the 84th mile to the 91st (*vide* plan) would perhaps be a more practicable one, but I have not followed it through for want of time.

The first coulée that this projected line crosses is nearly 80 feet deep by about 100 feet wide, while a second one is 800 feet wide by 300 feet deep. The hills on each side slope at a small angle and are separated from each other by perfectly level plateaus.

From the 90th mile until the 107th mile is reached, the country is most suitable for a railway line—very few wet places are seen, and the only coulée worth mentioning is met on the 98th mile, where it is divided into two branches and is 30 feet deep, gradually increasing in depth towards the river.

Between the 95th and the 107th mile the line might be shortened, but then numerous depressions and coulées would need excessive filling and bridging.

An important stream which the line crossed at the 107th mile demands the construction of a somewhat expensive bridge, its depth being about 175 feet, but as the bed of the stream rises very quickly, it would no doubt be possible to deviate the line and find a less expensive crossing.

We are now one and a half miles south of Hudson Hope, which is situated on the east side of the Rocky Mountains.

Between the 107th and 139th mile, the most suitable location for a railroad would be along the base of an elevation of the ground, lying at about 3 miles south of Peace River in a parallel direction from Hudson Hope to Pine River. This elevation seems to divide the water, a small part of which flows in the Peace River, and the greater part in Morberly and Pine River, and cannot be higher than 2,700 feet above sea level.

Between this point and Peace River, there is a slightly undulating plateau about 3 miles wide at 2,400 feet above the sea—*i. e.*, about 750 feet above the river—but the undulations are not greater than 20 feet deep.

This plateau was formerly well wooded, but destructive fires have ruined the greater part of the trees, which seem to have been growing thickly and to an average size, especially on the south declivity.

There would be on such location very few marshes, and no streams or coulées to bridge.

Wishing to ascertain the nature of the country at a greater distance from Peace River, I explored the interior; as far as Pine River, taking a south-easterly direction from Hudson Hope. Several plateaus were noticed, one of which is 1 mile long and 200 feet above the river at 1¼ miles from Hudson Hope. The main plateau has an elevation of 2,472 feet above sea, increasing to 2,832 feet at a distance of 4 miles; but towards Moberly River, it is gradually falling to 2,622 feet at 9 miles from Hudson Hope, and to 2,400 at Moberly River, 14 miles from Hudson Hope.

This section of the country is dotted by small lakes and marshes, small hills rising variously to 300 feet above the level of the ground. It is also well wooded in certain places, a large extent being covered with prairie brulé, or with aspen and jack-pine undergrowth.

Between Moberly and Pine Rivers, there is high rising ground running in a south-westerly direction, partly covered with very tall white and black spruce.

Half of this tract of land just traversed may be considered favourable for agriculture.

The construction of a railway through this section, extending southward and beginning at a point 3 miles south of Hudson Hope, would be rather costly on account of marshes and numerous declivities, which could only be avoided by a considerable prolongation of the line.

Returning again to the main line and in order to cross Moberly River at its most economical point the line should be made to gradually descend after the 138th mile is reached, towards the river, following a very irregular slope of the bank, and on account of the irregularity of the bank heavy side cuts and embankments would have to be made at different places, for the distance of 7 miles, by so doing the grade would be about 1·56 per hundred.

It would be easy to cross Moberly River over a bridge the dimensions of which should not exceed 200 feet span and 40 feet above low water.

East of Moberly River a magnificent plateau half a mile wide at an elevation of 50 feet extends almost as far as Fort St. John, a distance of 3 miles.

Opposite Fort St. John, a cut bank 300 feet long would entail considerable work, but from here to Pine River, a distance of 5 miles, an almost continuous plateau raising at 40 feet above low water, would afford an excellent location for a railway.

As far as I could judge, the only point where Pine River could be conveniently crossed is at its mouth and a 300 foot bridge by 40 feet above low water would be required.

On the west side of Pine River the elevation of the plateau just mentioned I found to be 2,247 feet above sea, while on the east side a rocky hill extending along the river for several miles and 290 feet higher than the west bank, presents the appearance of a wall without the least opening. On the east side of this hill a deep ravine running parallel to Pine River for a distance of 5 miles is also an obstacle.

From Pine River and on the shore of the Peace a rise in the ground having the shape of a narrow plateau is cut at a distance of one mile by a coulée 120 feet wide; it widens gradually to one-quarter of a mile and then keeps a uniform width for about 6 miles. Its elevation is 70 feet above low water.

From this point, that is to say from the 160th mile, the slope of the bank is rough for one-half mile, and cut banks 30 feet high are met on the space of 4½ miles, but below this, the slope is easy and not too irregular. This section of the location would not be very expensive.

At the middle of the 160th mile another plateau begins 60 feet high rising gradually to 80 feet at the river called Mud River on Dr. Dawson's 'Map of an Exploration from Edmonton to the Pacific Coast.' The Indians call the River Kis-ka-pis-qua-sepi, which means Cut Rock River.

Cut Rock River is 50 feet wide at low water and 80 to 90 at high water; from one bank to the other at the level of the lower plateau the distance is about 800 feet and 1,600 feet at the level of the higher plateau; a bridge 100 feet long at a height of 50 feet would be sufficient, but would require a large cutting on each side of the river.

From this point easterly 2½ miles, there are cut banks and the slope very rough.

Just before the end of the 183rd mile is reached, the River D'Echafaud is crossed, which would require a bridge similar to that of the Cut Rock.

From this point it would be better to climb up on the main plateau, where the ground is level, permitting no difficulty, however, in the construction of a line of railway.

Further on, the surface of the ground is much more favourable, plateaus met varying little in their elevation.

At this point we were supposed to be at the east boundary line of British Columbia. But as there is no trace of it here, I continued my survey as you will see by my plan some miles further east.

From Pine River to the boundary line nine coulées are passed, none of which, however, except one is of considerable size.

A more general description of the portion of Peace River district explored may find its place here, in order to supplement the first part of this report by information obtained by personal observation and also through the courtesy of several persons met in the district.

The meeting of the Finlay and Parsnip Rivers takes place in a basin of small extent at low water but very large at high water on account of the neighbouring low alluvial flats which are undoubtedly flooded every spring, as evidenced by the numerous dry channels seen through them.

This flat ground which extends principally to the west is covered with a shrifty growth of poplar and spruce.

From the junction of the Finlay and Parsnip Rivers the Peace breaks through the eastern range of the Rocky Mountains. At first the valley is very wide, being about 15 miles but quickly becomes narrow at a distance of 5 miles below the junction. The valley of the Peace is about three-quarters of a mile wide varying to an average width of one mile until we arrive at Clear-water River when it broadens considerably to the extent of 3 miles and about 7 miles between the mountain top.

Notwithstanding that the mountains generally rise close to the river, the plateaus are numerous and the slope of the mountains reaches the water's edge on the space of one mile only.

Rocks are seen in some places near the river, but blasting worth mentioning would be necessary through a couple of rocky points only. The curves would be numerous, and some necessarily as sharp as 10 degrees.

Although the fall of the river is relatively uniform at 2 feet 6 inches per mile, the grade would vary considerably on account of the difference in elevation of the plateaus which would necessitate cuttings and embankments to large extent.

Between the forks and the cañon two rapids, one of which Finlay Rapids has a total fall of 6 feet in the space of one quarter of a mile. The other rapid called the "Parle Pas" and 30 miles further down, has a fall of 4 feet in a distance of 500 feet.

Besides these rapids there is a number of ripples having a few inches fall only and generally followed by sections of almost still water.

The south shore of the Peace is well wooded as far as the foot of the mountains, whose slopes generally very steep rise to about 5,000 to 6,000 feet above sea level. The north shore is not as thickly wooded and the timber is of smaller dimensions, but the general character of the two shores is very much the same.

Below Clearwater River the mountains are not so high, their slope is less abrupt, and gradually become easier as they near the cañon.

The plateaus are of a larger extent and of a more uniform elevation, the woods soon disappear on the north shore, but on the south side the mountains are well wooded, whereas the flats often covered with a growth of small poplars, are for the most part thickly covered with tall grass which proves the great fertility of the soil.

Below Wide Valley River, that is to say from the 52nd mile, the mountains shelving up regularly and at a small angle, the line might easily be made to ascend several hundred feet above the river if necessary.

Peace River Cañon for 10 miles in length is a serious obstacle to the construction of a railroad, owing to numerous creeks cutting their way deeply through the mountains whose base is friable rock.

The appearance of these narrow deep creeks at their entrance to the main cañon changes, however, at a distance of a few miles from the river, where the cut bank disappears and beautiful broadening valleys are in view.

Moreover, the mountains which are low and flattened near the river, seem to rise there as barriers preventing passage from one valley to the other; there being five in number, the highest of which rises to 3,192 feet above the sea level.

The base of these mountains have been mined by the water of these rivers, forming the walls of the cañon which are 400 feet high.

Rocky plateaus, resembling terraces rising at 140 feet above water, are also observed on both sides of the cañon between the mountains.

On the north-east side of the cañon the base of the mountain called 'Portage Mountain' runs from one end of the cañon to the other. Its shape is very regular and easy, becoming almost horizontal near the river.

The construction of a railway line would be easily accomplished if a crossing was made one mile below the head of the cañon, but in order to return to the south shore a crossing would have to be made at the middle of the cañon. A grade of 3 per cent would be necessary in order to reach the plateau extending from Hudson Hope.

In the cañon the river is not navigable on its entire length. The fall of the river for the first 10 miles is 20 feet per mile. There are numerous rapids and long stretches of still water.

Two of my men were sent up the cañon for a distance of 13 miles above Hudson Hope by canoe. The fall of the river in this stretch was found to be an average of 5 feet per mile.

The plateau lying south of the river between Hudson Hope and British Columbia boundary, as well as its slope towards Peace River extending 2 or 3 miles from St. John, has previously been described.

Between Hudson Hope and Deep Creek, which comes in on the north side of Peace River, the banks are much broken by small coulées and are very wide at their entrance.

High cut banks are also numerous, rendering railway construction almost impossible close to the river.

From the junction of the Finlay and Parsnip rivers to the boundary line on the Peace, as far as facility and economy of construction is concerned, there exists no material difference between the north and south shores of the Peace River.

I am of the opinion, however, that the south shore is preferable, except at the cañon, where a decided advantage would be in favour of the north shore if it was not for the two crossings of the river, and the three per cent. grade, as spoken of previously.

A fact worth mentioning is that 1 or 2 miles south of the river the bushes are much thicker than on the north side, especially below Fort St. John.

As to the climate, it is much warmer than usually supposed.

Summer and winter are passed into without much transition. The weather is warm and dry in summer, and the winter is not rigorous, although at times the thermometer was seen to fall to 60 degrees below zero, but such severe cold is not unbearable on account of the dry atmosphere.

The warm winds, called Chinook, are very frequent at the beginning and the end of winter, causing a quick thaw.

I was informed by the Hudson's Bay officials that the fall of snow during the winter does not exceed 2 feet. The river begins to freeze early in October, broken ice coming down the river in sufficient quantity to prevent the swimming of horses, and was frozen solid, except in the rapids, on November 24.

The following is a record of the temperatures registered at Hudson Hope by Mr. John Brown, of London, Ont., who arrived at Hudson Hope on August 26, with the intention of wintering there. From September 1 to October 18, the temperature has been taken probably at noon, but from October 18 to November 27, the maximum and minimum are given.

Date.	Temperature		Weather.	Date.	Temperature		Weather.
	Max.	Min.			Max.	Min.	
Sept. 1	42		Fine.	Sept. 27	19		Rain.
" 2	43		"	" 28	22		"
" 3	32		"	" 29	30		First snow.
" 4	22		"	" 30	21		"
" 5	29		"				
" 6	34		"	Oct. 1	26		"
" 7	30		"	" 2	24		½ inch snow.
" 8	34		"	" 3	22		Snow, 1 inch deep.
" 9	30		"	" 4	9		"
" 10	38		"	" 5	17		"
" 11	36		"	" 6	17		"
" 12	40		"	" 7	28		"
" 13	36		"	" 8	28		"
" 14	44		"	" 9	20		"
" 15	29		"	" 10	21		Fine.
" 16	24		"	" 11	22		"
" 17	24		"	" 12	21		"
" 18	43		Rain.	" 13	22		"
" 19	44		"	" 14	32		"
" 20	42		"	" 15	21		"
" 21	40		"	" 16	28		"
" 22	37		"	" 17	28		"
" 23	30		"	" 18	27	54	"
" 24	35		"	" 19	29	36	"
" 25	34		"	" 20	26	36	"
" 26	40		"	" 21	26	40	"

TEMPERATURE AT HUDSON HOPE—*Continued.*

Date.	Temperature		Weather.	Date.	Temperature		Weather.
	Max.	Min.			Max.	Min.	
Oct. 22	21	36	Fine.	Nov. 10	20	42	Snow, 2 inches deep.
" 23	24	28	"	" 11	24	46	"
" 24	9	24	"	" 12	18	37	"
" 25	22	27	Snow, 2½ inches deep	" 13	28	51	"
" 26	18	24	" 3 "	" 14	34	45	"
" 27	20	28	" 4 "	" 15	22	44	"
" 28	22	28	Fine.	" 16	23	38	"
" 29	21	29	Snow, 5 inches deep.	" 17	1	8	"
" 30	14	30	" 6 "	" 18	10	6	Snow, 6 inches deep.
" 31	10	26	" 6 "	" 19	13	4	"
				" 20	24	2	"
Nov. 1	7	44	Snow, 1 inch deep; Chinook wind.	" 21	41	17	"
				" 22	34	17	"
" 2	8	24	Snow, 4 inches deep.	" 23	35	15	"
" 3	13	20	"	" 24	34	12	"
" 4	6	24	"	" 25		20	Snow, 7 inches deep.
" 5	9	41	Chinook wind.	" 26	17	22	"
" 6	4	24	Snow only 2 in. deep.	" 27	4	14	Snow, 8 inches deep.
" 7	6	9	Fine.	" 28			
" 8	16	13	"	" 29			
" 9	13	36	Chinook wind.				

I will now give the approximate cost of this section of 201 miles of railways, exclusive of steel bridges. The work to be done could be classified as follows :—

Light work,	of which there is	135 miles.
Medium	" "	46 "
Heavy	" "	20 "

Cost of permanent way :—

Steel rails, 70 lbs., 110 tons at $30	$3,300 00
Angle plates, 30 lbs., 704 plates, 21,120 lbs. at 2 cts	422 40
Bolts, 1 lb. each, 2,108 lbs. at 3½ cts	73 98
Spikes, 5½ x $\frac{9}{16}$ inches, 6,500 lbs. at 2½ cts	162 50
Ties, 2,640 at 25 cts	660 00
Washers and rubbers	25 00
Track laying per mile	200 00
Ballasting, 2,000 cubic yds. at 35 cts	700 00
Total	$5,543 88

Cost of construction one mile of railway:—

LIGHT WORK.

Clearing 12 acres at $20	$ 240 00
Close cutting 2 acres at $35	70 00
Grubbing 2 acres at $40	80 00
Earth work, 15,000 cubic yds. at 20 cts	3,000 00
Rock work, 500 cubic yds. at $1	500 00
Under drain and small wooden bridges	1,200 00
Engineering station, water supply, telegraph and siding	1,400 00
	$6,490 00
Contingencies, 10 per cent	649 00
	$7,139 00
Permanent way	5,543 88
Total	$12,682 88

MEDIUM WORK.

Clearing 12 acres at $25	$ 300 00
Close cutting 2 acres at $35	70 00
Grubbing 2 acres at $40	80 00
Earth work, 30,000 cubic yds. at 25 cts	7,500 00
Rock work, 5,000 cubic yds. at $1	5,000 00
Under drains and small wooden bridges	2,000 00
Engineering station, water supply, telegraph and sidings	1,400 00
	$16,350 00
Contingencies, 10 per cent	1,635 00
	$17,985 00
Permanent way	5,543 88
Total	$23,588 88

HEAVY WORK.

Clearing 12 acres at $25	$ 300 00
Close cutting 2 acres at $35	70 00
Grubbing 2 acres at $40	80 00
Earth work, 50,000 cubic yds. at 25 cts	12,500 00
Rock work, 2,000 cubic yds. at $1	2,000 00
Under drain and small bridges	5,000 00
Engineering station, water supply, telegraph and sidings	1,500 00
	$21,450 00
Contingencies, 10 per cent	2,145 00
	$23,595 00
Permanent way	5,543 88
Total	$29,138 88

Besides the above estimate there are sixteen bridges of lengths varying from 25 feet to 950 feet. I estimate the cost of the following bridges as follows :—

Across	Length of bridge.	Cubic yards of masonry required.	Price per yard.	Total cost of masonry.	No. of span — Length of span	Cost of lin. foot.	Total cost of steel.	Total cost of bridges.
			$	$	No. ft.	$	$	$
Parsnip River	959	3,000	12 00	36,000	2 200 3 182	106	100,700	136,700
Creek on the 10th Mile	25	500	12 00	6,000	1 25	30	750	6,750
" 17th "	70	500	12 00	6,000	1 70	45	3,150	9,150
Clear Water River	75	500	12 00	6,000	1 75	46	3,450	9,450
Creek on 47th Mile	50	500	12 00	6,000	1 50	34	1,700	7,700
Wide Valley River	60	500	12 00	6,000	1 60	39	2,340	8,340
Creek on the 77th Mile	350	2,500	12 00	30,600	2 187	106	19,822	49,822
" 80th "	400	2,500	12 00	30,600	1 400	175	70,000	100,600
" 87th "	50	500	12 00	6,000	.....	.....	.....	7,700
" 88th "	300	2,000	12 00	24,000	1 150 2 75	77 46	11,350 6,900	42,250
" 100th "	150	1,500	12 00	18,000	1 150	77	11,350	29,350
Moberley River	200	2,000	12 00	24,000	1 260	107	21,400	45,400
Pine "	300	2,000	12 00	24,000	1 300	150	45,000	69,000
Gullet on 150th Mile	25	500	12 00	6,000	1 25	30	750	6,750
Cut Rock River	100	1,000	12 00	12,000	1 100	55	5,500	17,500
D'Echafaud "	100	1,000	12 00	12,000	1 500	55	5,000	17,500
Total								583,962

Total cost of the 201 miles will be—

135 miles at $12,682.68 per mile	$1,712,188	80
46 do 23,588.88 do	1,085,088	48
20 do	582,777	60
3,205 feet of steel bridges	583,962	00
Total cost	$3,964,016	88

This gives an average cost of $19,721.47 per mile, including steel bridges.

I might say that good sandstone could be had mostly anywhere for the construction of piers and abutments of bridges, but the only timber that could be used in the construction of the railway is white and black spruce, which are of suitable dimension and could be got mostly anywhere.

The ballast of very good quality is in abundance and of easy access.

Speaking of our return trip, I would briefly state that our first move coming down from the junction was made on September 19, which was 8 miles.

On October 1, I met engineer Dibblee going up with two boats loaded with supplies. He had a hard and tedious time coming up the river, owing to the water being so very low, and was obliged to leave part of his supplies at Parle-pas Rapids.

We spent the next day together, as it was Sunday.

Monday morning an exchange of two men was made, Joseph Gagnon going with Mr. Dibblee, while Frank Neilson came with me.

We bid good-by to the party at 7 a.m. and at 4.15 p.m. we arrived at the parle-pas Rapids, making a total distance of 36 miles explored up to date (October 3).

On Saturday, October 8, the camp was pitched opposite Cust's house, which is at the head of Peace River cañon.

But the exploration was not finished up to that point.

Having explored over 100 miles south-west and south-east of the Peace River Cañon, and difficulties of all kind being met with, consequently causing much delay. However, under all these circumstances, we were very much pleased to arrive at Hudson Hope on November 16.

We spent eight days here making sleighs and fitting up harness for our trip down the river.

The snow is about one foot deep and the river is still open in places. The horses are in very poor condition, owing to the scarcity and poor quality of food found around the cañon.

On November 24, I started part of my party down the river in charge of my assistant, keeping three men and three horses to assist me on my trip to Pine River, as already spoken of. I started the next morning, but returned on the 30th instant.

December 1, I also started down river, completing my survey as I was travelling, and finishing the 18th of the same month. At this date the ice was in good condition.

But the balance of my party, which was a few days ahead, had a great many difficulties to contend with, owing to the bad condition of the ice.

On December 22, I reached Dunvegan, where I found the head division of my party. They had decided to spend Christmas here, in order to give the horses a very much needed rest and feed them with hay and oats.

During our trip we lost eight horses. One getting frightened and jumping into the river with pack and was lost. Three died with sickness during the summer, and the remaining four were shot between Hudson Hope and Dunvegan.

Realizing that our horses could not make the journey to Edmonton in a reasonable time, and hearing that Mr. Brick, who is living 50 miles below here, was going to Edmonton, I sent two men ahead, thinking, perhaps, I could make some arrangement with him.

The same day I met Mr. Charles Anderson, of Lesser Slave Lake, at Dunvegan, who offered to do the transportation very reasonable, but I did not want to commit myself until I saw Mr. Brick.

The next morning, the 26th, Mr. Anderson and I started to see Mr. Brick, and as his price was much higher, I decided to arrange with Mr. Anderson, for which I gave him $125 cash, reserving two horses that I sold, also tents, riding saddles, our personal baggage and bedding, and some other articles of but very little importance.

Twenty days were allowed him to reach Edmonton, and a bonus of $20 for each day he might gain, and if he was over twenty he was to pay a forfeit of $20.

The weather having been exceptionally fine and favourable for the trip we arrived in Edmonton on January 21, all glad to see civilization again after an absence of six months and thirteen days. We came by way of Lesser Slave Lake and Athabasca Landing.

Before closing my report I will give some distances that might become useful. These distances are based on time taken in travelling over the country just mentioned.

	Miles.
From Edmonton to Lesser Slave Lake via trail	285
Lesser Slave Lake to Peace River Crossing	80
Peace River Crossing to Dunvegan via trail	60
Dunvegan to Port St. John "	158
Port St. John to Hudson Hope "	50
Hudson Hope to head of portage "	13
From the portage to Parle-pas Rapids via water	48
Parle-pas Rapids to Finlay Rapids	31
Finlay Rapids to the junction	1
Total distance from Edmonton to junction of Finlay and Parsnip Rivers	726

Returning again to Hudson Hope—

	Miles.
From Hudson Hope to Port St. John via water	46
From St. John to Dunvegan "	106
From Dunvegan to Parsnip River crossing "	60
From Parsnip River crossing to Lesser Slave Lake via portage.	80
From Lesser Slave Lake to mouth of Little Slave River via water	68
From mouth of Little Slave River to Athabasca River via water	39
From Little Slave River to Athabasca Landing via water	56
From Athabasca Landing to Edmonton	96

I have the honour to be, sir,

Your obedient servant,

P. H. DUPONT, C.E.

To COLLINGWOOD SCHREIBER, Esq.,
Chief Engineer,
Railways and Canals.

OTTAWA, September 20, 1899.

SIR,—In compliance with your instructions received on June 18, 1898, I left at once for Edmonton, the initial point of the expedition, where I was to procure a pack train and organize my party for field work.

I arrived at Edmonton on the evening of June 24, having had a pleasant trip on the Canadian Pacific Railway.

I at once waited on the Hudson's Bay Company's employees and other leading citizens to acquire all information I could gather from them of the country I was going to explore and the best means to get into it with my supplies.

They all advised me to get my supplies freighted in by contract, as it would take too many horses to carry so large a supply so far. They also advised me to take more supplies than what was then following me from Ottawa, stating that I could not possibly do my work and get back in less than a year.

Upon representing this fact to you sir, you ordered me to take in more supplies, which I purchased from the firm of LaRue & Picard at reasonable prices.

I advertised for tenders for handling my supplies and delivering same at Hudson Hope. No one wanted to tender above that point.

Brick Bros'. tender was considered the best, and I entered into a contract with them to safely deliver my supplies at Hudson Hope in 40 days for 11 cents per pound. Fortunately I was enabled to get my second bill of supplies off in time to go with the supplies received from Ottawa, the last of it leaving Edmonton on Saturday, July 9. I also sent one of my men with the supplies at Brick Bros.' request.

During this interval I had been busy getting my pack train in readiness for a start on Monday July 11, but found on Sunday that six of the horses had strayed (or been driven from the band), which we did not recover until the afternoon of Monday.

We left Edmonton at 8 a.m. on Tuesday, July 12, and made Carrot Creek that day without any mishap, the horses behaving well, in fact they gave us no trouble at any time on the trip except through straying at times on the feeding grounds.

We arrived at Athabasca River on July 16, about 100 miles from Edmonton, where we were detained 11 days by the summer freshet. We found the river bank full and the tide rushing 12 miles an hour, a lot of drift stuff, trees, etc., floating down, and worst of all, the wire ferry torn down.

We are travelling on the new or Chalmers trail which crosses this river near old Fort Assiniboine.

We had to wait until the river fell 8 or 10 feet and then we had great difficulty in crossing, fortunately a number of outfits collected during the blockade and we were strong handed enough to row the ferry-boat across with large sweeps, first tracking the boat up stream about half a mile. We began ferrying on Tuesday afternoon, July 26, and on Wednesday at noon the 27th we got our train started again.

We arrived at Swan River on the evening of July 30, having driven that day about 40 miles (over a bad trail) on account of there being no feed for horses, we crossed a lot of muskegs, then the Swam Hills which rise 1,100 or 1,200 feet above the surrounding country. These hills could be avoided by keeping further east nearer Lesser Slave Lake where the country is level with plenty of feed, in fact old Indian trails lead in this direction.

I would say that nine-tenths of the land passed over on the Chalmers trail from Edmonton to Lesser Slave Lake is fine farming land, and it is only a question of time when this country will be all settled.

We arrived at the head of the lake on August 3, and found that notwithstanding our long delay at Athabasca River my supplies had only left here the day before. We rested the horses here one day and started for Peace River crossing on Friday, August 5, arriving there Sunday, August 7.

On the south side of Lesser Slave Lake, near its western extremity, there is a wild meadow 30 to 40 miles in extent that would cut 2½ tons to the acre, while the land on opposite side of lake is adapted for mixed farming. There are four stores here, a grist and sawmill, three churches and two schools. No doubt this will be a centre of some importance in the near future; Lesser Slave Lake should not be ignored by any projected railway in this country.

The country from the last mentioned lake to Peace River crossing is also well adapted for mixed farming, consisting of open prairie interspersed with tracts of small cottonwood timber, which would be easy to clear and the land is superb, in fact poplar and cottonwood grow on the best land in this country and to see this growth is to be sure of good land.

The land gradually rises from the lake to a high table-land which keeps up until the Peace River is reached. This river here at the crossing and from the crossing to Hudson's Hope is in a deep narrow valley with a high table-land on both sides. I learned from those that are acquainted with the river that below the crossing the valley widens until it is some 30 miles from foot to foot of table-lands.

There are some stores at the crossing and some up the river 14 miles, where the missions are established.

Five of our horses strayed from the band here and getting into some rough country below the crossing, we did not find them until 10 a.m. on Tuesday.

We swam them over the river (nearly half a mile) in the afternoon, four or five at a time, without an accident, and got out to first good feed in the evening. My supplies left this point on Monday evening, August 8, twenty-four hours ahead of me.

On the morning of August 10, we ascended to the table-land on north side of the river and from there to Fort St. John. We passed through magnificent grazing lands for at least nine-tenths of the distance.

We arrived at Fort St. John on Saturday, August 20, and found the supplies one day ahead of us, also Mr. Dupont's pack train one day ahead.

About 45 miles east of Fort St. John, on the trail, a celebrated muskeg is located. Before I reached this muskeg I had heard a number of contradictory reports. Some said it was 7 miles across, while others called it 25 miles wide. I crossed it on the afternoon of August 18 (a dry time of year), and found no trouble. There are four distinct muskegs, with islands or dry ground between them. The longest muskeg proper is not over 1,000 yards across. We had no trouble to speak of; only one horse got down and had to be unpacked; but earlier in the season no doubt it would be worse. I am told that this muskeg extends over a large extent of country, and that the trail crosses it in the narrowest place. From the beginning of the first muskeg to the end of the last is about 10 miles. Just west of this muskeg we passed through another wild meadow of great extent, like the one noted at Lesser Slave Lake.

Sunday, August 21, we started early to catch the freight, if possible, so as not to detain the freighters. We arrived at Hudson's Hope, Tuesday evening the 23rd inst., at 10 p.m., the boats having arrived at 3 p.m., and Mr. Dupont's train at 8 p.m.

The country from Fort St. John to Hudson's Hope is good grazing land for about two-thirds of the distance—good at both ends, with some poor land in the middle. The trail is hilly, however, following close to the river most of the way, where every small brook has a deep coulée which the trail crosses. The coulée at Deep Creek is between 500 and 600 feet on the east side and about 300 feet on the west side. The trail on both sides in places is at an angle of 75° from the level. Horses slide down the decline and get up the incline somehow. Those western ponies are sure-footed as cats and almost as active, and the amount of work they will do on grass alone is surprising.

We have travelled 625 miles from Edmonton to Hudson's Hope, in forty-three days, including lost time at Athabasca River and Peace River Crossing (thirteen days), averaging 14½ miles per day. We passed several parties of prospectors that have started early in the season from Edmonton—some in February and March.

On Wednesday, August 24, we took stock of our supplies and found only 50 pounds of oat meal had been damaged. Considering the mode of transit in this country, we were very fortunate, and it stamps the firm of Brick Bros. as painstaking and competent freighters.

J. P. Hetherington and G. Grandall changod places here to-day, Hetherington coming to me.

On Thursday, August 25, we took our first load on pack train over the Rocky Mountain portage (so called); it is 15 miles long and very hilly. We camped at Cust's House and fixed up comfortable as a new problem confronts us, viz., to whip saw lumber and build a boat to carry our supplies up river.

I engaged a man, John Bouche, at Peace River Crossing, that had been in the employ of the Hudson's Bay Company for ten years as boatman, to build and steer my boat. Bouche came up to Hudson's Hope as steersman on one of the Brick Bros. boats, but from some cause he changed his mind about going with me and started back as soon as he got his boat unloaded and before I arrived, thus leaving me without a skilled boat-builder. We built a boat, however, that was strong if not handsome, finishing and loading her on September 13.

In the meantime I had got all our supplies over the portage with the pack train. I had also bought a small boat for $10 from a party of four prospectors (belonging to the Dykeman party) who had come down from Fort Graham on the Finlay River and who were after their horses, left here in May last intending to take them over the Rockies to Fort Graham to winter them there. They told me that there was a good prospect for wintering horses up there, good grazing grounds and plenty of hay put up by prospectors who had arrived at Graham in August with horses and who intended wintering there. They also told me they thought I could use my horses on my work.

This induced me to send my horses to Fort Graham. September 14 we got away early having loaded both boats over night and before the first mile was passed found we were short handed, both boats were loaded almost to danger line, the men were green at tracking and we made little progress, so I concluded to caché part of the supplies leaving Wm. Colclough in charge. We got along better after this, but still our progress was slow and it was September 30 when we got all our stuff including boats through or above the Parle-pas Rapids, 48 miles from Cust's House.

I sent Alexander and Brenton with the horses to Fort Graham the same day, that we left Cust's House (September 14), they had to go back about 40 miles on the St. John train to Cache Creek where the trail to Graham branches off.

We left the Parle-pas Rapids on October 1, arriving at the Finlay Rapids with first load, October 5, and with last load October 9. It was on October 12 that we finally left this rapid and I begun my explorations. I might say here that the river was low and falling fast and we had a hard time coming up; it continued to get worse until finally winter stopped us at the Black Cañon on the Omenica River on October 24.

We had to carry all our supplies over the portage at the Parle-pas Rapids, 250 yards, also over the portage at the Finlay Rapids, 770 yards, the boats we pulled through the rapids light; both rapids are formed by ledges across the river, the Parle-pas Rapids drop 5 feet in 500 feet. The Finlay's drop 6 feet in 1,500 feet, either or both rapids could easily be utilized for water power, and if the rumour that gold bearing quartz has been located near Mount Selwyn is true, this fact will be taken advantage of no doubt.

We reached the mouth of the Omenica River with first load on October 14; also with the small boat. Here we found the stream so low and full of swift rapids that we had to abandon one of the boats, and with all hands on large boat and about one-quarter of a load in her, we were enabled to get all of our supplies up to the Black Cañon before winter set in. Here we built shacks and made this our headquarters for the winter. We also built hand sleighs and snowshoes, and after the streams froze up, I went on with my exploration, first having gone to Fort Graham—65 miles—for some needed supplies which we hauled to camp on hand sleighs. I recommenced taking exploratory notes in January and finished March 30. It was a hard and unpleasant job, but it kept us in good health, and was altogether better than waiting for the opening of navigation this spring to proceed with the exploration.

I went to Fort Graham the last of December and found that my horses were doing badly, ten of them being dead at that time and the rest looking miserable. There seems to have been some diesase among them.

They had plenty of hay and were sheltered from storms and cold and had plenty of good water. Still all the horses I purchased in Edmonton eventually died, only

three out of the whole number which I purchased at Peace River Crossing surviving the winter. The Dykeman party lost forty out of a train of forty-three; in fact about 80 or 90 per cent of the horses at or near Graham died. I might state here I sold the three surviving horses for $74 and a boat.

As I stated above, I began taking notes for exploration October 12, 1898. I found the country from the junction of the Parsnip and Finlay Rivers westward to where the Omenica River issues from the second range or Cariboo Mountains, a distance of 26 miles to be very easy. It crosses the valley between the Rockies and the Cariboo Ranges, which is from 30 to 40 miles wide below the mouth of the Omenica River. But above or north of the mouth of the Omenica it narrows gradually, until at Fort Graham, which is situated on the Finlay about 75 miles above the junction, it does not exceed three miles in width, where the Rockies and Cariboo both approach the river—I might state that Fort Graham is the most inaccessible trading post under the jurisdiction of the Hudson's Bay Co., in the great North-west. Flour is $36 per barrel and pork $80 per barrel, and everything else in proportion. From the crossing of the Parsnip River, located by Mr. Dupont, up the Finlay River to the mouth of the Omenica River, a distance of 16 miles, the line follows a shelf from 30 to 60 feet above the river. The formation being sand, gravel, and gravelly clay. The line crosses Manson River on the 4th mile, which would require a bridge 50 feet long. This section is all light work and does not require special mention; the general grade is about 3 feet per mile, so that local grades can be utilized to overcome slight irregularities in the ground.

Fine spruce and cottonwoods grow in abundance fit for use in construction.

I have shown on my plan an alternative line, which would branch off at or near the end of the 6th mile, and join Mr. Dupont's line at the end of the 7th mile, in a distance of 6 miles, in other words the point where the alternative line would leave my line is equidistant from Mr. Dupont's crossing of the Parsnip River and a point about 7 miles down his line.

Thus saving about seven miles in distance, and the bridge over Manson River, but on the other hand, I would have a bridge over the Finlay River 866 feet long, while the bridge projected by Mr. Dupont for the crossing of the Parsnip River would be ample for the crossing of the Peace River on my alternative line. The formation is the same as described above for the Finlay River section and is light work.

Omenica River.

The next section of 10 miles from the mouth of the Omenica River to where the river leaves the Cariboo Mountains is on a comparatively uniform shelf and does not require particular mention, as the grade is light about 14 feet per mile. Fine spruce grows in abundance on this section for construction purposes. This section is light work.

There is a fine ballast bank at and near the Black Cañon, about 23 miles from starting point, of great extent and of good quality.

We pass the Black Cañon (so called) on this section. It is about ½ mile long and from 80 to 120 feet wide, with perpendicular walls of mica schist, from 100 to 150 feet high. The water is very deep in this gorge, and at low water is comparatively still, so that boats can be rowed up until the upper end is reached, when a stiff rapid exists about 500 feet long. For about 1 mile above the cañon proper the stream is narrow and water swift with high rugged banks.

When the river is high, however, boats and boat loads have to be portaged by this cañon, and the narrow stretch above is 1½ mile, as the water rushes through the gorge like a mill race.

During the winter a spring brook trickled over the walls of the cañon in one place freezing into quaint shapes presenting a spectacle of the most amazing grandeur and beauty.

The next section of 12½ miles is on a lumpy side hill country (the beginning of the Cariboo Mountains). The 27th mile is on a shelf and is straight, the 28th mile winds around the side of a foot hill of clay and silt, where some curvature is required.

The 29th mile is on a side hill also, but is comparatively straight. The 30th mile like the 28th is crooked, while the 31st and 32nd are straight and the side hills are not so steep; the 33rd mile is on a level plateau and is easy, but the 34th mile again strikes a steep side hill where some heavy work is unavoidable; the 35th mile is like the last, while the 36th mile is easy.

We then have on the 37th mile some rough heavy side hill works, which extends to the middle of the 38th mile, crossing a creek on the 38th mile requiring a span of 25 feet.

Some trestling will be required on the section, and there is an abundance of fine spruce timber at hand for this purpose. The grade of the stream does not exceed 12 feet per mile, so that local grades can be introduced to lessen quantities; the formation is silt, gravel and clay with perhaps some rock in places; this section would class as medium heavy work.

The next section of 4 miles is on a plateau about 60 feet above the stream, where the grading is light and does not require any practical mention, the foundation being sand and gravel, the grade will not exceed 10 feet per mile.

We next have a section 5 miles long and heavy side hill work in limestone ledge. The 43rd mile is on the steepest part of this section, which stands at an angle of 60°, but the side hill is smooth and straight, and while the formation is solid limestone it will not cost a great sum to grade as all material can be wasted over the side. The 44th mile is like the last except the slope of the hill is not steep. We can cross the Omenica River near the end of this mile where the river takes a sharp bend at right angles to itself and flows through a gorge of perpendicular rock about 80 feet high, forming natural abutments for bridge, which will be one span of 100 feet. The 45th and 46th miles are like the two last, with the exception of the bridge, while the 47th mile eases off on to a plateau; very easy curves only required on this section. Heavy work.

Osilinca River.

The next 9 miles will be on a comparative uniform shelf or plateau. From the 48th to the 50½ mile the line is nearly straight, but on the next 2 miles considerable curvature will be required to get around a bend in the river; the 53rd, 54th and 55th miles are nearly straight or where light curves only will be required; plenty of ballast will be found on the 56th mile, the general formation of this section is clay and gravelly clay with some rock in places and is classed as medium heavy work; plenty of spruce abounds for construction purposes; the grade is 43 feet per mile.

The next section of 7½ miles up to the foot of the dead water is all side hill work. On the 57th mile a bluff of clay forces us back to stream where a sharp curve will be introduced to get around said bluff, without excessive work. We then follow the side-hills where some gulches or coulées will have to be trestled The 58th mile is nearly straight or only requires easy curves, but the 59th mile requires considerable curvature as well as trestling across some coulées. The 60th mile is comparatively easy, as well as the first half of the 61st mile, while the last half of the 61st and the 62nd mile is heavy work with considerable curvature; the 63rd mile is also pretty heavy work with a snow slide near the end of it. The grade on this section is 43 feet per mile; this section is classed heavy work.

The next 13½ miles past the dead water is much the same in general features as the last section, with the exception that the general grade is almost nothing, so that local grades can be used extensively to lessen work on construction. We have a bridge on the 64th mile over a small creek requiring a 25 foot span; this mile will require trestling to cross coulées, but easy curves will suffice. The 65th mile will require some trestling also as well as sharp curves, so will the 66th mile. While the 67th mile is nearly straight, the 68th mile requires some curvature, as also does the 69th mile, while the 70th mile swings around a bend in the valley; the 71st, 72nd and 73rd are nearly straight, requiring light curvature only. Near the centre of the 74th mile the hill takes a sharp turn to the right and we have to follow it around with a reverse on the

75th mile. The 76th mile is nearly straight. This section is all side hill work in solid limestone and clay and is all heavy work.

The next 2½ miles is like the last section except that there is more grade (24 feet per mile). The 77th mile is nearly straight, but the 78th mile is very crooked, needing a good deal of curvature. We cross a small creek on this mile that will require about 1,500 feet of trestling and a span of 25 feet. Just after crossing this creek we have a bold bluff of solid limestone on which the line winds around for at least ¼ of a mile; this bluff is steep almost overhanging the bottom, it extends on to the 79th mile, the latter part of this mile is easier, leading to a shelf or plateau that extends some miles. This section is classed heavy work.

The next section from the 80th to the 90th mile is located on a comparatively uniform shelf about 60 or 70 feet above the stream, and from ¼ to ½ mile wide, on which stunted pines grow thinly or in bunches indicating a sandy or sand and gravel formation. The general grade on this section is about 24 feet per mile, plenty of fine spruce grow on the bottom lands on this section. The 80th mile is straight; the 81st mile will require one slow curve; the 82nd mile is straight, while the 83rd and 84th miles will each have a slow curve, and the 85th mile is straight; the 86th require a medium curve and the 87th mile a long slow curve, as also will the 88th mile, while the 89th mile will have considerable curvature on the approach to the crossing of the south branch of the Osilinca on the 90th mile, where about 200 feet of trestling and a span of 50 feet are required; this section is classed light work.

From the crossing of one of the south branch of the Osilinca to the crossing of one of the forks of the north branch on the 98th mile, we have another high gravelly bench, but not so uniform as the last one described below the crossing of the south branch. After crossing the stream at the beginning of the 90th mile we have a curve to the right, and near the end of this mile, another to the left on the 91st mile, we have a slow curve to the right on the 92nd mile we have a medium curve to the left, while the 93rd is nearly straight, the 94th mile is on a slow curve to left for the first half, while the last half and the 95th mile is nearly straight; the 96th will require one slow curve to left and the 97th mile two curves to right; on the 98th mile we cross a stream where a span of 25 feet will be required. The formation of this section is like the last and ballast will be found in abundance. Medium heavy work. The general grade is 24 feet per mile. Fine spruce growing on the low flats on this section.

From the crossing of last branch of the Osilinca on the 98th mile to the summit at the 111th mile, the ground is lumpy, gravelly knolls and benches occur with slight depressions between them; the general grade is 24 feet per mile, so that local grades can be introduced to lessen work on construction. Pine, with a few spruce bluffs are in evidence. After crossing the stream on the 98th mile we turn an easy curve to the left and run straight to near the end of the 99th mile, where there is quite a curve to the right, then it is straight to near the end of the 101st mile, where a curve to left is required, then we have a tangent to nearly the end of the 110th mile, where a slight curve occurs. This section is medium heavy work.

We pass on this section a mountain rising out of the valley like an island in a lake (entirely surrounded by the valley). It is about 10 miles long and 2 miles wide at its base, and rises to an elevation of 6,452 feet above sea level. I obtained an excellent view of surrounding country from this mountain, having ascended it a bright, clear day.

We are now in a valley from 2½ miles to 3 miles wide, that extends for miles in a uniform direction, that is much like the last described section as to formation and general features, being composed of gravelly knolls and benches covered with a thin growth of jack pine. The grade, which is slight (about 10 feet per mile), is now going down however. From the 111th mile to the 120th mile the line is straight. Crossing on the 116th mile, a small creek that will require a span of 25 feet, this creek with another branch further down forming, as I suppose, the head waters of the Skeena River, or a branch thereof, and drains this part of the mountains which are lower than those noted further east. We passed the highest part of the Cariboo range on the dead water on the Osilinca.

On the 120th mile we have a slow curve to right, and then the line is straight to about the middle of 125th mile, where there is a slow curve to left, the line is then nearly straight to the 130th mile, where a curve to right occurs. It is again straight to the 136th mile, when a slow curve to left is required, also another one on the 139th mile. At the middle of the 140th mile the valley narrows; this section is close to stream, whose banks are comparatively uniform and above high water. The formation is sand and gravelly knolls and benches, being quite lumpy, local grades will be used to ease the work of construction, as the general grade is light, not exceeding 16 feet per mile. The growth is jack pine and spruce, this section is classed medium heavy work.

From the 140th mile to the 156th mile the valley narrows and the foot of the hills are close to stream, but as the general grade is light, local grades will be used to lessen quantities, the formation is clay and gravelly clay. We have a slow curve at the end of the 141st mile and the beginning of the 142nd mile, also another at the end of 146th and beginning of the 147th. The line is then nearly straight, requiring slight curvature until we reach the 152nd mile, where a curve to right occurs, we also have a slow curve on the 154th mile, crossing a small creek on the 155th mile (which is nearly straight), where a 25-foot span will be required. This section is medium heavy work.

After crossing the creek on the 155th mile the valley widens again, and the shelf is smoother to the end of the 171st mile, and is very light work. The line is straight to the 157th mile, when we have a curve to left, the line is then straight to the 160th mile, when a curve to left is required, then we have it straight to the 163rd mile, when a curve to the left is required, while the 164th and 165th mile has a slow reverse curve to get around a double bend in the stream. The 166th mile is straight, a slow curve on the beginning of the 167th mile and then straight to the middle of 169th mile where a slow curve to left is required at the end of the 171st mile, the valley again narrows and the foot of the hills approach closely to stream. Jack pine and spruce grow on this section, the general grade is about 11 feet per mile.

From 171st mile to 185th mile the line is on lumpy ground, where some rock may be found in places, the formation being clay and gravelly clay, and is classed as medium heavy work. Jack pines grow on the side hills, and spruce in the bottoms. Near the end of the 171st mile a slow curve to left is needed. 172nd mile is straight, and in fact very slight curvature is required until the end of the 183rd mile is reached, where a medium curve to left is required.

The next section of 5 miles is easy work, the hills again recede having plenty of room between their foot and the edge of the stream. From the 185th mile to the 190th, the end of the exploration, the alignment is nearly straight or requiring very little curvature. The formation is sand and gravel and the growth is spruce and balsam with Jack pine on hill sides, this is classed light work.

As stated earlier we finished our exploration on March 30, 1899. After a rest we got the boat out of the snow, and, after thoroughly drying it, caulked and pitched it, the gum of the spruce taking the place of the regular pitch, while old rope unravellings took that of oakum. We had a long tedious wait for the streams to open, it being a cold backward spring, our provisions ran low also and we were out of everything but flour and tea for sometime.

We finally got off on May 8, in the morning, and got down to the mouth of the Omenica in time to caulk and pitch the small boat (caché here last autumn that day).

We got away early the next morning. The boys from Fort Graham who had charge of the horses having arrived in the night, we were all together again. The boys from Graham were fortunate enough to secure some dried moose meat the day before from an Indian hunter, which we all enjoyed very much after our long diet of dry bread and straight tea.

We arrived at the Finlay Rapids about 9 a.m., and after lunch partially unloaded the boats, Joe Gagnon and Frank Umberg undertaking to shoot the rapids with the boats partially loaded, which they succeeded in doing without any mishap. We got away from rapids about 2 p.m. and ran into head of ice jam about 15 miles below the rapids about 4.30 p.m., and had to go into camp. We heard at a camp just below the

Wicked River where a party of prospectors wintered, that a party of prospectors camped at the mouth of the Clearwater, were laid up with the scurvy and needed help.

On May 10 we started at 5.25 a.m., the ice jam having broken in the night, and arrived at Clearwater Creek at 8.45, where we found affairs even worse than we had anticipated. Six men had camped here for the winter, and when we arrived one of them, Capt. Geo. W. Pontine from Sault Ste. Marie, Algoma, was dead, having died the 27th of April from scurvy, and the other five in bed helpless from the same disease. Walter Raines from same place, one of the captain's partners, was very low and so weak that he fainted every time he was moved. A. W. Ormiston from Calgary, another partner of Pontine's, also very low but a little stronger than Raines; J. S. G. Ironsides from Kingston, Ontario, very low; W. B. Moores from Kingston and G. S. Carter from McKenzie River (last three were partners). Moores and Carter were the strongest as they were the last two to succumb to the disease. It was a fearful condition for men to be in this wilderness and the hardest job of the whole expedition now confronted us. I would like to say here that my boys one and all were not only willing but eager to do all they could for these unfortunate men.

We made a coffin and buried poor Pontine near the shacks, painting his name and address and the date of his death on a headboard. The others we washed up and dressed and carried to our boats, making them as comfortable as possible. Fortunately having a boat large enough to allow plenty of room for them, we took nothing from their caché except a few pounds of pork and the clothes and bedding they required.

We got away from the Clearwater Creek at 12.25 p.m., and reached the Parle-pas Rapids about 2 p m. The river is about 5 feet higher than when we struggled up last autumn and the rapids present a different appearance altogether. We shot these rapids without taking anything out of the boats, the only danger being from floating ice, for if a boat should strike a cake of ice in the rapids it would stave it in. However, we got all boats through without an accident, and got about 12 miles below them before it was time to camp for the night. A strong head wind retarding us very much. The valley widens below the Parle-pas and the bottoms and hillsides are clear of snow. We slept on the bare ground for the first time since the 23rd of October last, nearly seven months.

The next day, May 11, we got away at 5.30 a.m., and were stopped about noon by another ice jam about 15 miles above Cust's House. This jam broke at 3.30 p.m., and we started at once and pulled through floating ice and timber, arriving at Cust's House or west end of Rocky Mountain portage at 8 p.m., the sick men standing the journey better than had been expected. We kept up the weaker ones with brandy, of which we fortunately had a good supply.

We met the Potts party here going in with some mining machinery, under charge of Dr. Robb, which they were taking up river, where they claim they have found paying gold-bearing quartz. Two of this party wintered just below the mouth of the Wicked River, and they with the 8 men who came in this spring intend developing their claims this season. This party left Edmonton the last of February with horse sleighs and got their supplies to this point on the snow and ice. They brought us about 50 lbs. of mail, which we were most pleased to get, being our first news from the outside world since November 4 last. We had some difficulty in getting the sick men and our small boat and our camp outfit over the portage; although there were plenty of horses in this neighbourhood, they were poor and weak and could not do much without resting.

I had to abandon the boat we built last autumn and the boat I purchased from the Dykeman party, they being too heavy to draw across portage; we got everything over however by the evening of Tuesday, May 16. The sick men all going through the terrible ordeal of being transported on travoys over a mountain trail 15 miles in length.

In the mean time I had hired the use of a large boat to the Peace River crossing from the agent of the De Ome & Dejarlais. Here I also purchased a Peterboro canoe from a party of prospectors to take the place of the two boats abandoned at Cust's House, and on Wednesday, May 17, we left Hudson's Hope about midday, the morning being taken up in repairing boat moved over portage, it having been shook up considerably in the transit. We got below the mouth of Halfway River about 4 miles this afternoon.

We reached Fort St. John at 9.30 a.m. on May 18, where we were enabled to get some fruit and syrup for the sick. A medical man who happened to be here, thought the sick men, with the exception of Raines, would be able to stand the journey to Edmonton. We reached Dunvegan on Saturday, May 20, at 10 a.m., where we were enabled to procure some fresh beef and potatoes (*nothing ever tasted so good as those potatoes*); we arrived this evening at Brick Bros.' ranch about 14 miles above the crossing, having sailed over 80 miles that day, notwithstanding we had a strong head wind all day, the last two days having been cold and raining some, which has been bad for the sick men, and poor Raines is perceptibly worse and has been wandering in his mind.

I made arrangements with Brick Bros'. to take us over the portage from Peace River crossing to Lesser Slave Lake, and as it would take him some time to get horses down to the crossing and over the river we laid off here over Sunday.

Two clergymen of the Episcopal Mission came to our camp to see the sick, and they offered to take Raines and Ormiston off my hands and care for them until they were strong and more fit for travelling.

Monday, May 22. Poor Walter Raines died this morning at 2.30 a.m., his death was not unexpected as he had been sinking ever since we left Hudson's Hope, and for the two last days had been unconscious, we carried A. W. Ormiston to the Episcopal Mission house this morning and took the remains of Walter Raines down to the Roman Catholic Mission (he being a Roman Catholic) which is situated about 5 miles below the the Protestant Mission. The priests kindly consenting to bury him, we making the coffin and digging the grave. We then sailed down to the crossing, where we cached some of our effects not needed on the trail in one of the government buildings under charge of the Mounted Police, we also left the canoe and small boat in their charge and returned De Ome & Dejarlais boat to their agent here. The Bricks arrived with their horses on a raft late in the evening. We found two or three new stores here, all seemed to be doing a good business.

Tuesday, May 23. Got away from crossing at 10 a.m., with four double wagons and a saddle horse, here we picked up another unfortunate victim of the scurvy, S. G. Heathcot, of Toronto, who wanted a passage to Edmonton, a request I could not very well refuse under the circumstances. We arrived at the head of Lesser Slave Lake on Saturday, May 27, at noon, the trail was very wet and heavy and the horses not strong and as the food was not very good we got along slowly. We learned on our arrival at the lake that the ice had not gone out; also found that we could not get a native crew to take us to Athabasca Landing as the natives were waiting the arrival of the Treaty Commission.

I tried to get a freighter to take us out to Edmonton by the Chalmers trail, with teams, but his prices were too high, so I hired a York boat from Brick Bros., intending to man it with my own men, Joseph Gagnon, captain and steersman, which we successfully carried out but it was somewhat risky.

We were detained here several days with a strong head wind from the east as well as the ice reported to be still in the lower part of the lake.

This place has improved wonderfully since going through here last August. A number of fine frame buildings going up, which are heavily stocked with all line of goods. I am more convinced that this place has a great future before it.

The wind changed Friday evening and we got away from the head of the lake, next morning June 3, at 7.30, the wind being favourable we crossed the lake in 12 hours. This lake is 85 miles long and about 20 to 40 miles wide, with splendid farming lands all around it, the waves ran high 10 or 12 feet at least, but Gagnon proved to be the right man in the right place and he managed to keep the boat from pitching badly. We camped at the head of the outlet or Lesser River as it is called; found that ice had all gone out of lake.

Sunday morning, June 4, we started down Little River at 4.10 a.m. and arrived at its mouth on the Athabasca River at 5.30 p.m. Little Slave River is narrow and crooked, and the lower part has several shoal rapids, making navigation very difficult; in going up freighters have to double this part of the river as the water is too shoal in places to float a full load. Those shoals could easily be deepened, requir-

ing very little blasting to make this river navigable for steamers of light draught. Good farming lands adjoin this river from the lake to Athabasca River on the upper part and about halfway down it is open prairie, that looks to me to be as good as any I saw in my life. The lower half has some bush alternate with open prairie, the length of this river is 57 miles.

The Athabasca River from the mouth of Little River to Athabasca Landing is a fine large stream about 1,500 feet wide, flowing about 4 miles per hour, without any rapids.

We sailed all night arriving at the landing at 7 a.m., just 47½ hours from the head of Lesser Slave Lake, a distance of a little over 200 miles, this I am told is a record breaker. We met the Treaty Commission about 8 miles above the landing with three large boats, they were getting along slowly on account of not having enough tracking force, they were expecting help from Lesser Slave Lake, and asked us eagerly when their men were coming down, we were forced to tell them that we had heard nothing about it. I was told later that the Mounted Police who were escorting the party went out on the tracking lines and rendered efficient service.

Athabasca Landing is situated just at a big bend the river makes here to the north, and is about 65 miles below the mouth of Lesser Slave River. This landing is headquarters for freighters going up the route we came down, and also for freighters going down the Athabasca River to Athabasca Lake and thence into Great Slave Lake and the Mackenzie River. It is also headquarters for the Hudson's Bay Co., and the place where they build their boats, there are some steamers here, and steam and naphtha yachts, while York boats and sturgeon hand boats are made by the score. The traders never bringing boats up from the lake except one apiece to transport their furs in, the rest are taken apart and used in buildings. There are some very bad rapids on this river below the landing, one 80 miles long, that requires a most experienced steersman to pilot a boat through, several parties prefer taking their freight to the Peace River via the way we came down and thence down that river to Great Slave Lake thus avoiding this dangerous water.

There are a number of stores here at the landing and a brisk business seems to be done. A great number of freighters are on the trail between here and Edmonton ; two, three and four horse teams are met frequently, also, one, two and four ox teams are seen drawing all kinds of merchandise and machinery for boats, one party brought in a steam yacht already for business, arriving the day before we got there.

A railroad to this place worked in connection with the steamers both up and down, would, I think be a paying industry as this country only awaits some rapid means of transit to develop fast. We were detained at Athabasca Landing one day on account of a heavy rain ; it was raining when we arrived here, and had been since nine o'clock Sunday night.

We left the landing on Tuesday, June 6, having been fortunate enough to find returning freight teams to take us all, the trail was very heavy on account of recent rains and our progress was slow ; however, I arrived at Edmonton on the evening of June 8, having left the party at Sturgeon River at 4 p.m., they arrived safely on the 9th about noon. We left Edmonton on July 12, 1898, being in the wilderness so to speak about 11 months, having travelled upwards of 2,000 miles by land and water, over prairies and over mountains, up and down wild mountain streams, over lakes and rivers, without any serious accident and without any sickness and we all were truly glad to get back to civilization again. The trail from Athabasca Landing to Edmonton is the best I have seen in this country, notwithstanding the fact that there is such a lot of freight hauled over it on wagons.

A great part of the country this trail passes through is good for farming, and from the crossing of the Sturgeon River to Edmonton, 28 miles, it is quite thickly settled.

The business men of Peace River Crossing, Lesser Slave Lake, and Athabasca Landing are sadly in need of a regular mail service, and there is nothing to prevent a monthly service being established, via Athabasca Landing, Lesser Slave Lake and Peace River Crossing, by pack-trail and boat during the open season, and by sleighs in winter. The only mail facilities they have now is through the courtesy of the Hudson's

Bay Co.'s officials who are very obliging in this respect; still this is irregular and unsatisfactory.

I began keeping a daily record of the temperature on the first of November; the first 16 days only recording the morning and evening readings, after the last date I managed to take 3 readings and also gave an average per day. I regret I had not started this account sooner, but I was worried with our slow progress up the river from Cust's House and I did not think of it. This record is taken in the Cariboo range of mountains down to May 10, 1899, and from that date to May 17, we were in the Rocky Mountains. I also kept a memorandum of the snowfall and have given same for each month, which aggregate 14 feet, settling to about 4¼ feet of solid snow in the bottom; up the mountains it was very deep, as much as 20 feet in places. From what I could learn from the Indians and Hudson's Bay Co.'s agent at Fort Graham it was an unusually mild winter with much more snow than usual.

TEMPERATURE for November, 1898.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°	°	°
1	30	.... ..	36	36·00	20	—12	12	—12	—7 34
2	28	....	40	34·00	21	—28	— 2	—18	—16·00
3	30	.....	40	35 00	22	—22	—14	—18	—18·00
4	31	.....	41	36·00	23	—28	— 8	—22	—19·34
5	32	....	44	38·00	24	—12	— 4	— 4	— 6·67
6	14	.....	25	19·50	25	10	20	20	16·67
7	15	.....	24	19·50	26	4	15	18	12 34
8	6	.....	18	12 00	27	16	28	20	21·34
9	21	.. ..	30	25·50	28	14	28	22	21·34
10	20	.....	36	28·00	29	16	28	20	21·34
11	27	....	40	33·50	30	19	25	24	22·67
12	26	... .	32	29·00					
13	28	....	38	33·00		Mean average for month			18·11
14	30	.....	36	33·00					
15	30	.....	33	31·50				Ft.	In.
16	29	....	34	31·50		Snowfall for October		1	6
17	21	17	10	16·00		" November....		2	9
18	3	5	2	3·34				—	—
19	— 4	8	— 2	0·67		Total to 30th inst.		4	3

TEMPERATURE for December, 1898.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°	°	°
1 ..	18	22	14	18·00	21 ...	9	19	13	13·67
2 ...	6	28	8	14·00	22 ...	0	11	3	4·67
3....	25	30	18	24·33	23....	6	13	17	12·00
4....	7	22	6	11·67	24....	22	30	32	28·00
5....	—10	2	6	—0 67	25...	22	30	19	23·67
6....	9	16	16	13·67	26....	22	28	28	26·00
7....	— 2	10	— 6	0·67	27..	31	33	28	30·67
8....	— 8	1	—10	—5·67	28 ...	2	10	— 4	2·67
9....	—18	2	—10	—8·67	29...	—18	0	—23	—13·67
10....	—10	6	— 8	—4·00	30....	—28	—18	—24	—23·34
11....	—16	2	—13	—9 00	31	—37	—22	—30	—29·67
12 ..	— 8	— 6	— 6	—6·67					
13....	— 8	— 2	— 2	—4·00				Mean average for month.....	8·65
14....	2	5	4	3·67					
15 ..	12	13	21	15·34				Ft.	In.
16....	21	31	25	25·67			Snowfall for month.. . .	2	5
17...	31	34	32	32·34			" previous month	4	3
18....	28	32	29	29·67				—	—
19....	30	29	19	26·00			Total to 31st inst.....	6	8
20....	17	23	12	17·34					

TEMPERATURE for January, 1899.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°	°	°
1 ...	—34	—24	—32	—30·00	21....	30	31	14	25·00
2 ..	—35	—15	—25	—25 00	22....	16	25	26	22·34
3....	—37	—22	—28	—29·00	23....	26	31	24	27·00
4....	—26	—16	—26	—22·67	24. ..	28	34	32	31·34
5...	—38	—24	—26	—29·34	25....	20	19	18	19·00
6 ...	—20	—16	—14	—16·67	26....	6	17	20	14·34
7....	—16	—10	— 6	—10·67	27....	24	28	20	24·00
8 ...	— 2	3	4	1·67	28....	2	18	12	10·67
9....	8	8	6	7·34	29....	10	18	12	13·34
10....	4	2	2	2·67	30...	6	12	10	9·34
11....	2	24	16	14·00	31....	—10	— 8	—12	10·00
12....	14	26	26	22·00					
13....	24	26	26	25·34				Mean average for month....	7·02
14....	20	18	12	16·67					
15 ...	0	4	0	1·34				Ft.	In.
16 ...	2	12	18	10·67			Snowfall for month... ...	3	6
17....	18	21	20	19·67			" previous.....	6	8
18....	20	30	24	24·67				—	—
19 ...	26	34	16	25·34			Total to 31st inst.....	10	2
20....	16	26	28	23·34					

TEMPERATURE for February, 1899.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°	°	°
1	—24	—10	—18	—17·34	20	16	18	14	16·00
2	—30	—20	—40	—30·00	21	—22	— 8	—28	—19·34
3	—30	—20	—20	—23·34	22	—16	— 7	— 4	— 9·00
4	—18	—14	—22	—18·00	23	6	8	6	6·67
5	—17	0	— 4	— 7·00	24	2	6	2	3·34
6	— 2	2	4	1·34	25	—11	— 6	—14	—10·34
7	4	10	— 4	3·34	26	—11	— 6	— 2	— 6·34
8	4	16	—10	10·00	27	—10	7	2	— 0·34
9	2	5	— 4	1·00	28	— 2	8	4	— 3·34
10	— 2	0	— 4	— 2·00					
11	— 2	5	6	3·00				Mean average for month	4·88
12	10	21	22	17·67					
13	20	36	28	28·00					
14	30	36	32	32·67					
15	22	34	28	28·00					
16	18	38	22	26·00					
17	24	38	30	30·67					
18	37	42	34	37·67					
19	32	35	26	31·00					

	Ft.	In.
Snowfall for month	2	3
" previous	10	2
Total to 28th inst.	12	5

TEMPERATURE for March, 1899.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°	°	°
1	— 2	0	— 4	— 2·00	21	14	16	12	4·67
2	—14	4	0	— 3·34	22	— 8	14	8	4·67
3	— 8	12	5	3·00	23	— 6	18	12	8·00
4	—14	10	8	1·34	24	—12	20	14	7·34
5	8	14	18	13·34	25	— 2	20	20	12·67
6	18	44	32	31·34	26	— 5	28	26	18·34
7	22	28	18	22·67	27	24	48	30	34·00
8	10	16	10	12·00	28	18	40	24	27·34
9	— 4	10	15	7·00	29	— 3	30	12	13·00
10	10	25	25	20·00	30	—13	22	20	9·67
11	17	36	25	26·00	31	1	32	18	17·00
12	16	32	26	24·67					
13	10	27	16	17·67				Mean average for month	13·89
14	—14	26	12	8·00					
15	—12	25	24	12·34					
16	— 6	33	28	18·34					
17	— 0	40	30	23·34					
18	26	28	20	24·67					
19	—10	18	12	6·67					
20	— 2	21	8	9·00					

	Ft.	In.
Snowfall for month	1	5
" previous	12	5
Total	13	10

TEMPERATURE for April, 1899.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°	°	°
1....	2	36	18	17·34	21 ...	26	48	40	38·00
2....	4	35	22	20·34	22.. .	26	52	38	38·67
3. ..	8	38	36	27·34	23....	24	54	42	40·00
4....	20	44	32	32·00	24....	28	62	44	44·67
5....	16	45	36	32·34	25....	32	52	42	42 00
6....	32	46	36	38·00	26....	32	42	36	36 67
7....	30	45	38	37·67	27....	30	38	35	34 34
8....	25	37	35	32·34	28....	24	42	36	34 00
9 ...	32	40	36	36·00	29....	22	37	26	28·34
10....	28	36	28	30·67	30 ...	16	32	25	24·34
11....	14	38	36	29·34					
12....	29	38	32	33·00				Mean average for month.....	33·74
13....	18	40	32	30·00					
14....	22	43	34	33·00				Ft.	In.
15....	32	39	35	35·34				Snowfall for month . . . 0	2
16....	32	46	39	39·00				" previous..... 13	10
17....	23	42	34	33·00					
18....	32	40	36	36·00				Total for winter..... 14	00
19....	30	46	42	39·34					
20....	36	42	40	39·34				Snow settled to about 4 ft. 6 in.	

TEMPERATURE for May, 1899.

Date.	Morning.	Noon.	Evening.	Mean Average.	Date.	Morning.	Noon.	Evening.	Mean Average.
	°	°	°	°		°	°		°
1....	16	32	26	24·67	18....	36	71	54	53·67
2....	14	36	33	27·67	19...	45	55	49	49·67
3 ...	29	46	36	37·00	20....	44	51	50	48·34
4....	34	51	42	42·34	21....	35	78	57	56·67
5....	34	50	36	40·00	22....	38	75	52	55·00
6 ..	24	56	42	40·67	23....	42	65	54	53·67
7....	34	52	45	43·67	24....	37	74	54	55·00
8....	38	58	46	47·34	25 ...	46	74	50	56·67
9....	32	42	34	36·00	26....	40	69	58	55·67
10....	22	45	36	34·34	27....	48	65	50	54·34
11....	30	42	36	36·00	28....	48	58	53	53·00
12....	26	46	33	35·00	29....	30	64	54	49·34
13....	16	56	42	38·00	30....	55	69	59	61·00
14....	15	56	48	39·67	31....	53	62	52	55·67
15....	29	56	49	44·67					
16....	36	58	54	49·34				Mean average for month	46·02
17....	30	70	58	52·67					

GAME AND FISH.

That we were in a game and fishing country goes without saying, as the Hudson's Bay Co. have had forts or business posts here for centuries, and free traders also have been doing business in this country for a great length of time. We had no time to devote to much hunting, but we saw several bears, moose and cariboos during our journey in the north-west wilds, at different times. In October a young cariboo attempted to cross the Omenica River just ahead of our boat as we were struggling through a bad rapid. Some of the boys held the boat ashore and Smith soon put an end to the cariboo's career. The meat tasted like veal, and was highly appreciated after having lived on salt pork for months.

In February, we were again in luck, killing five fine full grown cariboos that we discovered on the summit of a high mountain. L. E. Smith asked permission to try his luck, which I granted, he overtook us next day, with the hearts and livers of two and the information that he had killed all the band, which numbered five. I sent the boys back next day to get the meat down the mountain and to cache all but one and bring that to camp. They had a hard time of it and only got four down, but this made a lot of meat as they averaged about 200 lbs. apiece, the meat proving tender and nutritious.

Along in March we had the luck to stumble on two fine moose in our work, and Smith soon had some more liver for us. They dressed about 350 lbs. apiece; in all we must have had at least two months meat. We were not so fortunate with fish, and although the streams seemed full of fine mountain trout, we never got many; we did not seem to have the right kind of bait for them, at least that is what the Indians told us. Small fur-bearing animals were plentiful such as marten, fisher, beaver, and woolverine. There was a party of native hunters in the neighbourhood of our winter quarters all winter, and they came in once in a while with fresh meat and mocassins to sell, taking flour, tea and tobacco in exchange. They belonged to the Sicannie tribe, and are bright and intelligent.

The Cree Indians live between Edmonton and Peace River crossing, and a few miles up the river above the crossing; then we have the Beavers up to the Finlay River where the Sicannies are located. We never had the slightest trouble with any Indians during the whole expedition, always finding them friendly and obliging.

In speaking of Omenica country, I would like to make a quotation from a geological report of Dr. Dawson's, made in 1880.

'The known auriferous localities here lie about fifty miles north of a line passing westward from Pine River pass by Forts McLeod and St. James. There are three routes by which the Omenica may be reached. First, from the coast by the Skeena River, Babine Portage and Firepan Pass. This route is travelled by canoe and on foot. Second, by a trail from Fort St. James, practicable for pack animals; and third, by canoe or boat from the eastward by the Peace and Finlay Rivers. Without entering into details, a glance at the map will show how completely isolated this district is, and account for the scarcity and high price of provisions, which has hindered the thorough examination of the country.'

One of my men, Mr. Frank Urnberg, is an old prospector, and from time to time we washed a pan on the bars of the upper Peace River, the Finlay and Omenica, always finding colours. The gold, however, is very fine, what is known as flour gold, and is very hard to retain by the primitive methods that have to be resorted to in this isolated region at present, and that with the high cost of provisions hinders prospectors from giving a sufficient time to thoroughly prospect the different bars on these streams. I know of one man who worked a bar just at the head of the Black Cañon on the Omenica who averaged $5 per day for about 6 weeks before the frost stopped him last autumn. If the country is ever opened up so that mining machinery and provisions can be got in cheaply, all these bars and bottoms will be profitably worked.

APPROXIMATE ESTIMATE OF COST.

I will now give an approximate estimate, based on prices for similar work in eastern Canada, of the construction (road-bed and permanent way) from the junction

of the Parsnip and Finlay Rivers, westward 190 miles to a point on the Skeena River north-westward of Fort Connolly.

60	miles light work at $12,000 per mile	$ 720,000 00
101½	" medium heavy work at $15,000 per mile .	1,522,500 00
28½	" heavy " 20,000 " ..	570,000 00
	Steel bridges on masonry abutments and piers.....	151,700 00
	Total cost.....	$2,964,200 00

Average per mile, $15,600, including steel bridges.

It must be remembered that this estimate is for similar work in eastern Canada.

In conclusion, I wish to say that I was most favourably impressed with the country north and north-west of Edmonton, its future possibilities are practically unlimited.

This part of the great west is lower in elevation than the country to the south of it, and there is more bush and timber, hence there is more rainfall, and consequently there is greater fertility.

This country truly is a great inheritance only needing development, and we should strain every nerve to accomplish this, as eternal vigilance only is the price of success.

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

C. F. K. DIBBLEE,
Engineer in charge.

COLLINGWOOD SCHREIBER, Esq.,
Chief Engineer, Railways and Canals.

SESSIONAL PAPER No. 10

PRELIMINARY REPORT OF AN EXPLORATION ON THE UPPER PART OF THE STIKINE RIVER.

(By V. H. DUPONT, C.E.)

OTTAWA, December 3, 1899.

SIR,—I beg to submit the following preliminary report and sketch plan, of an exploration I made, on the upper part of the Stikine River, to ascertain the feasibility of building a railway.

Your instructions, dated May 1, directed me to leave Ottawa and proceed to explore the valley of the Stikine River, from where Mr. J. S. O'Dwyre, C.E., completed his work the previous year, viz., 107 miles south-east of Dease Lake, to the head waters of the river, and from that point to endeavour to find a pass to the Skeena River.

In accordance with your instructions, I proceeded immediately to get ready, but owing to some delays, I was unable to leave Ottawa before May 11.

I arrived at Vancouver on the 17th, and without delay I started to organize my party and purchase the necessary supplies.

Great difficulty was experienced in procuring a suitable outfit of horses, men, etc., and in making arrangements for the transportation, especially from Fort Wrangel to Telegraph Creek. However, all arrangements were completed on May 27 and at 4 p.m. on that date I left Vancouver for Fort Wrangel arriving at that point on May 30 at 11 a.m.

On June 3, I left Fort Wrangel for Telegraph Creek, but owing to the low stage of water, the boat was unable to proceed further than Glenora, where we arrived on the 6th. Here considerable time was spent in breaking mules and making packs ready for transportation.

On leaving Glenora on the morning of the 14th, we experienced a bad stampede through the rough bushy mountains, losing four mules. Searches were made without success, and we continued on our journey until we arrived at Telegraph Creek, which is 12 miles from Glenora. These mules we found next day.

On account of unforeseen circumstances it was impossible to leave Telegraph Creek before June 20.

On July 1, our camp was pitched at the crossing of the Tanzilla River, 2½ miles south of Dease Lake and 72 miles from Telegraph Creek.

Here, the greatest difficulty was experienced in crossing this river. As the season was fully a month behind, the water was at its highest stage and the river was a rushing torrent. We first attempted to ford it but, in trying to do so, one man and several horses were swept away and nearly drowned. We then tried to bridge the river, which seemed almost impossible, but after having built three bridges, we managed to cross part of the outfit, a few minutes before the third bridge was carried away.

Leaving the remainder of the outfit on the west side of the river, we resumed our journey on the 6th and travelled through rain and mud until the 11th. We were then stopped by a very steep hill of over 1,000 feet in height, and as the frost was just coming out of the ground, it was impossible to climb it so we pitched camp, and I ordered the pack train to go back to the Tanzilla River and bring on the rest of the outfit.

The hill just spoken of was at the foot of the divide mountain between Gnat and Ptarmigan Creeks.

As the mountain was nearly all covered with snow, and as on examination of the trail over the divide I found it was impossible for the pack train to cross, I at once marked out a new trail, and by the time the pack train returned, which was on July 20, the trail was completed and we were able to cross the divide with a light load, and proceed on towards the point the exploration was to begin.

After having built several bridges and rafts to enable us to cross some large streams, and travelling through mud and rain we arrived on August 4 at the beginning of the exploration.

On the morning of August 5, we started the exploration.

At the point where we started work, no trace of a trail could be found and four men were set to work cutting one, in order that the pack train might travel.

On August 28, having connected my survey with the one made by Mr. O'Dwyre on the Skeena River, and taking the old Telegraph and Ashcroft trail where it crossed the head of the Stikine River, we arrived, on September 19, at Kis-pi-ox an Indian village situated on the Skeena, 3 miles north of Hazelton.

At this point, I decided to send Mr. Kerr, my assistant, accompanied by three men, to Ashcroft over trail, where they arrived on October 22, having travelled 600 miles in about one month. The remainder of the party and myself left for the coast in an Indian canoe and arrived at Port Essington on September 26, at 10 p.m., and taking a steamer four days after, we arrived at Vancouver on October 3, and on the 13th I arrived in Ottawa.

DESCRIPTION OF THE COUNTRY.

Having made a brief narrative of the trip, I will now describe that part of the country which was the object of my expedition.

Beginning at 111 miles south of Dease Lake and following the river up stream, for the first 28 miles, the valley is from 6 to 8 miles wide, and between the base of the mountains and the river, it is generally bordered by flats and benches of different height and width. On the left side of the river, going up, there is about half a mile of side hill where it will be necessary to make some rock excavations in building a railway line, but in no place will it be deep or will it necessitate a large expenditure of money.

There are two land slides, one about 100 feet in length which is occasioned by a spring, and the other is 500 feet in length and was dry at the time I saw it, but it must be of bad character in the spring when the frost is coming out of the ground. These slides are composed of sandy clay and gravel which becomes very soft when wet and hard like concrete when dry. By careful drainage of the springs and diverting the water elsewhere, the slides mentioned can, without doubt, be stopped.

I also noticed a cut-bank 200 feet in length caused by the action of the river and composed of disintegrated beds of sandstone. This cut-bank will present very little difficulty.

Some short pieces of muskeg are also on the way, but all have a rocky bottom a few feet below the surface. From the beginning of this section of 28 miles and speaking always of the left side of the river (going up), there are 19 streams to cross, 16 of which are less than 6 feet in width.

The important streams are:—

The Ducker River, which is a very uniform stream, having a width of 250 feet in high water, it has a mean fall of 20 feet per mile for a distance of at least 6 miles and flows through a very wide valley, which appears to extend in a direction N. 60° E. This river will require a bridge 250 feet in length and 20 feet above the water. It is possible to bridge this river at any point, as the bottom is of a hard nature.

The Sanabar River is a very crooked stream, running through cañons of sandstone and conglomerate of a greenish colour. At a distance of 5 miles from its mouth, it branches into two equal streams, one running in a southerly direction, while the other follows an easterly course. This river has a fall of 106 feet in the first mile. It could be bridged with a 100-foot span, 12 or 15 feet above the water. The third stream will require a span of 40 feet. This stream after crossing a broken flat divides into three branches, the main one running in a direction S. 25° W.

From the beginning to the end of the first 28 miles, just described, the right side of the river appears to present the least obstacles to the construction of a railway line. Large flats of even height border the river, and the land seems to be dry and no streams of any importance will have to be crossed.

The Stikine River has a mean fall of 4 feet to the mile for the first 16 miles, and then the water is nearly still for a long stretch. The course followed by the river, is very crooked indeed, describing half a circle of 12 miles diameter and 28 miles long.

From the 28th mile to the 56th, the valley becomes much narrower, being in places not more than a mile wide. The river presents the appearance of a narrow lake with irregular contours of very peculiar appearance. As seen from the top of a moun-

tain, the valley looks like a very beautiful park. At one place, the river describes a very regular S over 4 miles long. The space between the branches of the S, is covered with grass of a fine yellow-green colour, and is cut off by numerous lakes and channels. The water is surrounded by a narrow strip of spruce trees, which gives the scenery a very pleasant effect.

The river for the second 28 miles flows through a muskeg of at least a mile wide, but a line could easily be built, at a moderate cost, by following the foot of the surrounding hills on either side of the river.

On the left side of the river, there are 13 streams, but only two are important. One will require a span of 75 feet, while a span of 20 feet will be sufficient for the other.

I noticed a cut-bank 40 feet high and 300 feet long. The base of this cut-bank is of slate formation.

In the next 12 miles, the river has a fall of 91 feet and becomes narrower and swifter in places. The land on both sides is dry and very suitable for the construction of a railway line. The valley, which is not more than a mile wide, becomes an open prairie for the last 4 miles.

There are six small streams on the left side of the river, and only three very small ones on the opposite side.

At the 68th mile, the river branches into three streams, one branch called the Tennasee Creek, running in a westerly direction, first through a short cañon, 1,500 feet in length, in which a vein of coal appears, and then through an open valley, one mile wide, until it comes within one mile of a branch of the Clappan River, where it turns in a southerly direction and branches out in the mountains.

The second branch continues toward the south, through several short cañons, for a distance of 5½ miles, and then branches off into two streams, one running in a westerly direction and is soon lost in the mountains, the other running toward the east across some high broken benches for a mile or so, and then through a very fine open valley one mile wide. This branch I have called the "Glacier Branch." It continues through the valley for 3 miles, where it touches a small lake which is the source of a branch of the Skeena River. From this lake the creek takes a sudden bend toward the south and runs in that direction for about 2 miles and then ends in a glacier, which I have named the 'Bell Glacier' on account of a black peak which at a distance has the appearance of an immense bell, and which is in the centre of this glacier.

This valley, through which a branch of the Skeena flows, continues to be open and becomes drier for a distance of 6 miles. The continuation of this valley will be described by Mr. O'Dwyer in his report.

I will now come back to the 68th mile and give a description of the third branch called the East Branch. The valley through which this branch flows presents a more favourable appearance for the route of a railway line than the valley just described. The stream follows an easterly course, running through a cañon about a mile long. The walls of this cañon are 25 feet high, and on the top of which ends the slope of a plateau of 150 feet in height. From here the valley is very open. At a distance of 14 miles, the river branches off into two streams, the most important one running in a north-easterly direction, and then continues toward the east for a distance of 4 miles, where it meets a branch of the Skeena River, which joins another branch of the Skeena meeting the Glacier Branch of the Stikine.

The junction point of the two branches of the Skeena River can be seen from an elevation, and as far as I could judge, this valley presents no serious obstacles to the construction of a railway line.

The approximate elevation at the divide of the Glacier branch is 4,335 feet above sea level, while it is 4,150 feet at the divide of the 'East Branch,' giving 185 feet lower in favour of the latter pass.

The mean grade by this route is 22 feet per mile, while it is 54·5 feet per mile by the valley of the Glacier branch, which is also 5½ miles longer than the other.

All the mountains in this part of the country are more or less covered with snow, and present the general appearance of the Rockies.

Particular pains were taken in studying the geolgy of the country but without any striking results. Colours of gold are found in the Stikine River up to the 38th mile, but then disappear entirely.

At the 48th mile we crossed a red mountain, which no doubt, is part of a mineral belt running practically east and west. Some good quartz might be found in this range.

The formation is chiefly of conglomerate and sandstone up to the 56th mile, where limestone, slate and shale formation commence to appear. At Tenasse Creek there is a vein of about 10 feet of impure coal, this same vein seems to appear on the Glacier Branch. Several indications of coal were noticed in the surrounding gulleys and even on top of the mountains, but all the coal seems to be impure and in small quantities.

Several peaks were ascended. The highest appears to be at the 48th mile, its elevation being 7,665 above sea level.

The climate is cool, freezing every night unless the sky is cloudy or the wind blowing. The season was very wet raining more or less ever day. From the time we left Telegraph Creek until we arrived in Vancouver, I am safe in saying it rained five days per week, but I am under the impression that this season was an exception, the climate being generally dry according to some Indians who I met at the head waters of the Stikine River.

Good timber is not very abundant; some white spruce of 2 feet diameter was seen in many places but not in large quantities. Many flats are covered with jack pine of small growth. There are also poplar trees in places, and everywhere there are thick bushes which make it very disagreeable in travelling.

An album containing the photographs taken on the trip will accompany the final report giving a better idea of the nature of the country.

I have the honour to be, sir,

Your obedient servant.

V. H. DUPONT, C.E.

COLLINGWOOD SCHREIBER, Esq., C.M.G.
Deputy Minister and Chief Engineer,
Department of Railways and Canals,
Ottawa, Ont.

THE INSTRUCTIONS OF THE CHIEF ENGINEER (WRITTEN AND VERBAL) GIVEN ME ON APRIL 21, 1899, OUTLINED THE FOLLOWING OPERATIONS IN THE FIELD.

(I.) An exploration of the Skeena River northward from Hazelton to the mouth of the east branch of the Skeena, thence along this branch to the Vicinity of Fort Connolly.

At this point a junction should be made with the work of Mr. C. F. Dibblee, who, during the winter of 1898-9, was expected to have made explorations westward from the mouth of the Omenica River towards Fort Connolly.

A personal interview with Mr. Dibblee was to be had, if possible, and his co-operation obtained in the exploration of the East Branch of the Skeena.

(II.) A continuation of the explorations of the Skeena River northward to its head, with the object of discovering a pass—suitable for railway construction between its head waters and those of the Stikine River.

My pack train and party started from Ashcroft for Hazelton, via Quesnelle, on May 20; we reached Hazelton June 30. Here we were delayed until July 5, getting the pack animals reshod, and preparing the supplies, outfit, &c., for the season's trip.

Before leaving Ashcroft, I received from the chief engineer a copy of Mr. Dibblee's report to him, dated April 1, 1899; in which Mr. Dibblee states, 'Have just finished explorations, getting back to headquarters the 30th ultimo. Have found a favourable route via Omenica, Osilinca, head waters of Skeena waters, &c.'

Mr. Dibblee's headquarters, referred to above, being at the mouth of the Omenica River, the proposed personal interview with him was now out of the question, as was also the contemplated assistance from him in exploring the East Branch of the Skeena.

Consequently, I decided to proceed directly to the head of the Main Branch of the Skeena, and explore that vicinity for a pass to the waters of the Stikine; leaving the work on the East Branch toward Fort Connolly for the latter part of the season. I was particularly influenced to adopt this programme of work, by the fact that Mr. Dupont, who had been sent out to continue my explorations on the Stikine River of 1898, southward to its head, would no doubt on reaching the divide between the Skeena and Stikine waters, be on the look out for my party, or evidences of our work. I realized too that it might be a difficult matter to connect our surveys in a wild, and wholly uninhabited territory, unless precautions were taken to reach that vicinity as early as possible, and ascertain the peculiar conditions topographically of the head waters of these rivers. As I was unable to obtain any reliable information regarding this locality, I could form no idea of the probable time required to explore for and secure the desired pass; another reason for proceeding directly to the head of the Skeena. Accordingly, I left Hazelton on July 5, making a track survey of our route, and taking barometer readings for elevation, also observations for latitude, to correct the traverse survey, as we proceeded. The most direct route to the head of the Skeena was taken. By August 8, I had discovered an excellent pass for a railway line between the head waters of the Skeena and Stikine Rivers—the divide being about 164 miles by trail from Hazelton—and had explored some 20 miles down the branch of the Stikine heading here. I then felt quite confident we were on the same branch of the Stikine River that I had explored last season, and which Mr. Dupont was this year following to its head. I was gratified to learn later on that Mr. Dupont had come directly onto my work and connected with reference posts left by me for that purpose on the banks of the Stikine, at the end of my explorations in that direction.

In taking the above-mentioned direct route to the upper Skeena, my trail left the main river about the 91st mile, and ascending to the head of a large tributary branch, passed through a low, wide valley to the head waters of the Nass River. It followed down this branch of the Nass for a few miles, then ascended by another one to an elevated unbroken watershed between the Nass and the Skeena. From here the route

descended to the main Skeena, reaching it at the 143rd mile. If it were not for the summit just mentioned, the route of this trail itself would form a good line for a railway, the general direction being almost due north from Hazelton.

Had the season not been so far advanced, on my return from the head of the river to the 143rd mile, I would have explored the main Skeena southward from this point to the 91st mile, where I had left it on my way north. To do this, however, under the circumstances, would have meant abandoning, for the present season, any possibility of exploring the East Branch to Fort Connolly, one of the objects of my expedition.

My explorations so far had established the fact that a railway line from Hazelton to the pass, now located between the Skeena and Stikine Rivers, must follow the main Skeena, the more direct route followed by the pack trail not being feasible. Hence the exploration of the river from the 143rd mile southwards, while necessary to obtain an idea of the approximate cost of construction over this section, was not absolutely essential to the work in hand. This portion of the river must be accepted in any case as part of the railway route northward from Hazelton, as mentioned above. However, before leaving the 143rd mile, I ascended a high mountain in this vicinity, and obtained from its summit a good view down the Skeena for some 20 miles southward. The river valley is quite direct, and timbered generally to the water, it did not appear to offer any serious obstacles to railway construction, and furthermore, my Indian guide, who had previously been over this part of the Skeena several times, told me that similar conditions obtained down to the mouth of the East Branch.

I then returned to the 91st mile on the main Skeena and on August 22 began the explorations eastward toward Fort Connolly, following the main river to the 116th mile. Here the East Branch, or Sestoot River, bringing westward the waters of Sestoot Lake and Bear Lake, joins the Skeena, which, veering around through 90 degrees from its previous east and west course, now turns abruptly north. Looking up the Skeena from this point, I observed for several miles, conditions somewhat similar to those noted at the 143rd mile, and I therefore feel quite confident that the section of the river between the 116th and the 143rd miles will not present serious difficulties to railway construction. Continuing eastward along the East Branch, I reached Fort Connolly at the lower or north end of Bear Lake, on September 6. I ascertained from Indians living here, that Sestoot Lake was distant some 60 to 70 miles by trail, and that this trail cuts across country avoiding the river entirely, and passing over high mountains on which freshly fallen snow could be seen at this early date.

To follow this trail to Sestoot Lake would give me no information regarding the country immediately adjacent to the East Branch, such information could only be obtained by cutting a new trail along the river, a task quite too great for the short part of the season now available.

In Mr. Dibblee's report, previously noted, he states he had reached the 'head waters of the Skeena waters.' This no doubt means the waters of or leading into Sestoot Lake; as, on his line of explorations he could hardly meet any other of the Skeena waters. Therefore, although an examination of this remaining portion of the East Branch, viz., from the outlet of Bear Lake to Sestoot Lake, is necessary to a proper estimate of the approximate cost of construction over this section, it is not absolutely essential to the immediate results of the expedition. This portion of the East Branch offers the only route to the main Skeena from Sestoot Lake, and must be accepted in connection with Mr. Dibblee's line.

While camped at Fort Connolly, I examined the shores of Bear Lake to its upper or south end, also the divide at this point between the lake and the head waters of Driftwood River. These waters form part of *a possible route from the Peace River to the main Skeena*, via Omenica River, Fall River (west Branch of the Omenica) Hogem Pass, Tacla Lake, Driftwood River, Bear Lake, and the East Branch.

Returning, I left Fort Connolly on September 9, and reached Hazelton on the 24th. Here I was detained a few days disposing of my pack train and outfit. From Hazelton I proceeded to Port Essington by canoe; the trip occupying three days, during which I made a cursory examination of the banks of the Skeena at a number of points, as we came down the river.

While waiting at Port Essington for a steamer to Vancouver, I went to Port Simpson, and had a look at its harbour as well as at the western portion of Work Channel, along which a railway line from the Skeena River to Port Simpson would necessarily have to be located.

Returning to Port Essington, I picked up my party and finally reached Vancouver on October 12.

From the time we left Hazelton until our return there, about 360 miles of actual explorations were made, and 530 miles travelled by trail; this latter, added to the distance to Hazelton from Ashcroft, 550 miles, makes 1,080 miles by trail. The canoe trip to Port Essington was about 150 miles; so we have a total of 1,230 miles of horse and canoe travel between Ashcroft, on the Canadian Pacific Railway, and Port Essington, on the Pacific coast, from May 20 to October 1.

With this preliminary report, I beg to file a small sketch map showing my explorations of this season. (Scale of 10 miles to the inch.)

The whole respectfully submitted,

JOHN S. O'DWYER,
Engineer in charge.

December 5, 1899.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Cheif Engineer and Deputy Minister,
Department of Railways and Canals.
Ottawa.

No. 4

CANALS

SAULT STE. MARIE CANAL.

SUPERINTENDENT'S OFFICE,
SAULT STE. MARIE, Sept. 20, 1899.

SIR,—I beg to submit the fourth annual report upon the operation of this canal for the fiscal year ending June 30 last

The canal was closed for the season on the 9th day of December, having been in continuous operation for 243 days and without any material delays to vessels, and was reopened for traffic this spring on the 26th day of April, some fifteen days later than last year.

During the fiscal year just ended there has been made some 2,336 lockages, passing through 3,321 registered and non-registered craft, with a total tonnage of 2,352,166, with an average time of 14·56 minutes to a lockage including all delays to vessels in the lock by breaking of tow lines, &c. Of this tonnage some 458,517 tons was of Canadian bottoms, being an increase this year on this item of tonnage of some 63,081 tons. In the total tonnage passing through the lock there was a falling off of some 1,766,326 tons. The only reason I can give for this great decrease is that several vessels in going out in the lower channel struck bottom, and this report got out, and several captains have informed me that they were afraid to come this way on that account, and as the channels of the American canal were down to 21 feet, there was no danger of touching bottom there. Now that the day of the large carriers and of deep draught ones is to hand, and this canal, so to speak, is built alongside of the American one and the lock was constructed for a 20-foot channel, this idea should be carried out and our channels deepened from 18 feet 6 inches to 21 feet to meet the altered circumstances. As it is now vessels drawing 18 feet 6 inches are very frequent, and in case of an accident to the American lock a vessel drawing that much water would either have to wait until the repairs were made or otherwise secure a lighter and lighten her load so as to be able to pass down through this canal. Whilst it is true that our present channels are deep enough for any of the Canadian vessels using it, we must not forget that a good deal of the produce of the Canadian North-west is carried through in American vessels, and there is not much doubt but that the large iron ore and other mineral deposits on the north shore or Canadian side of Lake Superior are about to be developed in a marked degree. All improvements to be made on this canal should be subordinate to this idea. The daily exchange of vessel reports with the American canal has been carried on the same as in former seasons, and we are indebted to the canal officials on the American side for many courtesies during the season.

SESSIONAL PAPER No. 10

A perusal of the following table will in some measure give an idea of the immense traffic on Lake Superior and shows the vast increase of this traffic since the opening of the first lock in 1855.

Year.	Number of Vessel Passages.	Registered Tonnage of Vessels.	Total Freight Tonnage.	Cost of carrying per mile. Ton.	Estimated Value of Freight Carried.	Proportion of Freight carried in Canadian Vessels.
				Mills.		
1855	No record...	106,296	No systematic record until 1881.....	.....	No record kept until 1881...	.....
1860	" ...	403,657	" ..	.....	" ..	.....
1865	997	409,062	" ..	.....	" ..	.....
1870	1,828	690,826	" ..	.....	" ..	.....
1875	2,033	1,259,534	" ..	.....	" ..	.....
1880	3,503	1,734,890	" ..	.....	" ..	.....
1887	9,355	4,897,598	5,494,649	$2\frac{5}{10}$	79,031,757	7
1888	7,803	5,130,659	6,411,423	$1\frac{6}{10}$	82,156,019	6
1889	9,579	7,221,935	7,516,022	$1\frac{7}{10}$	83,732,527	4
1890	10,557	8,454,435	9,041,213	$1\frac{8}{10}$	102,214,948	$3\frac{1}{2}$
1891	10,191	8,400,685	8,888,759	$1\frac{85}{100}$	128,178,208	4
1892	12,580	10,647,203	11,214,333	$1\frac{91}{100}$	135,117,267	$3\frac{8}{10}$
1893	12,008	8,949,754	10,796,572	$1\frac{1}{10}$	145,436,957	$4\frac{1}{10}$
1894	14,491	13,110,366	13,195,860	$\frac{99}{100}$	143,114,502	$3\frac{1}{4}$
1895	17,956	16,806,781	15,062,580	$1\frac{4}{100}$	159,575,129	$3\frac{9}{4}$
1896	18,615	17,249,418	16,239,061	$\frac{99}{100}$	195,146,842	4
1897	17,171	17,619,933	18,982,755	$\frac{93}{100}$	218,235,927	3
1898	17,761	18,622,754	21,234,664	$\frac{89}{100}$	233,069,739	$2\frac{9}{10}$

At a first glance of the above table it would look as though the carrying capacity of Canadian boats was decreasing every year, but this is not the fact; the apparent decrease in the percentage is from the building of large American vessels, there being at present quite a number over 470 feet long and some now building and to be ready for next season's work are to be 500 feet in length. The 8,000 ton cargo is now of the past it having been broken by two vessels. The first of this large class of vessels to pass through these canals was the schooner *Manilla* of the Minnesota steamship line, with a cargo of 8,205 net tons of iron ore on a draught of 18 feet 1 inch, followed shortly after by the schooner *John Smeaton* of the Bessemer steamship line with a cargo of 8,339 net tons of ore on a draught of 18 feet, both of these cargoes passed down through the American lock. The largest cargo carried through the Canadian lock is to the credit of the steamer *Henry W. Oliver*, 476 feet long, with a net registered tonnage of 3,617 tons, drawing 18 feet of water and carrying 7,464 net tons of ore.

All the machinery in the power house and on the lock walls has been thoroughly overhauled and is in good working order.

During last season dredging was done in the lower entrance channel by taking off the elbow on the south side, thereby enlarging the width of the channel, giving vessels a much wider turning point when coming in or going out.

We are still short of dockage room for vessels to tie up to when locking down at night and they have to wait here until daylight so as to be able to go on down the river. Our present south pier is too short, as there is only about sufficient room for a large sized tow to lie there, and even in that case the pier is very short, for it brings the stern of the schooner so near the lock that the surge from opening the discharge valves breaks the lines of the vessel lying there. An addition of some 800 to 1,000 feet would be of a manifest improvement to the use of the canal.

During the close of navigation a new swing bridge for carrying the Canadian Pacific Railway over the canal was erected under contract with the Dominion Bridge

Company of Montreal and extending over the whole width of the canal, thus doing away with the dangerous pier that has heretofore stood in the centre of the prism of the canal, calling for very strong remarks of condemnation from captains using the canal. This pier was removed by Messrs. Hickler Bros. under contract with this department.

It would be a manifest improvement in the appearance of the canal grounds if some more levelling up of them were done.

A small frame building should be erected for the use of the motormen and linesmen when not actually operating the lock, as the room now used by them in the power house is not of sufficient size to accommodate the number of men using it. Painting of the buildings has been done where necessary.

This coming winter it will be necessary to do some extensive repairs to the lower main and auxiliary gates. Very little damage has been done to the piers or lock walls by vessels using the canal.

An arrangement was made with the Marine Department for the maintenance of three front lights to mark the turning points of the channels and they have been of great convenience to the captains of vessels using the canal at nights.

I have the honour to be, sir,

Your obedient servant,

J. C. BOYD,
Superintendent.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer,
Railways and Canals.

SESSIONAL PAPER No. 10

SOULANGES CANAL.

ENGINEER'S OFFICE, COTEAU LANDING, P.Q., November 2, 1899.

SIR,—I have the honour to report as follows on the progress of the Soulanges Canal. The subjoined list gives the names of the contractors and the dates of the various contracts :—

Sections.	To whom Let.	Date of Letting.
Sections Nos. 1 and 2	(1.) Archibald Stewart	September 24, 1892.
	(2.) Ryan & Macdonell	December 11, 1897.
" No. 3	J. & M. O'Leary	March 27, 1893.
" Nos. 4, 5, 6 and 7	(1.) George Goodwin	May 9, 1893.
	(2.) Andrew Onderdonk	April 17, 1897.
" No. 8	Charles H. Raynor	December 29, 1892.
" No. 9	Randolph Macdonald	January 30, 1893.
" No. 10	Rogers & Taylor	December 24, 1892.
" No. 11	(1.) George Goodwin	May 11, 1892.
Transfer	(2.) Thomas Feeny	
	(3.) Poupore & Fraser	
Section No. 12	(1.) Denis O'Brien & Son	April 8, 1892.
	(2.) George Goodwin	May 9, 1893.
	(3.) M. J. Hogan	April 5, 1897.
Section No. 13	Randolph Macdonald	September 24, 1892.

The canal is 14 miles long, and is built on the location line of 1890. The rise of 82½ feet between Lakes St. Louis and St. Francis is overcome by four locks. Three of these, each 23½ feet lift, occur in the first mile from the Ottawa River. There is then a reach of some 2½ miles to the fourth lock which has a lift of 12 or 13 feet to low water level of Lake St. Francis. The summit is 10½ miles long. At its western end there is a guard lock, supply weir, and other structures. The lake fluctuates some 5 feet, but this extends over a long series of years, the annual variations being comparatively small. The lowest water of which there are authentic record, occurred in November, 1895. Twice during that month, the lake surface was only 151·88 over mean tide at New York, at which time there was, however, 14·55 feet at the upper entrance of the canal, and 14·83 feet on the lower mitre sill of lock No. 1. At mean water there will be from 17 to 18 feet in the long level. The canal is, for all purposes of navigation, a straight line throughout.

The present condition of the works may be briefly described as follows :—

Sections Nos. 1 and 2.—The completion of this contract was let to Messrs. Ryan & Macdonell in December, 1897.

As indicated by me at the close of 1898, the masonry and concrete (exclusive of the lower entrance works) was not practically completed until July, 1899. The earthwork was considered to be far enough advanced to permit of water being let into the canal to full height early last month, but so far nothing has passed through drawing more than about 8 feet, although, even at the present low stage of the river, there is a channel of a least depth of 15 feet throughout the canal and its entrances.

As a matter of fact there are scarcely any vessels drawing 14 feet now engaged in the St. Lawrence trade, except the line of American propellers plying between Chicago and Ogdensburg. When the St. Lawrence River and canals are fully ready, it is presumed that craft of the required capacity will be forthcoming. Some propellers of what is called 'Welland Canal' size, are in course of construction at upper lake ports, but the grain fleet for the St. Lawrence route has yet to be built. There is a number of whalebacks which could pass through our enlarged canals, but these are not likely to descend to tide-water, so long as the present freight rates continue on the great lakes.

Sections 1 and 2, entrance locks Nos. 1, 2 and 3, each of about 23½ feet lift, together with three regulating culverts and a large amount of concrete in retaining walls and other structures. The quantities of the principal items of work done by Messrs. Ryan & Macdonald up to September 30, 1899, are as follows:—Earth 366,734 cubic yards, rock 18,485, cut stone 14,554, concrete 53,442. The total value of work, deducting materials supplied by the previous contractor, is about $500,000. This is a very good showing for two years' operations, and was only accomplished by considerable energy on the part of the present contractors, who expended some $80,000 to provide proper plant to enable them to complete the work in a reasonable period.

The south entrance pier is now in progress and the concrete wall will be in place on both sides this year. But there is yet a large amount of rip-rap, sodding, finishing, &c., to be done before the works can be accepted as complete, according to contract.

Section No. 3.—As stated in my last year's report the work of section No. 3 was completed in the fall of 1897.

Sections Nos. 4, 5, 6 and 7.—Although comparatively fair progress has been made on these sections by the present contractor there yet remains a large amount of protection lining, macadam, sodding, &c., to be done before the work can be taken off his hands

When he began operations in the summer of 1897 there were some 850,000 cubic yards of earth remaining to be removed. This was chiefly blue clay, difficult to handle especially in winter. It has been nearly all taken out with the exception of some trimming and removal of certain points on the sides of the cutting on section No. 7 which will have to be done by dredging.

The principal items of work are as follows:—Earth 832,812 cubic yards, cut stone 5,148, concrete 38,598. Value of work to September 30, 1899, $516,215.30.

Lock No. 4.—The guard gates, and various other structures were practically completed in May last. The masonry and concrete is excellent and this work was carried on satisfactorily in accordance with the requirements of the plans and specifications.

It may here be stated that the walls of lock No. 4 are 37 feet high and the structure is built on piles about 35 feet long, but so far no perceptible settlement has taken place in the foundations. The banks on each side of the summit level from lock No. 4 to the west end of this contract at station 460, have proved quite water tight under full head.

Section 8.—On Sections Nos. 8 and 9 the slopes of the north bank between stations 513 and 560 were flattened out to 4 to 1, and a 15 foot berme left at the foot of the protection lining. Notwithstanding these precautions about 350 feet of this work immediately to the west of the St. Emmanuel road bridge slid into the canal on July 28 last. This material is now being removed by dredging and a final attempt will be made to repair the slope before the close of the season. The recurrence of slides has greatly retarded the progress of section 8, which would otherwise have been easily completed this year. It also largely increased the cost of the work. The progress estimates to September 30 amount to $298,966.74, which is already about $40,000 in excess of the original estimate.

The building of a set of regulating culverts designed to control the summit level was let to C. H. Raynor in March, 1898. The site chosen for these in 1890 was in the south bank of the canal, a short distance west of the crossing of River à la Graisse. They were estimated to cost $50,000. It was subsequently considered advisable to revert to the original scheme of placing the power house at this point also, and the weir plans were accordingly modified to suit the foundations of the building, the formation of wheel pits, &c. The cost of the whole will not exceed $55,000. The power house proper will amount to about $25,000, so that the structure for the combined purposes will not exceed say, $80,000. The foundations cover a space of 130 x 80 feet and are supported on piles. In the base walls, arches, &c., there are nearly 6,000 cubic yards of concrete of the best quality.

The main building is of brick with sandstone dressings. Its outside dimensions are 85 x 24 feet with a height from the floor to the apex of the roof of 46 feet.

There are two sets of four 24 inch wheels. Each individual wheel will develop 90 h.p under 18 feet head, or 360 h.p. the set. The generators will be each of 200 k.w. capacity which would equal say 270 h.p. This would leave a surplus of about 90 h.p. to be used as regulation and to overcome the losses in the bearings, &c., &c.

The horizontal shaft of each set of wheels is coupled directly to its generator. The power provided is considered ample to light the canal throughout in an efficient manner and also to easily operate the lock gates, sluices, &c.

The excellence of the site is now quite apparent. At mean level of Lake St. Francis (155·50) there will be at this point a cross sectional area in the canal of about 2,600 square feet: therefore the abstraction of say 26,250 cubic feet per minute, would only create a movement of 10 feet per minute in the prism, which will be barely perceptible; whilst the discharge of this volume into a wide tail race formed partly by the River à la Graisse will obviously preclude the inconvenience of fluctuating backwater. The difference in level between the surface of the canal and that of the river is remarkably uniform and generally about 20½ feet.

The power house is almost completed and the two generators are being set up. A ten ton travelling crane is provided and in place so that it is probable the western circuit of about 5 miles in length may be operated this month, and a test made of the lighting apparatus and also of the working of the stoney sluices and gate machines at the guard lock by electrical power. The whole question of the application of this power in the way designed will have to be carefully worked out in detail before next spring. The operation of the system when completed can only be safely entrusted to persons properly trained for that purpose. Any want of skill or knowledge in this department will result in immediate disaster to the machinery and interruption to the navigation of the canal.

Most of the line poles are now in place. They are 120 feet apart. Those to carry the lamps (480 feet apart) are being slowly set up. All the poles are of red cedar from British Columbia—of excellent quality—dressed to an octagonal shape and tapered. The lamps are to be closed, so it is expected that the carbons will only have to be changed every 150 hours. It is presumed that on this canal there will be really 2,000 candle power at each lamp, as the government supply the power and there are no 'commercial considerations' to prevent the full volume of light being furnished. The wires are now being strung from Coteau Landing eastwards and there is some appearance of the Canadian General Electric Co. accelerating their hitherto slow and unsatisfactory pace.

In connection with the electrical power it may be stated that no provision has been made for applying it to the operation of the two small swing bridges over the upper wings of lock No. 3 and the guard lock—or the bridge carrying the Canada Atlantic Railway over the lower wings of the latter structure at Coteau Landing.

Section 9.—Although none of the slides on section No. 9 were as serious as that which occurred on section 8 near the St. Emmanuel bridge on October 25, 1897; yet they were both numerous and troublesome to deal with between stations 535 and 565. The treacherous and uncertain nature of the material is shown by the fact that in some places it would not stand even at a 4 to 1 slope on the north side of the cutting, although it remained firm at 2 to 1 on the south side of the canal and immediately opposite; whilst the material on both sides was to all appearance the same. This question of slides is now practically disposed of by the introduction of the water into the canal, since when there have been no slides whatever.

On section 9, the north slope is re-established throughout but that on the south side will not be finished until next season. The work of this kind remaining to be done on sections 8 and 9 will not however interfere with the operation of the canal for a 14-foot navigation next year. The considerable increase in the cost of sections 8 and 9 was largely owing to the amount of stone which had to be used in holding up the slopes whilst the prism was dry.

The earth taken out to September 30, 1899, on section 9 was 636,520 cubic yards, which is already 130,000 cubic yards in excess of the original estimate. Value of work to same date, $167,257.13.

Section No. 10.—Section No. 10 was completed last fall.

Section No. 11.—Section No. 11 was only finished about a month ago, its completion having been unnecessarily prolonged, as stated in previous reports.

Section No. 12.—The work here was very difficult. It required the most strenuous exertion on the part of the contractor to get the section in such shape as to permit of the water being let into the summit level on August 12 last. This was of very great importance, as it enabled the stone lining of Onderdonk's contract to be carried on rapidly in scows; and the counterpoise of a column of water from 13 to 14 feet in depth has (as above stated) effectually prevented any further sliding on sections 8 and 9. Certain questions relative to the excavation on section 12 having been referred to Mr. T. C. Keefer, some data has been supplied to that gentleman to enable him to arrive at a decision in the matter.

The contract for the section is now practically completed. The quantities to September 30, 1899, are: earth 332,287 cubic yards, rock 121,000.

Mr. Hogan deserves much praise for the very plucky way in which he tackled such a difficult job and carried it through to completion without any attempt on his part to evade his contract obligations. This case should, however, serve as a warning to contractors whose previous experience is confined to railway work. The conditions on a canal are so essentially different that to attempt to execute similar items for the same price inevitably results in delay to the work and loss to the person undertaking it.

Expenditure to September 3, 1899, $196,528.34.

Section No. 13.—This section is nearly completed. The clay dam at the head of the canal has been removed and the outside shoal in line with the upper entrance is partly excavated. The channel between the piers is being cleaned up, but there is yet a considerable amount of dredging to be done.

The masonry of the section is excellent work. The cut stone was obtained at Point Ann near Belleville, Ont.; but the retaining walls are chiefly built of material got out near the mouth of the River Delisle, in what is called the Calciferous sandrock. All the structures on this section are founded on the rock, of which some 20,000 cubic yards were unexpectedly met with in the bottom of the canal at and to the eastward of the guard lock. The chief items of work are, earth 611,798 cubic yards, dredging 214,020, masonry 24,316, concrete 17,010. The total cost to September 30, 1899, is about $640,000.

With reference to the completion of the canal, it is urgent that the stone protection of the banks on Onderdonk's contract which is about 5 miles in length, should be pushed on as fast as possible. This is now being done with scows, but should be continued on the ice during the coming winter; as, when the canal is open, the water must of course be raised to full height, and this work would then have to be completed under quite disadvantageous circumstances. The other work remaining to be done, such as sodding of slopes, macadam, &c., &c., need not at all interfere with navigation.

The total value of work and materials returned in the progress estimates to Sept. 30, 1899, is as follows:—

Sections.	Contractors.	Amounts.
		$ cts.
1 and 2	Archibald Stewart	516,934 85
	Ryan & Macdonell	497,481 38
3	J. & M. O'Leary	193,852 61
4, 5, 6 and 7	George Goodwin	326,246 75
	Andrew Onderdonk	516,215 30
8	Charles H. Raynor	298,966 74
Power-house	" "	42,047 21
9	Manning & Macdonald	167,257 13
10	Rogers & Taylor	290,667 95
11	Poupore & Fraser	325,639 75
12	O'Brien & Son	26,811 15
	George Goodwin	11,400 37
	M. J. Hogan	196,528 34
13	Manning & Macdonald	639,004 15
		4,049,053 68

Bridges.—There are, besides the above, expenditures on the following works, viz.:

Road and railway bridges. (*a.*) The five bridges over the canal at St. Antoine, St. Féréol, St. Dominique, St. Emmanuel and River Rouge roads are erected and in operation. The cabins for the reception of the electrical apparatus are not however yet completed, and the bridges are now being swung by hand. They have been described in previous reports, and when open give a clear channel-way of 100 feet. The contract for them was awarded in April, 1896, to the Dominion Bridge Company of Lachine, Que.

(*b.*) Two small road bridges, one over the upper wings of lock No. 3, and the other in a similar position at the guard lock, section 13, have been furnished and set up by the Weddell Bridge Co. of Trenton, Ont. These have cost so far $4,995.

(*c.*) There is only one railway bridge, namely, that carrying the Canada Atlantic across the lower wings of the guard lock at the upper entrance of the canal. The superstructure of this has been completed and in use for some years. It was let to the Dominion Bridge Co. in November, 1894, and cost $9,970. The electrical appliances to operate this or the small bridges across the locks above referred to have not yet been put in hand.

Lock Gates.—The lock gates (11 pairs) have been constructed on the solid timber principle (similar to those in use on the Welland Canal) by Messrs J. R. Miller of Ingersoll, Ont., who have had considerable experience in this class of work. The timber is of large dimensions and is chiefly Douglas fir obtained in British Columbia and hauled across the continent. The construction work is excellent and the gates fully answer the required purposes.

The lower gates of each of the locks Nos. 1, 2 and 3 are 42 feet 3 inches high; the bottom bars are 28 feet 6 inches long and from 21 to 34 inches wide. The gates are well pivoted, securely hung and turn freely with a moderate force, which is applied through simple machinery, now worked by hand but shortly to be operated of electrical power. The cost of this apparatus so far is $8,920.

By way of safety the gates of the guard lock on section 13 were set up before the clay dam at the head of the canal was removed. This was a good precautionary measure. The water was let into the summit level in August last as before stated, and was subsequently held at a height of 150 feet above datum by a temporary dam erected by lock gate timbers at the upper mitre sill of lock No. 4. The pair of guard gates about 800 feet west of this were then brought up from St. Anne's, through the Beauharnois Canal, floated down the summit level here, which is 10½ miles long, and set up. When these were closed, together with the large stony sluices alongside of them, the lower levels of the canal were safely separated from the large body of water to the west, reaching to Lake St. Francis. The gates of the guard lock were in position in December, 1898, and the guard gates above lock 4 were set up at the close of August, 1899. The lower gates of lock No. 1 were placed in September, 1898, when it was necessary to remove the clay coffer-dam across the lower entrance. But it was not until the early part of last month that the upper gates of lock No. 1 and all those of locks Nos. 2, 3 and 4 could be erected. This was, however, accomplished in a few days, the upper gates of lock No. 4 being set up and closed on October 8, 1899 The contract also embraces five pairs of spare gates, which are delivered at the foot of the canal. Arrangements will be made for the protection of these during the winter, and a suitable plant for erection and repairs must be provided. The total cost of the sixteen pairs of gates is $100,000, and about $4,500 has been spent on the special work connected with the erection of the gates of the guard lock at the head of the canal and the placing of a temporary dam of timber at the head of lock 4 to enable the guard gates to the west of it to be set up as above described.

It is said that British Columbia fir is of great durability, but there is latterly an impression that metal gates are in many positions an improvement upon wooden ones.

Stony Sluices.—The filling and emptying of the locks is done through sluices of the stony pattern, which are also used in the weirs. There are thirty-six of these of various sizes on the canal, the largest of which (21 feet 1½ inches by 22 feet 3 inches) are alongside the guard gates on section No. 4. It is not considered necessary to enlarge

upon the excellence of these sluices as a means of controlling large bodies of water with ease and safety. The principle is being rapidly adopted in large hydraulic works in America as well as in Europe, where they have been known for some years. Their use in the locks of this canal in connection with side culverts has resulted in making it possible to lock vessels quickly with but little strain on their lines, as the water rises or falls steadily in the chamber when being filled or emptied. This has a very important bearing upon the safe and rapid navigation of the canal. The amount of water required for a lockage where the lift is 23½ feet is about 300,000 cubic feet. The progress estimate on these sluices to date give a total expenditure of $56,934. They are practically completed, but some minor changes may be made to them to increase the rate of lifting if on further investigation this is considered necessary.

A lockage of 23½ feet can easily be made in about twelve minutes. The difference, however, between the times of slow and fast filling or emptying in four locks is of little practical importance. The real gain will be made in the speed which can safely be maintained on the summit level, which is 10½ miles long and 75 per cent of the total length of the canal. The difference between a 5-mile and a 4-mile rate would make half an hour in 10 miles. This would exceed the time required to fill all the locks on the canal. A quick passage through the summit level is secured by the large cross section of the prism as compaaed with that of a fully laden vessel of the ordinary type. This will be at mean water of Lake St. Francis in the proportion of 2,600 to 600 or 1 to 4⅓. Besides, there will be no stop at the bridges, which, as previously stated, give, when open, a clear waterway of 100 feet in width. In short it seems reasonable to expect that a passage through the canal should not take more than from two and a half to three hours.

If the lockages are assumed at three per hour, the carrying capacity of the canal, with vessels fully laden both ways, would be very large indeed. With one-third west bound cargoes it would probably be able to pass over 20,000,000 tons in an ordinary season. Great as these figures are, they will doubtless be considerably exceeded by the amount of tonnage at Sault Ste. Marie during the year 1899.

Cement.—In the construction of the canal there have been used over 200,000 barrels of Portland cement, at a cost (including handling) of about $500,000. The cement is of excellent quality and has been properly tested at this office, where, up to date, over 60,000 briquettes have been made. The advantages of concrete construction in hydraulic works is now universally admitted. This is particularly suitable to the Soulanges Canal, where over 300,000 cubic yards of rock have been excavated; which, although generally unfit for masonry, is excellent material for concrete. As stated in previous reports, there are, roughly speaking, about 200,000 cubic yards of masonry and concrete on the whole work. About one-fourth of this (50,000) in cutstone masonry of various kinds, and the remaining three-fourths (150,000) in concrete. But the total cost of the masonry was about the same as that of the concrete, whilst it takes, for similar quantities, a longer time to build, besides requiring principally skilled labour. These reasons are considered quite sufficient to prove the judiciousness of adopting concrete to such a large extent in the building of the Soulanges Canal.

OPERATION.

As instructed by your letter of October 11 last, a number of men from this locality have been employed in operating the canal by hand. Of these there are at present about forty. They are in attendance by day only at the various locks and bridges. As there have been so far, passing through, the tugs and scows connected with the dredge employed in cleaning out the slides, and those engaged in putting in the stone protection lining of the canal, the duties of these men have not hitherto been very arduous; and an attempt has been made to utilize them for other purposes when practicable. But it is probable that this organization will not be necessary after the end of the present month, during which period, however, it is expected that some vessels of a larger size than can pass through the Beauharnois Canal will avail themselves of the increased dimensions and depth of the Soulanges to come down from the upper lakes or

ascend to Lake Ontario. There is now a clear channel way of 15 or 16 feet least depth between Lakes St. Louis and St. Francis; and transit through the canal will, as previously indicated, be safely made in 2½ to 3 hours.

I may say, in conclusion, that when the electrical power is applied to the lighting of the canal and the operation of the locks, bridges, &c., in the manner and to the extent contemplated, it will only then be possible to properly determine the number and kind of persons required to efficiently work the line throughout. It is, however, quite clear that the minimum of unskilled help will be necessary, as it is proposed to do by machinery in a safe, precise and rapid manner, work which has hitherto been performed on the Welland and St. Lawrence Canals by slow and expensive manual labour.

I am, sir, your obedient servant,

THOMAS MUNRO, M. Ins. C. E.,
Superintending Engineer, Soulanges Canal.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer Canals,
Ottawa.

QUEBEC CANALS.

SUPERINTENDING ENGINEER'S OFFICE,
MONTREAL, October 5, 1899.

SIR,—I have the honour herewith to submit my annual report on the works under my charge for the fiscal year ended June 30, 1899.

The canals in this division are the Lachine and the Beauharnois, on the St. Lawrence route; the Ste. Anne, the Carillon and the Grenville Canals on the Ottawa River, and the St. Ours Lock and the Chambly Canal on the Richelieu River.

Of these the Lachine Canal is by far the most important, on account of its immediate connection with the harbour of Montreal, the great export centre of the Dominion.

The traffic through it has rapidly increased of late years, owing to the development of industries and agriculture in Western Canada and the Canadian North-west, and it will certainly take a still greater importance with the completion of the deepened canals, especially when adequate terminal facilities for handling freight and grain shall have been provided,

The Ottawa Canals afford a most convenient route for the transportation of the produce of the extensive forests of the Ottawa Valley, a large proportion of which finds its way to the United States, through the Richelieu River Canals.

LACHINE CANAL.

Length, 8½ miles; 5 locks, 270 by 45 feet; 14 feet water on sills; total rise, 45 feet.

Old locks, 200 by 45 feet; still available with 9 feet of water on the sills.

Any interruption to the navigation of the above various routes cannot fail to be very serious, but I am pleased to state that, with the exception of a few hours detention on July 29 and August 6, 1898, on the Lachine Canal, and another interruption of forty-eight hours duration on the Beauharnois Canal in the month of June of the same year, the navigation was unimpeded throughout the year.

On July 29, 1898, the coal ship *Turret Court* was coming down from Wellington Basin, where she had discharged her cargo. As she approached Black's Bridge some misunderstanding of the bell signals by the engineer on board caused her to run into the bridge, which was thrown off its pivot and so badly injured that half of it had to be entirely rebuilt. Repairs could not be done on the spot and no vessels could pass that point before 11 p.m., when the structure was removed from its piers and floated on scows to the head of Wellington Basin. Another interruption of six hours took place on August 6, when the bridge was put back into position.

The cost of the repairs ($3,104) was borne by the owners of the ship.

REPAIRS AND RENEWALS.

Repairs during the year were executed as follows:

The towpath on the north side of the canal above Cote St. Paul, was macadamized for a distance of 800 feet from the point where this work was left off the year before.

Some planking along Wellington Basin was removed and a heavy coat of iron dross substituted; this was in turn covered up with cinders and the whole well-rolled down. It is the intention to thus replace wooden platforms around the basins wherever practicable, with a view to reducing the cost of maintenance of the works.

The slope walls on both sides above Cote St. Paul were repaired in a number of places on the lines adopted the previous year. This is only temporary work, as the slope walls will shortly be rebuilt all the way up to where the bed rock comes up to the surface in the vicinity of Lachine.

Considerable work was done in renewing the side walls of the head-race to the old supply weir at Lachine.

The last of the sliding sluices in waste weirs Nos. 1 and 4, were removed and swing gates substituted.

A cribwork pier, 200 feet long, below the old lock at Cote St. Paul, was renewed from the waterline to the top, the portion below water being at the same time straightened up and underpinned where necessary.

The gravel roof of two of the buildings leased to 'The Canada Horse Nail Co.,' as well as that of the carpenter shop in the canal yard on Mill street were renewed last fall, the work being done by 'The Montreal Roofing Co.'

At the time of the converting of the old Tate mill into an electric power house, the flume extending from the mill to the tail race of waste weir No. 2, a distance of 75 feet, had only been temporarily repaired. The said flume was completely renewed in April and May last. The work was a rather difficult one owing to the unsteady nature of the soil. The old wooden race was removed and a new one built consisting of timber and concrete bottom and sides, the roof of the structure being formed with heavy round cedars and the whole covered with clay well watered and rammed.

The canal electric lighting service was satisfactory throughout the year, but I cannot say as much of the telephone service which is more or less deficient owing to reduction in size of most of the copper wire in the line due to the prolonged strain on it. It will soon become necessary to renew the whole of this wire.

REPAIRS TO VESSELS.

The dredging fleet connected with the canals on this division, but mostly used of late years in connection with the Lachine Canal and the Lake St Louis channel, consists of the following vessels :—Dredge No. 1, loaned three years ago to the Public Works Department; Dredge No. 2, floating steam derrick, tug *Josephine*, house-boat used as office and lodgings by the engineer's staff of the Lake St. Louis channel, and eleven flat scows. All these vessels were put in working condition before the opening of navigation.

A couple of new flat screws, built in the spring, in connection with the dredging done during May and June, below lock No. 3, now form part of the fleet. They will replace two of the old scows which have become useless through length of service.

DEEPENING FOR 14 FEET NAVIGATION BETWEEN ST. GABRIEL AND LACHINE LOCKS.

The contract for this work was awarded to Messrs. McNamee & Mann, in September, 1894, and operations were commenced by them in the month of May following. The contract extended from lock No. 3, at St. Gabriel, to lock No. 5 at Lachine, a distance of $6\frac{1}{5}$ miles and the work consisted in the deepening of the prism of the canal to 15 feet, an average depth of 2 feet to be excavated between the two points above mentioned. The work was carried on night and day during seasons of navigation, the bulk of it being completed at the end of November, 1898.

While the canal was unwatered last April a large force of men was employed by the contractors in destroying boulders, spreading some ridges thrown up by the dredges and cleaning along the toe of the slope walls. All of the materials thus handled were thrown into the deeper portions of the canal prism, the dredges having had to cut much deeper than the 15-foot line in order to ensure grade at all points.

On the last day of April the two reaches were brought to the required grade line, and that part of the canal made ready for boats drawing 14 feet.

The quantities removed to reach the grade line from the beginning of the contract to the end of November, 1898, were in round numbers: earth 180,000 cubic yards, rock 184,000 cubic yards.

DEEPENING RIVER ST. PIERRE.

This work is intended to complete what has been termed the Lachine Canal drainage system, the object of which is to dispose of the water leaking through the canal banks, and incidentally to afford an outlet for the drainage of the town of Lachine, which is cut off from the St. Lawrence by the Lachine Canal.

The present work, which is being done under contract by Messrs. Brewder & McNaughton, consists of the deepening 2½ feet and the widening to 20 feet at grade line of the bed of the Little River St. Pierre, from a point 5,700 feet west of the culvert carrying the stream under the canal to a point on the city water works tail race, 4,100 feet below the outlet of the said culvert. The upper or western section is completed down to within 150 feet of this culvert, and so is another piece in the lower section 950 feet in length from the tail race upwards.

Besides the deepening of the bed of the river, this contract also embraces the rebuilding of the road bridge over the stream where it crosses St. Patrick street directly under the Grand Trunk Railway high level crossing at that point, and the cleaning of the culvert under the canal.

The roadway bridge was finished in March last, and while the deepening was going on then, the railway company had the stone abutments of their own bridge rebuilt, placing them such a distance apart as to give ample passageway for the waters at flood time.

The contractors suspended operations in March, and owing to unfavourable circumstances did not resume them before the end of the fiscal year, an extension of time having been granted them to finish the work which ought to have been completed on June 30, 1899.

Towards the end of the lower section of this contract, the intended grade line of the river strikes across the pipes of the Montreal Water Works. The stream had therefore to be carried under these pipes by means of a syphon culvert, consisting of five parallel lines of cast iron pipes, 4 feet in diameter and 158½ feet long; buried in a solid mass of Portland cement concrete connecting the inlet and outlet wells. These wells are also built of concrete up to 1 foot below the water surface, the upper position of the walls being of rock face masonry laid in cement, with cut stone copings and checks for stop logs.

For the purpose of cleaning this syphon, a partition has been built in both wells between the second and third lines of pipes from the east side in such a manner that the stream can be diverted to one side while the other is being attended to.

As many as five lines of water pipes intersected the trench at various angles and two valve chambers were also encountered. All these had to be underpinned and otherwise supported while the syphon pipes were being laid underneath, and in each case a solid mass of concrete was built up from the bottom of the excavation to the water pipes so as to prevent any possible settling.

Delays in obtaining authority from the city water department compelled us to execute the most arduous part of the work during the winter months, the cost of the undertaking being thus materially increased. However, it was brought to completion towards the end of April, 1899.

SLOPE WALLS ABOVE COTE ST. PAUL.

For a distance of 3½ miles above Cote St. Paul lock the slopes of the Lachine Canal are protected with a rip-rap revetment formed of small sized stones, which, as reported last year, will have to be almost entirely rebuilt, owing to the work of deepening the canal having disturbed it.

For this purpose a contract was awarded to Mr. J. B. DeLorimier on October 11, 1898, for the supply of 6,000 cubic yards of stone. At the end of the fiscal year most of this quantity had been delivered and the contractor was granted an extension of time to finish his contract.

The work of rebuilding was begun last spring, when some 1,800 cubic yards of wall were laid at various points between April 12 and 30. This was done by day labour.

It has now been decided to continue the work under contract, and, at the time of writing, tenders for it are being invited.

The above construction works were executed under the direct supervision of Mr. L. G. Papineau, assistant engineer.

WIDENING THE UPPER ENTRANCE TO THE OLD LOCK AT LACHINE.

For some years back forwarders have complained of the narrowness of the channel in the upper entrance, and by actual survey last summer, this channel was found to be not more than 25 feet wide at some points.

Towards autumn the Montreal Harbour Commissioners drill boat was rented for a couple of weeks, and the necessary blasting having been done, the canal dredge No. 2 was sent out. After six weeks work a width of 75 feet was provided on the shoals complained of, the aggregate length of which was 200 feet and the average depth of cutting thereon 2½ feet.

DEEPENING BETWEEN LOCK NO. 2 AND LOCK No. 3.

From May 1 last, to the end of fiscal year dredge No. 2 was engaged in deepening the prism between lock No. 3 and Montmorency street, the depth of water in this stretch being only 13 feet. This work being now done, the Lachine Canal from end to end is available for vessels of 14 feet draught.

LAKE ST. LOUIS CHANNEL.

This work which is under contract with the Weddell Dredging Company was commenced during the summer of 1895, it was practically completed at the end of the fiscal year. The contractors, however, have to go over the whole area of the channel to pick up boulders which may have escaped the dredges or to level down ridges thrown up by the buckets. The quantity of material removed from the cut since the beginning of the operations is 230,827 cubic yards, consisting of solid rock, boulders, clay and sand.

The cut thus made, 300 feet wide and 16 feet deep at low water, extends from a point opposite the lower lightship to some distance above the second lightship on the present 9-foot channel. Between those two points a number of stretches were encountered with water deeper than 16 feet and at other places a point of a shoal only had to be removed. The heaviest work was done in the lower portion where, on a length of some 1,200 feet, the depth of cutting was about 6 feet on the average.

The above construction works were performed under the direct supervision of Mr. L. S. Pariseau, assistant engineer.

BEAUHARNOIS CANAL.

Length 11¼ miles; 9 locks, 240 x 45 feet; 9 feet water on sills; total size, 82½ feet.

The interruption to navigation referred to above in connection with this canal, occurred on June 6 last, when the steamer *Sir L. Tilley* broke through the lower gates of lock No. 12, throwing them down. The rush of water through the lock chamber also carried the upper gates away, and the reach between locks Nos. 12 and 13 emptied into the reach below, the wave thus formed overflowing the banks and causing some damage to the towpath and to the adjoining farms, especially on the north side.

Spare gates were fortunately on hand, and after forty-eight hours uninterrupted work, the passage of boats was resumed.

The accident cost the owners of the boat $2,047.33, this amount including $660 for damage to land owners.

REPAIRS AND RENEWALS.

Two pairs of gates had been renewed before the above accident took place, completing a full set of spare gates for all the locks.

The lower mitre sills of locks Nos. 11, 12 and 13, which had been more or less displaced during the previous year, were put back in position and otherwise repaired.

A considerable quantity of macadam stone was placed on the roads along both sides of the canal as well as on the Hungry Bay dike road.

In connection with this dike a strip of land, half an arpent in width on each side was purchased from the estate Bergevin dit Langevin. Good clay for repairing the road and the dike proper can now be procured from this land instead of having to be carted long distances as formerly.

Boundary stones will be planted during the fiscal year 1899-1900, to mark the newly acquired property.

A new and very substantial scow for repair purposes was built during the winter.

All minor necessary repairs were made and the canal kept in good working condition.

PROTECTION DIKE ALONG THE SOUTH SHORE OF LAKE ST. FRANCIS IN THE PARISH OF STE. BARBE.

Orders to lay out this work and execute it by day labour were given on October 17, 1898, and operations commenced four days later.

The object of it is to reclaim a large area of lands which are now flooded at high water owing to the dams erected at the head of the Beauharnois Canal. The dike will have a length of about 2 miles. It will consist of a clay embankment built as follows :— A trench 4 feet in width and 3 to 5 feet in depth is cut into the black muck forming the surface of the soil down to hard ground and refilled with good clay taken a short distance alongside of it from another deeper trench, which will in future ensure the drainage of the reclaimed lands.

Work was begun at the eastern end and 600 feet of the dike had been built at the end of March, when, owing to thaws, operations had to be suspended. They were resumed in June at the other end and about three weeks later, the appropriation being exhausted, the year's work was brought to a close. This dike, it is expected, will be completed during the fiscal year 1899-1900.

CHAMBLY CANAL.

Length 12 miles ; 9 locks, 118 x 22½ feet ; 6½ feet water on the sills ; total rise 74 feet.

This canal was operated without accident during the year.

REPAIRS AND RENEWALS.

The most important work of repair executed here during the fiscal year consisted in the replacing in position and the strengthening of the western wing wall at the foot of the lower entrance lock, the facing of which was loosened from the backing. Both parts of the wall were joined together by means of iron bands and rods, the latter being passed through the body of the wall and firmly anchored to a heavy block of concrete placed some distance behind.

Similar repairs had been made in 1896 to the eastern wing wall and both are now quite safe.

The wharfs on this canal have an aggregate area of 55,000 square feet, and the renewing of the planking on them every six or seven years is very costly. It is the intention to gradually replace such planking by heavy gravel wherever possible.

Some of the numerous culverts carrying surface water from the farms on the east side of the canal to the Richelieu River require constant attention.

One of them, at the 6th mile will have to be renewed shortly, and I would suggest the rebuilding of it either with concrete or iron pipes.

The South-eastern Railway Co's. lease with the department having expired, their old wharf at Chambly Canton has been taken possession of by the canal authorities.

The planking on this wharf was renewed during the spring and a derrick erected in a convenient position to handle canal materials which are mostly delivered at that point.

A new steel swing bridge was erected at the head of Ste. Thérèse Island, superseding the ferry scow there. The superstructure was furnished and erected under contract, by the Dominion Bridge Company, and the pivot and rest piers, which are of timber, were built by day's labour, under the direct supervision of Mr. L. S. Pariseau, assistant engineer.

COLLECTING DRAIN AND SYPHON CULVERT AT ST. JOHNS.

This work, the contract for which was awarded to Messrs. Napoleon Laporte & Co. in February, 1898, should have been completed long before the end of the last fiscal year. However, only two-thirds of it had been executed at that date, and an extension of time was granted the contractors to bring it to a finish.

At the time of writing there still remains about 100 feet of the drain to be built before reaching St. Charles street, where the new drain will be connected with the old sewer built some years ago by the town.

Mr. L. S. Pariseau, assistant engineer, is in charge of this work.

ST. OURS LOCK AND DAM

Length, $\frac{1}{8}$ mile; 1 lock 200 x 45 feet, 7 feet of water on sills; total rise 5 feet.

Besides ordinary repairs to the lock, wharfs, piers, buildings, &c., a piece of work of some importance was executed here during the fiscal year 1897-8.

It consisted in the taking down and rebuilding of the western abutment of the submerged dam connected with the canal. This abutment is a solid masonry structure. A portion of it about 50 feet long and 20 feet high had been so undermined that its collapse was threatening. After the stones had been removed, a large cavity at the bottom was filled with concrete and the new wall started on the improved foundation, high class Portland cement being used in place of lime mortar with which it had been originally built.

The timber dam here is in a very unsatisfactory condition, a large quantity of water running through it.

Extensive repairs will have to be built next year at low water.

Some of the vessel owners using the lock, I am informed, are agitating for the permanent raising of the dam by 3 or 4 feet in order to facilitate navigation over the St. Antoine shoals, 5 or 6 miles further up. But, besides being unnecessary, this change in the level of the dam would surely open the door to unending claims on the part of the farmers whose lands would thus be more or less flooded. All that need be done is making the structure water tight.

There was no accident here during the year.

ST. ANNE LOCK.

Length of canal $\frac{1}{8}$ mile; 1 lock 200 x 45 feet; 9 feet water on sills, total rise 3 feet.

Old lock still available 200 x 45 feet, 6 feet of water on sills; total rise 3 feet.

Works other than ordinary repairs here during the year, consisted in the building of an extension to the mooring pier in the channel at Ile-aux- Tourtes, about one mile above the lock, and in the completing of the repairs of the south channel piers, which had been in progress since 1896.

The new lock and the various structures connected therewith are in first rate condition.

In the process of double-tracking their bridge across the river at this point, the Grand Trunk Railway Company had to rebuild the pier adjoining the south side of the old lock and in so doing they have renewed a portion of the outer wing dam, thus considerably improving it as far as the canal is concerned. The part of this dam above the railway pier will require some extensive repairs shortly.

An attempt will also be made to staunch the south wall of the old lock which is leaking badly.

No accident of any kind interfered with navigation on this canal during the year.

CARILLON AND GRENVILLE CANALS.

Carillon Canal.—Length, $\frac{3}{4}$ mile; 2 locks, 200 x 45 feet, 9 feet water on sills; total rise 16 feet.

Grenville Canal.—Length, $5\frac{3}{4}$ miles; 5 locks, 200 x 45 feet, 9 feet water on sills; total rise $43\frac{3}{4}$ feet.

Both these canals are under one superintendent. They are separated by a stretch of navigable river about 5 miles long, and between them is to be found the old Chute-à-Blondeau lock, which has been abandoned since the completion of the dam at the head of the Carillon Canal in 1883, the rise at that point having been then practically obliterated.

At the opening of the season of 1897, the operating staff on these canals had been reduced by the removal of one man from each lock, but owing to a considerable increase in the traffic during 1898-9, it was found necessary to re-appoint the same number of lock hands at the opening of navigation in 1899.

REPAIRS AND RENEWALS.

Carillon Canal.—The timber works on this canal are very extensive. The upper entrance is formed on the south side by a guard pier 800 feet long and a series of 9 detached piers, the first four lower ones about 60 feet and the others 140 feet apart, the space between the lower ones being spanned by strong booms, necessary, especially at high water, to prevent vessels from being carried over the dam.

Every spring the detached piers are more or less damaged by floating ice, and the keeping of them in good repair is very costly. Two of them were tilted over bodily in April, 1898, and had to be entirely rebuilt during the present year, at a cost of some $1,500 each.

The long guard pier which is of about 19 years standing, is rapidly decaying in its parts above water and extensive renewals will have to be made in a year or two.

Grenville Canal.—This canal is in good condition and no work of any consequence beyond general maintenance, was performed thereon during 1898-9. The heaviest items of expenditure were in connection with the towing paths and banks, the pointing of the lock walls, the painting of lock gates and the cleaning of the prism before the opening of the navigation season.

No interruption to the traffic occurred on the Carillon and Grenville Canals during the year.

GRENVILLE CANAL ENLARGEMENT.

The contract for this work was awarded to Messrs. Pigott & Ingles on April 9, 1897, and operations commenced in the month of May following. Very little, however, was done until the close of navigation that year.

The undertaking consists of the widening of the reach between lock No. 4 and Lock No. 5 about a mile long and of another stretch of the same length above the latter lock. In these two miles the 10 foot depth was only available on a very limited width and navigation considerably hampered in consequence.

The channel, as now enlarged, will have a minimum width of 45 feet in the bottom and will be provided with a substantial dry retaining wall on the towpath side. Both approaches to Lock No. 5 will be considerably enlarged and the lock itself make much easier of access.

About 1,800 feet above the lock a new waste weir has been built, which will permit of a better regulating of the level in the reach and will afford the means of thoroughly unwatering that part of the canal.

The work ought to have been finished on the 1st of May last, but the contractors failed to bring it to an end at the time specified.

On the opening of navigation last spring the reach between Lock No. 4 and Lock No. 5 was ready except for some grading, the building of a piece of wall about 400 feet long on the south side and the forming of ditches and trimming of the spoil banks.

The work still to be done in the section above Lock No. 5 consists of some rock excavation and walling at the upper end, some grading, the trimming of the spoil banks and the forming of the towpath.

It is expected that the whole will be completed early during next winter, as the contractors will resume work as soon as navigation is closed.

Mr. F. J. Lynch is now in charge of the enlargement, having succeeded Mr. H. G. Stanton, who has accepted a position on the Ottawa and Georgian Bay Canal survey.

Annexed to this report are tabular statements showing the highest and lowest water on the mitre sills of the locks at the upper and lower entrances of each canal, as well as statements of fines and damages collected during the fiscal year ended June 30, 1899.

I have the honor to be, sir,

Your obedient servant,

ERNEST MARCEAU,
Superintending Engineer.

C. SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer,
Railways and Canals,
Ottawa.

QUEBEC CANALS.

Closing and opening of navigation, 1898-9.

	Closing.	Opening.
Lachine Canal	Dec. 1, 1898	May 1, 1899.
Beauharnois Canal	Dec. 1, 1898	May 1, 1899.
St. Ours Lock	Nov. 26, 1898	April 22, 1899.
Chambly Canal	Dec. 1, 1898	May 1, 1899.
St. Anne's Lock	Nov. 27, 1898	April 27, 1899.
Carillon Canal	Nov. 26, 1898	May 1, 1899.
Grenville Canal	Nov. 26, 1898	May 1, 1899.

LACHINE CANAL.

STATEMENT showing the depth of the river water on the mitre sills of old Lock No. 1, at lower entrance, and Lock No. 5, at upper entrance, during the fiscal year ended June 30, 1899.

MONTHS.	OLD LOCK NO. 1, LOWER SILL.		OLD LOCK NO. 5, UPPER SILL.	
	Highest.	Lowest.	Highest.	Lowest.
1898.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
July	18 11	16 6	12 1	10 7
August	16 6	15 10	10 8	10 3
September	16 0	15 1	10 5	9 10
October	17 1	14 9	11 3	9 7
November	17 1	15 11	10 11	10 1
December	29 0	15 5	16 2	14 7
1899.				
January	36 5	27 7	11 10	9 10
February	27 8	24 7	11 3	9 3
March	29 3	24 11	10 9	9 8
April	36 4	22 11	14 4	10 4
May	24 6	20 4	15 5	13 0
June	20 9	18 1	13 4	11 8

Lachine Canal.

Statement showing the depth of the river water on the mitre sills of new Lock No. 1, at lower entrance, and new Lock No. 5, at upper entrance, during the fiscal year ended June 30, 1899.

Months.	New Lock No. 1, Lower Sill.				New Lock No. 5, Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	21	1	18	8	17	1	15	7
August	18	8	18	0	15	8	15	3
September	18	2	17	3	15	5	14	10
October	19	3	16	11	16	3	14	7
November	19	3	18	1	15	11	15	1
December	31	2	17	7	11	2	9	7
1899.								
January	38	7	29	9	16	10	14	10
February	29	10	26	9	16	3	14	3
March	31	5	27	1	15	9	14	8
April	38	6	25	1	19	4	15	4
May	26	8	22	6	20	5	18	0
June	22	11	20	3	18	4	16	8

Beauharnois Canal.

Statement showing the depth of the river water on the mitre sills of Lock No. 6, at lower entrance, and Lock No. 14, at upper entrance, during the fiscal year ended June 30, 1899.

Months.	Lock No. 6, Lower Sill.				Lock No. 14, Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	11	4	10	0	11	9	11	1
August	10	4	10	1	11	6	10	10
September	10	4	9	10	11	3	10	8
October	10	8	9	7	11	3	10	6
November	11	6	10	4	10	10	10	4
December	11	6	10	0	11	4	10	10
1899.								
January	13	6	11	3	11	2	10	10
February	19	6	13	4	11	5	10	6
March	17	0	12	4	12	0	10	9
April	13	9	12	9	12	6	11	8
May	14	8	12	4	12	0	11	6
June	12	8	11	4	12	3	11	6

Chambly Canal.

Statement showing the depth of the 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 June 30, 1899.

Months.	Lock No. 9, Lower Sill.				Lock No. 1, Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	10	9	8	11	8	10	7	7
August	9	1	7	11	8	5	7	2
September	9	0	7	10	8	5	6	9
October	10	2	8	6	9	1	7	6
November	10	10	9	1	9	3	7	4
December	10	6	9	1	8	8	8	4
1899.								
January	11	9	9	0	8	10	8	4
February	12	5	11	5	8	7	8	3
March	15	0	11	11	9	10	8	2
April	18	1	14	0	12	1	9	3
May	17	7	13	3	12	1	10	0
June	13	1	10	0	10	3	8	3

St. Ours Lock.

Statement showing the depth of the river water on the mitre sills of the St. Ours Lock, during the fiscal year ended June 30, 1899.

Months.	Lock No. 1, Lower Sill.				Lock No. 1, Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	11	0	8	3	9	3	8	1
August	8	6	7	6	8	2	7	6
September	8	6	6	11	8	6	7	5
October	8	11	6	9	9	3	7	9
November	9	9	8	0	9	6	8	0
December	10	4	7	10	8	10	8	0
1899.								
January	11	4	9	1	9	0	7	8
February	11	4	9	0	9	1	8	2
March	14	3	11	5	10	10	8	9
April	20	0	13	11	16	3	10	4
May	18	6	13	2	14	8	10	11
June	13	1	10	2	11	1	8	8

Ste. Anne's Canal.

Statement showing the depth of the river water on the mitre sills of Ste. Anne's Canal, during the fiscal year ended June 30, 1899.

Months.	Lock No. 1, Lower Sill.				Lock No. 1, Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	12	0	10	7	13	9	11	11
August	10	7	10	2	11	9	11	2
September	10	2	9	9	11	2	11	0
October	10	10	9	8	12	11	11	0
November	10	10	10	2	12	11	12	3
December	11	8	10	3	12	6	11	3
1899.								
January	11	9	10	5	11	9	11	1
February	11	5	9	8	11	6	10	5
March	10	10	9	9	12	3	10	5
April	14	5	10	6	17	8	10	8
May	15	7	13	2	19	4	15	9
June	13	6	11	9	16	3	13	8

Carillon Canal.

Statement showing the depth of the river water on the mitre sills of Locks Nos. 1 and 2, Carillon Canal, during the fiscal year ended June 30, 1899.

Months.	Lock No. 1, Lower Sill.				Lock No. 2, Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	15	6	13	1	15	2	13	0
August	13	0	12	3	12	9	12	0
September	12	4	12	8	12	2	12	0
October	14	4	12	2	14	0	12	0
November	14	4	13	4	14	1	13	4
December	13	10	12	10	14	1	12	8
1899.								
January	13	10	12	10	17	4	12	3
February	13	8	12	6	12	4	11	7
March	12	9	11	9	11	10	10	10
April	19	9	12	0	20	9	10	10
May	20	10	17	8	22	8	18	2
June	18	2	14	10	19	4	15	2

GRENVILLE CANAL.

STATEMENT showing the depth of the river water on the mitre sills of Locks Nos. 3 and 7, Grenville Canal, during the fiscal year ended June 30, 1899.

MONTHS.	LOCK NO. 3, LOWER SILL.				LOCK NO. 7, UPPER SILL.			
	Highest.		Lowest.		Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July	19	3	15	6	16	6	13	0
August	15	5	14	5	12	10	11	11
September	14	9	14	0	12	0	11	9
October	17	6	14	4	15	0	11	9
November	17	7	16	4	15	6	14	0
December	19	9	15	4	13	11	13	3
1899.								
January	22	0	16	6	13	6	12	11
February	21	9	17	3	12	10	12	0
March	17	1	15	3	12	2	12	0
April	25	4	14	6	21	6	12	1
May	28	1	22	6	24	3	19	2
June	23	2	18	7	19	8	16	0

LACHINE CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year ending June 30, 1899.

Date.	Name of Vessel.	Name of Owner.	Fines.	Damages.	Total.
1898.			$ cts.	$ cts.	$ cts.
Aug. 10..	Str. "Belmont"	S. Filgate	42 00	.....	42 50
" 24..	" "Turret Chief"	F. B. Horsfall	10 00	.....	10 00
Oct. 26..	Schooner "A. M. Ash"	M. Mackie	5 00	10 00	15 00
Nov. 7..	Barge "Lapwing"	Kingston & Montreal Forwarding.	.....	176 41	171 41
1897.					
May 19..	Tug "Nellie Reid"	A. Lomer	.....	10 00	10 00
June 1..	Barge "Metacomet"	I. Brakly	.....	30 00	30 00
" 19..	Tug "H. Larose"	H. Larose	5 00	.....	5 00
" 20..	Barge "Ivonne"	A. Laplante	20 00	.....	20 00
		Totals	82 00	226 41	308 41

TRENT CANAL.

SUPERINTENDING ENGINEER'S OFFICE,
PETERBOROUGH, October 31, 1899.

SIR,—I have the honour to submit herewith the annual report of the works under my charge for the fiscal year ending June 30, 1899.

The Trent Canal is a term applied to the several stretches lying for the greater part along the valley of the Trent, between the Bay of Quinté on Lake Ontario and Georgian Bay on Lake Huron, which, however, in their present condition do not form a continuous line of navigation. The object of the present works is to connect these several water stretches so as to make a continuous line of navigation. A glance at a map of the district will show how comparatively small the length of water-way to make or improve is to the length already provided by nature in the way of its beautiful and deep lakes and rivers. The total distance between Lake Ontario and Lake Huron is about 200 miles. By utilizing the numerous lakes and rivers, and taking advantage of the lay of the land to make flooded reaches, it is hoped that not more than 15 or 20 miles of the total length will be actual canal. The Imperial Government as far back as the year 1835, chose this route as being the most natural and feasible to make a water communication between Lake Ontario and Lake Huron, and they spent considerable sums in carrying out this project, and in fact a sufficient sum of money was voted by the Government at the time to construct that part of the work lying between Lake Ontario and Balsam Lake. The works then constructed have ever since been used for local traffic. When the two divisions at present under construction are completed a continuous line of navigation between Heeley's Falls and the ports of Lake Simcoe, a distance of about 160 miles, will then be available. Though a draught of 6 feet is provided on all the sills, the lands necessary to flood for a draught of 8 feet have been purchased on the new sections at present under construction, so that if required a draught of 8 feet could be provided at a comparatively little extra cost. The depth of water through the several lakes and rivers would give a draught of from 10 to 15 feet, except at a few places in the vicinity of shoals which have a draught of not more than 8 feet.

MAINTENANCE.

Navigation closed on the upper reach November 17, 1898, and opened May 1, 1899. On the lower reach navigation closed November 26, 1898, and opened again April 21, 1899.

The height of water on the mitre sills of the locks was very fair throughout the season, though there is still room for much improvement in regard to the regulation of the water on the different reaches. The regulation of the water is under three different managements, namely, the Dominion Government, the Ontario Government and the lumbermen, consequently it is not surprising that there are complaints regarding the management of the water during the dry season. Owing to the immense country drained, and the country becoming every year more cleared, the proper regulation of the water becomes more difficult. The regulation of the water also between Peterborough and Lakefield is, under the present circumstances, very unsatisfactory. Owing to the mills at Lakefield using all the surplus water, during the low stages of the water, any temporary stoppage of the mills almost stops the entire flow, in consequence of which the mills below are often stopped for a time. If the mill owners at Lakefield were compelled to notify the caretaker of the dam at Lakefield when it was necessary to stop temporarily for repairs the cause of complaint would be removed.

The total number of lockages for the season was 3,772, though this does not represent the traffic on the canal, as owing to many of the longer routes of the steamers not passing through a lock no record of the traffic is kept. There are about twenty steamers on the reach between Lakefield and Balsam Lake and seven on the reach between Peterborough and Heeley's Falls, and several on Lake Simcoe.

REPAIRS.

The following repairs were executed :—

CHISHOLMS.

The dam at this station is in a very dilapidated condition and will not hold the water at the proper level. A new dam will have to be built when this stretch is required for navigation. The lock and canal are in a fair state of repair.

HEELEY'S FALLS.

The dam here is in good condition and only required some few minor repairs.

HASTINGS.

A break occurred in the old dam, north of the sluices which were built last fall, occasioned by the ice during the spring freshet. This was temporarily repaired.

PETERBOROUGH.

The apron of the upper side of the east sluice was staunched and a new stoplog platform and track for the stoplog lifting winches placed thereon.

LAKEFIELD.

The platform over the dam was repaired and the east side of the dam was staunched by gravelling.

YOUNG'S POINT.

The upper and lower ends of the canoe slide over the dam were carried away by the ice in the spring. This was replaced.

BURLEIGH FALLS.

There were extensive repairs made to the dam. This dam has always leaked badly, and lately it became so bad that it lowered the water below navigation level. All the finer material in the gravel in front of the dam was washed out leaving only the coarse stones. This material was removed in front of the sheeting and new sheeting put on, and new gravel was placed against the new sheeting.

BOBCAYGEON.

New cribwork was placed at the upper entrance of the canal and a new landing provided to replace the old wharf. The bottom of the floor of the lock also burst up in the south-west corner, this was again replaced in its former position.

FENELON FALLS.

During the spring the culvert passing through the wharf became clogged with drift-wood, and the force of the water coming down the hill burst the culvert open and carried away part of the wharf. This culvert and wharf were repaired.

DREDGE "OTONABEE."

The hull of this dredge is rather light for the work it has been doing lately. It was necessary to build up the engine bed and strengthen it by braces and stay rods. The engine was also overhauled.

TUG "EMPIRE."

New frame timbers were put in the hull from stem to stern, and also new bed timbers for the engine.

BUOYING OUT.

The old buoys were repainted and new ones placed where required.

INCOME.

A second hand scow was purchased and rebuilt to suit the purpose of a dredge scow.

HASTINGS.

The old dam at this station is a flat tumble dam. The timber in it became so decayed that it was not safe. Part of the old dam was removed and two new sluiceways put in its stead. The remainder of the dam will have to be treated in the same way.

The drill scows and dredge were working for about five months removing the rock in order to make a new channel of navigable depth. It was not finished at the close of the year.

CAPITAL.

CONSTRUCTION.

Section No. 1.—Simcoe-Balsam Lake Division.

The contract for this work was let to Mr. Andrew Onderdonk on April 22, 1895.

Work on this section has been going on very slowly, only a small force of men being employed at any time during the season. There is very little work yet remaining to be done and the contract should be completed this season.

Section No. 1.—Peterboro'-Lakefield Division.

This contract was awarded to Messrs. Brown, Love & Aylmer on August 19, 1895.

Work has been going on continuously, though not at a very fast rate. The work on this contract should be completed at the end of this season, with the exception of the concrete superstructures in the upper and lower entrance piers at Lakefield, and the removal of the rock from the bottom of the river below Lakefield.

Section No. 2.—Peterboro'-Lakefield Division.

The contract for this section was awarded to Messrs. Corry & Laverdure, on May 21, 1896.

Most of the work on this section has been completed with the exception of Lock No. 6, and the work in connection with the masonry and excavation for the hydraulic lock. The work in connection with the hydraulic lock has been exceedingly slow, and unless a great improvement is made in the rate of progress, this masonry will not be ready for

the steel superstructure before the end of next season. Lock No. 6 should be completed this season and also the balance of the work, with the exception of that in connection with the hydraulic lock.

Hydraulic Lock.

The contract for the steel superstructure of this lock was awarded to the Dominion Bridge Company. The contract called for completion on May 1, 1900, but the contractors for the masonry will not be far enough advanced to allow of the superstructure being commenced before the end of next season, in which case the lock will not be ready for operation before the season of 1901.

PLANT.

The dredge *Otonabee*, with dump and drill scows, have been continuously employed at Bobcaygeon, and working for the contractors on section No. 1, at Balsam Lake, and on section No. 1, Lakefield.

The stone-lifter has been employed at Hastings, excavating the navigation channel.

Tug 'Empire.'

The tug *Empire* has been fully employed throughout the year in attending the dredge, buoying out the navigation channel, delivering timber to the different works and towing scows for staunching dams, &c.

I have the honour to be, sir,

Your obedient servant,

RICHARD B. ROGERS,
Superintending Engineer.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer,
Railways and Canals.

SESSIONAL PAPER No. 10

STATEMENT showing the highest and lowest Water Level at each Lock on the Trent Canal for the fiscal year ended June 30, 1899.

Station.	1898.													
	July.		August.		September.		October.		November.		December.	
	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.
	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
Hastings	6 11	6 10	6 10	6 8	6 11	6 8	7 0	6 9	6 10	6 7	6 3	6 7
Peterborough	7 3	6 4	7 2	6 1	7 0	6 5	7 1	6 0	6 10	6 3	.....	.....
Lakefield	5 6	5 0	5 7	5 0	5 7	5 0	5 7½	4 11	5 4	4 11	5 5	5 1
Young's Point	6 5	5 4	5 4	4 11	5 3½	5 1½	5 4½	4 11	6 0	5 4	6 3	5 4
Burleigh Falls	5 6	4 8	5 9	4 2	5 0	4 8	5 2	4 8	4 11	4 6	.....	.....
Lovesick	6 2	5 4	5 9	4 6	5 5	4 11	5 9	4 7	6 0	5 5	.....	.....
Buckhorn	6 6½	6 0	5 10½	5 4	5 5	5 0	5 0	4 10	5 0½	5 0	5 2½	5 0
Bobcaygeon	6 11	6 3	6 9	6 4	6 8	5 9½	5 9	5 6	6 6	5 7	6 7	6 4
Fenelon Falls	6 3	5 6	6 4	5 10	5 9	4 10	5 9	5 0	6 4	5 10	6 1	5 9

Station.	1899.											
	January.		February.		March.		April.		May.		June.	
	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.	Highest.	Lowest.
	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
Hastings	7 4	6 5	6 8	6 1	7 1	6 1	9 2	7 2	9 4	7 10	8 3	7 6
Peterborough	5 8	4 6	5 4	4 10	8 1	4 6	9 11	8 1	9 11	8 4	9 0	8 0
Lakefield	5 7	5 3½	5 5	5 0	6 2	4 10½	8 5	5 11½	8 5½	5 10	6 9	5 9
Young's Point	7 3	6 4	7 1½	6 4	6 9½	6 1	11 1½	6 10	11 1	7 10	8 9½	7 3
Burleigh Falls	.. ...	.....	....	. .	.....	. .	6 4	4 10	6 3	5 4	6 4	5 7
Lovesick	.....	.....	.....	.....	.....	.....	9 5	7 5	9 7	8 1	8 9	7 6½
Buckhorn	6 1¼	5 2½	6 2	5 7½	5 5	6 7	9 4½	6 5¾	9 3	7 0½	7 5	6 8½
Bobcaygeon	6 8	6 4	6 7	6 2	7 1	6 1	7 5	6 9	7 4	7 0	7 4	6 9
Fenelon Falls	6 4	5 10	5 10	5 6	6 4	5 8	8 4	6 0	8 0	6 1	6 8	6 0

RICHARD B. ROGERS,

Superintending Engineer.

RIDEAU CANAL.

SUPERINTENDING ENGINEER'S OFFICE,
OTTAWA, July 7, 1899.

SIR,—I have the honour to submit my annual report on the work performed on the Rideau Canal, under my charge, during the fiscal year ending June 30, 1899.

Navigation closed at Ottawa, November 29, 1898.
" " Kingston Mills, November 23, 1898.
" opened at Ottawa, May 2, 1899
" " Kingston Mills, May 2, 1899.

The depth of water maintained in the various levels throughout the whole season of navigation was excellent, no trouble from low water having occurred anywhere.

The spring freshet this year was of unusually long duration, and although not so violent as last year, from this very cause, did considerable damage to Black Rapids station, an account of which will be detailed in due course.

The principal works and repairs performed at the various locks stations and bridges along the line of navigation, are as follows :—

OTTAWA.

Two pairs of lock gates were rebuilt. The wharfs round the Maria Sreet end of basin were re-inforced and raised, and the roadway behind the same widened and macadamized. A large quantity of broken stone was filled into the holes caused by the washing away of the banks on the west side of the Deep Cut, inside the line of sheet piling. A new sidewalk was laid on the east side of Canal Street, from Sparks Street down to Bate & Co.'s warehouse. Lock No. 7 was thoroughly grouted and is now in fairly good condition. The masonry, however, of the whole eight locks taken altogether is not what it should be, and will sooner or later cost considerable to renew,

STEWARTON BRIDGE

The stone foundation of the bridge keeper's house was repaired. The pivot pier of this bridge is continually settling, and requires close watching, in order to allow the swing span to move.

BANK STREET BRIDGE.

Sundry small repairs were made to the bridge keeper's cottage. The new steel swing bridge has given great satisfaction during the past year.

HARTWELL'S LOCKS.

Sundry small repairs made to lock masonry. Stable built for lock house, and a summer kitchen added to lock labourer's cottage. The dam on the south side of the canal from Concession Street to the St. Lawrence and Ottawa Railway crossing, was raised and widened, a much needed improvement. The tow-path road from the said railway swing bridge to the locks, was considerably damaged when the frost went out of the ground this spring, the banks falling in, in some cases as far as the wheel track on the road. This has all been repaired, and a dry stone wall built in the water to protect the banks from the wash of the steamers.

HOGSBACK LOCKS.

Swing bridge across upper lock repaired. Also repaired apron below old bulkhead. About 500 feet of dry walling was built into the water along the tow-path road, as the canal banks fell in considerably, as at Hartwell's. This work has cost a considerable amount of money, but was absolutely necessary on account of the roadway itself being encroached upon, and also to prevent the banks sliding into the channel. The old break in the canal bank about half way between Hartwell's and Hogsback appeared to be sinking, so I had the bank filled up level with clay, a retaining wall of dry masonry being built at the foot to hold up the material when dumped from the top. A well was sunk for the lock-house; and a new boat purchased for the station, and a new boat-house built for same.

BLACK RAPIDS.

The side pier of the long dam, which was wrecked by ice, was rebuilt last winter. The lay-by piers below the lock were rebuilt from low water up; two new manhole gratings built, and four new chain blocks set in place. The ice this spring cracked the stop-log bent on the west side of the west waste weir. It held till May 24, when the check piece gave way, and let the stop-logs go down the river. This was temporarily repaired, without delay to navigation, but on the 30th the coffer dam broke, and it was necessary to run down the whole upper level before repairs could be made. This occurred, fortunately on a Friday afternooon, so that by the time the water was sufficiently lowered on Saturday night, everything was framed ready for erection. This was finished by Sunday night, and the upper reach was full again by 10 o'clock Monday morning, so that navigation was actually only stopped for about two days. The down stream side of the earth dam was considerably washed away last spring by the eddy from the waste weirs. However everything is secure for the season, and repairs will be made during the coming winter.

LONG ISLAND LOCKS.

The upper mitre sill of lock No. 2, which was to have been rebuilt last year, but was left undone on account of the freshet, was built last winter by our own masons. The piers at the head of Long Island and at Manotick were rebuilt from low water up. The bulkhead at Manotick was replanked. Thirty-five new stop-logs were purchased for Manotick bulkhead, and thirty-six for the bulkhead at the locks. Some new wire fencing was erected around the station. The 10-in. x 12-in. x 24-ft. sheet piling at the waste weir was completed this summer, and the effect is all that could be desired in the way of holding the clay in the wings from being washed out.

MANOTICK SWING BRIDGE.

Trifling repairs and painting done by the bridgekeeper.

WELLINGTON BRIDGE.

Trifling repairs and painting done by the bridgekeeper.

BECKETT'S LANDING.

Planking renewed in places and painting done by bridgekeeper.

BURRITT'S RAPIDS LOCKS.

Sundry small repairs made to station and embankments. New wire fence erected along canal land. The swing bridge in the village and the fence along the approaches

thereto are being, at the present time, painted by the bridgekeeper. A red and green signal lamp was purchased and placed on the swing bridge.

NICHOLSON'S LOCKS.

Sundry small repairs made to station. The waste weir was damaged by ice this spring, so that at first it was found impossible to put in the stoplogs. This has, however, been temporarily repaired, and the whole weir will be rebuilt next winter.

CLOWE'S QUARRY LOCK.

Sundry small repairs made to station.

MERRICKVILLE LOCKS.

Sundry small repairs made to station. The swing and fixed bridges across the locks and waste weir, together with fencing on approaches, are now being painted. The masonry at this station is in bad condition. I propose next winter to rebuild the south wall of the upper basin, and also the wing walls of the upper lock.

KILMARNOCK LOCK.

Sundry small repairs made to station. The bulkhead was repaired and widened out so as to form a crossing for vehicles, and the old corduroy bridge, the former means of crossing, was removed. The upper cut at this station is to be blasted out and deepened 2 feet this coming winter, which will be of great benefit to vessels navigating the canal.

EDMOND'S LOCK.

A lot of new wire fencing was put up round the canal land, replacing the old log fences, which have rotted away. A stable was built for the lock house, gravel placed on dam, and sundry small repairs made to station.

OLD SLY'S LOCKS.

Lower sill of lower lock repaired and sheet piled. The swing bridge across the upper lock was repaired, but will have to be rebuilt this winter. The dam at the bulkhead was raised two feet with broken stone and the road leading to the lock was gravelled.

SMITH'S FALLS COMBINED LOCKS.

One pair of lock gates rebuilt. The basin wall from the waste weir to the swing bridge approach was raised and straightened and a substantial iron railing erected thereon.

SMITH'S FALLS DETACHED LOCK.

General repairs to station and embankments. New summer kitchen and porch built round lockmaster's cottage.

POONAMALIE LOCK.

Sundry small repairs made to station and embankment. New kitchen built to lock house. The stoplog bulkhead across the upper cut is in bad repair and will be rebuilt next winter.

PERTH BRANCH.

Sundry small repairs to locks and station generally. The iron bridges in Perth required some small repairs, which have been made. The retaining dam at Beveridge's Bay was partially burned on the down stream face last week. This, as far as I can learn, was caused by unknown persons leaving a camp fire burning in a high wind. The damage, however, will not interfere with navigation, but several courses of timber must be replaced next winter.

OLIVER'S FERRY BRIDGE.

Small repairs to flooring made by bridge keeper. The swing span will be rebuilt next winter.

THE 'NARROWS' LOCK.

Small repairs made to lock house and lock labourer's house. New approaches built to swing bridge. Six new stoplogs were purchased for waste weir, and the long dam was gravelled and faced with stone.

NEWBORO' LOCK.

Two pairs of lock gates rebuilt. Bulkhead at head of cut repaired. Four new chain blocks set in place, and sundry small repairs made to station and lock house.

CHAFFEY'S LOCK.

One pair of lock gates rebuilt. Swing bridge over lock rebuilt. Storm sash were purchased for lock house windows. General small repairs made to station.

DAVIS'S LOCK.

A small summer kitchen was built to lock house, and general small repairs made to station. A well is required here for the lock house, as the present source of drinking water is a spring which is at a considerable distance from the house. The lock labourer, whose cottage is on the opposite side of the lock, has to procure his drinking water from the same spring.

JONES'S FALLS LOCKS.

One pair of lock gates rebuilt. Fencing of approaches to swing bridge, and hand railing of bridge repaired. Leakage through basin weir stopped with pine sheeting. Store house shingled. Small repairs made to Morton dam and station generally. The lower wing wall on the west side of the upper lock requires to be taken down and rebuilt. Our masons are now taking out the necessary stone in the quarry, and the work will be done this summer.

BRASS'S POINT BRIDGE.

Small repairs made to bridge railing and also to swing span. A small addition was built to bridge keeper's cottage.

BREWER'S UPPER MILLS LOCKS.

Swing bridge across lower lock rebuilt. Sill No. 3 was concreted and repaired, two coffer dams having been built in order to have the lock pumped out for the work. Four new manhole gratings laid. The lock house (which had not been used for some years, as the late lockmaster, who died last year, lived in his own house) was thoroughly renovated for the new lockmaster, and a kitchen and stable built to it. Sundry small repairs made to station generally.

BREWER'S LOWER MILLS LOCK.

An additional story was built on to the old stone lock house, as in its former state it was unfit for habitation. Repairs made to by-wash, and general repairs to station. The lay-by wharf at the head of the lock is now being rebuilt from water line up. Gravel placed on embankment.

KINGSTON MILLS.

Four chain blocks set in place, one new sluice frame put in, and two new foot boards placed on lock gates. Several pieces of coping and some hollow quoin stones were put in last winter. Our masons are now taking out of the quarry at Elgin, several more pieces of large dimension stone, which will be set in place here next winter. One of the lock labourer's cottages was lathed and plastered, and the lock house re-shingled and chimney rebuilt. A large quantity of gravel and stone was placed on the embankments, and general repairs made to the station.

GENERAL.

The pointing and grouting of the lock masonry was done by the lockmen in the spring; the cement for which, 300 barrels White Cross Portland, was purchased by contract with Messrs. Bellhouse, Dillon & Co., of Montreal. The painting of the lock houses, lock gates, bridges, &c., was also done by the lock men; the paint itself, 3,500 pounds of white lead and black, being supplied by contract with Messrs. McDougal & Cuzner, Ottawa. The contract for the supply and delivery of 6,000 cubic feet of white oak dimension timber for next winter's repair has been awarded to Messrs. Cameron & Co., of Ottawa.

DREDGING PLANT.

The dredge *Rideau* was employed all last summer between Kingston Mills and the city of Kingston in deepening the channel through the marsh, with the exception of six weeks, when she was dredging near the Exhibition Grounds at Ottawa. Her hull is to be rebuilt this winter, and for this reason her repairs when fitting out this spring were made as light as possible.

The tug *Shanley* was employed last season in attending on the dredge, delivering stores and buoying out the channel and removing logs and stumps from the channel throughout the canal, also on inspection work. Her repairs this spring were somewhat more extensive than usual, as last autumn she was cut through by ice and nearly sunk. She is now sheeted round the water line with light boiler plate, which will protect her from such accident in future. A new dingey was purchased, and a set of davits put up on her port side, which is, I think, a better way than towing the skiff astern, as we have had many boats broken in the locks from this way of towing them behind the tug.

The four side dump scows are in fair condition, but can be made almost as good as new at a comparatively small outlay. The coal scow is in first-class order. I append hereto a table showing the highest and lowest water during each month of the year at Ottawa and Kingston Mills lock stations.

I have the honour to be, sir,

Your obedient servant,

ARTHUR T. PHILLIPS, Mem. Can. Soc. C. E.,

Superintending Engineer.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer,
Department of Railways and Canals.

SESSIONAL PAPER No. 10

RIDEAU CANAL.

TABLE showing monthly, the Highest and Lowest Water on the Lower Sills of the locks at Ottawa and Kingston Mills, respectively, from July 1, 1898, to June 30, 1899.

OTTAWA.				KINGSTON MILLS.			
Highest.		Lowest.		Highest.		Lowest.	
	Ft. In.		Ft. In.		Ft. In.		Ft. In.
July 2	14 6	July 31	10 0	July 1 to 5	8 0	July 22 to 31	7 10
Aug. 1	9 11	Aug. 31	8 6	Aug. 1	7 10	Aug. 26 to 31	7 5
Sept. 10	8 9	Sept. 20 to 22	8 1	Sept. 1	7 5	Sept. 29 and 30	7 0
Oct. 31	12 4	Oct. 1	8 1	Oct. 1 to 17	7 0	Oct. 18 to 22	6 11
Nov. 1 and 2	12 4	Nov. 12	11 0	Nov. 26 to 30	7 1	Nov. 7 to 18	6 11
Dec. 1	11 3	Dec. 30 and 31	9 8	Dec. 1 to 21	7 1	Dec 11 to 31	7 0
Jan. 1 and 2	9 7	Jan. 10 to 31	9 5	Jan. 23 to 31	7 1	Jan. 1 to 22	7 0
Feb. 10 to 15	9 4	Feb. 16 to 20	9 3	Feb. 1 to 9	7 0	Feb. 10 to 21	6 11
March 31	10 8	March 1 to 6	9 4	March 29 to 31	7 4	March 2 to 12	6 11
April 30	21 9	April 1	10 8	April 23 to 30	7 10	April 1	7 4
May 8	25 6	May 29	18 0	May 22 to 31	8 1	May 1	7 10
June 1 to 6	20 0	June 30	14 7	June 1 to 16	8 1	Jnne 17 to 30	8 0

A. T. PHILLIPS,
Superintending Engineer.

RIDEAU CANAL OFFICE,
OTTAWA, July 7, 1899.

ST. LAWRENCE DISTRICT,

SUPERINTENDING ENGINEER'S OFFICE.
CORNWALL, July 1, 1899.

SIR,—I beg to submit my annual report upon works of construction, survey, &c., as connected with the enlargement of the St. Lawrence Canals for the year ending June 30, 1899.

CORNWALL CANAL.

(Opened for traffic 1843.)

The canal has a total lockage of 48 feet, and was designed to overcome the Long Sault Rapids, which extend from Dickenson's Landing to Cornwall, a distance of 11½ miles.

It is located on the north side of the St. Lawrence on ground sloping rapidly towards the river, and at a considerable elevation (generally about 30 feet) above it.

By closely following the margin of the river, high embankments became necessary, which, when imperfectly constructed (as has been found to have been the case) have under certain conditions been subjected to frequent land slides, accompanied by subsidence entailing as in 1888, very serious consequences.

The works of enlargement, now under construction, consist in deepening, widening, and straightening the original channel, in strengthening and protecting the embankments, and in the construction of new and enlarged locks, supply weirs, bridges, &c., also in addition to the above and not covered by the original contract, the repairs or renewal of the foundations and general restoration of the damaged masonry of the old locks 15, 16, 17, 18, 19 and 20 and the adaptation of the basin between 15 and 16 to the purposes of a dry-dock.

The construction of the dams, weir, &c., in connection with the Sheik's Island channel, including the guard gates and automatic dam at lock 20.

And the masonry superstructure and ice-breaker on the upper entrance pier.

The most important of these works, the Sheik's Island dams, were designed to perfect the channel and do away with the existing imperfectly constructed embankments west of the village of Mille Roches embraced in contracts 6 and 7 and part of 5 and 8, which have been abandoned.

This improvement in the alignment was considered necessary for the reason that the class of vessels for which the enlarged canal is designed would have great difficulty in navigating it and that on some of the curves west of Mille Roches on the abandoned contracts it would be practically impossible for those of full canal size to pass each other while under headway.

And the guard gates and dam connected therewith at lock 20 was constructed to protect the lower reaches in case of accident to the locks from the large body of water practically a lake, between the Sheik's Island dams.

The enlargement of the lower or eastern entrance (section No. 1) was commenced in 1876, and with the exception of some work on old lock 17, and the weir and head race to the mills, were completed in 1882.

Section No. 10 upper entrance, which was commenced in 1884, was completed 1895, with the exception of the entrance.

In 1888, the remainder of the work required to complete the enlargement was placed under contract and is practically completed.

And in 1893, the contract for section No. 4 was extended to include the construction of Sheik's Island dams, which are now completed and the contracts for sections Nos. 6 and 7 and part of 5 and 8 affected by their construction, cancelled.

Locality.	Section.	Contractors.	Date of Contract.
Cornwall	2	Wm. Davis & Sons	Nov. 5, 1888.
Lock No. 19	3	"	"
Maple Grove	4	"	"
Sheik's Island Dams		"	June 19, 1893.
Mille Roches	5	The Gilbert Blasting and Dredging Co.	Nov. 2, 1888.
Moulinette	6	" "	"
Sand Bridge	7	" "	"
Long Sault	8	" "	"
Dickenson's Landing	10	Jocks, Delorimier & Broder	April 7, 1884.

NOTE.—Sec. 2 includes the completion of Sec. No. 1. Sec. No. 4 includes the Sheik's Island Dams. Sec. No. 8 adjoins Sec. No. 10.

These contracts are now completed except some work now in progress in connection with the guard gates above lock No. 20, section No. 4, and of the widening and straightening of the upper entrance section No. 10.

Very unsatisfactory progress has been made with the final estimates for the above contracts.

WILLIAMSBURG CANALS.

FARRAN'S POINT CANAL.

(Opened for traffic 1847.)

This canal is about $\frac{3}{4}$ of a mile in length and has a lockage of $3\frac{1}{2}$ feet.

It overcomes a short, swift rapid above the village of Farran's Point, which is situated about 5 miles west of the village of Dickenson's Landing, the head of the Cornwall Canal.

The enlargement of this canal having been authorized, tenders were advertised for on May 9, 1897. On June 1 a contract was entered into with the Canadian Construction Co., the work to be completed January 31, 1899.

The time for completion has since been extended to May 1, 1899.

The work commences at Farran's Point, the entrance of the canal, and extends west to Empey's Bay, above the original entrance.

The works contemplated in the proposed scheme of enlargement consist in forming a new lower entrance, north of that at present in use, and beyond the influence of the 'Big Eddy' at the foot of the rapid, also of a new lock extending from deep water west to a point about 200 feet above the old lock and nearly parallel to it, of the deepening and straightening of the present channel to the head of the old canal, and its extension through Point Avoyon to Empey's Bay, a distance of about 7,000 feet.

The old lock and entrance will not be interfered with beyond such necessary repairs as may be required to continue its use in the event of accident to the new lock.

The timber and concrete foundations for the new lock were completed in October, 1898.

The building of masonry in this lock was continued to November 10, 1898, resumed April 20, 1899, and is now almost completed, 24,800 cubic yards of masonry having been laid during the year.

The lock gates were fitted and placed in position between May 11 and 16, 1899. and the lock is now ready for use.

A large amount of material has been excavated in prism of canal and lockpit by means of steam shovels and dredges.

The embankment on the south side of canal is about completed, and the cribwork at the upper and lower entrances well advanced.

RAPIDE PLAT CANAL.

(Opened for traffic 1847.)

The lockage of this canal is 11½ feet. It was constructed to overcome the rapid of Rapide Plat, and extends from the village of Morrisburg to Flagg's Bay, a distance of 3¾ miles.

The works placed under contract now completed are as under, viz. :—

Locality.	Section.	Contractors.	Date of Contract.
Morrisburg	1	Poupore & Fraser	January 26, 1891.
Mariatown	2	Weddell Dredging Co	" 12, 1891.
New Road	3	Poupore & Fraser	" 26, 1891.

NOTE.—The change of alignment east of lock No. 24, formerly section No. 4, is included in section No. 3.

These contracts have all been completed and the final estimates for sections Nos. 2 and 3 returned.

That for section No. 1 is in progress and will be finished by the end of this year.

GALOP'S CANAL.

(Opened for traffic 1847.)

IROQUOIS SECTION.

The enlargement of the eastern portion of what is known as the Galops Canal having been authorized, tenders for the Iroquois section were advertized for on April 17, 1897. On May 20 following a contract was entered into with Messrs. Larkin & Sangster, the work to be completed January 31, 1899.

The time for completion has since been extended to January 30, 1900.

The contract begins at the village of Iroquois, the eastern entrance of the canal, and extends westerly to Presqu'Isle, a distance of about 16,000 feet.

By the proposed scheme of enlargement it is designed to raise the normal level of the existing canal 6 feet, that is to the height of the lowest known stage of water in the River St. Lawrence above the guard lock, and thus, on the main line of navigation, dispense with the lift lock No. 26, Cardinal, which will hereafter be connected directly with the river, and thereby accommodate the village of Cardinal, the mills and the coasting trade.

The total quantity of earth excavated on this section during the year amounts to about 320,000 cubic yards, of which about 12,000 cubic yards were dredged out of lower entrance to the canal, about 18,000 cubic yards removed from lock-pit, 118,000 cubic yards from prism of canal west of lock, and about 170,000 cubic yards excavated from borrow pit.

The total quantity of rock excavation embraced by lower entrance, lock-pit and prism of canal has been about 65,000 cubic yards.

The laying of masonry for the foundation of lock walls at Iroquois was commenced on June 20, 1898, and the work has since been pushed so vigorously day and night that on December 22, 1898, when the laying of the masonry was discontinued for the season, the side walls of the lock were completed with the exception of a few short stretches of coping.

During this period about 3,600 cubic yards of concrete were deposited in foundation of lock, and over 50,000 cubic yards of lock masonry laid, and the enormous quantity of 500 cubic yards per day was laid during the month of October and the first week in November.

Between May 1 and 6, 1899, three pairs of gates were fitted and placed in position in this lock, and on May 13 the lock was brought into use.

CARDINAL SECTION.

Tenders for the Cardinal section were advertised for on April 17, 1897. On May 10 a contract was entered into with Messrs. Wm. Davis & Sons, the work to be completed January 31, 1899.

The time for completion has since been extended by Order in Council.

The contract embraces the old 'Junction' and the eastern half of the 'Galops' division. It commences at Presqu'Isle and extends west through the rear of the village of Cardinal to Gate's Point, the eastern end of the upper entrance contract now under construction, a distance of about 17,000 feet.

The proposed scheme of enlargement contemplates abandoning the use of lock No. 26 on the main line in future, and raising the normal level of the existing canal 6 feet above the lowest known stage of the River St. Lawrence at the upper entrance.

Since the commencement of the work in June, 1897, the principal work done has been in the excavation of the 'Deep Cut' through the village of Cardinal.

This cut is 5,900 feet long and 68 feet deep at the highest point and contains about 2,000,000 cubic yards, of which 1,660,000 cubic yards have already been excavated, leaving a balance of about 340,000 cubic yards yet to be removed.

Four steam shovels have been employed day and night on the excavating of this cut. Work was continued with these shovels until November 25, 1898, when the night work was stopped for the season, the day work being continued until December 3, 1898, when it being found almost impossible on account of the continued unfavourable weather to keep the tracks in a safe condition for the running of trains, the contractors considered it prudent to discontinue shovel work, and they were accordingly laid up for the season.

Day work was resumed on April 1, 1899, and on May 9 the shovels began working at night, and have since been working 22 hours in each 24.

Of the 1,660,000 cubic yards excavated in this cut about 860,000 cubic yards have been excavated during the year, showing an average of 4,057 cubic yards for each day during the time the shovels were working.

Solid rock was encountered in November, 1898, in the bottom of this cut near the centre and extending for a distance of 800 feet in line of canal and completely across the bottom, rising from each end to about 12 feet above grade.

The material overlying this rock, and for a considerable distance east and west of it, was found to be very hard and containing many large boulders, and this with the obstruction to shovel work caused by the solid rock, accounts in a great measure for the comparatively small quantity of material excavated by the shovels during the year.

About 1,400 lineal feet of this cut is, however, now excavated to bottom of canal and for the full width, and about 1,500 lineal feet to bottom of canal and for half its width.

The foundations for piers and abutments for the highway swing bridge across this cut, designed to connect the north and south portions of the village of Cardinal, are being prepared.

A few small slides occurred near the deepest part of the cut during the season of fall rains and when frost was coming out of the ground last spring, but nothing serious enough to indicate that the protection designed for the face of the slopes would be insufficient.

Earth excavation west of 'Deep Cut.' The excavation here consists in the widening and deepening of the old canal at Gate's Point, the removal of portions of the south bank of old canal, and the dredging of prism of new canal as well as dredging for seat of cribwork and embankment across Gate's Bay.

The total quantity of material to be excavated here is about 324,000 cubic yards, of which about 200,000 cubic yards have already been taken out by dredges, which worked until November 26, 1898, resumed work April 10, 1899, and are still continuing to work.

Earth excavation east of 'Deep Cut.' The excavation here includes the widening of the present canal, the removal of portions of the old towpath, and the dredging of new prism across Glassford's Bay. The total quantity of excavation east of 'Deep Cut' is about 228,000 cubic yards, of which only about 26,000 cubic yards have been removed, the greater part of which has been deposited along the shore of McDonald's Bay, on the north side of old canal.

The excavation from the 'Deep Cut' has been used in raising and widening the south bank at east end of section, in the formation of new banks across Glassford's Bay and Gate's Bay and the raising of the highway north of the cut; the remainder has been placed in spoil along McDonald's Bay or on the outside of the new bank east and west of Fraser's Point, to strengthen it where necessary.

UPPER ENTRANCE, GALOPS CANAL.

The works now under contract and in progress and for which Messrs. Murray & Cleveland are the contractors, were commenced in 1889.

The contract was entered into on November 14, 1888, to be completed June 15, 1891.

It embraces the construction of a lift lock connecting with the river below the rapid, and of a guard lock and supply weir, and the removal of the old guard lock, &c., also the deepening, widening and straightening of the channel from the upper entrance to Round Bay, a distance of about one mile.

The masonry of the upper entrance pier has been completed, also the entire removal of the old guard lock.

The pier across Little Bay connecting the new guard lock with McLaughlin's Point, the embankment between the new guard lock and supply weir, and the protection to slopes east of lock has been finished, and the pier east of guard lock connecting it with the main land is now in progress.

The work remaining to be done consists of the masonry on the outside of the south pier at lower entrance, some excavation adjoining the Cardinal section, the cleaning up of the bottom of the prism, and the completion of the north slope from McLaughlin's Point west to the head of the canal, all of which will be completed by the opening of navigation in 1900.

GALOPS RAPID IMPROVEMENT.

The Galops Rapid improvements consist in the formation, by subaqueous excavation of a straight channel 200 feet wide and 17 feet deep, through the shoals termed respectively Upper Bar, North and Caledonia Shoals, Island Shoal and Lower Bar, the whole of which are included in a distance of 3,300 feet.

This work was completed in November, 1888.

The work now in progress is for the purpose of making 'a satisfactory test and survey of the bottom of the said channel, and at the same time to be prepared for the removal of any material above the original or contract grade, and further in view of the apparent permanent lowering of the water surface of the River St. Lawrence, in said channel, that provision be made for the execution of such additional work as may be considered advisable.'

An agreement was entered into with the Gilbert Brothers Engineering Company, Limited, on September 15, 1897, to undertake the work as above described.

Operations were commenced November 10, 1897, and are still in progress.

The work of sweeping and testing this channel was continued by means of a dredge until November 24, 1898, when she was laid up for the season; work was resumed on May 23, 1899, and is still in progress.

The result of testing the channel shows it to be now clear for a distance of 2,500 feet from the upper entrance, and for the full width of 200 feet, with the exception of three points on Island Shoal which are now being removed.

The remainder of the channel, about 750 feet, has been satisfactorily tested on the south side of the centre line, showing a full depth at low water.

The sweeping and sounding on north side is now in progress and will be completed this season.

It having been decided to widen the entrance to the existing channel across Upper Bar towards the south, drilling and blasting operations were accordingly commenced on August 11, 1898, and continued to the close of the season, November 25.

The work was resumed June 5, 1899, and is still in progress, with the result that about 850 feet in length and for full width has been drilled and blasted and partially dredged, leaving to be done to complete about 300 feet in line of channel.

The question of reducing the finished surface of Island Shoal 6 inches or 1 foot, as recommended in former reports, is again submitted for approval.

NORTH CHANNEL.

The work having been authorized, tenders were advertised for on April 10, 1897. On May 14, a contract was entered into with Mr. M. A. Cleveland, the work to be completed on January 31, 1899.

The time for completion has since been extended to December 31, 1899.

The work commenced on June 1, 1897.

The proposed channel has been increased in width to 300 feet, and will be perfectly straight, commencing about 1 mile west of the upper entrance of the Galops Canal, and is practically an extension of canal navigation for fully 3 miles west to the deep water in the Prescott reach, opposite Johnstown.

The total quantity of earth excavation on this work during the year is about 400,000 cubic yards, which includes the Middle Ground and the cutting through Drummond's Island, between the dams, and also the dredging operation on all shoals west of Drummond's Island to deep water at the upper entrance to the channel

Two cableways were erected for the removal of the rock in the portion of the channel unwatered, and worked continuously through the year till June 15, 1899, when the rock excavation inside of dams, with the exception of a small portion along south slope, having been completed, they were dismantled.

The total quantity of rock removed during the year by cableways in the unwatered portion of the channel was about 160,000 cubic yards, and by derricks, 25,000 cubic yards.

The stone protection to slopes was continued during the winter, keeping pace with the excavation between the dams, and is still in progress; the length completed to the level of normal water is about 6,000 lineal feet.

The daily average of rock excavation during the season of 1898 was 1,000 cubic yards, and that for 1899 to date is 650 cubic yards.

During the past year the pumping for the purpose of completing the prism between the dams has necessarily been very constant. At the lower dam a 12-inch, and at

Tuttle's Point an 8-inch pump were kept continuously under steam, but working only a part of the time; but at Drummond's Island some heavy springs were uncovered as the level of the bottom channel was approached and it became necessary to provide additional pumping plant. Accordingly early in July, 1898, another 8-inch pump was placed on the north side near the commencement of the rock cut, and has been kept continuously at work since that date.

About 750 lineal feet of cribwork has been built, sunk and fully ballasted, at the upper entrance of the channel.

RIVER REACHES.

IMPROVEMENT OF CHANNEL, LAKE ST. FRANCIS.

St. Regis section, 2½ miles east of Cornwall.

This work, situated at the foot of Cornwall Island and nearly midway between it and the 'First Crab,' commences near the western entrance to the lateral channel over the St. Regis bar, which connects the existing north and south navigable channels.

The contract was entered into with Messrs. Manning & Macdonald, May 24, 1898, to be completed November 30, 1898.

The time for completion has since been extended to May 1, 1899.

Work was commenced in June and is in progress.

The channel through the bar now exceeds 150 feet in width, the dike is partially completed, and the cribwork at head and foot of channel is in progress.

It is expected that the width of the channel will be increased to 250 feet by the end of the present season, and fully completed by the opening of navigation in 1900.

Hamilton Island section, 10½ miles east of Cornwall.

This section comprises the undermentioned shoals, which obstruct the fairway between the 10th and 11th miles east of Hamilton's Island Light, viz.:—

The Middle Ground	10 miles.
The Highlander shoal	10½ "
The Horseback	11 "

The contract was entered into with Messrs. Manning & Macdonald, May 24, 1898, to be completed November 30, 1898.

The time for completion has since been extended to May 1, 1899.

Work was commenced on the Middle Ground in June and is in progress.

The Island crib on the Middle Ground has been completed and in part protected. The dredging has also been completed.

The Highlander shoal has proved so difficult that a bare commencement has been made. The contractor's present intention is to postpone the work until his most powerful dredge can be obtained from the Soulanges works.

The Horseback shoal has not yet been commenced as the necessity for its removal is still undecided.

ST. LAWRENCE RIVER AND CANALS.

SURVEYS.

The River and Lake St. Francis, between Cornwall and Coteau, was thoroughly examined, sounded and swept during the month of September, 1898.

The sweep was set at 16 feet during the preliminary trials and afterwards at 18 feet, both with reference to normal water, which is the level of 9 feet above the mitre sill of old lock No. 15.

In the new channel examined, the minimum depth shown by soundings was 20 feet.

This survey confirms my previous work of 1873, and establishes the fact that there is a good navigable channel of not less than 16 feet at low water between Cornwall and the foot of Lake St. Francis.

Surveys of the river between Cornwall and Glengarry Point have been made to test and correct the information obtained in connection with the new channel across the St. Régis Bar and the approaches thereto.

Surveys have also been made at the upper entrances of the Cornwall and Rapide Plat Canals, with a view to their improvement by widening and deepening, and also at a point midway between the upper entrance of the Galops Canal and the foot of the north channel.

Preparations are being made this season to sweep all the reaches of the river between the canals, and definitely locate the positions of the new series of buoys, which will be required to define the limits of a 14-foot channel at the opening of navigation in May, 1900.

I have the honour to be, sir,

Your obedient servant,

TOM S. RUBIDGE,

Superintending Engineer.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer,
Railways and Canals.

ST. LAWRENCE DISTRICT.

SUPERINTENDING ENGINEER'S OFFICE,
CORNWALL, July 1, 1899.

SIR,—I have the honour to report on the maintenance of the canals under my charge during the fiscal year ending June 30, 1899.

The St. Lawrence District includes the Cornwall, Farran's Point, Rapide Plat and Galops Canals; the Murray Canal, and the improvement in the rapids and channels of the navigable reaches of the River St. Lawrence and Lake St. Francis.

CORNWALL CANAL.

General navigation for the season of 1898 closed on December 9, 1898.

Water was drawn off the canal on April 9, 1899, for the usual spring repairs, and remained unwatered until opened for traffic on April 24, 1899.

The new and old locks at the lower entrance were dismantled and secured for winter.

The dry dock or basin between old locks 16 and 17 was used to its full capacity during the winter by contractor's tugs and dredging plant undergoing repairs, and also by local steamboats and tugs.

This dry dock is also constantly used during the season of navigation, and a charge sufficient to cover the expense of operating and keeping it in repair should be exacted from vessel owners.

The winter work at the shops in preparation for spring repairs and renewals was carried on as usual.

The foundations of the workshops were also renewed, and the buildings raised and thoroughly repaired during the winter.

Watch houses for the guard gates, bridges and lock 15 have been completed.

Life buoys have been provided at all locks and bridges.

Navigation was maintained without interruption during the past year, notwithstanding the closing of new locks 15 and 17 during the months of July and August, 1898, for extensive repairs and renewals to foundations.

The water supply to the mills was not interfered with.

On the afternoon of July 9, the lower mitre sill of lock No. 17 was found to be detached from its anchorage and partially afloat. This necessitated the immediate closing of locks No. 15 and 17 at the new entrace.

As stated above, navigation was not interfered with, as the operating staff were at once transferred to the old entrance locks 15, 16 and 17, and traffic resumed practically without delay.

In order to repair the mitre sill dams were constructed above lock 17 and below lock 15 and the locks and basin unwatered.

Advantage was taken of the unwatering to thoroughly repair the mitre sills and foundations of all structures, and to partially reduce the bottom of the basin to its original level.

The work was completed and the new entrance re-opened for navigation on the 28th of August.

The cribwork of lower river wharf which was partially destroyed by ice shoves in the spring was repaired soon after the opening of navigation.

New valves were put in gates for lock 15, and old lock 19, and new worm gear on regulating weirs at 19 and 20.

New foot bridges were placed on gates for old lock 19 and all others repaired.

The banks, ditches and all structures have been kept in good repair.

Extensive repairs are required at the lower entrance to ice-breaker and piers.

A new regulating and supply weir at the head race to the lower mills at lock 17 and extensive repairs to north bank between Pitt to Amelia Streets are urgently required.

There have been no superannuations during the year.

The fines imposed during the year 1898-9 are as follows:—

1898.	July 4	Damages	Str. "Passport"	$20 00	paid
1898.	July 9	"	Str. "Columbian"	25 00	"
1898.	July 18	"	Str. "Algerian"	10 00	"
1898.	July 30	Fine	Str. "Algerian"	5 00	"
1898.	Aug. 15	Damages	Str. "Spartan"	10 00	"
1898.	Aug. 25	"	Str. "Corsican"	10 00	"
1898.	Sep. 26	"	Barge "Mohawk"	5 00	"
1898.	Oct. 7	"	Barge "Toledo"	5 00	"
1898.	Oct. 11	"	Str. "Lake Michigan"	10 00	"
1898.	Oct. 26	"	Sch. "F. D. Ewen"	35 00	"
1898.	Oct. 31	"	Sch. "Emma M. Ash"	10 00	paid in
1898.	Oct. 31	Fine	Sch. " "	5 00	Montreal.
1899.	May 10	Damages	Tug "McNaughton"	10 00	paid
1899.	May 23	"	Str. "Melbourne"	20 00	"
1899.	May 31	"	Sch. "Helvetia"	15 00	paid at
1899.	June 2	"	Str. "Cuba"	10 00	Cardinal.
1899.	June 5	"	Barge "Whitbeck"	15 00	"
1899.	June 16	"	Str "Columbian"	10 00	"

The highest water recorded during the season of navigation at lock 15, lower entrance, was 10 ft. 4 in. and the lowest 8 ft. 9 in.

The highest water during the season of navigation at lock 21, upper entrance, was 10 ft. 2 in. and the lowest 8 ft. 1 in.

The highest and lowest water during the year ending June, 30, 1899, at locks No. 15 and 21, is as under, viz.:—

Lock 15, highest. 23 ft. 2 in.....March 19.
Lock 15, lowest, 9 ft. 2 in. .....October 11.
Lock 21, highest, 10 ft. 8 in.....March 20.
Lock 21, lowest, 7 ft. 1 in.....December 5.

The above levels are with reference to the mitre sill of the old locks 15 and 21 respectively.

WILLIAMSBURG CANALS.

The several divisions of these canals, viz., Farran's Point Canal, Rapide Plat Canal and the Point Iroquois, the Junction and the old Galops Canal, collectively known as the 'Galops Canal,' were closed on December 13, 1898, and reopened for the season of 1899 on April 13, but the actual date on which the several locks were opened was varied to suit the requirements of the contractors for the enlargement.

Navigation was maintained in a fairly satisfactory manner during the past year in view of the extensive works of enlargement now in progress.

No accidents have occurred during the season of 1898-9, nor has the water supply to the mills been interfered with for any length of time, except at Iroquois where in order to facilitate the contractors, operations in connection with the new structures at the basin and lock, it became necessary to close down the grist mill and waterworks in December, 1898.

The repairs staff has been chiefly occupied in maintaining the old locks in working order, a difficult task requiring constant and careful attention, owing to their almost constant use by the contractors for the enlargement.

During the winter general repairs were made to the buoy boat, scows, &c., and spare buoys prepared and ironed, also spare gates rebuilt for lock 26, Cardinal.

The buoy service from Cornwall to Prescott was duly performed at the close of the season in December, 1898, and again at the opening of navigation in April, 1899, and additional buoys were placed at the following points, viz. :—North Channel, Jackass Shoal, Cornwall, and Lake St. Francis in May, after the opening of navigation.

The following fines were imposed during the year :—

1898. Sept. 12.... Damages..... Tug "Curtis"..... $10.00 paid
1899. June 15..... " ..... Barge "Alberta"..... 15.00 "

The lowest water on the mitre sill of old lock 23 formerly the governing point on the canals in this district during the season of navigation was 8 ft. 5 in. on December 5.

The lowest water on the mitre sill of old guard lock No. 27, during navigation was 7 ft. 2 in., November 26, and the highest 10 ft. 4 in. May 30.

MURRAY CANAL.

Navigation closed on December 6, and opened again on April 13, 1899.

The number of vessels passed through canal from July 1, 1898, to June 30, 1899, was 685.

There were no accidents during this period.

The towpath ditches were kept cleaned out and repaired as usual in the fall and spring.

Back ditches were cleaned out and one, 74 rods long, was dug on north side, east of Brighton Road bridge.

All weeds and brush were cut and grass seed sown on the bare places as usual.

The railway swing bridge was repaired and well painted and the other bridges put in order.

The buildings have been painted and repaired where necessary and an ice-house built.

Stone scow was painted and overhauled.

Signs on bridges and offices were repainted and all tools were repaired during the winter.

The planking was renewed where required on the eastern and western entrance piers.

The floors on all the road bridges were partially renewed.

The rip-rap was repaired for a length of 3,600 feet and 1,385 cubic yards of broken stone used thereon.

The towpath was repaired and 1,270 cubic yards of gravel spread.

Mooring posts were put in where required, also new posts for boom chains.

A large amount of stone has been broken suitable for rip-rap.

The culverts are commencing to decay and have been temporarily repaired but must be renewed next season.

The lighthouses erected on the east and west end of piers and the semaphore on railway swing bridge are giving great satisfaction and complete the proper lighting of this canal.

Attention is again drawn to the necessity for a wharf at the collector's office.

The highest water recorded during the season of navigation, 1898–9, was 13 ft. 5 in., June 9, and the lowest 11 ft. 9 in., October 27.

I append a statement showing the highest and lowest water during the past year on each ofthe canals in my district, also a condensed statement of the highest and lowest water during the season of navigation from the year 1892 to 1898 both inclusive.

I have the honour, to be, sir,

Your obedient servant,

TOM S. RUBIDGE,

Superintending Engineer.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer, Railways and Canals,
Ottawa, Ont.

STATEMENT of the Highest and Lowest Water on the Canals in the St. Lawrence District for the Year ended June 30, 1899.

MONTH.	CORNWALL CANAL.				WILLIAMSBURG CANALS.										LAKE ONTARIO.	
	Lock 15.		Lock 21.		Lock 22.		Lock 23.		Lock 24.		Lock 25.		Lock 27.		Murray Canal.	
	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High.	Low.	High	Low.
	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Ft. in.
1898.																
July	11 3	9 8	10 0	9 2	9 6	8 6	9 1	8 0	9 5	8 3	12 0	10 10	9 7	8 10	13 4	12 9
August	9 11	9 7	9 9	9 0	9 0	8 4	8 7	7 10	8 9	8 0	11 6	10 0	9 8	8 8	12 11	12 5
September	9 8	9 2	9 5	8 9	8 9	7 5	8 1	6 6	8 5	7 5	10 10	8 7	9 3	8 0	12 5	11 11
October	9 7	8 11	9 6	8 1	8 9	7 5	8 4	6 7	8 5	6 7	10 8	8 10	9 4	8 0	12 6	11 9
November	9 9	8 9	9 8	8 3	8 11	6 11	8 4	6 0	8 5	6 0	10 10	8 0	9 1	7 2	12 2	11 9
December	11 0	8 9	9 9	7 1	9 1	6 0	8 8	5 5	9 0	6 5	11 3	8 9	9 4	7 0	12 1	11 0
1899.																
January	22 9	10 7	9 6	7 6	9 1	7 3	8 9	5 9	8 8	5 6	11 4	7 4	10 0	8 0	12 3	11 11
February	23 0	17 8	9 2	8 1	8 10	6 10	8 5	6 3	7 5	5 2	9 9	7 6	8 7	7 2	12 2	11 11
March	23 2	15 6	10 8	8 5	10 2	7 6	8 10	6 11	9 5	6 5	11 4	8 5	9 7	8 1	12 7	12 0
April	16 8	10 3	9 9	9 1	9 1	8 0	8 8	8 0	9 0	8 0	11 4	10 0	9 6	8 9	13 2	12 7
May	10 7	9 8	10 4	9 0	9 6	8 1	9 4	8 0	9 9	8 5	12 3	10 3	10 4	9 2	13 4	12 11
June	10 5	9 9	10 1	9 8	9 6	8 11	9 4	8 8	9 6	8 8	12 2	11 0	10 2	9 2	13 5	13 0

STATEMENT of the Highest and Lowest Water on the Canals in the St. Lawrence District, May to November in each year.

YEAR.	CORNWALL CANAL.								WILLIAMSBURG CANALS.							
	Lock No. 15.				Lock No. 21.				Lock No. 22.				Lock No. 23.			
	Highest.		Lowest.		Highest.		Lowest.		Highest.		Lowest.		Highest.		Lowest.	
	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.
1892.	August.	12 1	May ...	9 4	August.	10 10	Nov....	8 10	July....	10 3	Nov....	7 10	July....	9 9	May ..	7 6
1893.	May. ..	12 5	Nov....	9 7	May ...	11 9	"	9 0	May....	11 2	"	8 3	May ...	11 1	Nov....	7 1
1894.	June....	11 0	"	9 2	June...	10 11	"	8 6	June....	10 6	" ...	7 10	June....	10 1	" ...	6 0
1895.	May....	9 10	"	8 0	May ...	9 4	"	7 4	May ...	8 9	"	5 10	" ...	8 0	"	4 10
1896.	" ...	10 2½	Oct.....	8 6½	" ...	9 11	" ...	7 8	" ...	9 4	"	6 11	" ...	8 11	" ...	5 9
1897.	August.	10 3	Nov....	8 5	" ..	10 0	"	7 5	" ...	9 10	" ...	7 2	" ..	8 11	"	4 9
1898.	May ...	10 4	" ..	8 9	June....	10 2	Oct.....	8 1	" ...	9 7	"	6 11	...	9 3	" ...	6 0

STATEMENT of the Highest and Lowest Water on the Canals in the St. Lawrence District, May to November in each year (*Continued*).

YEAR.	WILLIAMSBURG CANALS (*Continued*).								LAKE ONTARIO.			
	Lock No. 24.				Lock No. 25.				Lock No. 27.				Murray Canal.			
	Highest.		Lowest.		Highest.		Lowest.		Highest.		Lowest.		Highest.		Lowest.	
	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.	Month.	Ft. in.
1892.	Sept....	10 0	Nov....	7 0	July....	12 8	Nov....	9 4	July....	10 3	Nov....	8 3	July....	13 6	Nov....	12 1
1893.	May ...	11 2	August.	7 4	May ...	13 10	"	10 0	May ...	11 6	" ...	8 2	June....	14 9	"	12 2
1894.	June....	10 5	Nov....	6 9	July....	13 3	"	9 1	July...	10 9	"	9 1	" ...	14 0	"	12 2
1895.	May ...	8 3	"	4 5	May ...	10 10	"	6 8	May ...	9 10	" ...	6 9	May ...	12 5	"	12 4
1896.	" ...	9 3	"	5 7	" ...	12 0	"	8 3	" ...	10 6	"	7 6	" ...	12 10	"	11 1
1897.	July....	9 3	"	4 8	June....	11 8	"	6 6	June....	10 0	" ...	6 8	July....	13 5	" ...	11 2
1898.	June....	9 6	"	6 0	" ..	12 9	"	8 0	" ...	10 0	"	7 2	June....	13 6	"	11 9

SESSIONAL PAPER No. 10

WELLAND CANAL.

OFFICE OF SUPERINTENDING ENGINEER,
ST. CATHARINES, ONT., September 13, 1899.

SIR,—I have the honour to report upon the Welland Canal and its branches for the fiscal year ending June 30, 1899.

A few words describing the Welland Canal system may interest those who have not read former reports.

The main line of canal connects Lake Ontario at Port Dalhousie with Lake Erie at Port Colborne, its length being 26¾ miles, the difference in level between Lakes Ontario and Erie which is 326¾ feet being overcome by 25 lift locks.

The locks are 45 feet in width at the level of the lower reach and 270 feet in length from hollow quoin to hollow quoin, allowing the passage of vessels from 250 to 260 feet in length according to their beam.

The depth of water on the lock mitre sills admits of the passage of vessels drawing 14 feet, except on rare occasions of short duration, when heavy gales on the lakes lower the surface of the water at Port Dalhousie or Port Colborne, and temporarily reduce the depth of water upon the entrance-lock mitre sills.

'The Old Canal' extends from Port Dalhousie to Allanburgh, a distance of 12½ miles, where a junction is made with the main line.

It has twenty-six lift locks 150 feet in length and 26 feet 6 inches in width, with 9 feet of water upon the mitre sills.

Except between Port Dalhousie and St. Catharines at Lock No. 2, from which point a steamer runs daily between St. Catharines and Toronto, 'the Old Canal' is seldom used for navigation, but furnishes a succession of excellent water powers, many of which are now used in various manufacturing establishments, and others are available if wanted.

The Welland Canal feeder connects the Grand River at Dunnville with the main line of the Welland Canal at 'the Junction,' a point about a mile and a quarter south of the town of Welland. It has a length of 21 miles, and a branch one mile and three-quarters in length from Stromness on the feeder, to Port Maitland on Lake Erie at the mouth of the Grand River, affords communication between Lake Erie and the Grand River above the Dunnville dam.

In the early days of the Welland Canal, the Grand River was the source of supply, the Dunnville dam being constructed for that purpose, and vessels locked in or out of the canal at Port Maitland on Lake Erie.

Since the enlargement of the Welland Canal and the deepening of the summit level so as to admit of the canal being being fed direct from Lake Erie at Port Colborne, the Welland Canal feeder and Dunnville dam and works in connection with it have ceased to be necessary for the purposes of supply, and now serve only for the passage of an occasional scow or small boat drawing five feet of water or less, and for furnishing an uncertain power for the mills at Dunnville, Marshville and Welland, which came into existence after the construction of the Dunnville dam

There are those who are of opinion that Dunnville dam and 'feeder,' being no longer necessary in connection with the Welland Canal, should be abandoned.

The residents on the Grand River above the Dunnville dam, from that point to Cayuga, agitate for the removal of the dam that the river may be allowed to recede to its original banks, and large areas of fertile land, now flooded, be brought under cultivation. They also believe that such action would materially benefit the health of the residents, by removing the cause of malarial diseases.

The residents below the Dunnville dam, on the lands adjoining 'the feeder,' see in the abandonment of the feeder an outlet for draining their lands, which is much needed.

The millers, on the other hand, desire to see the dam maintained.

At Port Robinson, on the main line of canal, a lock 150 feet in length by 26 feet 6 inches in width, and a cut below it, connects the Welland Canal and Chippawa River, which at a distance of 8¼ miles below Port Robinson, enters the Niagara River, and has a depth of 9 feet.

At the town of Welland, on the main line of the canal, a lock 150 feet in length and 26½ feet in width, with 9 feet of water upon the mitre sill, connects the Welland Canal with the upper waters of the Chippawa River, making that stream practically navigable from its mouth to above the Welland aqueduct, and thence upwards.

RENEWALS UNDER INCOME APPROPRIATIONS.

Under date of September 8, 1898, a contract was entered into with Mr. John Riley for renewing the superstructure of the west pier at Port Dalhousie, where required.

The pier had been originally constructed of timber, and the superstructure was to be renewed with concrete, from a foot below the low water line.

This was done by placing blocks of Portland cement concrete, 4 ft. x 4 ft. x 6 ft. on each face of the pier, at the level of one foot below the low water line, after the timber superstructure had been removed in short stretches to the required depth.

The remaining height of the faces of the pier for a width of 2 ft. 6 in. was made up with Portland cement concrete formed behind moulds secured to the pier, and the space between the outside walls was filled with concrete made with natural cement. At date of June 30, 600 feet in length of the west pier superstructure had been so renewed.

At Port Robinson Bridge (No. 15) the centre range of crib fender works was taken down to sound timber at or near the water line, and the cribwork rebuilt and filled with stone.

At the Quaker Bridge (No. 16) a similar renewal was carried out.

At the Welland Bridge (No. 17) the centre range of crib fenders was also taken down, rebuilt, and filled with stone.

On the Welland Raceway, the bridges on the lines of West Main Street, and Denistown Streets were renewed, and the Welland Raceway was cleaned out to the original depth.

On the Welland Canal feeder the back ditches were cleaned out where most needed.

For removing slides on the summit level, a contract was entered into with Messrs. A. H. Irvine Company, of Toronto, on September 23, 1898, and the removal of slides was commenced in the rock cutting north of Humberstone.

A slide a short distance north of the Welland aqueduct was also removed when the dredge moved down to a slide in the deep cut

At date of June 30, 1899, 7,209 cubic yards of material had been removed from the points above mentioned, all of which was scowed to Lake Erie and dumped at the dumping ground east of Port Colborne.

The dredge is now continuing the removal of the slides in the deep cut.

REPAIRS.

The locks, weirs, bridges and fenders have been repaired, many of the repairs being extensive, particularly in the case of bridges, fenders and wales, where the wear and tear is greatest.

Rip-rap protection has been renewed where washed down or injured by small slides and other causes. The ditches have been cleaned out where necessary, embankments and roads made up as required, and lock and bridge houses and other buildings repaired as needed, all of which has consumed large quantities of materials and kept the repair force fully employed.

The interruptions to traffic and damages to the canal works have been unimportant, except in the case of the steamer '*George Spencer*' of Cleveland, which on October 30, 1898, at 12:30 p.m., when passing up the canal carried away three gates of Lock No. 8.

The damage was caused by the steamer entering the lock at a speed which prevented her being stopped before the head gates were reached.

Spare gates were got upon the ground with all possible despatch, and at night of November 1 locking was resumed, the repairs having been effected with a rapidity that was most creditable to the entire repair force employed.

A deposit receipt for $5,000 having been received from the owners to cover the estimated cost of making good the damage done, the vessel was allowed to proceed.

During the fiscal year three lock and bridge tenders were superannuated on account of physical inability to perform their duties, the vacancies being filled by younger men.

Two lock and bridge tenders died from natural causes, and one lock and bridge tender on the old canal lost his life by falling into the canal at the head of his lock. These death vacancies were filled by suitable men.

The canal was closed on December 13, 1898, and opened on April 22, 1899.

Appended will be found a statement of damages to canal property and amounts paid or to be paid for the same, and to whom paid. Also a statement of fines collected from vessel owners or canal employees for breaches of canal rules and regulations.

Also a statement of the highest and lowest recorded depths of water monthly on the mitre sills of the new locks at Port Dalhousie and Port Colborne.

I have the honour to be, sir,

Your obedient servant,

W. G. THOMPSON, M. Inst. C.E.,

Superintending Engineer.

COLLINGWOOD SCHREIBER, Esq., C.M.G.,
Deputy Minister and Chief Engineer Railways and Canals,
Ottawa.

STATEMENT of Damages to Welland Canal property during the fiscal year ending June 30, 1899, and the amount paid and unpaid on account of said damages.

Date of Damage.	Name of Vessel.	Amount of Damages.		Date paid.	Where Paid.
		Paid.	Unpaid.		Collector's Office.
1897.		$ cts.	$ cts.	1898.	
May 14	Schooner Geo. Farrell	5 13		Nov. 22	Port Dalhousie.
1898.					
May 13	Steamer Aragon	17 00		Sept. 9	"
June 11	Barge Celtic	10 25		July 24	"
" 11	Steamer Samoa	10 98		" 22	"
July 2	" Algonquin	9 31		" 23	"
				1899.	
" 30	" Empire State	24 56		May 16	"
Aug. 10	Barge Iron Cliff	6 90		" 31	"
" 15	Steamer S. Langell		17 50		
				1898.	
Sept. 9	" Aragon	7 49		Sept. 30	"
				1899.	
" 10	Barge Iron Cliff	3 99		May 31	"
" 24	Steamer Hecla	4 12		" 19	"
Oct. 3	Barge Wadena	50 00		Oct. 4	"
" 6	" H. D. Alvinston	25 00		" 6	"
" 17	" F. D. Ewan	50 00		" 18	"
" 30	Steamer Geo. Spencer	5,000 00			Deposited on acct.
1899.					
June 7	Barge Helvetia	10 00		June 8	Port Colborne.
		5,234 73	17 50		

SEATEMENT of Fines collected from Vessels contravening Canal Rules and Regulations, and for use of Government property for the fiscal year ending June 30, 1899.

Date of Fine.	Name of Vessel.	Amount of Fines.		Date paid.	Where Paid.
		Paid.	Unpaid.		Collector's Office.
1897.		$ cts.	$ cts.	1898.	
Sept. 11	Steamer Escanaba	5 00		Nov. 14	Port Dalhousie.
1898.					
July 1	" Samoa	10 00		July 22	"
Aug. 31	" Empire State	20 00		Sept. 18	"
1899.				1899.	
June 20	Barge Minnedosa for use of diving apparatus and attendants	30 00		June 26	"
		65 00			

SESSIONAL PAPER No. 10

STATEMENT showing the Highest and Lowest Depth of Water on the Lower Mitre Sill of Lock No. 1, New Welland Canal, Port Dalhousie, for the fiscal year ending June 30, 1899.

MONTHS.	LOWER SILL.				MONTHS.	LOWER SILL.			
	Highest.		Lowest.			Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	1899.	Ft.	In.	Ft.	In.
July	16	0	15	7	January	15	3	14	7
August	15	7	15	1	February	14	11	14	6
September	15	7	14	9	March	15	7	14	8
October	15	2	14	8	April	15	11	15	3
November	15	0	14	7	May	16	3	15	10
December	14	10	14	2	June	16	4	15	11

STATEMENT showing the Highest and Lowest Depth of Water on the Upper Mitre Sill of Lock No. 27, New Welland Canal, Port Colborne, for the fiscal year ending June 30, 1899.

MONTHL.	UPPER SILL.				MONTHS.	UPPER SILL.			
	Highest.		Lowest.			Highest.		Lowest.	
1898.	Ft.	In.	Ft.	In.	1899.	Ft.	In.	Ft.	In.
July	15	3	14	6	January	16	6	13	1
August	15	8	14	5	February	14	4	13	5
September	15	5	14	1	March	15	9	13	0
October	16	2	13	5	April	14	9	14	2
November	14	11	12	5	May	15	5	14	1
December	15	10	12	11	June	15	4	14	8

ST. PETER'S CANAL.

ST. PETER'S, C.B., June 30, 1899.

SIR,—I beg to submit to you the following report :—

Since July 1, 1899, $490 have been appropriated for repairs on St. Peter's Canal, of which $441.61 have been expended, and the following work has been completed :

Section No. 1.—Begins at a point where the fendered portion of the wall ends, about 1,165 feet above north end of the lock and extending southerly a distance of 150 feet. This section was 135 feet, average 2 feet height of cribwork. The last 15 feet is where a large gap occurred in the rock, and stone and earth were sliding down into the canal. This required substantial cribwork from the rock, a little below the surface of the water.

Section No. 2.—Extends from a point 385 feet from place of beginning, or 235 feet from the south end of Section No. 1 to 820 feet, a distance of 435 feet and averaged about 2 feet of cribwork.

Section No. 3.—Extends from 820 feet to 920 feet and would average 6 feet of cribwork.

Section No. 4.—Was not worked at all owing to the fact that I could not get timber, it being so late in the season. The drawbridge has been covered 10 feet in the centre with timber flooring 8 x 4 ; also one coat of white lead, and it requires another coat to complete it.

One headlight has been placed at the northern entrance of the canal which proves of great benefit to steamers and vessels approaching the canal at night.

There are still considerable repairs required, such as wooden walls and hanging fenders, warping posts, &c.

The lock-house and kitchen is still in need of a thorough repair as well as painting. In fact if not looked after soon some of it will be a mass of rotten timber and boards.

One thousand seven hundred and two steamers and vessels passed through St. Peter's Canal in 1898 ; and from the opening of navigation this year, 1899, until June 30, 380.

Navigation opened this year on April 24.

In 1898 navigation opened on St. Peter's Canal on April 2 and closed on January 7, 1899.

There is one tidal lock and four pairs of gates on St. Peter's Canal.

I have the honour to be, sir,

Your obedient servant,

JNO. H. DURAND.

COLLINGWOOD SCHREIBER, Esq., C M.G.,
Chief Engineer and Deputy Minister of Railways and Canals,
Ottawa.

REPORT

OF THE

SECRETARY OF THE RAILWAY COMMITTEE

OF THE

PRIVY COUNCIL

RAILWAY COMMITTEE OF THE PRIVY COUNCIL.

The Minister of Railways and Canals being Chairman of the Railway Committee of the Privy Council, on which certain extensive duties are imposed by the Railway Act, 1888, and its amendments, it seems proper that a brief record should here be made of the matters submitted to the Committee during the period from November 15, 1898, to November 1, 1899, and the decisions arrived at.

They are as follows:—

Application of the Ottawa, Arnprior and Parry Sound Railway Company for a reconsideration of the decision in the matter of the application of the Ottawa and New York Railway Company with regard to right of way to their freight terminals, Ottawa. —Under consideration.

Application of the Canadian Pacific Railway Company for the Committee to fix the terms and conditions set out in schedule submitted as those on which the said company may use, jointly with other parties, the passenger station and tracks, and approaches thereto near Sappers' Bridge, Ottawa, after May 1, 1916.—Under consideration.

Application of the Ottawa and New York Railway Company for the Committee to fix the terms and conditions set out in the schedule submitted as those on which the said company may use, jointly with other parties, the passenger station and tracks, and approaches thereto near Sappers' Bridge, Ottawa, after May 1, 1916.—Under consideration.

Application of the Grand Trunk Railway Company, *re* the fixing of the additional expense at the crossings of the Grand Trunk Railway by the Montreal Street Railway. —Settled by parties interested.

Application of the parish of St. Blaise to have the costs in connection with its petition for a highway crossing over the Grand Trunk Railway, taxed by the Committee against the railway company.—Dismissed.

Petition of residents on road between Torendale and Barrie, in the township of Innisfil, asking that the Grand Trunk Railway Company and the township, or either, be directed to construct an overhead crossing where the railway crosses the highway about one mile from Allandale station.—Granted.

Application of the Toronto, Hamilton and Buffalo Railway Company for approval of plans and profiles of crossings of highways on the Ridgeville Branch, in the township of Pelham.—Approved.

Messrs. Chisholm and Logie submit a memorandum giving reasons why the Toronto, Hamilton and Buffalo Railway Company should pay to Mrs. Powell her expenses in connection with variation of order *re* closing of Hughson Street, Hamilton.—Under consideration.

Petition of the Toronto, Hamilton and Buffalo Railway Company asking that order No. 7447, *re* highway crossing at station, 100 x 12, be rescinded, and that the matter be reconsidered.—Under consideration.

Application of the Corporation of the City of St. Henri *re* opening of Gareau Street, across the tracks of the Grand Trunk Railway.—Under consideration.

Application of the Canadian Pacific Railway Company for approval of plan of certain proposed changes in their bridge at Sicamous Narrows, B.C.—Under consideration.

Application of the Ontario and Quebec Railway Company (C.P.R.), for permission to change the location of their line between Mono Road and Melville Junction, in township of Caledon.—Withdrawn.

Application of the Corporation of the Town of Galt for permission to make a crossing over the track of the Canadian Pacific Railway at Myrtle Avenue.—Under consideration.

Application of the Winnipeg Street Railway Company for permission to cross, at rail level, the Canadian Pacific Railway at Main Street and Higgins' Avenue, in the city of Winnipeg.—Under consideration.

Application of the United Counties Railway Company for permission to cross, at rail level, the Central Vermont Railway at Iberville.—Dismissed.

Re protection to be provided at the crossing of the Intercolonial Railway by the St. John Electric Street Railway, in St. John, N.B.—Under consideration.

Application of the Kingston, Napanee and Western Railway Company for permission to cross, at rail level, the Canadian Pacific Railway at Tweed.—Postponed.

Application of the Hamilton and Dundas Street Railway Company for an order authorizing the construction of a connection between their tracks and those of the Toronto, Hamilton and Buffalo Railway Company ; also, the use of their tracks by the Toronto, Hamilton and Buffalo Railway Company into and through the town of Dundas, and for approval of agreements between the two companies and the town of Dundas in regard thereto.—Granted.

Application of the Central Ontario Railway Company for permission to remove the packing from the frogs and wing rails from the month of December to the month of April of each year, both months included.—Under consideration.

Application of the Brandon and South-western Railway Company for approval of plans of crossings of Pembina and South-western branches of the Canadian Pacific Railway Company.—Under consideration.

Application of the Northern Pacific and Manitoba Railway Company for approval of the place and mode of junction of its railway with the Canadian Pacific Railway.—Approved.

Application of the Bedlington and Nelson Railway Company for running powers of the Crow's Nest Line of the Canadian Pacific Railway Company.—Granted.

Complaint of the Sun Oil Refining Company against the tariffs of the Grand Trunk and Canadian Pacific Railway Companies upon oil and the discrimination against them.—Under consideration

Application of the Montreal Island Belt Line Railway Company for permission to construct a branch line from their main line to the Dominion Cotton Mills Company's Works, Montreal.—Granted.

SESSIONAL PAPER No. 10

Application of the Municipality of the Parish of St. Théophile du Lac à la Tortue asking that the Canadian Pacific Railway Company be compelled to construct a highway crossing at Cordon, St. Mathieu.—Dismissed.

Petition of the Municipal Council of the County of Frontenac asking that the Grand Trunk Railway Company be compelled to place electric alarms or other protection at the highway crossings at Collin's Bay, Cataraqui and Perth roads.—Under consideration.

Application of the Montreal Island Belt Line Railway Company for permission to cross, at rail level, the tracks of the Montreal Street Railway Company on St. Catherine and Notre Dame Streets, Montreal.—Granted.

Petition of the Lake Erie and Detroit River Railway Company for running powers over the Canada Southern Railway, between Ridgetown and St. Thomas, a distance of 44 miles.—Under consideration.

Application of the Montreal Island Belt Line Railway Company for certain modifications to be made in the Order of September 28, 1897, File No. 7157, approving of the Chateauguay and Northern Railway Company (now M. I. B. L. Ry.) crossing the Montreal Street Railway on Ontario Street, Montreal.—Under consideration.

Application of the Canadian Pacific Railway Company for permission to use the crossing of the Grand Trunk Railway, by its railway at St. Constant, P.Q.—Granted.

Application of the Calgary Irrigation Company for permission to cross the Calgary and Edmonton Railway with irrigation ditches.—Granted.

Application of the Canadian Pacific Railway Company for permission to cross the Grand Trunk Railway at St. Johns, P.Q., without stopping.—Granted.

Application of the Ottawa and New York Railway Company for permission to use the junction of its railway with the Montreal and Ottawa Railway, near the city of Ottawa, before installation of the interlocking plant.—Granted.

Application of the Montreal and Ottawa Railway Company for permission to use the junction of its railway with the Ottawa, Arnprior and Parry Sound Railway before the installation of the interlocking plant.—Granted.

Application of the Montreal and Ottawa Railway Company for permission to use the junction of its railway with the St. Lawrence and Ottawa Railway, near the city of Ottawa, before the installation of the interlocking plant.—Granted.

Application of the Metropolitan Railway Company for approval of the place and mode of crossing of the Northern Branch of the Grand Trunk Railway Company in the township of Whitechurch.—Granted.

Order of the Committee directing that the Canadian Pacific Railway Company provide and maintain an interlocking plant at the crossing of the Canada Atlantic Railway by its railway at St. Polycarpe.

Application of the Columbia and Western Railway Company for approval of certain proposed changes in location of the line of its railway as shown on plans and profiles submitted.—Approved.

Order of the Committee determining that it has jurisdiction over through railway freight in so far as the portion which is applicable to carriage in Canada is concerned, and that such freight is subject to the provisions of the Railway Act of 1888.

Application of the Grand Trunk Railway Company for permission to lay a siding from its main line across Monck Street to the property of Mr. W. C. Butler, in the village of Brighton, Ont.—Granted.

Application of the Midland Railway Company of Nova Scotia for approval of the place and mode of junction of its railway with the Windsor Branch Railway at Windsor, Nova Scotia.—Approved.

Application of Mr. T. W. Robertson for permission to cross the Calgary and Edmonton Railway with an irrigation ditch.—Granted.

Application of Mr. A. T. Broderick for permission to cross the Calgary and Edmonton Railway with an irrigation ditch.—Granted.

Application of the St. Thomas Street Railway Company for permission to cross, at rail level, the tracks of the London and Port Stanley Railway Company at Talbot Street and Wellington Street, city of St. Thomas, and the line between the 7th and 8th concessions of township of Yarmouth.—Granted.

Application of the Bedlington and Nelson Railway Company for approval of the place and mode of its eastern junction with the Crow's Nest Line of the Canadian Pacific Railway Company.—Approved.

Application of the Bedlington and Nelson Railway Company for approval of the place and mode of its western junction with the Crow's Nest Line of the Canadian Pacific Railway Company.—Approved.

Application of the Portage and North-western Railway Company for approval of the place and mode of junction of its railway with the Manitoba and North-western Railway near the town of Portage la Prairie.—Approved.

Application of the Portage and North-western Railway Company for permission to cross, at rail level, the Manitoba and North-western Railway in the town of Portage la Prairie.—Granted.

Application of the Portage and North-western Railway Company for permission to cross, at rail level, the Canadian Pacific Railway Company on Pacific Avenue, in the town of Portage la Prairie.—Granted.

Application of the Corporation of the Town of Rat Portage for permission to construct an overhead bridge across the tracks of the Canadian Pacific Railway Company at Julius Street, in the said town.—Granted.

Application of the Corporation of the Town of Rat Portage for permission to construct an overhead bridge across the tracks of the Canadian Pacific Railway Company on Matheson Street, in the said town.—Granted.

Application of the Corporation of the Town of Rat Portage for permission to construct a subway under the tracks of the Canadian Pacific Railway Company on Argyle Street, in the said town.—Granted.

Application of the Midland Railway Company of Nova Scotia for approval of the place and mode of junction of its railway with the Intercolonial Railway at Truro, Nova Scotia.—Approved.

Application of the Pontiac Pacific Junction Railway Company for an interim order allowing the use of the crossing of the Hull Electric Railway in Aylmer by its construction trains, pending the installation of the interlocking plant.—Granted.

Application of the E. B. Eddy Company for permission to cross with its tramway the tracks of the Ottawa Electric Railway Company in the city of Hull.—Granted.

Application of the Calgary Irrigation Company for permission to construct an irrigation ditch under the Calgary and Edmonton Railway, in township 24, range 1, west of 5th meridian, district of Alberta, N.W.T.—Granted.

Application of the Portage and North-western Railway Company for an interim order allowing it to use the crossing of the Canadian Pacific Railway on Pacific Avenue, Portage la Prairie, pending the installation of the interlocking plant.—Granted.

Application of the Portage and North-western Railway Company for an interim order allowing it to use the crossing of the Manitoba and North-western Railway in the town of Portage la Prairie, pending the installation of the interlocking plant. —Granted.

Application of the Manitoba and South-eastern Railway Company for permission to cross the Pembina Branch of the Canadian Pacific Railway at St. Boniface.—Granted.

Application of the Corporation of the City of Toronto for a reconsideration of the application of the city with regard to Lansdowne Avenue crossing.—Under consideration.

Application of the Corporation of the City of Toronto for an order directing that gates and watchmen be placed at the crossing of Dunn Avenue by the Grand Trunk Railway, Toronto.—Under consideration.

Application of the Corporation of the City of Toronto for authority for the Toronto Railway Company to extend its tracks along Bloor Street across the tracks of the Grand Trunk Railway, (Northern Division), the Toronto, Grey and Bruce Railway, Grand Trunk Railway and the Canadian Pacific Railway, and for protection of the Northern Railway crossing by gates and watchmen.—Under consideration.

Application of the Corporation of the City of Toronto for an order directing that gates and watchmen be placed at the crossing of Cherry Street by the Grand Trunk Railway, Toronto.—Under consideration.

Application of the Toronto, Hamilton and Buffalo Railway Company for permission to run a branch line along Trolley Avenue, in the township of Barton, crossing the Grand Trunk Railway.—Under consideration.

Application of the Kaslo and Lardo-Duncan Railway Company for an order to restrain the Arrowhead and Kootenay Railway Company from trespassing or interfering with the workmen of the applicant on the right of way and line of the applicant as located in and in the neighbourhood of Duncan City Pass.—Settled by parties interested.

Application of the Toronto, Hamilton and Buffalo Railway Company for authority to build a branch line from a point on its main line, in or near lot 7, concession 3, township of Barton, to a point at or near Wellington Street, Hamilton, north of Grand Trunk Railway.—Under consideration.

Application of the Corporation of St. Andrews, P.Q., for an order compelling the Great Northern Railway Company to operate the Lachute and St. Andrews Railway without delay.—Under consideration.

Application of the Corporation of the City of Toronto for an order directing that gates and watchmen be placed at the crossing of Dowling Avenue by the Grand Trunk Railway, Toronto.—Under consideration.

Application of the Corporation of the City of Toronto for an order directing that gates and watchmen be placed at the crossing of Jamieson Avenue by the Grand Trunk Railway, Toronto.—Under consideration.

Complaint of Mr. George M. Way *re* Canada Atlantic Railway crossing on Grand Ile Lime Road, Valleyfield, being in a dangerous condition, and should be protected by gates.—Under consideration.

Complaint of the Sun Oil Refining Company and the Gall-Schneider Oil Company against the Grand Trunk and Canadian Pacific Railway Companies with regard to rates upon petroleum and its products.—Under consideration.

Complaint of Messrs. Thomas Conant and E. R. Mothersill that the Oshawa Electric Railway Company's tracks are too near their property at East Whitby, and ask that the railway company be compelled to remove the said tracks.—Under consideration.

Complaint of Mr. John Campbell that the Canadian Pacific, Grand Trunk and other railways have discriminated against him in freight rates on flour.—Under consideration.

Application of the Corporation of the Town of Richmond for permission to open Stanley Avenue across the Quebec line of the Grand Trunk Railway.—Under consideration.

Application of the Municipal Council of the County of Richmond, P.Q., for a highway crossing over the track of the Grand Trunk Railway on the town line road between townships of Melbourne and Durham, at Gore Station.—Under consideration.

Application of the Great Northern Railway Company for approval of three proposed crossings, at rail level, of the Canadian Pacific Railway, at points north of Joliette, south of St. Jerome and west of Lachute, and also for approval of proposed crossing, at rail level, of the Carillon and Grenville Railway near Grenville.—Under consideration.

Application of the Canadian Pacific Railway for permission to construct a branch line from the line of the Ontario and Quebec Railway to the Marl Quarry in the township of Holland, County of Grey.—Under consideration.

Application of the Grand Trunk Railway Company for permission to construct a branch line to the Doherty Organ Factory in the town of Clinton.—Approved.

Application of the Grand Trunk Railway Company for permission to construct a siding across Esplanade Street to the premises of Firstbrook Brothers at the corner of Esplanade and Princess Streets, Toronto.—Granted.

Application of the Quebec Railway, Light and Power Company for approval of the crossing, at rail level, of the Canadian Pacific Railway, by its electric railway, on St. Valier Street, Quebec.—Under consideration.

Application of the St. Thomas Street Railway Company for a further extension of time for putting in the interlocking appliances at the crossings of the London and Port Stanley Railway directed to be installed by the order of June 29,1899.—Under consideration.

Application of the Canadian Pacific Railway Company for approval of certain proposed road diversions on school sections in Manitoba and the North-west Territories. —Under consideration.

SESSIONAL PAPER No. 10

Application of the Grand Trunk Railway Company for a re-hearing in the matter of the crossing of the Grand Trunk Railway by a branch line of the Canada Southern Railway leading to the Canada Peat Fuel Company's Works.—Under consideration.

Application of the Toronto, Hamilton and Buffalo Railway Company for approval of plan, profile and book of reference of a proposed branch line northerly and westerly from its main line on lot 7, concession 3, township of Barton, to a point a short distance west of Wellington Street and north of Simcoe Street, Hamilton.—Under consideration.

Application of the Toronto, Hamilton and Buffalo Railway Company for approval of plan and profile of crossings of Great Western and Northern and North-western Divisions of the Grand Trunk Railway, by its proposed branch line.—Under consideration.

Application of the Toronto, Hamilton and Buffalo Railway Company for approval of plan and profile of crossing, at rail level, the Hamilton Radial Electric Railway, by its proposed branch line.—Under consideration.

Application of the Toronto, Hamilton and Buffalo Railway Company for approval of plan and profile of proposed junctions of the main line of its railway with the railway and transfer track of the Hamilton, Grimsby and Beamsville Electric Railway, and of a crossing by the proposed branch line of the Hamilton, Grimsby and Beamsville Electric Railway.—Under consideration.

Application of the Toronto, Hamilton and Buffalo Railway Company for approval of plans and profiles of certain highway crossings by its proposed branch line.—Under consideration.

Petition from the Parish of St. Jerusalem d'Argenteuil asking that the Great Northern Railway Company be compelled to provide gates and watchmen at the proposed crossing of the front road on south side of the North River near Lachute.—Under consideration.

Application of the Metropolitan Railway Company for permission to connect its line by a switch with the Canadian Pacific Railway at North Toronto.—Granted.

COLLINGWOOD SCHREIBER,
Secretary, Railway Committee, P.C.

Prepared by
J. W. PUGSLEY,
Clerk of the Railway Committee, P.C.

PART II

STATEMENTS OF THE ACCOUNTANT

No. 1.

STATEMENT showing the amount expended by the Department of Railways and Canals, Dominion of Canada, during the Fiscal Year ending June 30, 1899.

Name of Work.	Chargeable to Capital.	Chargeable to Income.	Chargeable to Revenue.	
			Staff.	Repairs.
CANALS.	$ cts.	$ cts.	$ cts.	$ cts.
Beauharnois		1,000 00	20,613 32	13,463 01
Carillon			11,919 27	11,478 88
Grenville	39,999 37			
Chambly		15,255 42	18,336 50	11,997 51
Cornwall	37,649 00	15,960 80	16,000 00	14,623 90
Lachine	162,351 83	3,103 99	55,990 00	35,776 90
Lake St. Louis	57,607 79			
Lake St. Francis	23,110 00	2,495 47		
Murray			5,073 70	3,533 68
Rideau		700 29	30,751 20	28,199 49
Sault Ste. Marie	63,935 48		13,840 24	6,564 40
Soulanges	1,442,824 22			
Ste. Anne's			1,920 12	1,997 96
St. Lawrence.. North Channel	461,979 50			
St. Lawrence.. Galops Channel	42,430 00			
St. Lawrence.. River Reaches	9,366 47			
St. Ours			2,244 12	1,494 93
St. Peters			2,819 86	456 61
Trent	166,611 49	6,179 79	5,048 72	6,454 49
Welland		30,099 84	86,110 88	56,270 60
Williamsburg : Galops	987,186 44			
" Rapide Plat	57,869 18	7,410 00	9,960 64	10,000 00
" Farran's Point	346,956 54			
Total	3,899,877 31	82,205 60	280,628 57	202,312 36
GENERAL ON CANALS.				
Dredge vessels, Lachine				2,802 92
" Rideau				5,960 24
Miscellaneous		100 00	8,990 36	4,444 71
Salaries and contingencies, canal officers			30,744 81	
Sunday labour			13,907 25	
Surveys and inspections		1,218 79		
Total		1,318 79	53,642 42	13,207 87
RAILWAYS.				
Canadian Pacific	8,418 53			
Crow's Nest Pass		2,234 68		
Intercolonial	1,081,929 94	210,000 00	3,465,686 21	
Prince Edward Island	22,000 00		218,053 01	
Windsor Branch			12,873 09	
Total	1,112,348 47	212,234 68	3,696,612 31	
GENERAL ON RAILWAYS.				
Exploratory survey to Klondike		39,469 97		
" " Stikine River and ocean port, B.C.		16,482 95		
Railway statistics		113 85		
Railway subsidies		*3,014,620 05		
Carried forward		3,070,686 82		

* This amount does not include annual payment of $183,600 to the Atlantic and North-west Railway Company.

STATEMENT showing the amount expended by the Department of Railways and Canals, &c.—*Concluded.*

Name of Work.	Chargeable to Capital.	Chargeable to Income.	Chargeable to Revenue.	
			Staff.	Repairs.
	$ cts.	$ cts.	$ cts.	$ cts.
Brought forward		3,070,686 82		
GENERAL ON RAILWAYS—*Concluded.*				
Repairs to Governor General's car, "Victoria"		2,500 00		
Reporting evidence before Railway Committee of the Privy Council		199 30		
Subscription to Railway Congress, Brussels		97 33		
Surveys and inspections		7,534 46		
To defray expenses gathering information in reference to a railway commission		608 00		
Total		3,081,625 91		
MISCELLANEOUS.				
Costs of litigation		1,174 92		
Salaries of engineers, draughtsmen, &c		18,949 96		
" extra clerks, &c.		1,960 31		
Total		22,085 19		
RECAPITULATION.				
Total on Canals	3,899,877 31	82,205 60	280,628 57	202,312 36
" " general		1,318 79	53,642 42	13,207 87
Total on Canals	3,899,877 31	83,524 39	334,270 99	215,520 23
Total on Railways	1,112,348 47	212,234 68	3,696,612 31	
" " general		3,081,625 91		
Total on Railways	1,112,348 47	3,293,860 59	3,696,612 31	
Grand Total, Railways and Canals, including Miscellaneous	5,012,225 78	3,399,470 17	4,030,883 30	215,520 23

Total amount expended, $12,658,099.48.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

No. 2.

STATEMENTS showing the amounts expended on Construction, Renewals, Ordinary Repairs and Working Staff of the Canals of the Dominion of Canada, up to June 30, 1899.

ST. PETER'S CANAL.

—	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation	.....	156,523 32	.....	.....	.....
" since " "	1868	21,519 72	.....	.....	.....
" " " "	1869	70,719 80	.....	.....	.....
" " " "	1870	.....	46,193 57	.....	.....
" " " "	1871	.....	.....	225 36	555 78
" " " "	1872	.....	.....	280 00	6,122 07
" " " "	1873	.....	.....	343 32	6,539 58
" " " "	1874	.....	.....	725 93	1,558 57
" " " "	1875	20 97	.....	560 00	889 35
" " " "	1876	11,125 00	.....	641 55	.....
" " " "	1877	63,330 18	.....	600 00	17 45
" " " "	1878	26,511 51	.....	600 00	.....
" " " "	1879	107,337 75	.....	631 50	.....
" " " "	1880	80,120 54	.....	400 00	.....
" " " "	1881	69,434 76	.....	959 58	.....
" " " "	1882	484 00	.....	1,920 54	200 63
" " " "	1883	.....	.....	2,089 19	232 42
" " " "	1884	2,471 40	.....	2,601 47	367 85
" " " "	1885	16,820 15	.....	1,929 11	183 11
" " " "	1886	2,316 85	.....	2,360 67	297 81
" " " "	1887	1,087 75	750 00	2,777 13	343 23
" " " "	1888	.....	.....	3,217 77	1,588 40
" " " "	1889	.....	500 00	3,085 29	353 38
" " " "	1890	.....	.....	3,110 15	255 34
" " " "	1891	972 65	510 53	3,255 30	312 02
" " " "	1892	14,387 00	30,936 82	3,007 70	1,461 24
" " " "	1893	811 59	9,987 78	2,938 15	1,856 30
" " " "	1894	437 05	3,852 21	2,935 94	1,986 70
" " " "	1895	868 44	26,222 46	2,499 81	353 55
" " " "	1896	1,455 21	16,743 64	2,182 04	260 90
" " " "	1897	.....	.....	2,728 38	1 20
" " " "	1898	.....	111 70	2,785 25	453 85
" " " "	1899	.....	.....	2,819 86	456 61
		648,755 64			
LESS—Refunds of previous years	.....	208 50			
Total	.....	*648,547 14	135,808 71	54,210 99	26,647 34

*Expenditure as above ..... $ 648,547 14
Less expenditure prior to Confederation 156,523 32

Agreeing with Public Accounts, 1899, page xvi..... $ 492,023 82

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

BAIE VERTE CANAL.

——	Year ending June 30.	Capital.	Income.
		$ cts.	$ cts.
Government expenditure prior to Confederation			
" since " "	1868		
" " " "	1869		
" " " "	1870		
" " " "	1871		17,929 34
" " " "	1872		6,399 41
" " " "	1873		14,943 83
" " " "	1874		4,018 90
" " " "	1875		443 00
" " " "	1876		110 75
" " " "	1877		22 30
" " " "	1878		
" " " "	1879		
" " " "	1880		
" " " "	1881		520 00
" " " "	1882		
" " " "	1883		
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" " " "	1896		
" " " "	1897		
" " " "	1898		
" " " "	1899		
Total			44,387 53

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

LACHINE CANAL.

——	Year ending June 30.	Chargeable to Capital.		Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Expenditure by Imperial Government	....	40,000 00				
Government expenditure prior to Confederation	....	2,547,532 85				
Government expenditure since Confederation	1868			1,852 70	13,742 05	10,431 51
" "	1869	2,000 00			14,209 02	12,085 84
Cost of original construction and enlargement of 1843 to 1848			2,589,532 85			
Expenditure by Dominion Government	1870				15,834 49	13,302 39
" "	1871			12,231 40	17,478 52	15,093 25
" "	1872	36,708 15			16,076 93	12,334 69
" "	1873	7,824 28		35,158 21	23,601 03	34,300 60
" "	1874	158,618 35			25,811 07	22,828 66
" "	1875	197,420 52			28,592 01	30,057 34
" "	1876	327,769 39			33,797 73	29,103 65
" "	1877	1,439,375 73			33,148 86	19,824 33
" "	1878	1,484,619 63			39,062 97	13,646 41
" "	1879	958,053 30			42,338 84	12,400 78
" "	1880	369,566 74			38,950 90	10,223 62
" "	1881	292,165 51			39,027 99	19,888 33
" "	1882	252,821 33		2,978 66	41,158 90	17,116 46
" "	1883	396,496 96		1,859 68	45,554 91	18,199 59
" "	1884	188,266 18			48,624 51	19,683 24
" "	1885	111,215 23			49,004 85	20,199 78
" "	1886	210,509 42			50,969 10	19,199 18
" "	1887	28,772 52		12,981 59	53,113 97	22,567 81
" "	1888	19,414 34		7,996 38	52,229 61	19,999 64
" "	1889	76,032 96		972 71	54,110 67	22,957 71
" "	1890	7,448 03		8,238 46	53,114 34	22,999 38
" "	1891	217 53		16,155 75	50,721 69	36,292 98
" "	1892	87,852 35		27,480 80	57,729 37	67,499 62
" "	1893	445,983 21		50,937 40	53,185 00	51,616 79
" "	1894	64,345 14		15,856 74	60,174 03	40,939 70
" "	1895	189,944 36		32,405 20	56,337 44	25,891 45
" "	1896	184,998 25		8,193 15	58,342 96	24,950 20
" "	1897	282,052 48		14,664 21	57,533 20	25,820 73
" "	1898	216,717 44		819 62	57,282 50	33,391 92
" "	1899	162,351 83		3,103 99	55,990 00	35,776 90
Cost of enlargement			8,197,561 16			
Total			10,787,094 01	253,886 65	1,331,849 46	780,624 48

Total expenditure on capital account as above		$ 10,787,094 01
Less charged to St. Lawrence River and Canals, see page 9	$2,950,104 15	
Less expenditure by Imperial Government	40,000 00	
		2,990,104 15
Agreeing with Public Accounts balance sheet, 1899, page xvi		$ 7,796,989 86

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

BEAUHARNOIS CANAL.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
			$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation		1,611,424 11			
" since " "	1868		63,193 75	9,349 99	6,216 98
" " " "	1869		55 00	9,626 99	6,498 57
" " " "	1870		27 50	10,117 57	6,384 81
" " " "	1871			12,316 53	5,722 36
" " " "	1872		27 50	11,792 46	15,733 38
" " " "	1873		5,122 50	12,210 73	9,882 06
" " " "	1874		26 00	15,392 51	10,990 56
" " " "	1875		36 00	14,399 32	12,253 01
" " " "	1876			14,465 86	17,170 83
" " " "	1877			14,377 63	15,207 36
" " " "	1878			14,383 37	9,861 05
" " " "	1879			15,015 86	10,370 71
" " " "	1880	266 15		15,362 61	8,997 34
" " " "	1881			17,659 93	10,770 67
" " " "	1882			18,804 53	20,813 86
" " " "	1883		6,727 44	18,287 77	15,826 71
" " " "	1884		3,277 98	19,107 38	16,232 61
" " " "	1885		7,999 79	18,960 40	14,637 70
" " " "	1886		8,491 80	19,228 90	14,356 00
" " " "	1887		3,633 57	18,867 45	14,999 88
" " " "	1888		14,411 97	19,325 05	14,285 98
" " " "	1889		10,993 52	20,019 11	14,982 54
" " " "	1890			19,847 42	14,999 20
" " " "	1891		17,085 68	18,886 86	12,537 39
" " " "	1892		1,696 23	20,050 01	14,999 80
" " " "	1893			20,348 34	14,107 11
" " " "	1894		6,547 72	20,574 53	13,903 46
" " " "	1895		27,982 93	20,128 59	12,299 49
" " " "	1896			20,725 47	15,050 85
" " " "	1897		9,813 15	21,012 64	14,862 98
" " " "	1898	25,000 00	5,799 34	20,650 00	16,164 92
" " " "	1899		1,000 00	20,613 22	13,463 01
Total		*1,636,690 26	193,949 37	542,209 13	414,583 18

*See page 9 for total cost of St. Lawrence River and Canals.

LEONARD SHANNON,
Accountant

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

ST. LAWRENCE RIVER AND CANALS, SURVEYS, &c.

	Year ending June 30.	Chargeable to Capital.	Chargeable to Income.
		$ cts.	$ cts.
Government expenditure prior to Confederation		18,442 85	98,378 46
" " since "	1868		
" " " "	1869		
" " " "	1870		
" " " "	1871		
" " " "	1872		
" " " "	1873	33,241 69	
" " " "	1874	26,541 30	
" " " "	1875	20,611 36	
" " " "	1876	50,215 47	
" " " "	1877	47,377 31	
" " " "	1878	5,570 46	
" " " "	1879	9,265 77	
" " " "	1880	9,214 56	
" " " "	1881	6,927 96	
" " " "	1882	28,933 45	
" " " "	1883	44,874 31	
" " " "	1884	89,846 03	
" " " "	1885	115,110 17	
" " " "	1886	116,051 73	
" " " "	1887	74,437 31	
" " " "	1888	56,482 85	
" " " "	1889	18,493 92	
" " " "	1890	23,979 91	
" " " "	1891	35,137 25	
" " " "	1892	59,779 31	
" " " "	1893	52,643 39	
" " " "	1894	13,721 66	
" " " "	1895	182,775 75	
" " " "	1896	7,457 05	
" " " "	1897	12,347 31	
" " " "	1898	211,537 76	
" " " "	1899	513,775 97	
Total		1,884,793 86	98,378 46

ST. LAWRENCE RIVER AND CANALS.

St. Lawrence River and Canals, as above	$ 1,884,793 86
Beauharnois Canal, see page 8	1,636,690 26
Cornwall Canal " " 12	6,563,008 00
Williamsburg Canals " " 14	7,170,592 26
Lake St. Louis " " 10	250,066 48
Soulanges Canal " " 26	5,098,259 83
Lachine Canal, from prior to Confederation to June 30, 1875, see page 7	2,950,104 15
Lake St. Francis, see page 11	26,530 00
Agreeing with Public Accounts Balance Sheet, 1899, page xvi	$25,580,044 84

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

LAKE ST. LOUIS.

—	Year ending June 30.	Chargeable to Capital.	Chargeable to Income.
		$ cts.	$ cts.
Government expenditure prior to Confederation			
" " since "	1868		
" " " "	1869		
" " " "	1870		
" " " "	1871		
" " " "	1872		
" " " "	1873		
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" " " "	1892		
" " " "	1893		
" " " "	1894		
" " " "	1895	4,753 14	
" " " "	1896	49,909 31	
" " " "	1897	73,300 41	
" " " "	1898	64,495 83	
" " " "	1899	57,607 79	
Total		*250,066 48	

* Included in total cost of St. Lawrence River and Canals, see page 9.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

LAKE ST. FRANCIS.

	Year ending June 30.	Capital.	Renewals Chargeable to Income.
		$ cts.	$ cts.
Government expenditure since Confederation	1868		
" " " "	1869		
" " " "	1870		
" " " "	1871		
" " " "	1872		
" " " "	1873		
" " " "	1874		
" " " "	1875		
" " " "	1876		
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" " " "	1880		
" " " "	1881		
" " " "	1882		
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" " " "	1893		
" " " "	1894		
" " " "	1895		
" " " "	1896		
" " " "	1897		
" " " "	1898	3,420 00	
" " " "	1899	23,110 00	
Total		*26,530 60	

* Included in total cost of St. Lawrence River and Canals, see page 9.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

CORNWALL CANAL.

—	Year ending June 30.	Chargeable to Capital.		Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation		1,933,152 69				
Government expenditure since Confederation	1868			2,786 00	11,244 47	3,774 18
" "	1869	10,692 04			10,347 91	3,859 14
" "	1870			17,780 05	10,368 16	7,145 42
" "	1871			7 50	11,848 39	8,891 61
" "	1872			10,000 21	10,594 30	8,163 70
" "	1873			1,011 75	13,042 25	12,467 65
" "	1874				13,405 20	7,610 70
" "	1875	1,780 00			13,351 91	7,097 34
Cost of original construction			1,945,624 73			
Expenditure by Dominion Government	1876				13,320 61	6,423 67
" "	1877	49,211 37			13,375 70	6,440 54
" "	1878	145,015 45			13,825 50	4,935 21
" "	1879	143,092 05			13,817 96	4,983 15
" "	1880	109,454 95			14,440 33	9,735 76
" "	1881	53,948 14			15,173 60	5,524 10
" "	1882	44,587 61			15,052 20	6,634 62
" "	1883	21,728 93			18,283 67	8,361 71
" "	1884	22,018 13			18,475 48	9,007 73
" "	1885	62,034 90		16,298 96	15,988 96	12,368 51
" "	1886	57,820 83		6,960 95	15,994 80	11,832 83
" "	1887	46,966 43			17,520 54	12,100 29
" "	1888	67,945 74			16,938 54	13,942 64
" "	1889	163,993 85			17,890 55	58,205 26
" "	1890	365,038 01		2,000 00	17,063 49	12,758 18
" "	1891	599,001 85		1,459 98	16,077 72	9,830 05
" "	1892	398,555 25		2,345 26	15,596 66	9,864 36
" "	1893	352,536 13			15,173 01	9,668 14
" "	1894	404,990 22			15,344 02	7,733 54
" "	1895	450,689 65		21,497 74	15,414 56	13,053 55
" "	1896	448,408 31		2,175 00	15,472 26	25,259 56
" "	1897	438,487 51			15,540 43	16,438 32
" "	1898	133,208 96			15,011 50	15,431 02
" "	1899	37,649 00		15,960 80	16,000 00	14,623 90
Cost of enlargement			4,617,383 27			
Total			*6,563,008 00	100,284 20	460,994 68	364,166 38

* Included in total cost of St. Lawrence River and Canals, see page 9.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Continued.*

WILLIAMSBURG CANALS.

	Year ending June 30.	Capital.				Renewals Chargeable to Income.	Staff.	Repairs.
		Farran's Point.	Galops.	Rapide Plat.	Total.			
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation being amount of original construction					1,320,655 54			
Government expenditure since Confederation	1868						5,745 97	6,442 41
" " "	1869						5,769 81	5,670 88
" " "	1870						5,573 13	6,546 16
" " "	1871						6,382 17	5,308 41
" " "	1872					1,077 00	5,542 94	3,230 07
" " "	1873						6,424 49	7,347 75
" " "	1874						6,857 19	7,395 92
" " "	1875						6,547 62	4,110 29
" " "	1876						7,418 39	11,690 98
" " "	1877						7,388 08	10,053 61
" " "	1878						7,430 11	4,449 78
" " "	1879						7,517 20	3,549 71
" " "	1880						7,590 15	3,999 77
" " "	1881						7,572 35	5,020 73
" " "	1882						7,589 44	7,447 69
" " "	1883				13 19		7,423 48	7,299 39
" " "	1884				2,473 44		7,757 04	7,349 37
" " "	1885		70,764 07	32,473 05	103,237 12		7,696 67	8,198 03
" " "	1886		78,014 92	71,820 79	149,835 71		7,671 54	7,847 05
" " "	1887		32,862 02	82,990 98	115,853 00		7,635 54	7,904 76
" " "	1888		16,628 95	53,499 34	70,128 29	1,613 67	7,646 79	8,190 13
" " "	1889		37,661 15	22,206 11	59,867 26		7,485 28	8,794 61
" " "	1890		126,417 42	12,660 95	139,078 37		8,954 53	8,191 69
" " "	1891	2,853 76	172,779 88	55,036 96	230,670 60		8,678 25	7,987 40
" " "	1892		218,511 17	158,034 15	376,545 32	797 83	9,458 33	8,551 32
" " "	1893		154,524 01	217,669 28	372,193 29	3,675 00	8,676 03	8,347 97
" " "	1894		223,992 81	274,397 42	498,390 23		10,230 09	7,029 95
" " "	1895		118,464 53	228,892 70	347,357 23	13,720 36	9,675 09	7,371 37

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Concluded.*

WILLIAMSBURG CANALS—*Concluded.*

	Year ending June 30.	Capital.				Renewals Chargeable to Income.	Staff.	Repairs.
		Farran's Point.	Galops.	Rapide Plat.	Total.			
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure since Confederation.	1896	4,980 00	150,744 16	286,396 96	442,121 12	8,607 04	9,588 51	9,036 00
" " "	1897	.....	262,795 78	205,480 55	468,274 33	3,880 76	8,697 54	8,210 71
" " "	1898	231,321 44	734,492 07	116,072 55	1,081,886 06	.....	10,708 66	8,032 84
" " "	1899	346,956 54	987,186 44	57,869 18	1,392,012 16	7,410 00	9,960 64	10,000 00
Total.....	...	586,111 74	3,385,837 38	1,875,500 97	*7,170,592 26	40,781 66	249,293 05	230,606 75

* Original construction..... $ 1,320,655 54
Cost of enlargement... . ... 5,849,936 72

Total..... .... $ 7,170,592 26

Included in total cost of St. Lawrence River and Canals, page 9.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENT showing the amounts expended on Construction, Renewals, &c.—*Con.*

WELLAND CANAL.

—	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Imperial Government		222,220 00			
Government expenditure prior to Confederation		7,416,019 83			
" since "	1868	12,097 84		37,679 05	38,852 96
" " "	1869	43,486 36		39,060 61	50,773 03
" " "	1870		22,173 72	40,340 45	65,009 19
" " "	1871		48,569 10	42,383 33	53,381 02
" " "	1872	53,680 32	6,022 44	37,085 37	50,276 90
" " "	1873	82,282 20	47,876 27	45,382 99	66,550 73
" " "	1874	746,420 61		50,966 48	103,666 99
" " "	1875	1,047,119 91		52,595 00	88,539 99
" " "	1876	1,569,478 19	700 00	57,623 31	81,376 12
" " "	1877	2,199,962 61		59,963 47	49,783 93
" " "	1878	2,138,392 99		60,138 59	66,393 53
" " "	1879	1,552,697 41		59,942 23	56,755 57
" " "	1880	1,252,924 75		63,198 10	76,535 25
" " "	1881	1,242,943 37	6,593 19	56,398 04	69,249 53
" " "	1882	603,402 17	13,664 80	74,641 51	84,374 97
" " "	1883	549,433 29	5,979 03	109,207 21	72,707 62
" " "	1884	432,336 21		113,276 87	90,926 97
" " "	1885	463,505 38	6,150 21	112,670 00	91,534 66
" " "	1886	215,380 75	1,359 00	111,660 22	69,507 48
" " "	1887	1,071,073 87	3,828 67	109,371 69	77,440 80
" " "	1888	429,720 94	10,740 86	110,806 01	86,518 97
" " "	1889	225,910 21	43,803 80	113,587 05	77,547 77
" " "	1890	117,633 22	51,648 28	109,202 02	72,686 19
" " "	1891	36,371 03	19,767 73	107,662 63	82,548 30
" " "	1892	29,541 21	9,008 80	104,673 73	73,771 87
" " "	1893	8,259 94	25,103 13	104,926 73	65,016 84
" " "	1894	1,571 78	13,430 20	102,018 80	53,053 71
" " "	1895	3,809 35	24,245 02	90,438 07	48,270 94
" " "	1896	1,677 67	18,768 99	87,988 11	62,542 64
" " "	1897	2,282 35	22,283 06	88,095 20	41,247 81
" " "	1898		34,803 25	84,806 54	59,571 66
" " "	1899		30,099 84	86,110 88	56,270 60
Total		*23,771,635 76	466,619 39	2,523,900 29	2,182,684 54

*Total expenditure as above	$ 23,771,635 76
Less expenditure by Imperial Government	222,220 00
Agreeing with Public Accounts Balance Sheet, 1899, page xvi.	$ 23,549,415 76

Original cost of construction, including first enlargement	$ 7,693,824 03
Enlargement, including new Welland Canal	16,077,811 73
Total expenditure as above	$ 23,771,635 76

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

STE. ANNE'S LOCK AND CANAL.

—	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation		134,456 51			
" since "	1868			778 16	432 47
" " "	1869			1,062 96	1,873 51
" " "	1870			1,136 54	1,280 36
" " "	1871			1,285 84	1,539 02
" " "	1872		1,939 46	1,106 80	1,393 63
" " "	1873		540 11	2,199 64	1,264 40
" " "	1874	12,753 27		2,614 90	7,208 63
" " "	1875	32,627 71		1,859 20	4,506 68
" " "	1876	24,935 85		1,952 14	4,033 72
" " "	1877	30,003 08		1,982 65	1,756 93
" " "	1878	14,618 85		2,057 32	541 95
" " "	1879	22,113 02		2,202 03	3,259 70
" " "	1880	3,054 68		2,152 57	1,704 71
" " "	1881	69,042 76		2,553 02	3,257 92
" " "	1882	193,158 36		2,611 30	2,343 99
" " "	1883	172,959 95		2,569 86	3,448 83
" " "	1884	142,006 25		2,775 32	2,725 49
" " "	1885	93,679 57		2,618 60	4,042 04
" " "	1886	129,681 67		2,611 90	5,803 01
" " "	1887	45,276 08	6,054 10	2,537 41	1,499 96
" " "	1888	18,910 55	1,372 59	2,505 61	1,380 75
" " "	1889	24,786 33		2,569 22	1,730 79
" " "	1890	6,151 14		2,571 04	1,525 51
" " "	1891		8,173 69	2,505 69	1,503 56
" " "	1892		25,471 61	2,571 28	1,666 21
" " "	1893		6,521 88	2,581 08	2,800 03
" " "	1894		3,497 56	2,640 00	2,799 63
" " "	1895		3,694 33	2,508 14	3,025 91
" " "	1896			2,495 54	4,993 89
" " "	1897			2,357 51	1,688 12
" " "	1898			1,904 10	1,699 44
" " "	1899			1,920 12	1,997 96
Total		*1,170,215 63	57,265 33	69,797 49	70,728 75

* Included in total cost of Ottawa River Works, see page 19.

Original construction	$ 134,456 51
Enlargement, including new lock	1,035,759 12
	$ 1,170,215 63

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

CARILLON AND GRENVILLE CANAL.

—	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Imperial Government		*			
Government expenditure prior to Confederation		63,053 64			
" since " "	1868		19,817 22	6,301 88	8,911 28
" " " "	1869			6,549 38	10,157 42
" " " "	1870		4,167 96	6,617 81	9,852 09
" " " "	1871		23,119 37	8,676 90	8,218 24
" " " "	1872	165,257 28		8,324 51	17,235 31
" " " "	1873	133,199 10	3,051 38	10,068 28	8,781 50
" " " "	1874	245,258 38		10,710 88	10,605 82
" " " "	1875	339,864 76		10,378 57	18,520 44
" " " "	1876	326,203 16		10,764 38	11,475 96
" " " "	1877	245,738 04		11,050 27	10,304 06
" " " "	1878	22,676 20		11,401 30	5,082 72
" " " "	1879	243,141 24		11,501 52	7,629 98
" " " "	1880	281,514 27		11,959 14	7,625 54
" " " "	1881	336,707 53		13,059 18	8,076 91
" " " "	1882	433,084 39		14,387 49	7,582 68
" " " "	1883	433,575 10		17,479 58	8,310 02
" " " "	1884	399,267 16		17,393 91	7,918 42
" " " "	1885	157,187 72		19,702 30	10,429 26
" " " "	1886	104,973 24	75 00	20,597 82	9,303 31
" " " "	1887	20,747 11		20,011 36	10,554 41
" " " "	1888	38,996 29		21,531 12	10,036 62
" " " "	1889	298 17		22,098 88	10,135 66
" " " "	1890	17 58	4,526 61	15,896 16	7,582 38
" " " "	1891		4,395 25	21,230 22	10,796 68
" " " "	1892	34,585 64	15,036 48	17,458 69	8,620 15
" " " "	1893	207 00	42,298 74	16,762 71	10,669 28
" " " "	1894	385 55	20,034 94	14,144 98	11,620 09
" " " "	1895		5,963 76	15,453 21	12,303 25
" " " "	1896	3,850 31		13,995 69	12,161 10
" " " "	1897	1,908 44	4,939 20	13,780 29	11,607 95
" " " "	1898	82,663 37	5,082 03	11,697 81	10,993 61
" " " "	1899	39,999 37		11,919 27	11,478 88
Total		†4,154,360 04	152,507 94	442,905 19	324,581 02

* Expenditure not given—records relating to same were kept in Ordnance Office at Montreal and were destroyed by fire in 1852.

† Included in total cost of Ottawa River Works, see page 19, cost of enlargement $4,091,306.40.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

CULBUTE LOCK AND DAM.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure since Confederation.	1868	.....	.....	.....	.....
" " " ..	1869	.....	.....	.....	.....
" " " ..	1870	.....	.....	.....	.....
" " " ..	1871	.....	.....	.....	.....
" " " ..	1872	.....	.....	.....	.....
" " " ..	1873	.....	835 53	.....	.....
" " " ..	1874	.....	38,388 99	.....	.....
" " " ..	1875	63,659 29	.....	.....	.....
" " " ..	1876	76,842 44	.....	.....	.....
" " " ..	1877	56,081 87	.....	.....	.....
" " " ..	1878	5,933 53	.....	.....	.....
" " " ..	1879	20,694 19	.....	.....	.....
" " " ..	1880	16,688 20	.....	202 50	259 31
" " " ..	1881	4,721 62	.....	962 85	.....
" " " ..	1882	29,567 15	.....	790 00	162 33
" " " ..	1883	14,249 60	.....	695 00	288 99
" " " ..	1884	8,151 16	.....	733 50	.....
" " " ..	1885	19,071 76	.....	730 00	572 75
" " " ..	1886	26,385 27	.....	730 00	2,396 14
" " " ..	1887	7,760 88	.....	730 00	967 33
" " " ..	1888	7,573 99	.....	739 50	730 60
" " " .	1889	17,112 01	.....	1,050 00	116 53
" " " ..	1890	2,818 35	.....	747 83	.....
" " " ..	1891	2,183 15	9,122 05	745 25	499 91
" " " ..	1892	.....	1,546 25	736 00	.....
" " " ..	1893	.....	1,420 65	749 00	13 55
" " " ..	1894	.....	2,540 14	730 00	494 43
" " " ..	1895	.....	1,475 26	436 05	434 28
" " " ..	1896	.....	.....	.....	.....
" " " ..	1897	.....	.....	.....	.....
" " " ..	1898	.....	.....	.....	100 00
" " " ..	1899	.....	.....	.....	.....
Total.....	.....	*379,494 46	55,328 87	11,507 48	7,036 15

* Included in total cost of Ottawa River Works, see page 19.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

RIDEAU CANAL.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Imperial Government	....	3,911,701 47	.....	.....	.....
Government expenditure prior to Confederation	.....	153,062 60	.....	.....	.....
" since " "	1868	166 50	7,298 12	18,397 28	16,475 21
" " " "	1869	.....	.....	19,250 71	13,140 77
" " " "	1870	.....	13 16	20,022 37	19,469 33
" " " "	1871	.....	11,732 98	22,814 58	18,120 52
" " " "	1872	.....	4,967 50	22,139 48	14,005 32
" " " "	1873	.....	18,070 97	22,841 51	26,074 49
" " " "	1874	.....	5,793 16	26,815 44	22,957 40
" " " "	1875	9,310 85	.....	26,553 37	19,699 81
" " " "	1876	2,163 96	.....	26,430 77	14,428 25
" " " "	1877	214 11	.....	25,959 56	14,198 18
" " " "	1878	.....	.....	26,651 51	11,034 22
" " " "	1879	7,703 88	.....	26,042 52	7,134 55
" " " "	1880	.....	.....	26,463 88	11,434 05
" " " "	1881	.....	133 50	26,024 71	8,627 00
" " " "	1882	.....	.....	26,915 29	13,860 28
" " " "	1883	.....	70 65	27 322 81	23,524 84
" " " "	1884	.....	4,597 50	26,938 95	19,245 02
" " " "	1885	.....	2,098 76	26,971 32	18,189 55
" " " "	1886	.....	550 00	27,045 95	35,648 04
" " " "	1887	.....	20,823 96	29,440 46	18,565 34
" " " "	1888	.....	18,889 48	33,458 83	25,478 87
" " " "	1889	.....	6,665 22	33,801 77	18,106 36
" " " "	1890	.....	21,124 10	34,270 57	18,025 21
" " " "	1891	.....	20,967 25	34,641 98	21,537 56
" " " "	1892	.....	31,363 23	35,500 82	21,507 16
" " " "	1893	.....	24,274 71	35,022 49	18,789 50
" " " "	1894	.....	14,485 11	34,943 35	16,939 47
" " " "	1895	.....	31,559 48	33,827 08	19,897 32
" " " "	1896	.....	21,452 29	34,052 77	30,196 38
" " " "	1897	10,720 50	19,079 11	31,461 55	29,535 94
" " " "	1898	.....	13,608 39	30,759 05	26,599 93
" " " "	1899	.....	700 29	30,751 20	28,199 49
Total	....	*4,095,043 87	300,318 92	903,533 93	620,645 36

* Ottawa River Works.

Ste. Anne's Lock, page 16		$ 1,170,215 63
Carillon and Grenville Canals, page 17		1,154,360 04
Culbute Canal, page 18		379,494 46
Rideau Canal as above	$ 4,095,043 87	
Less expenditure by Imperial Government	3,911,701 47	
		183,342 40
Total Ottawa Works (Capital)		$ 5,887,412 53
Add expenditure on slides and booms prior to Confederation	$ 719,247 13	
Since Confederation	7,243 60	
Add expenditure on Chats Canals prior to Confederation	482,950 81	
Add expenditure in 1881, charged to Miscellaneous, *see* page 229, part ii Public Accounts	1,136 84	
Add amount transferred, *see* page xxxvi Public Accounts, Balance sheet, 1881	233,555 85	
		1,444,134 23
Less expenditure prior to Confederation, transferred to Income Accounts	$ 320,618 28	$ 7,331,546 76
Less expenditure, 1872, on Carillon and Grenville Canal, as shown in Public Accounts Balance Sheet, page xx, under Miscellaneous	165,257 28	
		485,875 56
Agreeing with Balance Sheet, Public Accounts, 1899, page xvi		$ 6,845,671 20

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

LEONARD SHANNON,
Accountant.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

ST. OURS LOCK.

	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation	....	121,537 65	....	....	....
" since " "	1868	....	....	1,532 75	753 74
" " " "	1869	....	....	1,755 15	1,399 18
" " " "	1870	....	....	1,458 09	1,006 22
" " " "	1871	....	....	1,414 48	1,210 98
" " " "	1872	....	....	1,565 80	1,263 19
" " " "	1873	....	....	2,076 50	1,575 10
" " " "	1874	....	....	2,219 13	2,363 42
" " " "	1875	....	....	1,362 22	1,245 69
" " " "	1876	....	....	1,403 92	1,601 71
" " " "	1877	....	....	1,533 40	750 80
" " " "	1878	....	....	1,556 65	283 77
" " " "	1879	....	....	1,581 55	456 07
" " " "	1880	....	....	1,614 01	705 54
" " " "	1881	....	....	1,741 97	1,299 77
" " " "	1882	....	....	2,002 71	1,902 41
" " " "	1883	....	17,230 32	2,361 65	2,188 08
" " " "	1884	....	5,279 17	2,315 37	1,494 99
" " " "	1885	....	4,700 64	2,271 57	3,652 63
" " " "	1886	....	....	2,311 70	4,143 47
" " " "	1887	....	....	2,175 37	5,864 78
" " " "	1888	....	....	2,216 04	2,801 17
" " " "	1889	....	17,964 45	2,421 14	2,002 63
" " " "	1890	....	24,571 96	2,138 40	1,935 44
" " " "	1891	....	21,696 74	2,011 08	4,460 16
" " " "	1892	....	3,585 34	2,168 44	1,944 33
" " " "	1893	....	....	2,136 66	1,994 34
" " " "	1894	....	....	2,216 68	924 55
" " " "	1895	....	....	2,161 63	915 50
" " " "	1896	....	....	2,094 91	1,678 49
" " " "	1897	....	....	2,135 60	707 06
" " " "	1898	....	....	2,049 67	692 04
" " " "	1899	....	....	2,244 12	1,494 93
Total	....	*121,537 65	95,028 62	62,248 36	56,712 18

* Included in total cost of Chambly Canal and River Richelieu, see page 21.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

CHAMBLY CANAL.

	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation	..	634,711 76	.....	.....	.....
" since " "	1868	.....	.....	8,312 90	9,355 70
" " " "	1869	.....	.....	8,437 22	13,120 97
" " " "	1870	.....	.....	8,934 41	20,180 73
" " " "	1871	.....	2,839 85	10,214 71	22,426 33
" " " "	1872	.....	1,906 40	9,628 50	22,327 99
" " " "	1873	.....	759 00	10,390 44	11,789 27
" " " "	1874	.....	2,810 00	11,675 67	16,427 19
" " " "	1875	2,415 00	.....	12,201 99	16,306 91
" " " "	1876	.....	.....	10,593 14	13,273 56
" " " "	1877	80 00	.....	10,281 78	10,111 32
" " " "	1878	.....	.....	10,413 99	6,022 96
" " " "	1879	.....	.....	11,301 53	8,809 77
" " " "	1880	.....	.....	11,516 22	12,377 74
" " " "	1881	.....	.....	13,950 47	20,705 17
" " " "	1882	.....	31,796 41	16,686 78	16,843 60
" " " "	1883	.....	21,332 36	15,904 38	15,182 24
" " " "	1884	.....	41,640 77	18,448 85	12,003 34
" " " "	1885	.....	21,049 23	18,378 55	13,046 95
" " " "	1886	.....	14,547 27	19,501 28	11,999 77
" " " "	1887	.....	17,911 17	19,053 62	20,071 37
" " " "	1888	.....	65,536 64	20,073 60	11,823 74
" " " "	1889	.....	51,437 87	19,679 22	19,392 18
" " " "	1890	.....	23,221 48	19,655 38	14,399 93
" " " "	1891	.....	43,344 41	19,204 76	11,399 93
" " " "	1892	.....	38,353 99	19,665 22	12,976 48
" " " "	1893	.....	21,127 65	19,310 29	12,451 63
" " " "	1894	.....	8,567 78	19,040 93	11,920 74
" " " "	1895	.....	6,147 63	19,325 49	11,779 12
" " " "	1896	.....	3,694 63	19,349 65	11,801 12
" " " "	1897	.....	12,665 88	18,754 17	13,128 55
" " " "	1898	.....	13,184 68	17,992 90	12,466 51
" " " "	1899	.....	15,255 42	18,336 50	11,997 51
		637,206 76			
Less proceeds of sale of piece of land	.....	150 00			
Total	.....	*637,056 76	459,130 52	486,214 54	447,919 72

* Chambly Canal and River Richelieu.

Chambly Canal as above		$ 637,056 76
St. Ours Lock, see page 20		121,537 65
		$ 758,594 41
Less amount deducted at Confederation, see Public Accounts, 1868, part i, page 9.		
Government expenditure prior to Confederation.		
Chambly Canal as above	$ 634,711 76	
St. Ours Lock, page 20	121,537 65	
	$ 756,249 41	
Returned as an asset in Public Accounts, 1868	433,807 83	
		$ 322,441 58
Agreeing with Public Accounts, 1899, page xvi		$ 436,152 83

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

MURRAY CANAL.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation	.....	.....	.....	.....	.....
" since " ..	1868	.....	400 00	.....	.....
" " " ..	1869	.....	.....	.....	.....
" " " ..	1870	.....	.....	.....	.....
" " " ..	1871	.....	.....	.....	.....
" " " ..	1872	.....	.....	.....	.....
" " " ..	1873	.....	.....	.....	.....
" " " ..	1874	.....	.....	.....	.....
" " " ..	1875	.....	.....	.....	.....
" " " ..	1876	.....	.....	.....	.....
" " " ..	1877	.....	.....	.....	.....
" " " ..	1878	.....	.....	.....	.....
" " " ..	1879	.....	.....	.....	.....
" " " ..	1880	.....	.....	.....	.....
" " " ..	1881	.....	.....	.....	.....
" " " ..	1882	7,135 63	.....	.....	.....
" " " ..	1883	84,071 68	.....	.....	.....
" " " ..	1884	118,187 43	.....	.....	.....
" " " ..	1885	148,902 66	.....	.....	.....
" " " ..	1886	179,704 52	.....	.....	.....
" " " ..	1887	142,563 66	.....	.....	.....
" " " ..	1888	146,754 37	.....	.....	.....
" " " ..	1889	215.326 46	.....	.....	.....
" " " ..	1890	106,760 35	.....	494 31	.....
" " " ..	1891	61,260 49	.....	5,137 03	173 53
" " " ..	1892	5,964 22	.....	5,803 48	3,505 15
" " " ..	1893	30,838 79	.....	5,499 62	5,341 34
" " " ..	1894	.....	.....	5,667 52	5,295 57
" " " ..	1895	.....	.....	5,354 97	5,063 49
" " " ..	1896	.....	.....	5,409 10	5,410 33
" " " ..	1897	.....	.....	5,526 87	3,966 41
" " " ..	1898	.....	.....	5,799 94	4,710 23
" " " ..	1899	.....	.....	5,073 70	3,533 68
Total	....	*1,247,470 26	400 00	49,766 54	36,999 73

* Agreeing with Public Accounts Balance Sheet, 1899, page xvi.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

TRENT CANAL.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation		309,371 31			
" since " "	1868				
" " " "	1869				
" " " "	1870				
" " " "	1871				
" " " "	1872				
" " " "	1873				
" " " "	1874				
" " " "	1875				
" " " "	1876				
" " " "	1877				
" " " "	1878				
" " " "	1879				
" " " "	1880	561 50		1,188 92	3,568 89
" " " "	1881			2,489 93	2,233 50
" " " "	1882		5,836 51	2,011 92	8,115 50
" " " "	1883	40,767 16	9,303 66	2,235 50	3,047 42
" " " "	1884	120,393 91	6,198 57	2,208 64	5,264 35
" " " "	1885	121,382 84		3,303 87	4,653 50
" " " "	1886	75,103 30		1,639 75	5,917 88
" " " "	1887	179,541 63		1,938 08	6,008 88
" " " "	1888	114,879 35		1,770 29	5,151 42
" " " "	1889	47,592 13	29,677 92	3,242 05	5,935 94
" " " "	1890	58,644 50	11,522 65	3,450 99	730 55
" " " "	1891	9,826 49	3,164 81	3,803 66	4,888 98
" " " "	1892	4,457 28	6,506 97	3,695 85	4,721 85
" " " "	1893	5,962 47	10,838 90	3,739 86	2,087 17
" " " "	1894	3,412 32	20,403 93	3,785 47	4,988 59
" " " "	1895	53,907 70	21,143 41	4,184 18	3,374 49
" " " "	1896	392,976 08	6,185 75	4,349 34	3,329 97
" " " "	1897	486,575 70	13,880 37	4,965 39	3,497 90
" " " "	1898	351,273 31	8,991 54	5,034 60	4,998 80
" " " "	1899	166,611 49	6,179 79	5,048 72	6,454 49
Total		2,543,240 47	159,834 78	64,087 01	88,970 07

Total expenditure on Capital account as above		$ 2,543,240 47
LESS—Expenditure prior to Confederation	$ 309,371 31	
" Year 1880	561 50	
		309,932 81
Agreeing with Public Accounts Balance Sheet, 1899, page xvi.		$ 2,233,307 66

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

TAY CANAL.

	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure since Confederation	1868				
" " "	1869				
" " "	1870				
" "	1871				
" " "	1872				
" " "	1873				
" " "	1874				
" " "	1875				
" " "	1876				
" " "	1877				
" " "	1878				
" " "	1879				
" " "	1880				
" " "	1881				
" " "	1882		748 65		
" " "	1883	4,831 80			
" " "	1884	50,878 12			
" " "	1885	92,473 97			
" " "	1886	65,561 51			
" " "	1887	49,617 92			
" " "	1888	54,166 57			
" " "	1889	89,486 18			
" " "	1890	22,226 23		*	*
" " "	1891	17,114 78		*	*
" " "	1892	29,771 64		*	*
" " "	1893			*	*
" " "	1894			*	*
" " "	1895			*	*
" " "	1896			*	*
" " "	1897			*	*
" " "	1898			*	*
" " "	1899			*	*
Total		†476,128 73	748 65	*	*

* Included in Rideau Canal.
† Agreeing with Public Accounts, 1899, page xvi.

Cost of Canal as above	$ 476,128 73
Paid in 1896-97 but charged as voted under Rideau Canal Capital—Final Estimate, Wm. Davis & Sons	10,720 50
Total cost of Tay Canal	$ 486,849 23

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

SAULT STE. MARIE CANAL.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure since Confederation.	1868				
" " "	1869				
" " "	1870				
" " "	1871				
" " "	1872		949 35		
" " "	1873				
" " "	1874				
" " "	1875				
" " "	1876				
" " "	1877				
" " "	1878				
" " "	1879				
" " "	1880				
" " "	1881				
" " "	1882				
" " "	1883				
" " "	1884				
" " "	1885				
" " "	1886				
" " "	1887				
" " "	1888	8,145 06			
" " "	1889	34,018 95			
" " "	1890	176,568 55			
" " "	1891	325,336 33			
" " "	1892	341,474 31			
" " "	1893	589,801 25			
" " "	1894	1,316,529 29			
" " "	1895	466,151 50		3,432 73	
" " "	1896	189,986 59		16,074 70	2,650 17
" " "	1897	209,561 82		15,381 59	7,671 79
" " "	1898	21,004 56		14,389 92	8,172 09
" " "	1899	63,935 48		13,840 24	6,564 40
Total		*3,742,513 69	949 35	63,119 18	25,058 45

* Agreeing with Public Accounts, 1899, page xvi.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENTS showing the amounts expended on Construction, Renewals, &c.—*Con.*

SOULANGES CANAL.

——	Year ending June 30.	Capital.	Renewals Chargeable to Income.	Staff.	Repairs.
		$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation	...	...	...	...	...
" since " "	1868	...	...	...	...
" " " "	1869	...	...	...	...
" " " "	1870	...	...	...	...
" " " "	1871	...	...	...	...
" " " "	1872	...	...	...	...
" " " "	1873	...	...	...	...
" " " "	1874	...	...	...	...
" " " "	1875	...	...	...	...
" " " "	1876	...	...	...	...
" " " "	1877	...	...	...	...
" " " "	1878	...	...	...	...
" " " "	1879	...	...	...	...
" " " "	1880	...	...	...	...
" " " "	1881	...	...	...	...
" " " "	1882	...	...	...	...
" " " "	1883	...	...	...	...
" " " "	1884	...	...	...	...
" " " "	1885	...	...	...	...
" " " "	1886	...	...	...	...
" " " "	1887	...	...	...	...
" " " "	1888	...	...	...	...
" " " "	1889	...	...	...	...
" " " "	1890	...	...	...	...
" " " "	1891	...	...	...	...
" " " "	1892	54,235 76	...	...	...
" " " "	1893	210,336 24	...	...	...
" " " "	1894	723,380 95	...	...	...
" " " "	1895	752,016 53	...	...	...
" " " "	1896	535,939 07	...	...	...
" " " "	1897	363,126 06	...	...	...
" " " "	1898	1,016,401 00	...	...	...
" " "	1899	1,442,824 22	...	...	...
Total	...	*5,098,259 83	...	...	...

Included in total cost of St. Lawrence River and Canals, *see* part ii, page 9.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

STATEMENT showing amount expended on Construction and Enlargement of Canals, to June 30, 1899.

Canal.	Construction.	Enlargement.	Total.
	$ cts.	$ cts.	$ cts.
St. Peters	248,762 84	399,784 30	648,547 14
Lachine	2,589,532 85	8,197,561 16	10,787,094 01
Beauharnois	1,636,690 26		1,636,690 26
St. Lawrence River and Canals	18,442 85	1,866,351 01	1,884,793 86
Lake St. Louis		250,066 48	250,066 48
Lake St. Francis		26,530 00	26,530 00
Cornwall	1,945,624 73	4,617,383 27	6,563,008 00
Williamsburg: Farran's Point		586,111 74	7,170,592 26
Williamsburg: Galops		3,385,837 38	
Williamsburg: Rapide Plat		1,875,500 97	
Williamsburg: Williamsburg	1,320,655 54	2,486 63	
Welland	7,693,824 03	16,077,811 73	23,771,635 76
St. Anne's	134,456 51	1,035,759 12	1,170,215 63
*Carillon and Grenville	63,053 64	4,091,306 40	4,154,360 04
Culbute	379,494 46		379,494 46
Rideau	4,095,043 87		4,095,043 87
St. Ours	121,537 65		121,537 65
Chambly	637,056 76		637,056 76
Murray	1,247,470 26		1,247,470 26
Trent	2,543,240 47		2,543,240 47
Tay	476,128 73		476,128 73
Sault Ste. Marie	3,742,513 69		3,742,513 69
Soulanges	5,098,259 83		5,098,259 83
	33,991,788 97	42,412,490 19	76,404,279 16

*Construction by Imperial Government not included, records relating to same were kept in Ordnance Office, Montreal, and were destroyed by fire in 1852.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

*RECAPITULATION—EXPENDITURE on Canals, also showing Revenue received.

——	Year ending June 30.	Capital.	Income.	Staff.	Repairs.	Revenue received.
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation, including Imperial Government		20,593,866 13	98,378 46			
Government expenditure since Confederation	1868	33,784 06	95,347 79	113,084 50	101,646 44	403,879 19
" "	1869	126,898 20	55 00	116,069 76	118,579 31	400,263 32
" "	1870		90,355 96	120,403 02	150,176 70	414,687 02
" "	1871		116,429 54	135,040 81	140,467 52	488,538 76
" "	1872	255,645 75	33,289 27	124,137 09	152,086 25	466,847 52
" "	1873	256,547 27	127,369 55	148,581 18	186,573 13	486,433 26
" "	1874	1,189,591 91	51,037 05	167,194 40	213,613 86	510,755 99
" "	1875	1,714,830 37	479 00	168,401 21	203,226 85	414,979 59
" "	1876	2,388,733 46	810 75	178,411 80	190,578 45	390,337 04
" "	1877	4,131,374 30	22 30	179,661 40	138,448 51	390,857 37
" "	1878	3,843,338 62		187,521 31	122,251 60	373,814 17
" "	1879	3,064,098 61		191,892 44	115,349 99	337,675 13
" "	1880	2,123,366 34		195,039 33	147,167 52	341,598 14
" "	1881	2,075,891 65	7,246 69	197,573 62	154,653 63	361,558 17
" "	1882	1,593,174 09	55,025 03	224,572 61	187,399 02	325,231 54
" "	1883	1,763,001 97	62,503 14	269,415 01	178,617 86	361,604 01
" "	1884	1,577,295 42	60,993 99	280,657 29	192,219 38	372,561 69
" "	1885	1,504,621 47	58,297 59	280,226 20	201,708 47	321,289 47
" "	1886	1,333,324 80	31,984 02	282,323 63	198,251 97	328,977 43
" "	1887	1,783,698 16	65,983 06	285,172 62	198,888 84	321,784 88
" "	1888	1,033,118 34	120,561 59	292,458 76	201,928 93	317,902 04
" "	1889	972,918 43	162,015 49	301,040 23	240,261 36	333,188 90
" "	1890	1,026,364 24	146,853 54	290,516 63	176,089 00	354,816 92
" "	1891	1,318,092 15	165,843 87	294,562 12	204,768 45	349,431 90
" "	1892	1,437,149 30	194,129 61	293,115 58	231,089 54	324,475 24
" "	1893	2,069,573 30	196,185 84	291,588 97	204,759 39	357,089 87
" "	1894	3,027,164 19	109,216 33	294,446 34	179,630 13	387,788 97
" "	1895	2,452,273 65	216,057 58	281,477 04	164,033 71	339,890 49
" "	1896	2,258,778 97	85,820 49	292,121 05	209,321 60	339,538 72
" "	1897	2,341,016 16	101,205 74	287,970 36	178,385 47	384,780 53
" "	1898	3,207,249 79	82,400 55	280,872 44	203,478 86	407,652 81
" "	1899	3,899,877 31	82,205 60	280,628 57	202,312 36	369,044 38
Total		76,404,279 16	2,618,104 42	7,326,174 32	5,687,964 10	12,079,274 46

*This does not include expenditure which has been charged to Canals—General—but amounts expended on specified Canals.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

LEONARD SHANNON,
Accountant.

HYDRAULIC AND OTHER RENTS.

Balances due July 1, 1898.	Accrued during the Year ended June 30, 1899.	Totals.	—	Abatement.	Deposited to the Credit of the Receiver General.	Balance due June 30, 1899.	Totals.
$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.
28,020 96	12,417 28	40,438 34	Welland Canal	178 93	8,996 35	31,263 06	40,438 34
781 00	708 00	1,489 00	Williamsburg Canal		95 00	1,394 00	1,489 00
2,372 50	5,170 00	7,542 50	Cornwall "		4,115 00	3,427 50	7,542 50
7,497 83	2,703 00	10,200 83	Beauharnois "		2,532 50	7,668 33	10,200 83
17,105 61	27,661 90	44,767 51	Lachine "		27,619 86	17,147 65	44,767 51
386 84	86 50	473 34	Chambly "	60 00	62 50	350 84	473 34
2,028 39	3,101 70	5,130 09	Rideau "	2 00	2,973 05	2,155 04	5,130 09
124 00	55 00	179 00	Trent Valley "		107 00	72 00	179 00
5 00	25 00	30 00	Sault Ste. Marie "		30 00		30 00
108 00	2,133 00	2,241 00	Carillon and Grenville Canal	3 00	128 00	2,100 00	2,241 00
4 00		4 00	Sundry Canals			4 00	4 00
58,434 13	54,061 48	112,495 61	Totals	243 93	46,659 26	65,592 42	112,495 61

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

CANALS, 1898-9.

Collectors of Canal Tolls in Account with Revenue.

Canal Revenue.				Total Canal Revenue Accrued.	Hydraulic and other Rents, &c.	Total.	Collection Divisions.	Deposits to the Credit of the Receiver General.		Total.	Cost of Staff, Repairs and Offices of Collection, Chargeable to Revenue.
Tolls.	Wharfage and Storage.	Fines.	Other Receipts.					On account, Canal Revenue.	On account, Hydraulic Rents.		
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.
.....	.....	.....	.....	.....	.....	.....	*Welland Canal*.....	.....	.....	.....	146,978 23
96,779 29	.....	.....	38 58	96,817 87	964 50	97,782 37	Port Colborne	96,817 87	964 50	97,782 37	3,300 59
51,903 96	.....	35 00	9 70	51,948 66	1,000 10	52,948 76	Port Dalhousie.....	51,948 66	1,000 10	52,948 76	2,162 03
347 29	.....	.....	.....	347 29	200 00	547 29	Dunnville	347 29	200 00	547 29	781 00
479 69	.....	.....	.....	479 69	6,826 75	7,306 44	St. Catharines.....	479 69	6,826 75	7,306 44	211 75
54 16	.....	.....	.....	54 16	5 00	59 16	Chippawa	54 16	5 00	59 16	123 00
149,564 39	.....	35 00	48 28	149,647 67	8,996 35	158,644 02	.. Totals.....	149,647 67	8,996 35	158,644 02	153,556 60
.....	.....	.....	.....	.....	.....	.....	*St. Lawrence Canals*.....	.....	.....	.....	183,166 52
17,308 67	6 00	35 00	.....	17,349 67	2,532 50	19,882 17	Beauharnois.....	17,349 67	2,532 50	19,882 17	1,057 30
30,390 68	.....	5 00	.....	30,395 68	4,115 00	34,510 68	Cornwall	30,300 37	4,115 00	34,415 37	1,740 45
305 46	.....	25 00	.....	330 46	95 00	425 46	Cardinal..	330 46	95 00	425 46	492 21
2,578 56	10 05	.....	863 35	3,451 96	.....	3,451 96	Lachine	3,451 96	.....	3,451 96	2,246 52
28,516 13	2,343 84	82 00	12,690 80	43,632 77	27,619 86	71,252 63	Montreal	43,632 77	27,619 86	71,252 63	7,890 36
12,551 96	.....	.....	.....	12,551 96	.....	12,551 96	Kingston	12,551 96	.....	12,551 96	681 80
91,651 46	2,359 89	147 00	13,554 15	107,712 50	34,362 36	142,074 86	.. Totals..	107,617 19	34,362 36	141,979 55	197,275 16
.....	.....	.....	.....	.....	.....	.....	*Chambly Canal*.....	.....	.....	.....	34,073 06
7,964 32	.....	.....	.....	7,964 32	.....	7,964 32	Chambly.	7,964 32	.....	7,964 32	1,556 50
12,008 04	.....	.....	.....	12,008 04	62 50	12,070 54	St. Johns	12,008 04	62 50	12,070 54	1,705 48
587 23	.....	.....	.....	587 23	.....	587 23	St. Ours	587 23	.....	587 23	621 75
20,559 59	.....	.....	.....	20,559 59	62 50	20,622 09	.... Totals	20,559 59	62 50	20,622 09	37,956 79
.....	.....	.....	.....	.....	.....	.....	*Ottawa Canals*	.....	.....	.....	27,503 88
29,993 38	.....	.....	.....	29,993 38	.....	29,993 38	Ottawa.....	29,993 38	.....	29,993 38	.....
5,795 32	.....	.....	8 00	5,803 32	105 00	5,908 32	Grenville.	5,803 32	105 00	5,908 32	455 85
46 09	.....	.....	.....	46 09	23 00	69 09	Carillon.	46 09	23 00	69 09	627 65
1,102 31	.....	.....	.....	1,102 31	.....	1,102 31	St. Anne's Lock..	1,102 31	.....	1,102 31	688 04
36,937 10	.....	.....	8 00	36,945 10	128 00	37,073 10	.....Totals.....	36,945 10	128 00	37,073 10	29,275 42

							Rideau Canal				58,950 69
3,651 22	9 20		220 00	3,880 42	2,677 70	6,558 12	Ottawa	3,880 42	2,677 70	6,558 12	2,394 18
915 49			15 00	930 49	230 00	1,160 49	Kingston Mills	930 49	230 00	1,160 49	449 08
595 45			46 32	641 77	65 35	707 12	Smith's Falls	641 77	65 35	707 12	334 13
5,162 16	9 20		281 32	5,452 68	2,973 05	8,425 73	Totals	5,452 68	2,973 05	8,425 73	62,128 08
											3,276 47
2,747 15				2,747 15		2,747 15	*St. Peter's Canal*	2,747 15		2,747 15	132 05
2,747 15				2,747 15		2,747 15	Totals	2,747 15		2,747 15	3,408 52
							Murray Canal				9,111 38
667 14				667 14		667 14	Brighton	667 14		667 14	384 70
667 14				667 14		667 14	Totals	667 14		667 14	9,496 08
							Trent Valley Canal				11,503 21
67 14				67 14		67 14	Burleigh	67 14		67 14	
266 93			46 00	312 93		312 93	Bobcaygeon	312 93		312 93	
131 33				131 33	104 00	235 33	Fenelon Falls	131 33	104 00	235 33	
32 57				32 57		32 57	Hastings	32 57		32 57	10 00
355 72				355 72	3 00	358 72	Peterborough	355 72	3 00	358 72	29 66
95 58				95 58		95 58	Buckhorn	95 58		95 58	21 03
949 27			46 00	995 27	107 00	1,102 27	Totals	995 27	107 00	1,102 27	11,563 90
					30 00	30 00	*Sault Ste. Marie Canal*		30 00	30 00	21,650 39
							Dredge Vessels				8,763 16
							Inspection				187 02
							Department of Public Printing and Stationery				1,026 77
							General				13,503 33
							Totals				23,480 28
368,238 26	2,369 09	182 00	13,937 75	324,727 10	46,659 26	371,386 36	Grand totals	324,631 79	46,659 26	371,291 05	549,791 22
							Less refunds			2,246 67	
							Net revenue collected			369,044 38	549,791 22

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENT showing Refunds of Canal Tolls paid during the Year ending June 30, 1899.

Date.	To whom paid.	Refund of Tolls on	Canal.	Amount.
1898.				$ cts.
July 22	Montreal Transportation Co	Coal for Govt. work.	St. Lawrence	208 24
Aug. 12	" "	" "	"	122 39
" 24	Canadian Forwarding and Export Co	Cement "	"	146 41
" 29	" " "	Coal, lumber and cement for Govt. work	"	239 89
Sept. 16	Montreal Transportation Co	Coal for Govt. work.	"	230 84
" 16	Canadian Forwarding and Export Co	" "	"	94 41
Oct. 1	" " "	Coal overpaid	"	21 71
" 8	Montreal Transportation Co.	Cement for Govt. work	"	24 06
Nov. 28	Bartlett, Frazier & Co., Ltd	Twice paid on corn	Welland	151 20
Dec. 6	W. A. McCaffrey & Co.	Sand for Govt. work	Grenville	10 42
" 15	Canadian Forwarding and Export Co	Cement "	St. Lawrence	125 54
" 22	John Read.	Timber "	Welland	68 84
" 22	Canadian Forwarding and Export Co	Cement and timber for Govt. work	St. Lawrence	508 42
" 30	Alex. Laplante	" "	"	167 91
Mar. 27	Larkin & Sangster	" "	Lachine	62 50
July 5	Montreal Transportation Co	Coal for Govt. work.	St. Lawrence	40 61
" 21	Ogdensburg Coal and Towing Co.	Unused portion of let pass	"	23 28
				2,246 67

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

INTERCOLONIAL RAILWAY.

(Including amounts paid to Nova Scotia Railway and European and North American Railway, N.B.)

——	Year.	Construction.	Income.	Working Expenses including Windsor Branch Ry.	Revenue received, including Windsor Branch Ry.
		$ cts.	$ cts.	$ cts.	$ cts.
Expenditure prior to Confederation		10,766,725 54			
" since "	1868	483,353 65		359,961 08	420,752 58
" " "	1869	282,615 18		387,548 47	455,022 76
" " "	1870	1,729,381 49		445,208 75	471,245 09
" " "	1871	2,916,782 13		442,993 31	565,713 52
" " "	1872	5,131,141 51		595,076 22	622,900 56
" " "	1873	5,201,450 37		1,011,892 60	703,458 26
" " "	1874	3,614,898 81		1,847,175 24	893,430 17
" " "	1875	3,426,099 55		1,532,589 62	861,593 43
" " "	1876	1,108,321 59		1,277,197 79	848,861 46
" " "	1877	1,318,352 19		1,661,673 55	1,154,445 35
" " "	1878	408,816 74		1,811,273 56	1,378,946 78
" " "	1879	226,639 19		2,010,183 22	1,294,099 69
" " "	1880	2,048,014 60		1,607,956 70	1,520,310 45
" " "	1881	608,732 80		1,780,353 53	1,777,856 76
" " "	1882	585,568 79		2,080,592 37	2,100,315 85
" " "	1883	1,616,632 96		2,383,477 20	2,395,034 99
" " "	1884	1,405,377 52		2,366,719 95	2,376,666 19
" " "	1885	1,195,363 08		2,460,229 87	2,392,605 00
" " "	1886	544,958 17		2,508,473 10	2,406,858 88
" " "	1887	823,070 86		2,854,158 91	2,621,337 41
" " "	1888	742,203 09		3,300,481 94	2,937,337 40
" " "	1889	655,228 13		3,174,785 19	2,923,736 46
" " "	1890	365,246 48		3,500,455 80	2,958,243 38
" " "	1891	79,929 34		3,691,273 65	3,007,630 51
" " "	1892	168,101 77		3,458,891 39	2,978,950 82
" " "	1893	228,984 79		3,062,207 45	3,099,815 20
" " "	1894	166,362 43		2,999,317 07	3,020,485 74
" " "	1895	327,034 51		2,964,940 98	2,979,795 59
" " "	1896	259,105 23		3,029,304 08	2,994,201 93
" " "	1897	145,142 00		2,936,789 71	2,906,631 25
" " "	1898	252,367 20	70,000 00	3,275,830 14	3,154,896 49
" " "	1899	1,081,929 94	210,000 00	3,478,559 30	3,775,558 08
Total		49,913,931 63	280,000 00	65,297,571 74	61,092,106 78

* Including $296,872.90 charged to "Consolidated Fund."

Total cost of construction as above $49,913,931 63

LESS amounts transferred from Capital to Consolidated Fund as follows:—

	Nova Scotia Ry.	European and North American Ry.
1868	$ 16,800 99	$ 11,302 89
1870	34,403 45	1,749 21
1871	50,405 69	.....
1873	106,899 59	75,311 08
	$ 208,509 72	$ 83,363 18
		208,509 72
		296,872 90
		$ 49,617,058 73
Cape Breton Railway		3,860,679 14
Oxford and New Glasgow Railway		1,949,063 21
Eastern Extension Railway		1,324,042 81
Total Capital cost of Intercolonial Railway system		$ 56,750,843 89
Governor General's car "Victoria"		1,290 31
Agreeing with Public Accounts, 1899, page xvi		$ 56,752,134 20

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

EASTERN EXTENSION RAILWAY.

——	Year.	Capital.	Working Expenses.	Revenue received.
		$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation				
" since "	1868			
" " "	1869			
" " "	1870			
" " "	1871			
" " "	1872			
" " "	1873			
" " "	1874			
" " "	1875			
" " "	1876			
" " "	1877			
" " "	1878			
" " "	1879			
" " "	1880			
" " "	1881			
" " "	1882			
" " "	1883			
" " "	1884	1,284,311 97	10,033 77	30,767 66
" " "	1885	2,055 92	78,273 65	73,050 01
" " "	1886	183 79	94,756 06	66,893 11
" " "	1887		94,254 04	64,107 10
" " "	1888		90,954 73	70,552 20
" " "	1889	34,235 73	90,719 04	72,436 65
" " "	1890		79,102 77	84,658 95
" " "	1891	3,255 40	*	†
" " "	1892		*	†
" " "	1893		*	†
" " "	1894		*	†
" " "	1895		*	†
" " "	1896		*	†
" " "	1897		*	†
" " "	1898		*	†
" " "	1899		*	†
Total		‡ 1,324,042 81	538,094 06	462,465 68

*Included in Intercolonial Railway working expenses. †Included in Intercolonial Railway revenue.
‡Included in total cost of Intercolonial Railway system, page 33.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

CARLETON BRANCH RAILWAY.

——	Year.	Capital.	Working Expenses.	Revenue received.
		$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation.....				
" since "	1868			
" " "	1869			
" " "	1870			
" " "	1871			
" " "	1872			
" " "	1873			
" " "	1874			
" " "	1875			
" " "	1876			
" " "	1877			
" " "	1878			
" " "	1879			
" " "	1880			
" " "	1881			
" " "	1882			
" " "	1883			
" " "	1884			
" " "	1885			
" " "	1886	85,610 69		
" " "	1887	2,299 62		
" " "	1888	500 17		
" " "	1889			
" " "	1890			
" " "	1891			
" " "	1892			
" " "	1893			
" " "	1894			
" " "	1895			
" " "	1896			
" " "	1897			
" " "	1898			
" " "	1899			
Total.		*88,410 48		

*56 Victoria, cap. 6, transferred the Carleton Branch Railway to the city of St. John, N.B., for the sum of $40,000, which sum was paid in March, 1893, to the Receiver General.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

CAPE BRETON RAILWAY.

——	Year.	Capital.	Working Expenses.
		$ cts.	$ cts.
Government expenditure prior to Confederation	1868		
" since "	1869		
" " "	1870		
" " "	1871		
" " "	1872		
" " "	1873		
" " "	1874		
" " "	1875		
" " "	1876		
" " "	1877		
" " "	1878		
" " "	1879		
" " "	1880		
" " "	1881		
" " "	1882		
" " "	1883		
" " "	1884		
" " "	1885		
" " "	1886		
" " "	1887	76,501 89	
" " "	1888	689,450 50	
" " "	1889	1,083,276 60	
" " "	1890	1,170,523 62	
" " "	1891	521,441† 62	
" " "	1892	99,936 96	
" " "	1893	59,982 74	
" " "	1894	158,770 61	
" " "	1895	*	
" " "	1896	*	
" " "	1897	405 00	
" " "	1898	389 60	
" " "	1899		
Total		§3,860,679 14	†

* Included in Intercolonial Railway capital. † Included in Intercolonial Railway working expenses
§ Included in total cost of Intercolonial Railway system, see page 33.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

SESSIONAL PAPER No. 10

OXFORD AND NEW GLASGOW RAILWAY.

—	Year.	Capital.	Working Expenses.
		$ cts.	$ cts.
Government expenditure prior to Confederation	1868		
" since. "	1869		
" " "	1870		
" " "	1871		
" " "	1872		
" " "	1873		
" " "	1874		
" " "	1875		
" " "	1876		
" " "	1877		
" " "	1878		
" " "	1879		
" " "	1880		
" " "	1881		
" " "	1882		
" " "	1883		
" " "	1884		
" " "	1885		
" " "	1886		
" " "	1887		
" " "	1888	280,932 35	
" " "	1889	840,553 57	
" " "	1890	434,074 60	
" " "	1891	220,886 39	
" " "	1892	48,745 23	
" " "	1893	7,922 80	
" " "	1894	112,382 75	
" " "	1895	*	
" " "	1896	*	
" " "	1897	3,565 52	
" " "	1898		
" " "	1899		
Total		‡ 1,949,963 21	†

* Included in Intercolonial Railway capital. † Included in Intercolonial Railway working expenses.
‡ Included in total cost of Intercolonial Railway system, page 33.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

MONTREAL AND EUROPEAN SHORT LINE RAILWAY.

——	Year.	Construction.	Working Expenses.	Revenue received.
		$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation.	1868			
" since " "	1869			
" " " "	1870			
" " " "	1871			
" " " "	1872			
" " " "	1873			
" " " "	1874			
" " " "	1875			
" " " "	1876			
" " " "	1877			
" " " "	1878			
" " " "	1879			
" " " "	1880			
" " " "	1881			
" " " "	1882			
" " " "	1883			
" " " "	1884			
" " " "	1885	49,587 45		
" " " "	1886	135,214 38		
" " " "	1887	24,157 32		
" " " "	1888	397 35		
" " " "	1889			
" " " "	1890			
" " " "	1891	124,568 23		
" " " "	1892			
" " " "	1893			
" " " "	1894	17 99		
" " " "	1895			
" " " "	1896			
" " " "	1897			
" " " "	1898			
" " " "	1899			
Total		*333,942 72		

* Agreeing with Public Accounts, 1899, page xvi.

LEONARD SHANNON
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

PRINCE EDWARD ISLAND RAILWAY.

——	Year.	Construction.	Working Expenses.	Revenue received.
		$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation		3,114,735 11		
" since " "	1874		750 00	
" " " "	1875	46,086 63	49,344 62	24,493 99
" " " "	1876	42,546 10	219,930 43	118,060 96
" " " "	1877	200,000 00	228,595 25	130,664 92
" " " "	1878	6,551 86	221,599 49	135,899 60
" " " "	1879	40,129 05	223,313 12	125,855 91
" " " "	1880	16,539 82	164,640 55	113,851 11
" " " "	1881		203,122 88	131,131 43
" " " "	1882	402 03	228,259 97	137,267 54
" " " "	1883	57,186 02	252,808 41	146,170 42
" " " "	1884	130,663 38	236,428 13	144,504 12
" " " "	1885	76,956 56	211,207 01	158,588 06
" " " "	1886	4,668 33	216,744 34	155,584 36
" " " "	1887	5,800 00	204,237 45	155,303 37
" " " "	1888		229,639 95	158,363 62
" " " "	1889		247,559 44	171,369 56
" " " "	1890		266,485 85	160,971 78
" " " "	1891		257,990 08	174,258 05
" " " "	1892	8,300 49	289,706 38	157,442 69
" " " "	1893		226,422 17	162,690 42
" " " "	1894		226,891 06	158,533 83
" " " "	1895		232,905 19	149,654 78
" " " "	1896		225,138 56	146,476 54
" " " "	1897		240,489 90	153,443 13
" " " "	1898	17,541 88	231,418 74	158,950 61
" " " "	1899	22,000 00	218,053 01	165,012 03
Total		3,790,107 26	5,553,681 98	3,594,542 83

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

CANADIAN PACIFIC RAILWAY.

	Year.	Construction, including Subsidy of $25,000,000.	Working Expenses.	Revenue received.
		$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation				
" since "	1868			
" " "	1869			
" " "	1870			
" " "	1871	30,148 32		
" " "	1872	489,428 16		
" " "	1873	561,818 44		
" " "	1874	310,224 88		
" " "	1875	1,546,241 67		
" " "	1876	3,346,567 06		
" " "	1877	1,691,149 97		
" " "	1878	2,228,373 13		
" " "	1879	2,240,285 47		
" " "	1880	4,044,522 72	78,892 01	104,975 69
" " "	1881	4,968,503 93	236,944 98	291,498 06
" " "	1882	(1) 4,589,075 79	1,786 20	
" " "	1883	(2) 10,033,800 04	266 09	
" " "	1884	(3) 11,192,722 02	327 02	
" " "	1885	(4) 9,900,281 53		
" " "	1886	(5) 3,672,584 81		
" " "	1887	(6) 915,057 49		
" " "	1888	52,098 65		
" " "	1889	86,716 07		
" " "	1890	40,980 54		
" " "	1891	37,367 00		
" " "	1892	66,211 39		
" " "	1893	413,836 49		
" " "	1894	146,539 87		
" " "	1895	49,209 77		
" " "	1896	65,669 49		
" " "	1897	14,054 50		
" " "	1898	692 17		
" " "	1899	8,418 53		
Total	....	*62,742,579 90	318,216 30	396,473 75

* Agrees with Public Accounts balance sheet, 1898-99, page xvi.

(1)	Including	$ 2,210,000 00	on account subsidy.
(2)	"	5,323,076 60	"
(3)	"	7,254,208 27	"
(4)	"	6,862,201 00	"
(5)	"	2,890,427 00	"
(6)	"	460,087 13	"
		*$25,000,000 00	

* See also Statement No. 3, page 45. for this expenditure.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

ANNAPOLIS AND DIGBY RAILWAY.

——	Year.	Capital.	Working Expenses.
		$ cts.	$ cts.
Government expenditure prior to Confederation			
" since "	1868		
" " "	1869		
" " "	1870		
" " "	1871		
" " "	1872		
" " "	1873		
" " "	1874		
" " "	1875		
" " "	1876		
" " "	1877		
" " "	1878		
" " "	1879		
" " "	1880		
" " "	1881		
" " "	1882		
" " "	1883		
" " "	1884		
" " "	1885		
" " "	1886		
" " "	1887		
" " "	1888		
" " "	1889	9,847 27	
" " "	1890	381,942 75	
" " "	1891	196,869 36	
" " "	1892	26,129 39	
" " "	1893	2,190 62	
" " "	1894	1,675 36	
" " "	1895	570 55	
" " "	1896		
" " "	1897	41,457 29	
" " "	1898		
" " "	1899		
Total		*660,683 09	

* Of this amount Parliament voted under 52 Vic., cap. 8, the sum of $500,000 as a subsidy to the Western Counties Railway which is also shown in the statement of subsidies, page 45.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

STATEMENT showing amount expended on Capital Account on Railways.

Railways.	—	—
	$ cts.	$ cts.
Intercolonial	49,617,058 73	
Cape Breton	3,860,679 14	
Oxford and New Glasgow	1,949,063 21	
Eastern Extension	1,324,042 81	
		56,750,843 89
Carleton Branch		48,410 48
Montreal and European Short Line		333,942 72
Prince Edward Island		3,790,107 26
Canadian Pacific		62,742,579 90
Annapolis and Digby		660,683 09
Governor General's car "Victoria"		1,290 31
Total		124,327,857 65
Memo. re *Recapitulation—Railways.*		
Total cost as per statement above		124,327,857 65
Add amounts transferred from Capital to Consolidated Fund, Intercolonial Railway, see statement page 33		296,872 90
Agreeing with total cost of construction, as per statement page 43		124,624,730 55

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

RECAPITULATION—RAILWAYS.

——	Year.	Construction.	Working Expenses.	Revenue Received.
		$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation	.....	13,881,460 65	.....	.....
" since "	1868	483,353 65	359,961 08	420,752 58
" " "	1869	282,615 18	387,548 47	455,022 76
" " "	1870	1,729,381 49	445,208 75	471,245 09
" " "	1871	2,946,930 45	442,993 31	565,713 52
" " "	1872	5,620,569 67	595,076 22	622,900 56
" " "	1873	5,763,268 81	1,011,892 60	703,458 26
" " "	1874	3,925,123 69	1,847,925 24	893,430 17
" " "	1875	5,018,427 85	1,581,934 24	886,087 42
" " "	1876	4,497,434 75	1,497,128 22	966,922 42
" " "	1877	3,209,502 16	1,890,268 80	1,285,110 27
" " "	1878	2,643,741 73	2,032,873 05	1,514,846 38
" " "	1879	2,507,053 71	2,233,496 34	1,419,955 60
" " "	1880	6,109,077 14	1,851,489 26	1,739,137 25
" " "	1881	5,577,236 73	2,220,421 39	2,200,486 25
" " "	1882	5,175,046 61	2,310,638 54	2,237,583 39
" " "	1883	11,707,619 02	2,636,551 70	2,541,205 41
" " "	1884	14,013,074 89	2,613,508 87	2,551,937 97
" " "	1885	11,224,244 54	2,749,710 53	2,624,243 07
" " "	1886	4,443,220 17	2,819,973 50	2,628,336 35
" " "	1887	1,846,887 18	3,152,650 40	2,840,747 88
" " "	1888	1,765,582 11	3,621,076 62	3,166,253 22
" " "	1889	2,709,857 37	3,513,063 67	3,167,542 67
" " "	1890	2,392,767 99	3,846,044 42	3,203,874 11
" " "	1891	1,184,317 34	3,949,263 73	3,181,888 56
" " "	1892	417,425 73	3,748,597 77	3,136,393 51
" " "	1893	712,917 44	3,288,629 62	3,262,505 62
" " "	1894	585,749 01	3,226,208 13	3,179,019 57
" " "	1895	376,814 83	3,197,846 17	3,129,450 37
" " "	1896	324,774 72	3,254,442 64	3,140,678 47
" " "	1897	204,624 31	3,195,959 58	3,060,074 38
" " "	1898	270,990 85	3,507,248 88	3,313,847 10
" " "	1899	1,112,348 47	3,696,612 31	3,940,570 11
Total	.....	*124,663,440 24	76,726,244 05	68,451,220 29

*Total amount paid on construction.....	$124,663,440 24
Less amount received from the City of St. John, N.B., as purchase of the Carleton Branch Railway.....	40,000 00
Total cost of construction.....	$124,623,440 24
Add expenditure Governor General's car "Victoria".....	1,290 31
	$124,624,730 55

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

RECAPITULATION—RAILWAYS AND CANALS.

EXPENDITURE.

Railways—Capital Account, *see* statement page 42		$ 124,327,857 65
Canals— " " 27		76,404,279 16
Total cost of Government Railways and Canals, Capital Account.		$ 200,732,136 81
Railway Subsidies, chargeable to Consolidated Fund as per Statement No. 3, page 45	$ 46,133,842 16	
Less subsidies already included in Railways Capital Account (statement page 42) to Canadian Pacific Railway	$ 25,000,000 00	
Western Counties Railway	500,000 00	
	25,500,000 00	
		20,633,842 16
* Total expenditure on Railways and Canals, Capital Account, and Railway Subsidies		$ 221,365,978 97

REVENUE.

Canals, revenue received from July 1, 1867, to June 30, 1899. (For details *see* page 28)	$ 12,079,274 46
Railways, revenue received from July 1, 1867, to June 30, 1899. (For details *see* page 43)	63,451,220 39
Total revenue received to July 1, 1898	$ 80,530,494 75

Memo of cost of operating and maintaining Railways and Canals to June 30, 1899 :—		
Canals chargeable to Income	$	2,618,104 42
Less prior to Confederation		98,378 46
	$	2,519,725 96
From Confederation (July 1, 1867) to June 30, 1899 :—		
Staff		7,326,174 32
Repairs		5,687,964 10
Total Canals, *see* statement page 28	$	15,533,864 38
Railways, Working expenses, *see* page 43		76,726,244 05
Total	$	92,260,108 43

* This amount does not include the annual subsidy of $186,600 payable half-yearly for twenty years, dating from July 1, 1889, to the Atlantic and North-west Railway Company; nor the annual payment of $119.700 to the Provincial Government of Quebec, being interest at the rate of 5 per cent on the sum of $2,394,000 granted by 47 Vic., ch. 8 (1884), for the line between Ottawa and Quebec, which sum has now been transferred to the public debt as a liability. (*See* Public Accounts, 1898-99, p. x.). These items are dealt with by the Finance Department.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November, 1, 1899.

No. 3.

STATEMENT showing Subsidies voted for Railways as to which contracts have been entered into and payments made up to June 30, 1899.

Subsidies voted.			Railways.	Payments.														Total June 30, 1899.
Authority.		Amount.		1883-84.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.	1895-96.	1896-97.	1897-98.	1898-99.	
		$ cts.		$	$	$	$	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
46 Vic., chap. 25		156,800 00	International Railway, Quebec	144,000				8,960 00		3,840 00										156,800 00
53 do 2																				
45 do 14		384,000 00																		
46 do 25		80,000 00																		
48-49 do 59		96,000 00																		
49 do 10		186,295 00																		
50-1 do 24		28,800 00	Quebec and Lake St. John Railway, Quebec	32,000	37,027	186,745	202,219	232,013 00	19,911 00	38,440 00	70,350 00	26,222 73	76,471 77	81,600 00		3,744 00				1,006,743 50
51 do 3		96,000 00																		
52 do 3		64,000 00																		
53 do 2		30,000 00																		
54-5 do 8		5,250 00																		
57-8 do 4		44,800 00																		
46 do 25		89,600 00																		
49 do 10		70,000 00	Kingston, Napanee and Western Railway, formerly Napanee, Tamworth and Quebec Railway, Ontario	32,000	57,600					95,744 00	7,600 00		1,856 00	13,932 80						208,73 8
50-1 do 24		12,800 00																		
52 do 3		32,000 00																		
55-6 do 5		64,000 00																		
47 do 8		272,000 00																		
51 do 3		41,000 00	Pontiac Pacific Junction Railway, Quebec		49,090	41,000	60,580	24,158 00							18,750 00					193,578 00
53 do 2		24,000 00																		
46 do 25		115,200 00																		
47 do 8		76,800 00	Caraquet Railway, N.B		32,000	76,800	61,200	40,050 00	13,950 00											224,000 00
50-1 do 24		32,000 00																		
47 do 8		32,000 00																		
49 do 10		57,600 00																		
52 do 3		22,400 00	Great Northern Railway, Quebec		25,088					20,000 00	9,500 00	24,100 00			32,000 00	32,000 00			32,000 00	174,688 00
53 do 2		48,000 00																		
56 do 2		48,000 00																		
57-8 do 4		96,000 00																		
47 do 8		48,000 00	Kingston and Pembroke Railway, Ontario		48,000															48,000 00
45 do 14		660,000 00	Northern and Pacific Junction Railway, Ontario		154,440	1,051,590	78,370			35,000 00	600 00									1,320,000 00
46 do 26		660,000 00																		
53 do 2																				
47 do 8		128,000 00																		
48-9 do 59		19,200 00																		
49 do 10		32,000 00	Canada Eastern Railway, formerly Northern and Western Railway, N.B., including also Chatham Branch Railway			128,000	18,200	159,400 00	6,300 00	100 00		24,439 84			30,400 00					366,839 84
48-9 do 59		24,439 84																		
51 do 3		140,800 00																		
57-8 do 4		35,200 00																		
47 do 8		60,342 00	Quebec Central Railway, Quebec			60,342										288,000 00				348,342 00
51 do 3																				
53 do 2		288,000 00																		
48-9 do 59		72,000 00	Montreal and Sorel Railway, Quebec			64,972	4,950			6,719 50	17,116 07									93,757 57
53 do 2		40,000 00																		
48-9 do 59		30,000 00	Montreal and Champlain Junction Railway, Quebec			30,000		16,400 00	36,700 00	5,400 00			15,100 00							103,600 00
50-1 do 24		64,000 00																		
51 do 3		9,600 00																		
46 do 25		38,400 00	Elgin, Petitcodiac and Havelock Railway, N.B.			38,400						44,252 82								82,652 82
51 do 3		44,252 82																		
47 do 8		22,400 00	St. Louis and Richibucto Railway, N.B			22,400														22,400 00
48-9 do 59		96,000 00	Canada Atlantic Railway, Ontario			48,480	44,384		9,491 20	149,812 00	30,188 00									282,355 20
49 do 10		38,400 00																		
50-1 do 24		180,000 00																		
47 do 6		750,000 00	Esquimalt and Nanaimo Railway, B.C			422,520	327,480													750,000 00
47 do 8		96,000 00	Erie and Huron Railway, Ontario				96,000													96,000 00
46 do 25		320,000 00	Baie des Chaleurs Railway, Quebec				250,000	50,300 00	75,200 00	148,675 00				95,825 00						620,000 00
47 do 8		300,000 00																		
52 do 3																				
48-9 do 59		118,400 00	New Brunswick and Prince Edward Railway, N.B				97,440	16,000 00												113,440 00
50-1 do 24		217,600 00	St. Lawrence, Lower Laurentian and Saguenay Railway, Quebec, now Laurentian Railway				64,430	28,383 00			32,003 00	92,784 00								217,600 00
49 do 10		11,200 00	L'Assomption Railway, Quebec				11,200													11,200 00
49 do 10		32,000 00																		
50-1 do 24		96,000 00	Great Eastern Railway, Quebec				19,200				16,300 00	4,845 00								40,345 00
56 do 2		64,000 00																		
53 do 2		37,500 00																		
47 do 8		160,000 00	Irondale, Bancroft and Ottawa Railway, Ontario				15,000						17,000 00	32,000 00	32,000 00		48,000 00			144,000 00
52 do 3																				
49 do 10		96,000 00	Buctouche and Moncton Railway, N.B				40,480	20,573 57		4,366 00	1,600 43			34,580 00						101,600 90
50-1 do 24		6,400 00																		
47 do 8		51,200 00	Albert Southern Railway, N.B				1,000	18,428 57	1,387 06		10,684 37	18,960 00								50,460 00
52 do 3																				
50-1 do 24		65,200 00	Lake Temiscamingue Colonization Railway, Quebec				14,400	3,000 00	9,000 00	26,360 00					233,198 95	17,900 75	6,476 25			310,335 95
57-8 do 4		274,940 00																		
49 do 10		38,400 00	Joggins Railway, N.S					26,138 78		9,761 22	1,600 00									37,500 00
50-1 do 24		4,000 00																		
45 do 14		240,000 00	Témiscouata Railway, N.B., and Quebec					249,684 00	163,216 00	74,300 00	82,770 00	54,830 00	21,150 00							645,950 00
48-9 do 58		258,000 00																		
51 do 3		100,000 00																		
53 do 2		51,200 00																		
48-9 do 59		44,800 00	Leamington and St. Clair Railway, Ontario					32,000 00	19,200 00											51,200 00
50-1 do 24		6,400 00																		
49 do 10		16,000 00	Toronto, Grey and Bruce Railway, Ontario					14,656 00												14,656 00
50-1 do 24		22,400 00	Dominion Lime Co., Quebec					11,840 00	3,520 00											15,360 00
49 do 10		256,000 00	West Ontario Pacific Railway and Ontario and Quebec Railway					60,000 00	800 00	189,200 00	6,000 00									256,000 00
53 do 2																				
50-1 do 24		96,000 00	Drummond County Railway, Quebec					15,057 00	13,815 00	12,428 00	136,000 00	5,105 00	13,435 00		92,096 00				136,000 00	423,936 00
52 do 3		14,400 00																		
53 do 2		76,800 00																		
57-8 do 4		96,000 00																		
48-9 do 59		128,000 00	Brockville, Westport and Sault Ste. Marie Railway, Ontario						45,000 00		47,400 00	12,800 00								105,200 00
53 do 2																				
54-5 do 8		64,000 00																		
57-8 do 4																				
49 do 10		32,000 00	Montreal and Lake Maskinongé Railway, Quebec						19,700 00	20,080 00	1,500 00									41,280 00
53 do 2		10,200 00																		
50-1 do 24		54,400 00	South Norfolk Railway, Ontario						54,400 00											54,400 00
50-1 do 24		51,200 00	Guelph Junction Railway, Ontario						46,000 00											46,000 00
48-9 do 59		22,400 00	Belleville and North Hastings Railway, Ontario						21,888 00											21,888 00
49 do 10																				
49 do 10		108,800 00	Hereford Railway, Quebec						63,900 00	91,300 00										155,200 00
52 do 3		48,000 00																		
50-1 do 24		118,400 00	Lake Erie and Detroit River Railway, Ontario						106,500 00	11,900 00				220,331 00						338,731 00
55-6 do 5		224,000 00																		
50-1 do 24		62,400 00	Beauharnois Junction Railway, Quebec						54,650 00	4,250 00						3,500 00				62,400 00
56 do 2																				
50-1 do 24		138,400 00	St. Catharines and Niagara Central Railway, Ontario						26,640 00		11,760 00									38,400 00
55-6 do 5		108,000 00																		
57-8 do 4		108,800 00																		
52 do 3		30,000 00	Fredericton and St. Mary's Railway Bridge Co., N.B						30,000 00											30,000 00
50-1 do 24		9,600 00	Harvey Branch Railway Co., N.B						5,553 57											5,553 57
55-6 do 5		240,000 00	Nova Scotia Central Railway Co., N.S							219,100 00	3,300 00	8,300 00							4,500 00	235,200 00
61 do 1																				
50-1 do 24		44,800 00	Cumberland Railway and Coal Co., N.S							29,400 00	10,450 00									39,850 00
52 do 3		19,200 00	Pontiac and Renfrew Railway Co., Ontario							9,800 00	3,800 00									13,600 00
52 do 3		54,400 00	Thousand Islands Railway Co., Ontario							10,400 00				14,000 00						24,400 00
52 do 3		96,000 00	Quebec, Montmorency and Charlevoix Railway Co., Quebec							65,600 00					30,400 00					96,000 00
56 do 3																				
52 do 3		375,000 00	St. Clair Frontier Tunnel Co., Ontario							173,000 00	143,400 00	58,600 00								375,000 00
50-1 do 24		57,600 00	Brantford, Waterloo and Lake Erie Railway, Ontario							36,620 00	16,190 00					4,790 00				57,600 00
57-8 do 4																				
51 do 3		287,200 00	Port Arthur, Duluth and Western Railway, Ontario								87,000 00	70,075 00	114,125 00							271,200 00
53 do 2																				
50-1 do 24		192,000 00	Montreal and Ottawa Railway, Ontario								49,960 00			23,640 00			32,000 00	40,000 00	46,400 00	192,000 00
53 do 2																				
54-5 do 8																				
57-8 do 4																				
50-1 do 24		44,800 00	Cornwallis Valley Railway, N.S								42,670 00	2,130 00								44,800 00
52 do 3																				
52 do 3		320,000 00	Ottawa and Gatineau Railway, Quebec								87,582 00	38,790 00	104,380 00	53,376 00						284,128 00
57 8 do 6		64,000 00																		
47 do 8																				
51 do 3																				
52 do 3		83,612 54	Central Railway, N.B								75,639 00	88,612 54							66,761 00	226,012 54
53 do 2		142,400 00																		
57 8 do 4		48,000 00																		
61 do 1																				
62-3 do 1																				
53 do 2		361,270 00	Montreal and Western Railway, Quebec								76,143 00	82,253 00	133,388 00	119,486 00						361,270 00
52 do 3		128,000 00	Parry Sound Colonization Railway									30,400 00	28,820 00		68,780 00	24,800 00				152,800 00
57-8 do 4		64,000 00	Shuswap and Okanagan Railway, B.C									162,260 00		640 00	300 00					163,200 00
52 do 3		163,200 00																		
54-5 do 8		89,600 00																		
53 do 2		35,200 00	Tobique Valley Railway, N.B									73,000 00	41,674 46	19,341 54						134,016 00
55 6 do 5		9,600 00																		
53 do 2		112,000 00	Columbia and Kootenay Railway, B.C									88,800 00								88,800 00
53 do 2		35,200 00	Waterloo Junction Railway, Ontario									32,800 00								32,800 00
53 do 2		99,200 00	Orford Mountain Railway, Quebec									32,000 00		52,800 00						84,800 00
53 do 2		57,600 00	St. Lawrence and Adirondack Railway, Quebec									40,256 00	24,448 00	297 60				84,480 00		149,481 60
55-6 do 5		25,024 00																		
55 6 do 5		*40,000 00	New Glasgow Iron, Coal and Railway Company, N.S										32,945 84	5,454 16		1,440 00				39,840 00
56 do 2		102,400 00	United Counties Railway, Quebec											88,973 00	42,728 15	52,926 85	2,700 00	1,488 00		188,816 00
57 8 do 4		102,400 00																		
55-6 do 5		21,600 00	Philipsburg Junction Railway Quarry Company, Quebec											18,688 00	2,912 00					21,600 00
55-6 do 5		*430,400 00	Ottawa, Arnprior and Parry Sound Railway, Ontario											101,120 00	249,280 00	80,000 00		327,232 00	22,080 00	779,712 00
56 do 2		67,200 00	Montfort Colonization Railway, Quebec											32,000 00	35,200 00			35,840 00	64,400 00	167,440 00
57-8 do 4		38,400 00																		
55-6 do 5		48,000 00	Lotbinière and Mégantic Railway, Quebec											35,200 00	38,400 00		22,400 00			96,000 00
57-8 do 4		48,000 00																		
56 do 2		48,000 00	Grand Trunk, Georgian Bay and Lake Erie Railway, Ontario												39,744 00					39,744 00
55-6 do 5		80,000 00	Canadian Pacific Railway, Revelstoke to Arrow Lake, B.C												28,000 00		52,000 00			80,000 00
57-8 do 4		121,600 00	Nakusp and Slocan Railway, B.C												117,760 00					117,760 00
55-7 do 5		89,600 00	Dominion Coal Company, N.S												32,000 00	55,808 00				87,808 00
56 do 2		22,400 00	Oshawa Railway and Navigation Company, Ontario													22,400 00					22,400 00
57-8 do 4		51,200 00	Tilsonburg, Lake Erie and Pacific Railway, Ontario													51,200 00			10,912 00		62,112 00
56 do 2		*11,200 00	St. Stephen's and Milltown Railway, N.B													9,635 89		5,212 11			14,848 00
57-8 do 4		*38,400 00	Gulf Shore Railway Company, N.B														28,635 05	25,064 15			53,699 20
57-8 do 4		9,000 00	Cap de la Madeleine Railway, Quebec														7,424 00				7,424 00
56 do 2		32,000 00	Ontario, Belmont and Northern Railway Company, Ontario														30,720 00				30,720 00
		*	Coast Line of Nova Scotia															90,400 00			90,400 00
		*	Ottawa and New York Railway Company, Ontario															33,600 00	138,784 00		172,384 00
60-61 do 5		3,630,000 00	Crow's Nest Pass Railway Co., B.C															453,750 00	2,322,500 00		2,776,500 00
60 61 do 4		300,000 00	Grand Trunk Railway Co., "Victoria Jubilee Bridge," Quebec															131,268 52	68,331 05		119,599 57
		*	Restigouche and Western Railway Co., N.B																32,000 00		32,000 00
		*	East Richelieu Railway Co., Quebec																69,952 00		69,952 00
				208,000	403,245	2,171,249	1,406,533	1,027,041 92	846,721 83	1,491,595 72	1,079,105 87	1,061,615 93	624,794 07	1,043,285 10	1,123,949 10	648,145 49	230,355 30	1,228,334 78	3,014,620 05	17,608,592 16
37 do 14		1,525,250 00	Canada Central Railway																	1,525,250 00
46 do 2																				
44 do 1		25,000,000 00	Canadian Pacific, main line																	25,000,000 00
47 do 8		1,500,000 00	Canadian Pacific, extension																	1,500,000 00
48-9 do 58																				
52 do 8		500,000 00	Western Counties Railway																	500,000 00
																				46,133,842 16

This return does not include the Atlantic and North-western Railway.

* 60-61 Victoria, Cap. 4, *authorizes $3,200 per mile subsidy if the cost does not average more than $15,000 per mile, if over that amount a further sum of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of $15,000 per mile, such subsidy not exceeding in the whole the sum of* $6,400 per mile.

LEONARD SHANNON,
Accountant.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 1, 1899.

PART III

RAILWAY SUBSIDIES

No. 1.

RAILWAY SUBSIDIES.

TABLE of per mile Cash Subsidies paid in aid of Railway Construction, showing amount of subsidy granted for same Railways.

Number.	Name of Railway.	On Following Named Railways. No. of miles built up to June 30, 1899.	No. of miles paid and provided for.	Subsidy paid and available at June 30, 1899.	Subsidy paid to June 30, 1899.	Subsidy paid to Nov. 1, 1899.
				$ cts.	$ cts.	$ cts.
1	Albert Southern	16	16	50,460 00	50,460 00	50,460 00
2	Baie des Chaleurs	70	70	620,000 00	620,000 00	620,000 00
3	Beauharnois Junction	19·50	19·50	62,400 00	62,400 00	62,400 00
4	Belleville and North Hastings	6·84	6·84	21,888 00	21,888 00	21,888 00
5	Brantford, Waterloo and Lake Erie	18	18	57,600 00	57,600 00	57,600 00
6	Brockville, Westport and Sault Ste. Marie	44·50	44·50	105,200 00	105,200 00	105,200 00
7	Buctouche and Moncton	31·75	31·75	101,600 00	101,600 00	101,600 00
8	Canada Atlantic	54·05	54·05	282,355 20	282,355 20	282,355 20
9	Canada Central	120	120	1,525,250 00	1,525,250 00	1,525,250 00
10	Canada Eastern	107	107	342,400 00	342,400 00	342,400 00
11	Canadian Pacific	1,905	1,905	25,000,000 00	25,000,000 00	25,000,000 00
12	" (extension)*	476·55	476·55	5,210,000 00	4,356,250 00	4,356,250 00
13	Caraquet	67	67	224,000 00	224,000 00	224,000 00
14	Central (of New Brunswick)	44·50	59·50	185,100 00	142,400 00	142,400 00
15	Cornwallis Valley	14	14	44,800 00	44,800 00	44,800 00
16	Columbia and Kootenay	27·75	27·75	88,800 00	88,800 00	88,800 00
17	Cumberland	14	14	39,850 00	39,850 00	39,850 00
18	Dominion Lime Co	4·80	4·80	15,360 00	15,360 00	15,360 00
19	Dominion Coal Co	27·44	27·44	87,808 00	87,808 00	87,808 00
20	†Drummond Counties	133·03	135 60	433,920 00	423,936 00	423,936 00
21	Elgin, Petitcodiac and Havelock	12	12	38,400 00	38,400 00	38,400 00
22	Erie and Huron	30	30	96,000 00	96,000 00	96,000 00
23	Esquimalt and Nanaimo	71	71	750,000 00	750,000 00	750,000 00
24	Fredericton and St. Mary's Bridge Co.	1·33	1·33	30,000 00	30,000 00	30,000 00
25	Grand Trunk, Georgian Bay and Lake Erie	12·42	12·42	39,744 00	39,744 00	39,744 00
26	Great Eastern	12·50	12·50	40,345 00	40,345 00	40,345 00
27	†Great Northern	64·59	143·59	517,588 00	174,688 00	174,688 00
28	Guelph Junction	15·25	15·25	46,000 00	46,000 00	46,000 00
29	Harvey Branch	3	3	5,553 57	5,553 57	5,553 57
30	Hereford	48·50	48·50	155,200 00	155,200 00	155,200 00
31	Irondale, Bancroft and Ottawa	45	50	160,000 00	144,000 00	144,000 00
32	International	49	49	156,800 00	156,800 00	156,800 00
33	Joggins	12	12	37,500 00	37,500 00	37,500 00
34	Kingston and Pembroke	15	15	48,000 00	48,000 00	48,000 00
35	Kingston, Napanee and Western	61·35	61·35	208,732 80	208,732 80	208,732 80
36	L'Assomption	3·50	3·50	11,200 00	11,200 00	11,200 00
37	Lake Erie and Detroit River	84·05	84·05	338,731 00	338,731 00	338,731 00
38	Lake Temiscamingue Colonization	45·84	45·84	310,335 95	310,335 95	310,335 95
39	Leamington and Lake St. Clair	16	16	51,200 00	51,200 00	51,200 00
40	Lotbinière and Mégantic	30	30	96,000 00	96,000 00	96,000 00
41	Montreal and Sorel (now South Shore Ry)	44·67	44·67	109,922 00	93,757 57	109,922 00
42	Montreal and Lake Champlain	83	83	103,600 00	103,600 00	103,600 00
43	Montreal and Western	70	70	361,270 00	361,270 00	361,270 00
44	Montreal and Lake Maskinongé	12·90	12·90	41,280 00	41,280 00	41,280 00
45	Montreal and Ottawa	60	60	192,000 00	192,000 00	192,000 00
46	Montfort Colonization	32·20	33	171,600 00	167,400 00	167,400 00
47	Nakusp and Slocan	36·90	38	121,600 00	117,760 00	117,760 00
48	New Brunswick and P.E.I.	35·45	35·45	113,440 00	113,440 00	113,440 00
	Carried forward	4,209·16	4,351·08	38,850,833 52	37,561,335 09	37,577,499 52

TABLE of per mile Cash Subsidies granted and paid in aid of Railway Construction, &c.—*Concluded.*

Number.	Name of Railway.	ON FOLLOWING NAMED RAILWAYS. No. of miles built up to June 30, 1899.	No. of miles paid and provided for.	Subsidy paid and available at June 30, 1899.	Subsidy paid to June 30, 1899.	Subsidy paid to Nov. 1, 1899.
				$ cts.	$ cts.	$ cts.
	Brought forward.....	4,209·16	4,351·08	38,850,833 52	37,561,335 09	37,577,499 52
49	New Glasgow Iron and Coal Co.....	12·45	12·45	39,840 00	39,840 00	39,840 00
50	Northern Pacific Junction.....	110	110	1,320,000 00	1,320,000 00	1,320,000 00
51	Nova Scotia Central	73·50	73·50	235,200 00	235,200 00	235,200 00
52	Ontario, Belmont and Northern.....	9·60	10	32,000 00	30,720 00	30,720 00
53	Ontario and Quebec.....	61·25	61·25	196,000 00	196,000 00	196,000 00
54	Oxford Mountain.....	26·50	26·50	84,800 00	84,800 00	84,800 00
55	Oshawa Railway and Navn. Co.....	7	7	22,400 00	22,400 00	22,400 00
56	Ottawa and Gatineau Valley	54	86	396,800 00	284,128 00	284,128 00
57	†Ottawa, Arnprior and Parry Sound.	159·58	163	609,000 00	779,712 00	779,712 00
58	Parry Sound Colonization.....	47·75	47·75	152,800 00	152,800 00	152,800 00
59	Pontiac Pacific Junction.....	70	70	307,850 00	193,578 00	193,578 00
60	†Phillipsburg Junction	6·75	7·41	23,712 00	21,600 00	21,600 00
61	Pontiac and Renfrew.....	4·25	4·25	13,600 00	13,600 00	13,600 00
62	Port Arthur, Duluth and Renfrew...	84·75	84·75	271,200 00	271,200 00	271,200 00
63	Quebec Central.....	74·86	74·86	348,342 00	348,342 00	348,342 00
64	Quebec and Lake St. John.....	245·85	245·85	1,006,743 50	1,006,743 50	1,006,743 50
65	Quebec, Montmorency and Charlevoix	30	30	96,000 00	96,000 00	96,000 00
66	Shuswap and Okanagan.....	51	51	163,200 00	163,200 00	163,200 00
67	South Norfolk.....	17	17	54,400 00	54,400 00	54,400 00
68	St. Catharines and Niagara Central..	12	12	38,400 00	38,400 00	38,400 00
69	St. Clair Frontier Tunnel.....	2·23	2·23	375,000 00	375,000 00	375,000 00
70	St. Lawrence and Lower Laurentian.	38·85	38·85	217,600 00	217,600 00	217,600 00
71	St. Louis, Richibucto and Buctouche.	7	7	22,400 00	22,400 00	22,400 00
72	†St. Lawrence and Adirondack ...	33·51	33·51	108,201 60	149,481 60	149,481 60
73	Témiscouata.....	112·95	112·95	645,950 00	645,950 00	645,950 00
74	Thousand Island.....	4·33	4·33	24,400 00	24,400 00	24,400 00
75	†Tilsonburg, Lake Erie and Pacific..	19·41	19·50	62,400 00	62,112 00	62,112 00
76	Tobique Valley.....	27·88	27·88	134,016 00	134,016 00	134,016 00
77	Toronto Gray and Bruce.....	4·58	4·58	14,656 00	14,656 00	14,656 00
78	†United Counties	59	65	208,000 00	188,816 00	188,816 00
79	Waterloo Junction.....	10·25	10·25	32,800 00	32,800 00	32,800 00
80	Western Counties.....	20	20	500,000 00	500,000 00	500,000 00
81	West Ontario Pacific.....	18·75	18·75	60,000 00	60,000 00	60,000 00
82	Cap de la Magdeleine.....	2·32	2·32	7,424 00	7,424 00	7,424 00
83	†Gulf Shore.....	16·78	17·50	56,000 00	53,699 20	53,699 20
84	†St. Stephen and Milltown.....	4·64	4·64	14,848 00	14,848 00	14,848 00
85	†Coast (of Nova Scotia).....	28·25	61	195,200 00	90,400 00	90,400 00
86	Grand Trunk.....	Bridge	Bridge	300,000 00	199,599 57	271,628 25
87	†Ottawa and New York	53·87	53·87	172,384 00	172,384 00	172,384 00
88	†Restigouche and Western.....	10	40	128,000 00	32,000 00	32,000 00
89	†East Richelieu Valley.....	21·86	24	76,800 00	69,952 00	69,952 00
	Total.....	5,863·71	6,113·81	47,619,800 62	45,981,536 96	46,069,730 07

‡ Add subsidy of used rails as per statement, part iii, page 6, $152,305.20, which will then agree with statement of subsidies in part ii, page 44, viz., $46,133,842.16.

* Includes the mileage of the North Shore Railway, 160 miles.

† By 60-61 Vic., cap. 4, a subsidy was authorized on certain mileage of this railway, specified in the Act of Parliament, of $3,200 per mile and a further subsidy beyond the sum of $3,200 per mile, of 50 per cent on so much of the *average cost* of the said specified mileage subsidized as in excess of $15,000 per mile, such subsidy not exceeding in the whole the sum of $6,400 per mile.

The amount of certain of the subsidies authorized by Parliament, given in this statement, includes the determined portion of the subsidies under 60-61 Vic., cap. 4, viz.: The amount produced by the $3,200 per mile, but the other portion is now an undetermined amount, and therefore cannot be shown here.

SESSIONAL PAPER No. 10

The following is the mileage of certain of the Railways shown in this statement and subsidized under 60-61 Vic., cap. 4, and 62-63 Vic., cap. 7 :—

	Miles.
Ottawa, Arnprior and Parry Sound	56
Phillipsburg Junction	0·66
St. Lawrence and Adirondack	13·50
Tilsonburg, Lake Erie and Pacific	3·50
United Counties	1
Great Northern	44
Gulf Shore	5·50
St. Stephen's and Milltown	1·14
Drummond County	42·50
Coast (of Nova Scotia)	61
Ottawa and New York	53·87
Restigouche and Western	40
East Richelieu Valley	24
Ottawa and Gatineau	86

STATEMENT showing Railways receiving Cash Subsidies of fixed amounts, payable Annually or Semi-annually for fixed period of years.

No.	Name of Railway.	Miles Subsidized.	Amount of Instalment.	Amount paid up to June 30, 1899.
				$
1	International (Atlantic and North-west) Railway Co.	252	$93,300 per ½ year for 20 years	1,866,000
2	Kingston, Smith's Falls and Ottawa Railway Co.	56	$3,136 " 21 "	Nil
	Total	308		1,866,000

STATEMENT showing Railways aided by the Grant of Loans.

No.	Name of Railway.	Amount of Loans authorized.	Amount loaned.
		$	$ cts.
1	Albert Railway Co	15,000	14,725 56
2	Fredericton and St. Mary's Bridge Co.	300,000	300,000 00
3	St. John Bridge and Railway Extension Co.	500,000	433,900 00
	Total	815,000	748,625 56

STATEMENT showing Railways subsidized by the Grant of used Iron Rails valued at the amount set forth.

No.	Name of Railway.	Tons of used Rails.	Subsidy on value of Rails.	Subsidy in used Rail paid.
			$ cts.	$ cts.
1	Central Railway Co. of New Brunswick	4,052	83,612 54	83,612 54
2	Elgin, Petitcodiac and Havelock Ry. Co	2,201	44,252 82	44,252 82
3	Chatham Branch Railway Co	958	24,439 84	24,439 84
	Total	7,211	152,305 20	152,305 20

STATEMENT showing Railways aided by the Loan of used Iron Rails valued at the amount set forth.

No.	Name of Railway.	Tons of used Rails.	Value of used Rails loaned.	Remarks.
			$ cts.	
1	Kent Northern Railway Co	2,549	58,334 27	By 51 Victoria, chapter 3, these used rails will be granted as a subsidy (the section of road to be first laid with new steel rails weighing not less than 50 lbs. per lin. yard and after an O.C. had been passed authorizing transfer).
2	Halifax Cotton Co	233	4,235 00	
3	Steel Company of Canada	597	11,964 66	
4	Albert Railway Company	726	14,665 45	
	Total	4,105	89,299 38	

SESSIONAL PAPER No. 10

STATEMENT showing Railways sub-idized by Grants of Lands.

No.	Act authorizing Subsidy.	Name of Railway Company.	Mileage Subsidized.	Acres granted per Mile.	Total Area granted.
1	48-49 Vic., c. 60 50-51 Vic., c. 22 52 Vic., c. 2	Alberta Railway and Coal Co.—Main line, Dunmore to Lethbridge	109·50	6,400	700,800
2	52 Vic., c. 4 52 Vic., c. 3	Alberta Railway and Coal Co.--From Lethbridge to the International Boundary	64·62	6,400	413,568
3	53 Vic., c. 4	Calgary and Edmonton Railway	340·00	6,400	2,176,000
4	44 Vic., c. 1	Canadian Pacific Railway—Main line			18,206,986
5	53 Vic., c. 4	C. P. R.—Deloraine and Napinka Branch	18·01	6,400	115,264
6	53 Vic., c. 4	C. P. R.—Glenboro' and Souris Branch	45·24	6,400	289,536
7	53 Vic., c. 4 54 Vic., c. 10	C. P. R.—Kenmay and Estevan Branch	156·86	6,400	1,003,904
8	57-58 Vic., c. 6	C. P. R.—Pipestone Branch	31·30	6,400	200,320
9	49 Vic., c. 11	Great North-west Central Railway	50·00	6,400	320,000
10	48-49 Vic., c. 60	Manitoba and North-western Railway—Main line	430·00	6,400	2,918,400
11	49 Vic., c. 11	Manitoba and North-western Railway—Branch from Biscarth	26·60	6,000	
12	53 Vic., c. 4	Manitoba and South-eastern Railway Co.	98·00	6,400	627,200
13	54-55 Vic., c. 10 48-49 Vic., c. 10	Manitoba South-western Colonization Co.	218·25	6,400	1,396,800
14	48-49 Vic., c. 60 50-51 Vic., c. 23	Qu'Appelle, Long Lake and Saskatchewan Railway and Steamboat Co	253·96	6,400	1,625,344
15	52 Vic., c. 4 54 Vic., c. 9	Red Deer Valley Railway and Coal Co	55·00	6,400	352,000
16	57-58 Vic., c. 6	Saskatchewan and Western Railway Co	15·47	6,400	99,008
17	62-63 Vic., c. 57	Canadian Northern Railway	1,025·00	Div. A., 6,400 do B., 12,800 do C., 6,400	9,280,000
			2,937·21		39,725,130

NOTE.—By 62-63 Victoria (Session of 1899), chapter 57, the Lake Manitoba Railway and Colonization Company and the Winnipeg Great Northern Railway were amalgamated under the title of the Canadian Northern Railway, all the rights of the two companies being vested in the new company.

No. 2

LIST OF RAILWAY SUBSIDY ACTS PASSED IN EACH YEAR.

NOTE.—The marginal number opposite each subsidy has reference to the alphabetical list in the Deputy Minister's report showing the action taken in case where a contract for work has been made with any company.

By the Acts of Parliament below specified, authority has been placed in the hands of the Governor in Council to grant, upon certain conditions, aid towards the construction of various lines of railway throughout the Dominion, as follows, namely:—

By the Acts of 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
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
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
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

"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

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 Métapediac, on the Intercolonial Railway, to Paspebiac, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 320,000

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

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

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 256,000

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

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

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

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.

15. For a railway from the International 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 of 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 to 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 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

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.

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.

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

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 Kazubazua to Le Désert, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 160,000

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

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 Désert, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole $160,000

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

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

32. To the Kingston and Pembroke Railway Company, for a line of railway from Mississippi 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

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. Andrew's to Lachute, in the county of Argenteuil, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 22,400

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

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

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 Harbour, in the province of New Brunswick, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 76,800

42. For a branch of the Intercolonial Railway, from Metapediac eastward towards Paspebiac, 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

"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 Island 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**

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**

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* The extension of the Canadian Pacific Railway from its terminus at St. Martin's Junction, or some other point on the said railway to the harbour of Quebec.

51. To the Montreal and Champlain Junction Railway Company, for a line of railway from Brosseau's to Dundee, a subsidy not exceeding $500 per mile, nor exceeding in the whole $30,000

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 Rathbun, 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

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

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

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

58. To the Gatineau Railway Company, for a line of railway from Hull station towards Le Désert, a distance of 62 miles, in lieu of the subsidies granted by 46 Vic., chap. 25, and 47 Vic., chap. 8, a subsidy of.... 320,000

59. For a line of railway from the Grand Piles, on the River St. Maurice, to its junction with 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 Grand Piles, on the River St. Maurice, to Lake Edward, a subsidy of..... 217,600

60. To the Canada Atlantic Railway Company, for a line of railway from Valleyfield to a point one and a half miles west of Johnston's, a subsidy not exceeding $1,600 per mile, and from one and a half miles west of Johnston's to Lacolle; also from the present terminus at Ottawa, to the Chaudiere Falls, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

61. For a line of railway from Indiantown via the Miramichi Valley, to its junction with the Northern and Western Railway at or near Boiestown, 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, 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 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 connected 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 Edmundston, 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.

63. 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, 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 a line of railway for a period of twenty years, or a guarantee bond 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.

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 harbour of Quebec, in such a 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 Cartier 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.

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 obligation 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

66. For a railway from Ingersoll via 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

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

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 mile, nor exceeding in the whole..... 118,400

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 Sundridge, 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

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 Désert, in the province of Quebec, a subsidy of $5,161 per mile, in lieu of the subsidies granted by 46 Vic., chap. 25, and 47 Vic., chap. 8, not exceeding in the whole..... 361,270

79. For a railway from St. Andrew's 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 Vic., chap. 8, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 22,400

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

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

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 wharfs and landing stages on the line of the railway from Long Sault to the foot of Lake Temiscamingue, a subsidy of..... 6,000

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 the 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

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

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

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 have been 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 be so 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 to 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 section 2 of this Act authority was given for the grant of a charter by the Governor in Council for the purpose of constructing a railway from Long Sault to the foot of Lake Temiscamingue.

By the Act 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

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 49 Victoria, chapter 10, to the wharfs, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 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 49 Victoria, chapter 10, to Moncton, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 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 Hagarsville 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, 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 and forty-ninth years of Her Majesty's reign, chapter 59, to Tweed, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 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, 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. Francis 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 47 Victoria, chapter 8, to the town of Perth, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 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 49 Victoria, chapter 10, a subsidy not exceeding in the whole.. 32,000

117. To the St. Lawrence and Lower Laurentian and Saguenay Railway Company, for the section of this 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 held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter 59, 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..... 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 wharfs 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 59, 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 49 Victoria, chapter 10), a subsidy of..... 12,400

120. To the Carillon and Grenville Railway Company, for twelve miles of their railway from St. Eustache to Sault au Récollet, 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 Hébert 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..... 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 59, to the village of Comber, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. 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..... $ 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..... 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.. 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 49 Victoria, chapter 10, for a railway from Perth Centre station, on the New Brunswick Railway, to a point near Plaister Rock Island, a subsidy of..... 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..... 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 49 Victoria, chapter 10, a subsidy not exceeding..... 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 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 Act contained."

By the Act 51 Vic., cap. 3, 1888 (*Assented to 22nd May, 1888*):—

134. To the Ottawa and Parry Sound Railway Company, for 22 miles of their railway from a point on the Canadian Pacific Railway to Eganville, in lieu of the subsidy granted by 49 Victoria, chapter 10, for a railway from a point on the Canadian Pacific Railway to Eganville, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 70,400 00

135. To the Nova Scotia Central Railway Company, for 46 miles of their railway, in the province of Nova Scotia, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 147,200 00

136. To the Montreal and Champlain Junction Railway Company, for 3 miles of their railway from the end of the present subsidized section, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 9,600 00

137. To the Massawippi Junction Railway Company, for their railway from a point on the Atlantic and North-west Railway, near the village of Magog, to Ayer's Flat station, on the Massawippi Valley Railway, in lieu of the subsidy granted by 50-51 Victoria, chapter 24, a subsidy of..... 32,000 00

138. To the Pontiac Pacific Junction Railway Company, for bridging the several channels of the Ottawa River at Culbute and west thereof, a subsidy of $31,500, to be paid out monthly as the work progresses, upon the certificate of the Chief Engineer of Government railways, in the proportion which the value of the work executed bears to the value of the whole work undertaken, and for three miles of their railway extending from a point three miles east of Pembroke to Pembroke, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole $9,600, provided that the entire work subsidized upon this railway shall be completed within four years from the passing of this Act, the subsidy granted by this Act not to exceed in the whole..... 41,100 00

139. To the Port Arthur, Duluth and Western Railway Company, for 84¾ miles of their railway from Port Arthur towards Gun Flint Lake, in lieu of the subsidies granted by 48-49 Victoria, chapter 59, and 49 Victoria, chapter 10, for the construction of a railway from Murillo Station to Crooked Lake, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 271,200 00

140. To the Quebec and Lake St. John Railway Company, for 30 miles of their railway from Lake St. John towards Chicoutimi, or from Chicoutimi towards Lake St. John, being a transfer made at the request of the Saguenay and Lake St. John Railway Company of the subsidy granted to them by 50-51 Victoria, chapter 24, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 96,000 00

141. To the Temiscouata Railway Company, for 20 miles of their branch railway from Edmundston towards the St. Francis River, in the province of Quebec, in lieu of the subsidy granted by 50-51 Victoria, chapter 24, a subsidy of..... $100,000 00

142. To the Quebec Central Railway Company, for the construction and completion of a line of railway from St. Francis Station to a point on the Atlantic and North-west Railway near Moose River, 90 miles, in lieu of the balance of the subsidy, unearned, granted by 47 Victoria, chapter 8, a subsidy not exceeding $21,191.54 per annum for twenty years, or a guarantee of a like sum for a like period as interest on the bonds of the company, such annual subsidy for twenty years representing a grant in cash of 288,000 00

143. To the Central Railway Company of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 4,052 tons of used iron rails and fastenings, loaned to the St. Martin's and Upham Railway Company, now forming part of the Central Railway, which rails and fastenings stand in the Public Accounts as an asset for..... 83,612 54

144. To the Elgin, Petitcodiac and Havelock Railway Company of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 2,201 tons of used iron rails and fastenings loaned to the Elgin Branch Railway, now forming part of the Elgin, Petitcodiac and Havelock Railway, which rails and fastenings stand in the Public Accounts as an asset for 44,252 82

145. To the Kent Northern Railway Company of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 2,549 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 58,334 27

146. To the Halifax Cotton Company of Nova Scotia, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 233 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 4,335 00

147. To the Steel Company of Canada, in Nova Scotia, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company of 597 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 11,964 66

148. To the Albert Railway Company of New Brunswick, a grant as a subsidy (the section of road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 726 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... 14,665 45

149. To the Chatham Branch Railway of New Brunswick, a grant as subsidy (the road to be first laid with new steel rails weighing not less than 56 pounds per lineal yard, and after an Order in Council has been passed authorizing their transfer to the company) of 958 tons of used iron rails and fastenings loaned to the company, which rails and fastenings stand in the Public Accounts as an asset for..... $24,439 84

" 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 also the said subsidies respectively, payable in cash, shall be payable out of the Consolidated Revenue Fund of Canada by instalments, on the completion to the satisfaction of the Minister of Railways and Canals of each section of the railway of not less than 10 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."

By the Act 52 Vic., chap. 3, 1889. *(Assented to 2nd May, 1889):—*

150. To the Ontario and Pacific Railway Company, for a line of railway from Cornwall to Ottawa, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $172,400 00

151. To the Ottawa and Gatineau Railway Company, for a line of railway from Hull station towards Le Désert, a distance of sixty-two miles, a subsidy not exceeding in the whole..... 320,000 00

152. 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 00

153. To the Parry Sound Colonization Railway Company, for forty miles of their railway, from the village of Parry Sound to the village of Sundridge, or some other point on the line of the Northern and Pacific Junction Railway, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 128,000 00

154. For a railway from St. Andrew's 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, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 22,400 00

155. For a railway from Truro, or a point between Truro and Stewiacke, to Newport or to Windsor, in the province of Nova Scotia, forty-nine miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 156,800 00

156. For a line of the Central Railway from the head of Grand Lake to the Intercolonial Railway, in the province of New Brunswick, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 128,000 00

157. To the Albert Southern Railway Company, the balance remaining unpaid of the subsidy granted by the Act 47th Victoria, chapter 8, not exceeding in the whole 31,771 43

158. To the Baie des Chaleurs Railway Company, the balance remaining unpaid of the subsidy mentioned in the Act 49th Victoria, chapter 17, not exceeding in the whole 244,500 00

159. 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 county of Hastings, the balance remaining unpaid of the subsidy granted by the Act 47th Victoria, chapter 8, not exceeding in the whole..... $145,000 00

160. To the Northern and Pacific Junction Railway Company, for a railway from Gravenhurst to Callander, the balance remaining unpaid of the subsidies granted by the Act 45th Victoria, chapter 14, and 46th Victoria, chapter 25, not exceeding in the whole.. 35,000 00

161. For a railway from some point on the Joggins Railway, near the Hébert River, to Young's Mills, in the province of Nova Scotia, a distance of five miles, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... 16,000 00

162. To the St. Clair Frontier Tunnel Company, for the construction of a tunnel under the St. Clair River, from a point at or near Sarnia, to a point at or near Port Huron, a subsidy not exceeding in the whole..... 375,000 00

163. To the Pontiac and Renfrew Railway Company, for six miles of their railway from the north bank of the Ottawa River, opposite Braeside, or from Bristol Iron Mines, to the Pontiac Pacific Junction Railway, near the Quyon River, in the province of Quebec, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... 19,200 00

164. To the Quebec, Montmorency and Charlevoix Railway Company, for thirty miles of their railway, from the east bank of the St. Charles River, to or near to Cap Tourmente, in the province of Quebec, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... 96,000 00

165. To the Fredericton and St. Mary's Bridge Company, for a bridge over the St. John River, at Fredericton, in the province of New Brunswick, a subsidy not exceeding in the whole..... 30,000 00

166. To the Napanee, Tamworth and Quebec Railway Company, for seven miles of their railway, from a point at or near Yarker to a point at or near Harrowsmith, and to a company for three miles of railway from a point at or near Harrowsmith to a point at or near Sydenham, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... 32,000 00

167. For a railway from a point near Sicamous, on the Canadian Pacific Railway, to a point on Lake Okanagan for fifty-one miles of such railway, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... 163,200 00

168. To the Cornwallis Valley Railway Company, for one mile of their railway, from the end of the line subsidized by the Act 50-51 Victoria, chapter 24, to Kingsport, in the province of Nova Scotia, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 3,200 00

169. To the Lake Témiscamingue Colonization and Railway Company, for fifteen miles of their railway, from Mattawa station on the Canadian Pacific Railway, towards the Long Sault, or from the Long Sault towards the said Mattawa station, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

170. To the Maskinongé and Nipissing Railway Company, for fifteen miles of their railway, from a point on the Canadian Pacific Railway at or near Maskinongé or Louiseville, towards the parish of Saint-Michel des Saints, on the River Mattawin, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

171. To the Kingston, Smith's Falls and Ottawa Railway Company, for twenty miles of their railway, from the city of Kingston towards Smith's Falls, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 64,000 00

172. To the South Ontario Pacific Railway Company, for forty-nine and one-half miles of their railway, from Woodstock to Hamilton, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 158,400 00

173. For a railway from St. Césaire to St. Paul d'Abbotsford, in the province of Quebec, five miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 16,000 00

174. To the Great Eastern Railway Company, for twenty miles of their railway, from the east end of the line subsidized by the Act 50-51 Victoria, chapter 24, at St. Grégoire, towards the Chaudière Junction station on the Intercolonial Railway, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000 00

175. To the Drummond County Railway Company, for four and one-half miles of their railway, from the end of the line subsidized by the Act 50-51 Victoria, chapter 24, to Ball's Wharf, on the St. Lawrence River, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 14,400 00

176. To the St. Catharines and Niagara Central Railway Company, for twenty miles of their railway, from the end of the line subsidized by the Act 50-51 Victoria, chapter 24, at St. Catharines, towards the city of Hamilton, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000 00

177. To the Quebec and Lake St. John Railway Company, for twenty miles of their railway, from the end of the section of thirty miles from Lake St. John towards Chicoutimi, subsidized by the Act 51 Victoria, chapter 3, towards Chicoutimi, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000 00

178. To the Grand Trunk, Georgian Bay and Lake Erie Railway Company, for fifteen miles of their railway, from the village of Tara or some point between Tara and Hepworth, to the town of Owen Sound, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

179. To the Hereford Railway Company, for fifteen miles of their railway, from Cookshire to a junction with the Quebec Central Railway at Dudswell, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

180. To the Massawippi Junction Railway Company, for fifteen miles of their railway, from Ayer's Flat to Coaticook, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

181. To the Brockville, Westport and Sault Ste. Marie Railway Company, for twenty miles of their railway, from a point at or near Newboro', towards Palmer's Rapids, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. 64,000 00

182. To the Thousand Islands Railway Company, for four miles of their railway, from a point near the St. Lawrence River, in Gananoque village, to Gananoque Junction of the Grand Trunk Railway, and for thirteen miles of their railway, from Gananoque Junction of the Grand Trunk Railway to a junction with the Brockville, Westport and Sault Ste. Marie Railway, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 54,400 00

183. For a railway from Cape Tourmente towards Murray Bay, twenty miles, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $64.000 00

184. To the Amherstburg, Lake Shore and Blenheim Railway Company, for twenty miles of their railway, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000 00

"So much of the subsidy of three thousand two hundred dollars per mile, which under the provisions of the Act forty-ninth Victoria, chapter seventeen, and of this Act, may be paid to the Baie des Chaleurs Railway Company in respect of the thirty miles of their railway, from the seventieth to the hundredth mile, eastward from Metapediac, shall be applicable to the section of the said railway, comprised between the fortieth and the seventieth mile thereof, eastward from Metapediac, instead of to the said first mentioned section of thirty miles, making six thousand four hundred dollars per mile applicable to the secondly mentioned section of thirty miles; but the foregoing provision shall be subject to the condition that the said company undertake to complete the thirty miles of their railway from the seventieth to the hundredth mile eastward from Metapediac within a reasonable time, not to exceed four years, to be fixed by Order in Council, and without any further subsidy from the Government of Canada, and that they deposit with the Minister of Railways and Canals, as security to the Crown that they will well and truly carry out their undertaking, their bonds to the amount of two hundred thousand dollars.

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose, shall be granted to such companies respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, 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 the completion of the work subsidized, except as respects the tunnel under the St. Clair River, in which case there 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, 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.

"And for the removal of doubts it is hereby declared and enacted that the provision in the Act passed in the fifty-first year of Her Majesty's reign, and chaptered three, relating to the Pontiac Pacific Junction Railway Company, extended and extends the several subsidies in aid of the said company for four years from the passing of the said Act, that is to say, from the twenty-second day of May, one thousand eight hundred and eighty-eight."

By the Special Act, 52 Vic., cap. 5, 1889 *(Assented to 2nd May, 1889)*:—

185. In order to enable the Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company to complete their railway from Regina to some point on the South Saskatchewan River at or near Saskatoon, and thence northward to Prince Albert, the Governor in Council may enter into a contract with such company for the transport of men, supplies, materials and mails,

for twenty years, and may pay for such services during the said term, eighty thousand dollars per annum in manner following, that is to say:—the sum of fifty thousand dollars to be paid annually on the construction of the railway to a point at or near Saskatoon, such payment to be computed from the date of the completion of the railway to such point; and the remaining thirty thousand dollars annually on the extension of the railway to Prince Albert, such payment to be computed from the date of such last mentioned completion: Provided that if the second portion of the said railway is not built and operated to Prince Albert within two years after the completion of the railway to the South Saskatchewan as aforesaid, the payment of fifty thousand dollars shall cease until the whole railway is finished to Prince Albert.

By the Act 53 Vic., cap. 2, 1890 *(Assented to 16th May, 1890)*:—

186. To the Montreal and Ottawa Railway Company, for thirty miles of their railway, from the western end of the thirty-six miles subsidized by the Act 50-51 Victoria, chapter 24, towards Ottawa, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... $ 96,000

187. To the Waterloo Junction Railway Company, for eleven miles of their railway, from Waterloo to Elmira, a subsidy not exceeding $3,200 per mile, and not exceeding in the whole..... 35,200

188. To the Northern and Pacific Junction Railway Company, for a railway from Gravenhurst to Callander, the balance remaining unpaid of the subsidies granted by the Acts 45 Victoria, chapter 14, and 46 Victoria, chapter 25, not exceeding in the whole... 600

189. For a railway from Woodstock via London to Chatham, in the province of Ontario, thirty miles in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, for a railway from Ingersoll via London to Chatham, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 256,000

190. To the St. Catharines and Niagara Railway Company, for fourteen miles of their railway, from the end of the twenty miles subsidized by the Act 52 Victoria, chapter 3, to Hamilton, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. 44,800

191. To a railway from Ottawa to Morrisburg, fifty-two miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 166,400

192. To the Erie and Huron Railway Company, for twenty-two miles of their railway from Petrolea via Oil Springs to Dresden, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. 70,400

193. To the Brockville, Westport and Sault Ste. Marie Railway Company, for a railway from Brockville to Westport, the balance remaining unpaid of the subsidy granted by the Act 48-49 Victoria, chapter 59, not exceeding in the whole..... 83,000

194. To the Manitoulin and North Shore Railway Company, for thirty miles of their railway from Little Current to the Algoma Branch of the Canadian Pacific Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

195. To the Port Arthur, Duluth and Western Railway Company, for five miles of their railway, being a branch of the main line of railway to the Kakabeka Falls, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 16,000

196. To the Lake Erie and Detroit River Railway Company, for fifty miles of their railway, on a line to be fixed by the Governor in Council, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 160,000

197. To the Lindsay, Bobcaygeon and Pontypool Railway Company, for sixteen miles of their railway, from Bobcaygeon to the Midland Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 51,200

198. To the Kingston, Smith's Falls and Ottawa Railway Company, for thirty-six miles of their Railway, from the north-east end of the twenty miles subsidized by the Act 52 Victoria, chapter 3, to Smith's Falls, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 115,200

199. To the Ottawa and Parry Sound Railway Company, for thirty miles of their railway, from Eganville to Barry's Bay, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

200. To the Belleville and Lake Nipissing Railway Company, for thirty miles of their railway, from Belleville to Tweed and thence to Bridgewater, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

201. To the Cobourg, Northumberland and Pacific Railway Company, for thirty miles of their railway from Cobourg to the Ontario and Quebec Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

202. To the St. Stephen and Milltown Railway Company, for three and a half miles of their railway, from the town of St. Stephen to the town of Milltown, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 11,200

203. To the Woodstock and Centreville Railway Company, for six miles of their railway, from the western end of the twenty miles subsidized by the Act 50-51 Vic., chap. 24, to the International boundary between the province of New Brunswick and the state of Maine, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 19,200

204. For a railway from a point at or near Fredericton, via Oromocto and Gagetown, to a point on the New Brunswick Railway west of Westfield station, for thirty miles thereof, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

205. To the Central Railway Company of New Brunswick, for four and a half miles of their railway, the distance which the previous subsidy granted is short of covering, from the head of Grand Lake to the Intercolonial Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 14,400

206. To the Montreal and Western Railway Company, for seventy miles of their railway, from St. Jérôme, north-westerly towards Désert, in the province of Quebec, in lieu of the subsidy granted by the Act 49 Vic., chap. 10, a subsidy not exceeding $5,161 per mile, nor exceeding in the whole..... 361,270

"Provided, that the subsidy hereby granted to the Montreal and Western Company may be paid by instalments on the completion of each section of the railway as follows, that is to say:—

SECTIONS.	Approximate length in miles.
St. Jérôme to Shawbridge	8
Shawbridge to St. Sauveur	4
St. Sauveur to Ste. Adèle	6
Ste. Adèle to Lac à la Fourche	6
Lac à la Fourche to Ste. Agathe	6½
Ste. Agathe to St. Faustin	14
St. Faustin to St. Jovite	7½
St. Jovite to Summit Lake	8
Summit Lake to La Chute aux Iroquois	7
La Chute aux Iroquois towards Désert	3

"Such instalments to be proportionate to the value of the portions so completed in comparison with that of the whole work undertaken, to be established as aforesaid."

207. For seventy-five miles of the railway from Shelburne, in the county of Shelburne, and from Liverpool, in the county of Queen's towards Annapolis, in the province of Nova Scotia, to be so contracted for as to secure the construction to both Shelburne and Liverpool, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 240,000

208. To the Inverness and Richmond Railway Company, for fifty miles of their railway from Port Hawkesbury to Broadcove, a subsidy not exceeding $1,000 per mile, nor exceeding in the whole..... 50,000

209. To the International Railway Company, for a railway from Sherbrooke to the international boundary, the balance remaining unpaid of the subsidy granted by the Act 46 Vic., chapter 25, not exceeding in the whole..... 3,840

210. For completing the Montreal and Sorel Railway from St. Lambert to Sorel..... 40,000

211. To the Pontiac Pacific Junction Railway Company, for seven and a half miles of their railway, from Hull to Aylmer, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 24,000

212. To the Montreal and Lake Maskinongé Railway Company, for three and a half miles of their railway, the distance which the subsidy granted by the Act 49 Vic., chapter 10, is short of covering from St. Félix to Lake Maskinongé, in the parish of St. Gabriel, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 10,200

213. To the Great Eastern Railway Company, for a bridge over the Nicolet River, and also a bridge on the St. Francis River, a subsidy of 15 per cent on the value of the structure, not to exceed..... 37,500

214. To the Drummond County Railway Company, for twenty-four miles of their railway, from Drummondville to Ste. Rosalie, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 76,800

215. To the Great Northern Railway Company, for fifteen miles of their railway, from, at or near Montcalm to the Canadian Pacific Railway, between Joliette and St. Félix de Valois, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000

216. To the Lake Temiscamingue Colonization Railway Company, for twenty miles of their railway, from the northern end of the fifteen miles subsidized by the Act 52 Vic., chapter 3, to the Long Sault, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000

217. To the Maskinongé and Nipissing Railway Company, for fifteen miles of their railway, from the northern end of the 15 miles subsidized by the Act 52 Victoria, chapter 3, towards the parish of St. Michel des Saints, on the River Mattawa, in the province of Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000

218. To the St. Lawrence and Adirondack Railway Company, for eighteen miles of their railway, from Valleyfield to Huntingdon, on the Montreal and Champlain Junction Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 57,600

219. To the Quebec Central Railway Company, for ninety miles of their railway, from St. Francis Station, on the Quebec Central Railway, to a point on the Atlantic and North-western Railway,

near Moose River, or from a point on the Quebec Central Railway between the Chaudière River and Tring Station, to a point on the International Railway at or near Lake Megantic, in lieu of the subsidy granted by the Act 51 Victoria, chapter 3, a subsidy not exceeding $21,191.54 per annum for twenty years, or a guarantee of a like sum for a like period, as interest on the bonds of the company, such annual subsidy for twenty years representing a grant in cash of..... $288,000

220. To the Quebec and Lake St. John Railway Company, for a railway bridge over the St. Charles River, to give access to the city of Quebec, a subsidy not to exceed in the whole $30,000; also for twelve miles of their railway from Lorette via Charlesbourg to Quebec, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole $38,400..... 68,400

221. For a railway from Summerside to Richmond Bay, in the province of Prince Edward Island, three miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 9,600

222. To the Columbia and Kootenay Railway Company, for thirty-five miles of their railway, from the outlet of Kootenay Lake to a point on the Columbia River as near as practicable to the junction of the Kootenay and Columbia Rivers, a subsidy not exceeding $3,200 per mile, nor to exceed in the whole..... 112,000

223. 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, Springside, Upper Stewiacke and Musquodoboit settlements, twenty-five miles, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 80,000

224. For a railway from Fredericton to the village of Prince William in the province of New Brunswick, twenty-two miles, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 70,400

225. To the St. John Valley and Rivière du Loup Railway Company, for twenty-two miles of their railway from the village of Prince William towards the town of Woodstock, in lieu of the subsidy granted by the Act 50-51 Victoria, chapter 24, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 70,400

226. To the Témiscouata Railway Company, for sixteen miles of their railway, from the west end of the twenty miles of their branch railway from Edmundston, subsidized by the Act 51 Victoria, chapter 3, towards the St. Francis River, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 51,200

227. For a railway from the north end of the fourteen miles for which a subsidy was granted by the Act 50 and 51 Victoria, chapter 24, to the Tobique Valley Railway Company, from Perth Centre towards Plaister Rock Island, eleven miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 35,200

228. To the Orford Mountain Railway Company, for thirty-one miles of their railway, between Eastman and Kingsbury, a subsidy not exceeding $3,200 per mile, nor exceedingin the whole..... 99,200

229. For a railway from Lachine Bank, on a line of the Grand Trunk Railway, to a point at or near Rivière des Prairies, a distance of fifteen miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000

"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 its 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 July next, and completed within a reasonable time, not to exceed four years, to be fixed by Order in Council,—except the Erie and Huron Railway, which shall be completed within two years from the first day of July next. And they 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 specifying 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 the completion of the work subsidized—except as regards the Erie and Huron Railway Company, upon which payment shall be made only upon the completion of the work—except, also as regards the subsidies to the Inverness and Richmond Railway, which shall be paid on the completion of each ten mile section, in accordance, as nearly as practicable, with the agreement between the company and the municipality of Inverness, and with section four of the Act of the Legislature of Nova Scotia, 1890, intituled: An Act to enable the county of Inverness to borrow money—except, also, as regards the subsidies to the Great Eastern Railway Company for bridges over the Nicolet and St. Francis Rivers, and to the Quebec and Lake St. John Railway for the bridge over the St. Charles 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—and except also the subsidy granted to the Quebec Central Railway Company, the first annual payment upon which shall be made at the end of twelve months from the date of the Chief Engineer's certificate of the completion of the work, and each subsequent payment at the end of each twelve months thereafter, for the term of twenty years.

"The granting of such subsidies to the companies mentioned, respectively, shall be subject to such conditions for securing running powers or traffic arrangements or other rights as will afford all reasonable facilities and equal mileage rates to all railways connecting with those subsidized, as the Governor in Council determines."

By the special Act 53 Vic., ch. 5, 1890 *(Assented to 16th May, 1890)*:—

230. In order to enable the Calgary and Edmonton Railway Company to construct so much of their railway as reaches from a point on the line of the Canadian Pacific Railway Company within the town of Calgary to a point on the North Saskatchewan River near Edmonton, the Governor in Council may enter into a contract with such company for the transport of men, supplies, materials and mails for twenty years, and may pay for such services during the said term, eighty thousand dollars per annum, in manner following, that is to say: the sum of eighty thousand dollars to be paid annually on the construction of the railway from Calgary to a point on the North Saskatchewan River near Edmonton,—such payment to be computed from the date of the completion of the railway between such points: Provided that the Governor General in Council may order such sums to be paid in semi-annual instalments, and may permit the company to assign the same by way of security for any bonds or securities which may be issued by the company in respect of the company's undertaking.

By 54-55 Victoria, ch. 8, 1891 *(Assented to 30th Sept., 1891)*:—

231. To the Great Northern Railway Company, 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, the balance

remaining unpaid of the subsidy, not exceeding $3,200 per mile, granted by the Act forty-ninth Victoria, chapter ten, nor exceeding in the whole..... $ 28,100 00

232. To the Quebec and Lake St. John Railway Company, for the railway bridge over the St. Charles River to give access to the city of Quebec, the difference between the amount already paid to the company and the sum of $30,000 mentioned as not to be exceeded by the Act fifty-third Victoria, chapter two, a subsidy not exceeding..... 5,250 00

233. To the Oshawa Railway Company, for seven miles of their railway from Port Oshawa towards Raglan, in lieu of the subsidy for a like amount granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 22,400 00

234. To the St. Lawrence, 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, the balance remaining unpaid of the subsidy granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, not exceeding in the whole..... 92,784 00

235. To the Great Eastern Railway Company, for thirty-miles of their railway, from the River St. Francis to the Arthabaska Railway at St. Grégoire station, the balance remaining unpaid of the subsidy, not exceeding $3,200 per mile, granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, not exceeding in the whole..... 79,700 00

236. To the South Ontario Pacific Railway Company, for forty-nine and one-half miles of their railway from Woodstock to Hamilton, in the province of Ontario, in lieu of the subsidy for a like amount granted by the Act fifty-second Victoria, chapter three, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 158,400 00

237. To the Montreal and Ottawa Railway Company (formerly the Vaudreuil and Prescott Railway Company), for thirty miles of their railway from Vaudreuil towards Hawkesbury, the balance remaining unpaid of the subsidy granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, not exceeding in the whole..... 46,040 00

238. 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 for a like amount granted by the Act passed in the session held in the fiftieth and fifty-first years of Her Majesty's reign, chapter twenty-four, a subsidy not exceeding $6,400 per mile, nor exceeding in the whole.... 89,600 00

239. To the Kingston, Smith's Falls and Ottawa Railway Company for fifty-six miles of their railway from the city of Kingston to Smith's Falls, in lieu of the subsidies, not to exceed $179,200, granted by the Acts fifty-second Victoria, chapter three, and fifty-third Victoria, chapter two, a subsidy not exceeding $12,534 per annum, to be paid in semi-annual instalments of $6,267 each, for twenty years, which represents a grant in cash of..... 179,200 00

"Provided, that upon the completion of twenty-eight miles of the said railway a semi-annual subsidy may be paid proportionate to the value of the portion so completed in comparison with that of the whole fifty-six miles; Provided also, that the company may deposit with the Minister of Finance and Receiver General a sum not exceeding $1,170,000, in consideration whereof there shall be paid to the company, for twenty years, a semi-annual annuity calculated on a basis of three and one-half per cent on the amount so deposited; Provided further, that the Governor in Council may permit the company to assign the said subsidy and annuity to trustees by way of security for any bonds or securities which may be issued by the company in respect of their undertaking."

240. To the Brockville, Westport and Sault Ste. Marie Railway Company, for twenty miles of their railway, from a point at or near Newboro' towards Palmer's Rapids, in the province of Ontario, in lieu of a subsidy for a like amount granted by the Act fifty-second Victoria, chapter three, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $64,000 00

"Provided that the subsidy hereby granted to the Brockville, Westport and Sault Ste. Marie Railway Company may be paid by instalments, on the completion of each section of the railway as follows, that is to say:—

Sections.	Length in miles.
From, at or near Newboro' to Westport.....	4
From Westport towards Palmers Rapids.....	16

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall be granted to such companies respectively; all the lines for the construction of which subsidies are granted, unless they are already commenced, 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 the completion of the work subsidized—except as to the subsidy granted to the Kingston, Smith's Falls and Ottawa Railway Company, the first semi-annual payment upon which shall be made at the end of six months from the date of the Chief Engineer's certificate of the completion of twenty-eight miles of the railway, and each subsequent payment at the end of each six months thereafter, for the term of twenty years,—except also as to the Quebec and Lake St. John Railway Company, the subsidy to which shall be paid upon the completion of the work,—except also as to the Brockville, Westport and Sault Ste. Marie Railway Company, the subsidy to which shall be paid as follows: on the completion of that portion of the said road from, at or near Newboro' to Westport, a distance of four miles, the sum of twelve thousand eight hundred dollars, and on the completion of the remaining sixteen miles from Westport towards Palmer's Rapids, the sum of fifty-one thousand two hundred dollars.

"Within one month after the commencement of each session of Parliament, whilst any of the said moneys are being paid out, there shall be laid before Parliament a statement showing all payments of such moneys during the then next preceding year, the names of the respective persons to whom such payments have been made, and the amounts paid them respectively, together with the engineer's report upon which pay-

ments have been recommended, and copies of all contracts between the Government and the company under which the said subsidies are authorized to be paid.

"The granting of such subsidies respectively shall be subject to such conditions for securing such running power 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.

By the Act 55-56 Victoria, chap. 5, 1892 *(Assented to 9th July, 1892)*:—

241. To the Lake Erie and Detroit River Railway Company, for fifty-eight miles of their railway from a point at or near Cedar Creek to the town of Ridgetown, in lieu of the subsidies granted to the Lake Erie and Detroit River Railway Company by the Act 53 Victoria, chapter 2, and to the Amherstburg, Lake Shore and Blenheim Railway Company by the Act 52 Victoria, ch. 3. $224,000 00

242. To the Ottawa, Arnprior and Parry Sound Railway Company, for fifty-five miles of their railway from Barry's Bay towards the Northern Pacific Junction Railway, a subsidy not exceeding $6,400 per mile on the first twenty-seven and a half miles out from Barry's Bay, and not exceeding $3,200 per mile on the second twenty-seven and a half miles, nor exceeding in the whole..... 264,000 00

243. To the Canadian Pacific Railway Company or to the Columbia and Kootenay Railway and Navigation Company, for a railway from a point on the Canadian Pacific Railway at or near Revelstoke to the head of Arrow Lake, for twenty-five miles of such railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 80,000 00

244. To the Tobique Valley Railway Company, for a railway from the north end of the eleven miles for which a subsidy was granted by the Act 53 Victoria, chapter 2, to Plaister Rock Island, for 3 miles of such railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 9,600 00

245. To the Monfort Colonization Railway Company, for twenty-one miles of their railway from Lachute, St. Jérôme or a point at or near St. Sauveur, on the line of the Montreal and Western Railway, to Monfort and westward, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 67,200 00

246. To the Ontario, Belmont and Northern Railway Company, for ten miles of their railway from the Belmont iron mines to the Canadian Pacific Railway and the Central Ontario Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 32,000 00

247. To the Montreal and Champlain Junction Railway Company, the balance remaining unpaid of the subsidies granted by the Acts 50-51 Victoria, chapter 24, and 51 Victoria, chapter 3, a subsidy of..... 15,100 00

248. To the Buctouche and Moncton Railway Company, for thirty-two miles of their railway from Moncton to Buctouche, the balance remaining unpaid of the subsidy, not exceeding $3,200 per mile, granted by the Acts 49 Victoria, chapter 10, and 50-51 Victoria, chapter 24, not exceeding in the whole..... 35,480 00

249. To the Cobourg, Northumberland and Pacific Railway Company, for nineteen miles of their railway from Cobourg to the Ontario and Quebec Railway (in addition to the subsidy granted by the Act 53 Victoria, chapter 2), a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 60,800 00

250.	For a railway from the parish of St. Rémi, in the county of Napierville, to St. Cyprien in the said county, for twelve miles of such railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	$ 38,400 00
251.	To the Inverness and Richmond Railway Company (or any other company undertaking the work), for twenty-five miles of their railway from a point on the Cape Breton Railway, at or near Orangedale, to Broadcove, a subsidy not exceeding $3,200 per mile, in lieu of the subsidy of $50,000 granted to the said railway company by 53 Victoria, chapter 2, and on the same conditions, not exceeding in the whole	80,000 00
252.	To the Nicola Valley Railway Company, for twenty-five miles of their railway from a point on the Canadian Pacific Railway at or near Spence's Bridge towards Nicola Lake	80,000 00
253.	To the Lotbinière and Megantic Railway Company, for fifteen miles of their railway from a point at or near St. Jean Deschaillons towards Glen Lloyd, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	48,000 00
254.	To the Stewiacke and Lansdowne Railway Company, 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 at Springside, Upper Stewiacke and Musquodoboit settlements, twenty-five miles, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	80,000 00
255.	To the Philipsburg Junction Railway and Quarry Company, for six and seven-hundredths miles of their railway from Stanbridge Station to Philipsburg, in the county of Missisquoi, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	21,600 00
256.	To the Kingston, Napanee and Western Railway Company, for three miles of their railway from a point at or near Harrowsmith to a point at or near Sydenham, in lieu of the subsidy granted for this section of road by the Act 52 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	9,600 00
257.	For a railway from Cape Tourmente towards Murray Bay, in the province of Quebec, twenty miles, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	64,000 00
258.	To the Stewiacke and Lansdowne Railway Company, for a railway from Truro, or a point between Truro and Stewiacke, to Newport or to Windsor, in the province of Nova Scotia, for forty-nine miles of such railway, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	156,800 00
259.	To the Restigouche and Victoria Railway Company, for fifteen miles of their railway from Campbelton towards Grand Falls, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	48,000 00
260.	For a railway from St. Johns to Ste. Rosalie, thirty-two miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	102,400 00
261.	For a railway from St. Placide to St. Andrew's, eight miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	25,600 00
262.	For a railway to complete the connection between Sydney and Louisburg, in the county of Cape Breton, for twenty-eight miles of such railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	89,600 00

263. To the Belleville and Lake Nipissing Railway Company, for thirty miles of their railway from Belleville to Tweed and thence to Bridgewater, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 96,000 00

264. To the Kingston, Smith's Falls and Ottawa Railway Company, for fifty-six miles of their railway from the city of Kingston to Smith's Falls, in lieu of the subsidies, not to exceed $179,200, granted by the Acts 52 Victoria, chapter 3, and 53 Victoria, chapter 2, a subsidy calculated on a basis of three and a half per cent on the amount of such subsidies so granted, to be paid in semi-annual instalments for such period not exceeding twenty-one years, as the company may elect, which represents a grant in cash of..... 179,200 00

"Provided, that upon the completion of twenty-eight miles of the said railway a semi-annual subsidy may be paid proportionate to the value of the portion so completed in comparison with that of the whole fifty-six miles: Provided also, that the company may deposit with the Minister of Finance and Receiver General, a sum not exceeding $1,170,000, in consideration whereof there shall be paid to the company for such period not exceeding twenty years as the company may elect, a semi-annual annuity calculated on a basis of three and a half per cent on the amount so deposited. Provided further, that the Governor in Council may permit the company to assign the said subsidy and annuity to trustees by way of security for any bonds or securities which may be issued by the company in respect of their undertaking."

265. To the St. Catharines and Niagara Central Railway Company, for thirty-four miles of their railway from the city of St. Catharines to the city of Hamilton, in lieu of the subsidies, not to exceed $108,000, granted by the Acts 52 Victoria, chapter 3, and 53 Victoria, chapter 2, a subsidy calculated on a basis of three and a half per cent on the amount of the said subsidies, to be paid in semi-annual instalments for such period, not exceeding twenty years, as the company may elect, representing a grant in cash of $108,000: Provided that, upon the completion of ten miles of said railway, a semi-annual subsidy may be paid proportionate to the value of the portion so completed in comparison with that of the whole thirty-four miles. Provided also, that the company may deposit with the Minister of Finance and Receiver General a sum not exceeding $400,000, in consideration whereof there shall be paid by the Government to the company, for such period not exceeding twenty years, as the company may elect, a semi-annual annuity, calculated on a basis of three and a half per cent on the amount so deposited, or a guarantee of a like sum, as interest on the bonds of the company: Provided further, that the company, with the approval of the Governor in Council, may assign the said subsidy and annuity to trustees by way of security for principal, or interest of any bonds or securities which may be issued by the company in respect of their undertaking, and the subsidy last above mentioned to the St. Catharines and Niagara Central Railway Company shall be paid in instalments, the first semi-annual payment upon which shall be made at the end of the six months from the date of the Chief Engineer's certificate of the completion of the first ten miles of railway, and each subsequent payment at the end of six months thereafter, for the term of twenty years or less. It is a condition of this subsidy that the sum not exceeding $400,000 above mentioned shall be deposited with the Finance Minister before January 1st, 1893.

266. To the Woodstock and Centreville Railway Company, for a railway from Woodstock towards Centreville, twenty miles, in lieu of the subsidy granted by 50-51 Victoria, chapter 24, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $64,000 00

267. To the Brockville, Westport and Sault Ste. Marie Railway Company, for the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding $3,200 per mile, and also for the balance remaining unpaid of the subsidy granted by the Act 53 Victoria, chapter 2, nor exceeding in the whole..... 96,800 00

268. To the New Glasgow Iron, Coal and Railway Company, for a railway from Eureka Junction on the Intercolonial Railway to a point at or near Sunnybrae, including a branch line to the charcoal iron furnace at Bridgeville, for twelve and a half miles of such railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 40,000 00

269. To the Thousand Island Railway Company, for an extension of their railway to connect with the Brockville, Westport and Sault Ste. Marie Railway, the Kingston, Napanee and Western Railway, the Kingston, Smith's Falls and Ottawa Railway, or the waters of the Rideau Canal, and an extension across the mouth of the Gananoque River, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole..... 44,000 00

Payable, $14,000 on the completion of the last named or southern extension, and the balance of said subsidy, being $30,000, on the completion of the first named or northern extension of their railway.

270. To the Manitoulin and North Shore Railway Company, for thirty miles of their railway from Little Current to the Algoma Branch of the Canadian Pacific Railway, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $96,000 00

271. To the Lindsay, Bobcaygeon and Pontypool Railway Company, for sixteen miles of their railway from the end of the line subsidized by the Act 53 Victoria, chapter 2, at the junction with the Midland Railway, to Pontypool, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 51,200 00

272. For seventy-five miles of the railway from Sand Point, Shelburne Harbour, in Nova Scotia, to Annapolis Royal, in the county of Annapolis and to a junction at or near New Germany on the Nova Scotia Central Railway, with a view to future construction to Liverpool, in lieu of the subsidy of a like amount granted by the Act 53 Victoria, chapter 2, for the same length of railway from Shelburne and from Liverpool, towards Annapolis, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 240,000 00

273. To the Kingston, Napanee and Western Railway Company, for twenty miles of their railway, being extensions or branches in the counties of Peterborough, Hastings, Addington, Frontenac or Leeds, towards iron deposits, a subsidy not exceeding $3,200 per mile, payable in instalments regulated by the length of each of the said extensions, additions or branches, the subsidy not exceeding in the whole..... 64,000 00

274. To the St. John Valley and Rivière du Loup Railway Company, for ten miles of their railway from the north end of the line subsidized by the Act 53 Victoria, chapter 2, towards the town of Woodstock, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

275. To the Cobourg, Northumberland and Pacific Railway Company, for thirty miles of their railway from Cobourg to the Ontario and Quebec Railway, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 96,000 00

276. To the Ottawa, Arnprior and Parry Sound Railway Company, for thirty miles of their railway, from Eganville to Barry's Bay, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000 00

277. To the Ottawa, Arnprior and Parry Sound Railway Company, for twenty-two miles of their railway from a point on the Canadian Pacific Railway to Eganville, in lieu of the subsidy granted by the Act 51 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 70,400 00

278. To the Lake Témiscamingue Colonization Railway Company, for thirty-five miles of their railway from Mattawa to the Long Sault, in lieu of the subsidies granted by the Acts 52 Victoria, chapter 3, and 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 112,000 00

279. To the Témiscouata Railway Company, for twelve miles of their railway from the north end of the section of the St. François Branch subsidized by the Act 51 Victoria, chapter 3, being the first twelve miles on the section subsidized by the Act 53 Victoria, chapter 2, a subsidy not exceeding $1,800 per mile, in addition to the subsidy already granted, and not exceeding in the whole..... 21,600 00

280. To the Tilsonburg, Lake Erie and Pacific Railway Company, for sixteen miles of their railway from Port Burwell to Tilsonburg, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 51,200 00

281. To the Woodstock and Centreville Railway Company, for six miles of their railway from the west end of their twenty miles subsidized by the Act 50-51 Victoria, chapter 24, to the international boundary between the province of New Brunswick and the state of Maine, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 19,200 00

282. To the Lake Témiscamingue Colonization Railway Company, for 15 miles of their railway from the Long Sault to the crossing of the Kippewa River, a subsidy not exceeding $3,200 per mile—and a subsidy of fifteen per cent on the value of a wooden truss bridge over the Ottawa River near Mattawa, not exceeding $15,000,—nor exceeding in the whole..... 63,000 00

283. To the Goderich and Wingham Railway Company, for thirty-one miles of their railway from Goderich to Wingham, via Port Albert, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 99,200 00

284. To the Joliette and St. Jean de Matha Railway Company, for eight miles of their railway from St. Félix de Valois to St. Jean de Matha, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 25,600 00

285. To the Bracebridge and Baysville Railway Company, for fifteen miles of their railway from Bracebridge towards Baysville, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. 48,000 00

286. To the Nipissing and James Bay Railway Company, for twenty-five miles of their railway from, at or near North Bay station on

	the Canadian Pacific Railway towards James Bay, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	$ 80,000 00
287.	For a railway from a point on the Intercolonial Railway between Ste. Flavie and Little Métis station to Matane, for fifty miles of such railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	160,000 00
288.	To the Ontario and Pacific Railway Company, for fifty-three and eighty-seven hundredths miles of their railway from Cornwall to Ottawa, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	172,400 00
289.	For a railway from a point on the line of the Canadian Pacific Railway on the Isle Jésus, in the county of Laval, towards St. Eustache, for twelve miles of such railway, in lieu of the subsidy granted by the Act 50-51 Victoria, chapter 24, to the Carillon and Grenville Railway Company, for twelve miles of their railway, from St. Eustache to Sault au Récollet, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	38,400 00
290.	For a railway from St. Eustache to St. Placide, in the county of Two Mountains, for eighteen miles of such railway, in lieu of the subsidy granted by the Act 49 Victoria, chapter 10, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	57,600 00
291.	To the Port Arthur, Duluth and Western Railway Company, the balance remaining unpaid of the subsidy granted by the Act 51 Victoria, chapter 3, not exceeding, with the amount already paid, $3,200 per mile, nor exceeding in the whole.....	114,125 00
292.	To the Drummond County Railway Company for four and six-tenths miles of their railway from Bull's Wharf, on the St. Lawrence River, near Nicolet, to Ste. Rosalie Junction, an excess of distance by the constructed line over the subsidies heretofore voted for a railway between the said points, $3,200 per mile, not exceeding in the whole.....	14,720 00
293.	To the St. Lawrence and Adirondack Railway Company, for five and forty-two hundredths miles of their railway, from Huntingdon towards the international boundary, which, with the distance between Valleyfield and Huntingdon, twelve and fifty-eight hundredths miles, makes up the distance of eighteen miles named in the 53 Vic., chap. 2, granting a subsidy to this company, and for five and forty-hundredths miles from the east end of the eighteen miles referred to to the international boundary, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	25,024 00

"The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may 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, unless they are already commenced, 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, which agreement 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 the completion of the work subsidized,—except as to subsidies with respect to which it is hereinbefore otherwise provided, and except also as to the subsidy granted to the Kingston, Smith's Falls and Ottawa Railway Company, and the subsidy granted to the St. Catharines and Niagara Central Railway Company, the first semi-annual payments upon both of which shall be made at the end of six months from the date of the Chief Engineer's certificate of the completion of their railways respectively, and each subsequent payment at the end of each six months thereafter, for the term of twenty years or less.

"The granting of such subsidies 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."

294. Notwithstanding the expiration of the time limited by the Act 47 Victoria, chapter 8, and by the contract entered into with the Pontiac Pacific Junction Railway Company, the Governor in council may pay the balance remaining unpaid of the subsidy granted by the said Act to the said company, according as it becomes due and payable in accordance with the said contract, and subject to the terms and conditions applicable to the said subsidy under the terms of the said Act.

295. Notwithstanding the expiration of the time limited by the Act 52 Victoria, chapter 3, and by the contract entered into with the Quebec and Lake St. John Railway Company, the Governor in Council may pay the balance remaining unpaid of the subsidy granted by the said Act to the said company, according as it becomes due and payable in accordance with the said contract, and subject to the terms and conditions applicable to the said subsidy under the terms of the said Act; and notwithstanding anything contained in the Act 50-51 Victoria, chapter 24, the Governor in Council may also pay to the said company the balance remaining unpaid of the subsidy granted to the company by the said Act, amounting to $12,800, on the four miles of their road from the north end of the main line subsidized towards Roberval.

By the Act 56 Vic., chap. 2, 1893 (*Assented to 1st April, 1893*):—

296. To the Great Eastern Railway Company, for twenty miles of their railway, from the east end of the line subsidized by the Act 50-51 Victoria, chapter 24, at St. Grégoire, towards the Chaudière Junction station on the Intercolonial Railway, in the province of Quebec, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole ..... $ 64,000 00

297. To the United Counties Railway Company, for thirty-two miles of their railway, from a point at or near the town of Iberville to St. Hyacinthe, and thence towards Sorel, in lieu of the subsidy granted by the Act 55-56 Victoria, chapter 5, for a railway from St. Johns to Ste. Rosalie, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 102,400 00

298. To the Ontario, Belmont and Northern Railway Company, for ten miles of their railway, divided into two sections: first, from the Belmont Iron Mines to Marmora village; second, from Marmora village to the junction with the Ontario Central Railway, in lieu of the subsidy granted by the Act 55-56 Victoria, chapter 5, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 32,000 00

299. To the Central Ontario Railway Company, for twenty miles of their railway, from Coe Hill or Gilmore, or some point between

Coe Hill and Gilmore, to Bancroft, via L'Amable, or as near thereto as practicable, in lieu of the subsidy granted by the Act 48-49 Victoria, chapter 59, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 64,000 00

300. To the Quebec and Lake St. John Railway Company, for thirty miles of their railway, from Lake St. John towards Chicoutimi, the balance remaining unpaid of the subsidy granted by the Act 51 Victoria, chapter 3, not exceeding in the whole..... 81,040 00

301. To the Irondale, Bancroft and Ottawa Railway Company, for fifty miles of their railway, from the Victoria branch of the Midland Railway to the village of Bancroft, in the county of Hastings, the balance remaining unpaid of the subsidy granted by the Act 47 Victoria, chapter 8, and again granted by the Act 52 Victoria, chapter 3, not exceeding in the whole..... 145,000 00

302. To the Beauharnois Junction Railway Company, for thirty miles of their railway, from Ste. Martine towards St. Anicet, the balance remaining unpaid of the subsidy granted by the Act 50-51 Victoria, chapter 24, not exceeding in the whole..... 3,500 00

303. To the St. Stephen and Milltown Railway Company, for three and a half miles of their railway, from the town of St. Stephen to the town of Milltown, in lieu of the subsidy granted by the Act 53 Victoria, chapter 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 11,200 00

304. To the Quebec, Montmorency and Charlevoix Railway Company, for thirty miles of their railway, from the east bank of the River St. Charles, to or near to Cape Tourmente, in the province of Quebec, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole.. 30,400 00

305. To the Ottawa and Gatineau Valley Railway Company, for sixty-two miles of their railway, from Hull station towards Le Désert, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole..... 89,248 00

306. To the Grand Trunk, Georgian Bay and Lake Erie Railway Company, for fifteen miles of their railway, from the village of Tara, or some point between Tara and Hepworth, to the town of Owen Sound, in the province of Ontario, in lieu of the subsidy granted by the Act 52 Victoria, chapter 3, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000 00

307. To the Nova Scotia Central Railway Company (or to such person or persons or company as in the opinion of the Minister or acting Minister of Justice are entitled to the same) for eighty miles of their railway, from Lunenburg, on the east coast of Nova Scotia, westward to a point in the district of New Germany, together with a spur about three-fourths mile long to Bridgewater railway wharf, and from a point thirty-three and a half miles from Lunenburg and running to Middleton on the Windsor and Annapolis Railway, of unpaid subsidies granted by the Acts 50-51 Victoria, chapter 24, and 51 Victoria, chapter 3, an amount not exceeding in the whole..... 4,500 00

308. To the Great Northern Railway Company, for eighteen miles of their railway, from a point at or near New Glasgow or St. Lin, to or near to Montcalm, in the province of Quebec, the balance remaining unpaid of the subsidy granted by the Act 54-55 Victoria, chapter 8, not exceeding in the whole..... 25,600 00

309. To the Great Northern Railway Company, for fifteen miles of their railway, from, at or near Montcalm to the Canadian Pacific

Railway between Joliette and St. Félix de Valois, in lieu of the subsidy granted by the Act 53 Victoria, chap. 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 48,000 00

310. To the Montfort Colonization Railway Company, for twenty-one miles of their three-feet gauge railway from Lachute, St. Jérôme, or a point at or near St. Sauveur, on the line of the Montreal and Western Railway, to Montfort and westward, in lieu of the subsidy granted by the Act 55-56 Victoria, chapter 5, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 67,200 00

311. To the Maskinongé and Nipissing Railway Company, for fifteen miles of their railway, from a point on the Canadian Pacific Railway at or near Maskinongé or Louiseville, towards the parish of St. Michel des Saints, on the river Mattawa, in the province of Quebec, and for fifteen miles of their railway from the north end of the fifteen miles above referred to, towards the parish of St. Michel des Saints on the river Mattawa, in the province of Quebec, in lieu of the subsidies granted by the Acts 52 Victoria, chap. 3, and 53 Victoria, chap. 2, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000 00

312. To the Parry Sound Colonization Railway Company, for forty miles of their railway, from the village of Parry Sound to the village of Sundridge, or some other point on the Northern Pacific Junction Railway, in the province of Ontario, the balance remaining unpaid of the subsidy granted by the Act 52 Victoria, chapter 3, not exceeding in the whole..... 97,600 00

313. To the Jacques Cartier Union Railway Company, for extending and completing their railway, in lieu of the subsidy granted by the Act 50-51 Victoria, chapter 24, a subsidy of..... 20,000 00

314 To the Oshawa Railway Company, for seven miles of their railway and branches as follows: from Port Oshawa to a point at or near Edmondson's Falls mill site, near Mill Street, in the town of Oshawa (this portion being known as the "Lake" section of the said railway); thence to a point at or near the town hall in the town of Oshawa, and thence to the Oshawa station of the Grand Trunk Railway Company of Canada (this portion being known as the "Town" or "Northern" section of the said railway)—in lieu of the subsidy granted by the Act 54-55 Victoria, chapter 8, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 22,400 00

"All the lines for the construction of which subsidies are granted, unless they are already commenced, 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, which agreement 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.

"The granting of such subsidies 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.

"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 the completion of the work subsidized,—except as follows:—

"(*a.*) The subsidy to the Ontario, Belmont and Ottawa Railway Company, which shall be paid as follows: on the completion of the first section, an instalment proportionate to the value of the said section in comparison with that of the ten miles hereby subsidized, to be established as aforesaid, and the balance of the said subsidy on the completion of the second section;

"(*b.*) The subsidy to the Oshawa Railway Company, which shall be paid as follows: on the completion of the "Town" or "Northern" section, an instalment proportionate to the value of the said section in comparison with that of the seven miles hereby subsidized, to be established as aforesaid, and the balance of the said subsidy, on the completion of the "Lake" section of the said railway."

By the Act 57-58 Vic., cap. 4, 1894. *(Assented to, 23rd July, 1894)*:—

315. To the Bracebridge and Baysville Railway Company, for fifteen miles of their railway from Bracebridge towards Baysville, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 48,000

316. To the Brockville, Westport and Sault Ste. Marie Railway, the balance remaining unpaid of the subsidy granted by chapter 3 of 1889, not exceeding $3,200 per mile, and also the balance remaining unpaid of the subsidy granted by chapter 2 of 1890, which was re-granted by chapter 5 of 1892; the whole not exceeding..... 86,800

317. To the Tilsonburg, Lake Erie and Pacific Railway Company, for sixteen miles of their railway, from Port Burwell to Tilsonburg, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole 51,200

318. To the Brantford, Waterloo and Lake Erie Railway Company, for eighteen miles of their railway, from the town of Brantford to the village of Hagarsville or the village of Waterford, or some intermediate point on the Canada Southern Railway, the balance remaining unpaid of the subsidy granted by chapter 24 of 1887, not exceeding $3,200 per mile, nor exceeding in the whole 4,790

319. To the St. Catharines and Niagara Central Railway Company, for 34 miles of their railway from the city of St. Catharines to the city of Hamilton, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 108,800

320. To the Montreal and Ottawa Railway Company (formerly the Vaudreuil and Prescott Railway Company), for thirty miles of their railway from Vaudreuil towards Hawkesbury, the balance remaining unpaid of the subsidy granted by chapter 24 of 1887; and for 30 miles of their railway from the western end of the 30 miles first mentioned towards Ottawa, the balance remaining unpaid of the subsidy granted by chapter 2 of 1890, not exceeding $3,200 per mile; the whole not exceeding..... 118,400

321. Notwithstanding the expiration of the time limited by chapter 2 of 1890, and by the contract entered into with the Quebec Central Railway Company, and notwithstanding anything otherwise in the said chapter 2 contained, the Governor in Council may pay the subsidy granted by the said chapter to the said company at the present worth of the twenty annual payments mentioned in the said chapter (interest computed at four per cent), for and upon the completion of its railway extending from a point between the Chaudière River and Tring Station to a point on the International Railway at or near Lake Megantic, and upon the inspection and acceptance of the same by the Chief Engineer of Railways and Canals, the sum in all of..... 288,000

322.	To the Philipsburg Junction Railway and Quarry Company, for $\frac{67}{100}$ mile of their railway from Stanbridge Station to Philipsburg, in the county of Missisquoi and a branch to Missisquoi Bay, the balance remaining unpaid of the subsidy granted by chapter 5 of 1892, not exceeding $3,200 per mile, nor exceeding in the whole	$ 2,912
323.	To the Joliette and St. Jean de Matha Railway Company, for 8 miles of their railway from St. Félix de Valois to St. Jean de Matha, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	23,600
324.	To the Lake Temiscamingue Colonization Railway Company, for their railway from Mattawa to the foot of the Kippewa Lake, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole $160,000,—also 15 per cent on the value of a wooden truss bridge over the Ottawa River near Mattawa, not to exceed $15,000 in all, in lieu of the subsidies granted by chapter 5 of 1892,—also the balance remaining unpaid of the subsidy granted by chapter 24 of 1887, for their railway from Long Sault to Lake Kippewa, a subsidy not exceeding $3,200 per mile of railway and 15 per cent on the value of the bridges,—also, a sum of $1,750 additional per mile on their said railway from Mattawa to the foot of the Kippewa Lake; the whole not exceeding	274,940
325.	For a railway from St. Placide to St. Andrews, 8 miles, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	25,600
326.	For a railway from St. Eustache to St. Placide, in the county of Two Mountains, for 18 miles of such railway, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	57,600
327.	For a railway from a point on the line of the Canadian Pacific Railway on Isle Jésus, in the county of Laval, towards St. Eustache, for 12 miles of such railway, in lieu of the subsidy granted by chapter 5 of 1892, to the Carillon and Grenville Railway Company, for 12 miles of their railway, from St. Eustache to Sault au Récollet, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	38,400
328.	For a railway from the parish of St. Rémi, in the county of Napierville, to St. Cyprien, in the said county, for 12 miles of such railway, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole	38,400
329.	To the Pontiac Pacific Junction Railway Company, for bridging the several channels of the Ottawa River at Culbute and west thereof, a subsidy of $31,500, to be paid out monthly as the work progresses, upon the certificate of the chief engineer of government railways, in the proportion which the value of the work executed bears to the value of the whole work undertaken; and for 3 miles of their railway extending from a point 3 miles east of Pembroke to Pembroke, in the province of Ontario, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole $9,600, in lieu of the subsidy granted by chapter 3 of 1888; provided that the entire work subsidized upon this railway shall be completed within 4 years from the passing of this Act; the subsidy granted by this Act not to exceed in the whole	41,100

330. To the Pontiac Pacific Junction Railway Company, for the construction or acquisition of 7½ miles of railway, from Hull to Aylmer, in lieu of the subsidy granted by chapter 2 of 1890, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. $ 24,000

331. To the Pontiac Pacific Junction Railway Company, for 85 miles of their railway from Aylmer to Pembroke, the balance remaining unpaid of the subsidy granted by chapter 8 of 1884, less the subsidy granted for the line from Hull to Aylmer, provided the Ottawa River is crossed at some point not east of Lapasse, a subsidy not exceding $3,200 per mile, nor exceeding in the whole 73,172

332. To the Harvey Branch Railway Company, for 3 miles of their railway from the southern terminus of the Albert Railway to Harvey Bank, the balance remaining unpaid of the subsidy granted by chapter 24 of 1887, not exceeding $3,200 per mile, nor exceeding in the whole..... 4,046

333. For a railway from a point on the Intercolonial Railway near Newcastle via Douglastown, to a point on the River Miramichi opposite the town of Chatham, in the province of New Brunswick, 6 miles, in lieu of the subsidy granted by chapter 10 of 1886, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 19,200

334. For a railway from some point on the Joggins Railway, near the Hebert River, to Young's Mills, in the province of Nova Scotia, a distance of 5 miles, in lieu of the subsidy granted by chapter 3 of 1889, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 16,000

335. To the Woodstock and Centreville Railway Company, for a railway from Woodstock to the international boundary between the province of New Brunswick and the state of Maine, 26 miles, in lieu of the subsidies granted by chapter 24 of 1887 and chapter 2 of 1890 a subsidy not exceeding $3,200 per mile nor exceeding in the whole..... 83,200

336. For 90 miles of the railway from Newport or Windsor to Truro, or to a point between Truro and Stewiacke, and from a point on the said railway to a point at or near Eastville, and from Eastville through the valley of the Musquodoboit River towards a point on the proposed Dartmouth branch of the Intercolonial, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile; and also for a railway bridge over the Shubenacadie River on the line of the said railway, a subsidy of 15 per cent on the value of the structure; the whole not exceeding..... 300,000

337. To the Nipissing and James Bay Railway Company, for 25 miles of their railway from, at or near North Bay Station on the Canadian Pacific Railway towards James Bay, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile; also for 43 miles of their railway from North Bay towards Lake Tamagaming, a subsidy not exceeding $3,200 per mile; the whole not exceeding..... 217,000

338. To the Lotbinière and Mégantic Railway Company, for 15 miles of their railway, in addition to the 15 miles already subsidized and built, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000

339. To the Drummond County Railway Company, for 30 miles of their railway from St. Leonard northerly towards a junction with the Intercolonial Railway at Chaudière Junction, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000

340. For a railway from Lime Ridge, in the county of Wolfe, in the province of Quebec, northerly through the county of Wolfe and into the county of Megantic, a distance not exceeding 50 miles from Lime Ridge, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $160,000

341. To the Strathroy and Western Counties Railway Company, for 25 miles of their railway from St. Thomas through the counties of Elgin and Middlesex, towards Forest Station or Park Hill, on the Grand Trunk Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 80,000

342. To the Parry Sound Colonization Railway Company, for 20 miles of their railway east from Parry Sound, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000

343. To the Manitoulin and North Shore Railway Company, for 10 miles of their railway from Little Current to Nelson, on the Algoma Branch of the Canadian Pacific Railway, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 32,000

344. To the United Counties Railway Company for 32 miles of their railway from Iberville to Sorel, in addition to the 32 miles already subsidized, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 102,400

345. To the Joliette and St. Jean de Matha Railway Company, for 12 miles of their railway from St. Jean de Matha to Ste. Emelie de L'Energie, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 38,400

346. To the Great Northern Railway Company, for 22 miles of their railway, from the eastern end of the 15 miles subsidized by chapter 2 of 1893 to a point between Joliette and St. Félix de Valois, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 70,400

347. To the Quebec and Lake St. John Railway Company, for 2 miles of the Chicoutimi branch of their railway, from the east end of the 50 miles already subsidized and built eastward to deep water at Chicoutimi, a subsidy not exceeding $3,200 per mile; also for 12 miles from the 52nd mile on the Chicoutimi branch to Ha Ha Bay, a subsidy not exceeding $3,200 per mile; the whole not exceeding..... 44,800

348. To the Pontiac and Ottawa Railway Company, for 23 miles of their railway from the point of divergence from the Pontiac Railway to Ferguson's Point, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 73,600

349. To the Ottawa and Gatineau Valley Railway Company, for 20 miles of their railway from the eastern end of the 62 miles already subsidized towards Désert, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000

350. To the Canada Eastern Railway Company for 6 miles of their railway from the town of Chatham to Black Brook, a subsidy not exceeding $3,200 per mile; also for 4 miles of their railway for a branch to the village of Nelson, a subsidy not exceeding $3,200 per mile; the whole not exceeding..... 32,000

351. For a railway from Cross Creek Station, on the Canada Eastern Railway to Stanley village, in the county of York, in the province of New Brunswick, 6 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 19,200

352. To the Restigouche and Victoria Railway Company, for 20 miles of their railway from the western end of the 15 miles subsidized by chapter 5 of 1892, towards Grand Falls, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 64,000

353. To the Central Railway Company of New Brunswick, for 15 miles of their railway from Chipman station to the Newcastle coal fields, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... $ 48,000

354. To the Tobique Valley Railway Company, for 15 miles of their railway from the present terminus at Plaister Rock easterly, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 48,000

355. Towards the restoration or renewal of the railway bridge on the South-eastern Railway over the Yamaska River at Yamaska, a subsidy equal to one-third of the actual cost of the renewal of the bridge, but the grant not to exceed in the whole..... 50,000

356. To the Boston and Nova Scotia Coal and Railway Company, for 10½ miles of their railway from the north end of the section already subsidized to Broad Cove, a subsidy not exceeding $3,200 per mile; also for 25 miles of their railway from a point on the Cape Breton Railway at or near Orangedale towards Broad Cove, in lieu of the subsidy granted by chapter 5 of 1892, a subsidy not exceeding $3,200 per mile; the whole not exceeding 113,600

357. For a railway from Port Hawkesbury towards Cheticamp, 25 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 80,000

358. To the Manitoba North-western Railway Company, for 100 miles of the extension of their main line from its present western terminus towards Prince Albert,—the company relinquishing 3,200 acres of the land grant per mile, and the whole road to be operated as a continuous line of railway under one management, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 320,000

359. For a line of railway from the junction of the Elk and Kootenay Rivers to Coal Creek, a distance of 34 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 108,800

360. For a railway from Abbotsford Station on the Mission Branch of the Canadian Pacific Railway to the town of Chilliwack, 21 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 67,200

361. To the Nicola Valley Railway Company, for 28 miles of their railway from the western end of the section of their road subsidized by chapter 5, of 1892, towards Nicola Lake, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 89,600

362. To the Nakusp and Slocan Railway Company, for 38 miles of their railway from the town of Nakusp to a point at or near the Forks of Carpenter Creek, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 121,600

363. To the Pontiac and Kingston Railway Company, for 22 miles of a railway from Portage du Fort to Upper Thorne Centre, via Shawville, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 70,400

364. To the New Glasgow Iron, Coal and Railway Company, for 5 miles of their railway, from Sunnybrae to Kerrogare, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.... 16,000 00

365. To the South Shore Railway Company, for 35 miles of their railway from Yarmouth towards Shelburne and Lockport, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. 112,000 00

366. To the Cape Breton Railway Extension Company, for 30 miles of railway from Port Hawkesbury to St. Peter's, on their line of railway from Port Hawkesbury to Louisbourg, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000 00

367. For a railway from a point on the Intercolonial Railway between Norton and Sussex Stations towards Havelock, 20 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole. $ 64,000 00

368. For a railway from St. John to Barneville, for a distance of 10 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 32,000 00

369. For a line of railway from Cap de la Magdeleine to connect with the Piles Branch of the Canadian Pacific Railway, 3 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 9,600 00

370. To the Canada Eastern Railway Company, for an extension of one mile from the western end of their railway, to connect with the Canadian Pacific Railway, a subsidy not exceeding..... 3,200 00

371. To the Great Northern Railway Company, for 30 miles of their railway from its junction with the Lower Laurentian Railway near St. Tite, in the vicinity of the River St. Maurice, westward, in lieu of the subsidy granted to the Maskinongé and Nipissing Railway Company by chapter 2 of 1893, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 96,000 00

372. To the Lindsay, Bobcaygeon and Pontypool Railway Company, for 16 miles of their railway from Bobcaygeon to the Midland Railway, and for another 16 miles from the end of the first mentioned 16 miles to Pontypool, in lieu of the subsidies granted by chapter 2 of 1890, and chapter 5 of 1892, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 102,400 00

373. To the Montfort Colonization Railway Company, for 12 miles of their railway from the end of the 21 miles already subsidized westward to a point on the Rouge River, in the county of Argenteuil, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 38,400 00

374. For a railway from a point on the Caraquet Railway, at or near Pokemouche siding, towards Tracadie village, 12 miles, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole..... 38,400 00

The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may 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, unless they are already commenced, 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 Railway and Canals, and specified in an agreement to be made in each case by the company with the Government, which agreement 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.

The granting of such subsidies 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.

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 the completion of the work subsidized,—except as to subsidies with respect to which it is hereinbefore otherwise provided, and except also as to the

subsidy granted to the Great Northern Railway Company by chapter two of 1893, for fifteen miles from Montcalm to the Canadian Pacific Railway, which shall be paid as follows: on the completion of the eighteen miles from New Glasgow to Montcalm and of two miles out of the fifteen miles from Montcalm to the Canadian Pacific Railway, an instalment proportionate to the value of the ten miles out of the total mileage subsidized by chapter two of 1893, to be established as aforesaid, and the balance of the said subsidy on the completion of the remaining thirteen miles of the said railway.

No subsidies were authorized by 58-59 Vict. (1895), nor by 59 Vict. (1896).

By the Act 60-61, chapter 4, 1897 *(Assented to 29th June, 1897).*

1. In this Act, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost, and includes the amount expended upon any bridge up to and not exceeding twenty-five thousand dollars, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway, nor the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of $3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated), which shall not cost more on the average than $15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than $15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of $3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of $15,000 per mile, such subsidy not exceeding in the whole the sum of $6,400 per mile:—

375. To the Ottawa and New York Railway Company, for $53\frac{87}{100}$ miles of their railway from Cornwall to Ottawa, in lieu of the subsidy granted by chapter 5 of the statutes of 1892,

376. To the Kingston, Smith's Falls and Ottawa Railway Company, for 101 miles of their railway from Kingston, or a junction with the Grand Trunk Railway at Rideau or some other point near Kingston, to Ottawa, in lieu of the subsidy granted by chapter 5 of 1892;

377. For a railway from a point on the Canadian Pacific Railway, at or near either Welsford or Westfield, or between the said two points, to Gagetown, in the county of Queen's, New Brunswick, not exceeding 30 miles, in lieu of the subsidy granted by chapter 2 of 1890;

378. To the Cobourg, Northumberland and Pacific Railway Company, for 50 miles of their railway from Cobourg to the Ontario and Quebec Railway, in lieu of the subsidies granted by chapter 5 of 1892;

379. To the Ottawa and Gatineau Railway Company, for 20 miles of their railway from the end of the 62nd mile subsidized towards Désert, in lieu of the subsidies granted by chapter 4 of 1894;

380. To the Great Northern Railway Company, for 9 miles of their railway, being shortage in distance between Montcalm and St. Tite;

381. To the St. Gabriel de Brandon and Ste. Emélie de l'Energie Railway Company, for 15 miles of their railway from St. Gabriel to Ste. Emélie de l'Energie, and 5 miles from a point on the main line to St. Jean de Matha, making in all 20 miles, in lieu of the subsidy granted by chapter 4 of 1894;

382. To the Central Railway Company of New Brunswick, for 15 miles of their railway from Chipman Station to Newcastle Coal Fields, county of Queen's, in lieu of the subsidy granted by chapter 4 of 1894;

383. To the Gulf Shore Railway Company, for 5½ miles of their railway from the end of the section subsidized to Tracadie and thence to Big Tracadie, New Brunswick;

384. For a railway from Campbellton, on the Intercolonial Railway, towards Grand Falls, New Brunswick, a distance of 20 miles, commencing at Campbellton, in lieu of the subsidy granted by chapter 4 of 1894;

385. To the Pontiac Pacific Junction Railway Company, for 7½ miles of their railway from Hull to Aylmer, in lieu of the subsidy granted by chapter 2 of 1890;

386. To the Schomberg and Aurora Railway Company, for 15 miles of their railway from a point on the Grand Trunk Railway between King and Newmarket to Schomberg, in the province of Ontario;

387. To the Tilsonburg, Lake Erie and Pacific Railway Company, for $3\frac{50}{100}$ miles of their railway from the present terminus, through Tilsonburg to the Michigan Central Railway, in the province of Ontario.

388. To the Ottawa, Arnprior and Parry Sound Railway Company, for 52 miles of their railway, from the crossing of the Northern Pacific Junction Railway to 55 miles west of Barry's Bay, and also for 4 miles of their railway across Parry Island;

389. To the Pembroke Southern Railway Company, for 20 miles of their railway from Pembroke to Golden Lake, in the province of Ontario;

390. To the Ontario and Rainy River Railway Company, for 80 miles of their railway from the Port Arthur, Duluth and Western Railway to Rainy Lake, in the province of Ontario;

391. To the Strathroy and Western Counties Railway Company, for 7 miles of their railway, commencing at a point at or near Caradoc Station on the Canadian Pacific Railway and extending to the town of Strathroy;

392. To the Phillipsburg Railway and Quarry Company, for $\frac{66}{100}$ mile of their railway from the end of the subsidized section to the government wharf at Phillipsburg;

393. To the United Counties Railway Company, for 1 mile of their railway from Johnson to St. Grégoire Station, in the province of Quebec;

394. To the St. Lawrence and Adirondack Railway Company, for 13½ miles of their railway from Beauharnois to Caughnawaga, in the province of Quebec;

395. To the East Richelieu Valley Railway Company, for 24 miles of their railway from Iberville to St. Thomas, boundary of Missisquoi County, in the province of Quebec;

396. To the Portage du Fort and Bristol Branch Railway Company, for 15 miles of their railway to a point at or near Shawville, in the county of Pontiac;

397. For a railway from a point at or near Windsor Junction, on the Intercolonial Railway, to Upper Musquodoboit, for a distance of 40 miles;

398. To the St. Stephens and Milltown Railway Company, for $1\frac{14}{100}$ mile of their railway from Milltown to St. Stephen, in the province of New Brunswick;

399. For a railway from Sunny Brae to Country Harbour, and from a point at or near Country Harbour Cross Roads to Guysboro', in the province of Nova Scotia, a distance of 65 miles;

400. For a railway from Port Hawkesbury, Nova Scotia, to Port Hood and Broad Cove, 53 miles, in lieu of the subsidy granted by chapter 4 of 1894;

401. For a railway from a point on the Central Railway in the county of Lunenburg, Nova Scotia, to the town of Liverpool, via the village of Caledonia, or to the village of Caledonia via Liverpool, or for any part thereof, the whole distance not exceeding 62 miles;

402. For a railway from Indian Garden on the line of the Central Railway, to Shelburne, in the province of Nova Scotia, a distance of 35 miles;

403. To the Coast Railway Company of Nova Scotia, for 61 miles of their railway from Yarmouth to Port Clyde, in the province of Nova Scotia;

404. For a railway from Brookfield Station on the Intercolonial Railway to Eastville, 30 miles;

405. To the Great Northern Railway Company, for 35 miles of their railway from St. Jérôme, in the province of Quebec, to Hawkesbury, in the province of Ontario;

406. To the Drummond County Railway Company, for 42½ miles of their railway from Moose Park to Chaudière River, provided that the amount of the said subsidy shall be refunded to the Government of Canada in the event of the company's railway from Ste. Rosalie to Chaudière River being purchased or leased for a term of years by the government.

3. The Governor in Council may grant the subsidies hereinafter mentioned to the railway companies and towards the construction of the railways also hereinafter mentioned, that is to say:—

407.	To the Great Northern Railway Company, for 67 miles of their railway between Montcalm and its junction with the Lower Laurentian Railway near St. Tite, in the vicinity of the St. Maurice River, the balance remaining unpaid of the subsidies granted by chapter 2 of 1893, and by chapter 4 of 1894, between these points, a subsidy not exceeding $3,200 per mile, nor exceeding in the whole.....	$ 182,400 00
408.	To the Pontiac Pacific Junction Railway Company, for 85 miles of their railway from Aylmer to Pembroke, also for bridging the Ottawa River, the balance remaining unpaid of the subsidy granted by chapter 8 of 1884, and by chapter 4 of 1894, not exceeding.....	114,272 00
409.	To the Ottawa and Gatineau Railway Company, for 62 miles of their railway from Hull towards Désert, in the province of Quebec, the balance remaining unpaid of the subsidy granted by chapter 2 of 1893, not exceeding in the whole.....	35,872 00
410.	To the Grand Trunk Railway Company of Canada, for a subsidy towards the rebuilding and enlargement of the Victoria Bridge at Montreal over the St. Lawrence River, 15 per cent upon the amount expended thereon, not exceeding.....	300,000 00
411.	To the Montfort Colonization Railway Company, for 33 miles of their railway from Montfort Junction to Arundel, in the province of Quebec, a subsidy not exceeding $2,000 per mile, nor exceeding in the whole.....	66,000 00
412.	To the Irondale, Bancroft and Ottawa Railway Company, the balance remaining unpaid of the subsidy for the last five miles of the company's railway; the eastern terminus to be either at the village of Bancroft or at some point near the Hastings Road, in the township of Herschell, in lieu of the subsidy granted by chapter 2 of 1893, not exceeding in the whole.....	16,000 00
413.	To the Great Northern Railway Company, towards the construction of a railway bridge over the Ottawa River at Hawkesbury, 15 per cent upon the amount expended thereon, not exceeding.....	52,500 00
414.	For a railway and traffic bridge over the Ottawa River at Nepean Point, between the city of Ottawa and the city of Hull, 15 per cent upon the amount expended thereon, not exceeding.....	112,500 00

4. The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as are 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, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years from the said first day of August, 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, which agreement 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.

5. The granting of such subsidies 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.

6. 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 the completion of the work subsidized—except as to subsidies with respect of which it is hereinbefore otherwise provided.

7. Any company receiving a subsidy as aforesaid, in excess of $3,200 per mile, shall be bound to carry Her Majesty's mails for a term of ten years free of charge over the portion of railway subsidized.

By the Special Act 60-61 Victoria, Chapter 5, 1897. *(Assented to 29th June, 1897.)*

1. Subject to the conditions hereinafter mentioned, the Governor in Council may grant to the Canadian Pacific Railway Company a subsidy towards the construction of a railway from Lethbridge, in the district of Alberta, through the Crow's Nest Pass to Nelson, in the province of British Columbia (which railway is hereinafter called "the Crow's Nest Line,") to the extent of eleven thousand dollars per mile thereof, and not exceeding in the whole the sum of three million six hundred and thirty thousand dollars, payable by instalments on the completion of each of the several sections of the said railway of the length respectively of not less than ten miles, and the remainder on the completion of the whole of the said railway; provided that an agreement between the Government and the company is first entered into in such form as the Governor in Council thinks fit, containing covenants to the following effect, that is to say:—

On the part of the company:

(*a.*) That the company will construct or cause to be constructed, the said railway upon such route and according to such descriptions and specifications and within such time or times as are provided for in the said agreement, and, when completed, will operate the said railway for ever;

(*b.*) That the said line of railway shall be constructed through the town of Macleod, and a station shall be established therein, unless the Governor in Council is satisfied by the company that there is good cause for constructing the railway outside the limits of the said town, in which case the said line of railway shall be located and a station established at a distance not greater than five hundred yards from the limits of the said town;

(*c.*) That so soon as the said railway is opened for traffic to Kootenay Lake, the local rates and tolls on the railway and on any other railway used in connection therewith and now or hereafter owned or leased by or operated on account of the company south of the company's main line in British Columbia, as well as the rates and tolls between any point on any such line or lines of railway and any point on the main line of the company throughout Canada, or any other railway owned or leased by or operated on account of the company, including its lines of steamers in British Columbia, shall be first approved by the Governor in Council or by a railway commission, if and when such commission is established by law, and shall at all times thereafter and from time to time be subject to revision and control in the manner aforesaid;

(*d.*) That a reduction shall be made in the general rates and tolls of the company as now charged, or as contained in its present freight tariff, whichever rates are now the lowest, for carloads or otherwise, upon the classes of merchandise hereinafter mentioned, westbound, from and including Fort William and all points east of Fort

William on the company's railway to all points west of Fort William on the company's main line, or on any line of railway throughout Canada owned or leased by or operated on account of the company, whether the shipment is by all rail line or by lake and rail, such reduction to be to the extent of the following percentages respectively, namely :—

Upon all green and fresh fruits, 33⅓ per cent;

Coal oil, 20 per cent;

Cordage and binder twine, 10 per cent;

Agricultural implements of all kinds, set up or in parts, 10 per cent;

Iron, including bar, band, Canada plates, galvanized, sheet, pipe, pipe-fittings, nails, spikes and horse shoes, 10 per cent;

All kinds of wire, 10 per cent;

Window glass, 10 per cent;

Paper for building and roofing purposes, 10 per cent;

Roofing felt, box and packing, 10 per cent;

Paints of all kinds and oils, 10 per cent;

Live stock, 10 per cent;

Wooden ware, 10 per cent;

Household furniture, 10 per cent;

And that no higher rates than such reduced rates or tolls shall be hereafter charged by the company upon any such merchandise carried by the company between the points aforesaid; such reductions to take effect on or before the first of January, one thousand eight hundred and ninety-eight;

(*e.*) That there shall be a reduction in the company's present rates and tolls on grain and flour from all points on its main line, branches or connections, west of Fort William to Fort William and Port Arthur and all points east, of three cents per one hundred pounds, to take effect in the following manner:—One and one-half cent per one hundred pounds on or before the first day of September, one thousand eight hundred and ninety-eight, and an additional one and one-half cent per one hundred pounds on or before the first day of September, one thousand eight hundred and ninety-nine; and that no higher rates than such reduced rates or tolls shall be charged after the dates mentioned on such merchandise from the points aforesaid;

(*f.*) That the Railway Committee of the Privy Council may grant running powers over the said line of railway and all its branches and connections, or any portions thereof, and all lines of railway now or hereafter owned or leased by or operated on account of the company in British Columbia south of the company's main line of railway, and the necessary use of its tracks, stations and station grounds, to any other railway company applying for such grant upon such terms as such committee may fix and determine, and according to the provisions of The Railway Act and of such other general Acts relating to railways as are from time to time passed by Parliament; but nothing herein shall be held to imply that such running powers might not be so granted without the special provision herein contained;

(*g.*) That the said railway, when constructed, together with that portion of the company's railway from Dunmore to Lethbridge, and all lines of railway, branches, connections and extensions in British Columbia south of the main line of the company in British Columbia shall be subject to the provisions of The Railway Act and of such other general Acts relating to railways as are from time to time passed by Parliament;

(*h.*) That if the company or any other company with whom it shall have any arrangement on the subject shall, by constructing the said railway or any part of it, as stipulated for in the said agreement, become entitled to and shall get any land as a subsidy from the Government of British Columbia, then such lands, excepting therefrom those which in the opinion of the Director of the Geological Survey of Canada (expressed in writing) are coal-bearing lands, shall be disposed of by the company or by such other company to the public according to regulations and at prices not exceeding these prescribed from time to time by the Governor in Council, having regard to the then existing provincial regulations applicable thereto; the expression "lands" including all mineral and timber thereon which shall be disposed of as aforesaid, either with or without the land, as the Governor in Council may direct:

(*i.*) That if the company or any other company with whom it shall have any arrangement on the subject shall, by constructing the said railway or any part of it as stipulated for in the said agreement, become entitled to and shall get any lands as a subsidy from the Government of British Columbia which in the opinion of the Director of the Geological Survey of Canada (expressed in writing) are coal-bearing lands, then the company will cause to be conveyed to the Crown, in the interest of Canada, a portion thereof to the extent of fifty thousand acres, the same to be of equal value per acre as coal lands with the residue of such lands. The said fifty thousand acres to be selected by the Government in such fair and equitable manner as may be determined by the Governor in Council, and to be thereafter held or disposed of or otherwise dealt with by the Government as it may think fit on such conditions, if any, as may be prescribed by the Governor in Council, for the purpose of securing a sufficient and suitable supply of coal to the public at reasonable prices, not exceeding two dollars per ton of two thousand pounds free on board cars at the mines.

And on the part of the Government, to pay the said subsidy by instalments as aforesaid.

2. The company shall be bound to carry out in all respects the said agreement, and may do whatever is necessary for that purpose.

3. In order to facilitate such financial arrangements as will enable the company to complete the railway as aforesaid without delay and to acquire and consolidate with it the railway from Dunmore to Lethbridge, hereinafter called "the Alberta Branch," which, under the authority of chapter thirty-eight of the statutes of 1893, it now operates as lessee, and is under covenant to purchase, the company may issue bonds which will be a first lien and charge and be secured exclusively upon the said Alberta Branch and Crow's Nest Line together in the same way and with the same effect as if both the said pieces of railway to be so consolidated were being built by the company as one branch of its railway within the meaning of section one of chapter fifty-one of the statutes of 1888, and that section shall apply accordingly, such first lien to be subject to the payment of the purchase money of the Alberta Branch, as provided for in the said covenant to purchase.

By the Act 62–63 Vic., chapter 7 (*Assented to 11th August, 1899*).

1. In this Act, unless the context otherwise requires, the expression "cost" means the actual, necessary and reasonable cost and shall include the amount expended upon any bridge, up to and not exceeding $25,000, forming part of the line of railway subsidized not otherwise receiving any bonus, but shall not include the cost of equipping the railway, nor the cost of terminals and right of way of the railway in any city or incorporated town; and such actual, necessary and reasonable cost shall be determined by the Governor in Council, upon the recommendation of the Minister of Railways and Canals, and upon the report of the Chief Engineer of Government Railways, certifying that he has made or caused to be made an inspection of the line of railway for which payment of subsidy is asked, and careful inquiry into the cost thereof, and that in his opinion the amount upon which the subsidy is claimed is reasonable, and does not exceed the true, actual and proper cost of the construction of such railway.

2. The Governor in Council may grant a subsidy of $3,200 per mile towards the construction of each of the undermentioned lines of railway (not exceeding in any case the number of miles hereinafter respectively stated) which shall not cost more on the average than $15,000 per mile for the mileage subsidized, and towards the construction of each of the said lines of railway not exceeding the mileage hereinafter stated, which shall cost more on the average than $15,000 per mile for the mileage subsidized, a further subsidy beyond the sum of $3,200 per mile of fifty per cent on so much of the average cost of the mileage subsidized as is in excess of $15,000 per mile, such subsidy not exceeding in the whole the sum of $6,400 per mile:—

415. To the Central Ontario Railway Company, for an extension of their railway from, or from near, either Coe Hill or Rathbun Station on the company's railway to, or near to Bancroft, not exceeding 21 miles, in lieu of the subsidy granted by chapter 5 of 1892;

416. To the Great Northern Railway Company, for a railway between Montcalm and St. Tite Junction, on the Lower Laurentian Railway, Quebec, not exceeding 53½ miles; and for a branch from their main line to Shawenegan Falls, Quebec, not exceeding 6½ miles.

417. To the Phillipsburg Railway and Quarry Company, shortage in the extension of their railway from a point on the company's line at or near the end of the subsidized section, to the government wharf at Phillipsburg, Quebec, not exceeding $\frac{66}{100}$ of a mile;

418. To the Strathroy and Western Counties Railway Company, for a line from Strathroy, Ontario, via Adelaide and Arkona, to either Forest, Tedford, or Park Hill, not exceeding 24 miles, in lieu of the subsidy granted by chapter 4 of 1894;

419. To the St. John Valley and Rivière du Loup Railway Company, for a line of railway from Fredericton, in the county of York, New Brunswick, to Woodstock, in the county of Carleton, not exceeding 59 miles;

420. For a railway from Port Hawkesbury, on the Strait of Canso, Nova Scotia, to St. Peter's, not exceeding thirty miles;

421. For a railway from Windsor, Nova Scotia, to Truro, via the township of Clifton, not exceeding 58 miles, in lieu of the subsidy granted by chapter 4 of 1894;

422. For a railway from a point at or near Brookfield Station, Nova Scotia, on the Intercolonial Railway, to Eastville, not exceeding 25 miles, in lieu of the subsidy granted by chapter 4 of 1897;

423. For a railway from Cross Creek Station, on the Canada Eastern Railway, to Stanley Village, New Brunswick, not exceeding 6 miles;

424. For a railway from the village of St. Rémi to Stottville or some point on the Delaware and Hudson Railway (Grand Trunk) in the parish of St. Paul de l'Ile aux Noix, not exceeding 19 miles;

425. For a railway between Pontypool and Bobcaygeon, via Lindsay, Ontario, not exceeding 40 miles.

426. To the Pontiac Pacific Junction Railway Company, for a railway from Aylmer to Hull, Quebec, not exceeding 9 miles, in lieu of the subsidy granted by chapter 4 of 1897;

427. To the Portage du Fort and Bristol Branch Railway Company, for a branch line from a point on the Pontiac Pacific Junction Railway at or near the village of Quyon, towards the village of Portage du Fort, Quebec, not exceeding 15 miles, in lieu of the subsidy granted by chapter 4 of 1897;

428. To the Orford Mountain Railway Company, for a branch from their railway from a point between Lawrenceville and Eastman to Waterloo, not exceeding 13 miles;

429. To the Atlantic and Lake Superior Railway Company, for an extension of their railway from Caplin to Paspebiac, Quebec, not exceeding 30 miles;

430. To the United Counties Railway Company, for a railway from St. Robert Junction to Sorel, 6½ miles, (this sudsidy to be payable only in the event of adequate running rights over the South-eastern Railway between the two points above mentioned not being granted to the first mentioned Company on terms to be approved by the Railway Committee of the Privy Council,) and from Mount Johnson to St. Grégoire Station, 1 mile, not exceeding 7½ miles.

431. For a railway from a point on the Central Railway in the county of Lunenburg, Nova Scotia, to the town of Liverpool, via the village of Caledonia, or to the village of Caledonia, via Liverpool, or for any part thereof, the whole distance not exceeding 62 miles;

432. For a railway from Indian Gardens, Queen's County, Nova Scotia, to Shelburne, in the said province, a distance of 35 miles;

433. The subsidy which the Ontario and Rainy River Railway Company is entitled to receive under chapter 4 of 1897, shall be $6,400 per mile for the 80 miles mentioned in the said Act; not exceeding in all $512,000.

434. To the Bay of Quinté Railway Company, for such extensions, branches or additions to their system as will enable the said Company to connect their lines of railway or connecting lines with iron or other mines or mineral or wood lands in the counties of Peterborough, Northumberland, Hastings, Lennox and Addington, Frontenac or Leeds, payable in instalments regulated by the length of each of the said extensions or branches or additions, as the case may be, in lieu of part of the balance remaining unpaid of the subsidy granted to the Kingston, Napanee and Western Railway Company, by chapter 5 of 1892, but not exceeding $3,200 per mile for 10 miles, nor exceeding in the whole $32,000;

435. To the Quebec and Lake St. John Railway Company, for 12 miles of their railway from the end of their line at deep water on the Chicoutimi branch of their railway, to Ha Ha Bay, in the lieu of the subsidy for the 12 miles granted by chapter 4 of 1894;

436. For a line of railway from Hawkesbury, Ontario, to South Indian, not exceeding 35 miles;

437. For a railway from Sault Ste. Marie, Ontario, towards Michipicoten River and harbour and towards the main line of the Canadian Pacific Railway, not exceeding 40 miles;

438. For a branch line of railway from the main line of the Ottawa, Arnprior and Parry Sound Railway to the town of Parry Sound, Ontario, not exceeding 5 miles;

439. For a railway from the village of Haliburton, via the village of Whitney, towards the town of Mattawa, Ontario, not exceeding 20 miles;

440. For an extension of the Tilsonburg, Lake Erie and Pacific Railway, from Tilsonburg to Ingersoll or Woodstock, Ontario, not exceeding 28 miles;

441. To the South Shore Railway Company, from Sorel Junction along the South Shore to Lotbinière, Quebec, a distance not exceeding 82 miles;

442. To the Massawippi Valley Railway Company for an extension of their railway to the village of Stanstead Plain, Quebec, not exceeding 2½ miles;

443. For a railway from Port Hawkesbury on the Strait of Canso, to Caribou Cove, Nova Scotia, a distance of 10 miles;

444. For a railway from Fort Frances, Ontario, westerly to a point at or near the mouth of Rainy River, a distance not exceeding 70 miles;

445. To the Central Railway Company of New Brunswick, for an extension of their line of railway from Newcastle Coal Fields to Gibson, New Brunswick, not exceeding 30 miles;

446. To the Canadian Northern Railway Company, for a railway from a point on the present line of the Winnipeg Great Northern Railway north of Swan River to Prince Albert, North-west Territories, not exceeding 100 miles;

447. For a railway from some point near Antler Station to a point near Moose Mountain, Manitoba, not exceeding 50 miles;

448. For a railway from Sunnybrae to Country Harbour, and from a point at or near Country Harbour Cross Roads to Guysborough, Nova Scotia, to make up the deficiency in mileage between points mentioned and subsidized by chapter 4 of 1897, additional mileage not exceeding 15 miles;

449. For a railway from Port Clyde towards Lockeport, in the province of Nova Scotia, not exceeding 20 miles;

450. For a railway from a point on the Intercolonial Railway at or near Halifax towards the Central Railway in the county of Lunenburg, not exceeding 20 miles;

451. For a railway from Labelle, in the province of Quebec, in a north-westerly direction, to Nominingue, via Notre Dame de l'Annonciation, a distance not exceeding 22 miles;

452. For a railway from Owen Sound, in the province of Ontario, to Meaford, not exceeding 21 miles;

453. To the Ottawa and Gatineau Railway Company, for their line of railway in and through the city of Hull, Quebec, not exceeding 4 miles;

454. To the Western Alberta Railway Company, from a point on the United States boundary, west of Range 27, north-westerly towards Anthracite, in the district of Alberta, not exceeding 50 miles ;

455. To the Edmonton, Yukon and Pacific Railway Company, for a railway from the town of South Edmonton, North-west Territories, to North Edmonton, and thence westerly towards the Yellow Head Pass, a distance not exceeding 50 miles ;

456. To the Restigouche and Western Railway Company, in addition to the 20 miles subsidized by chapter 4 of 1897, and in continuation from the westerly end of the said 20 miles towards the St. John River, a further distance not exceeding 15 miles, and for the company's railway from a point on the St. John River, New Brunswick, at or near Grand Falls, or St. Leonard, or between Grand Falls and St. Leonard, and extending easterly towards Campbellton, such point to be approved by the Governor in Council, a distance of 12 miles ; in all not exceeding 27 miles ;

457. For a railway in extension of the St. Francis branch of the Temiscouata Railway to the mouth of the St. Francis River, a distance not exceeding 3 miles ;

458. To the Canada Eastern Railway Company, for a line of railway from Nelson, New Brunswick, to connect with the company's main line running into Chatham, to complete the connection from Nelson to such main line, not exceeding in the whole 2¼ miles ;

459 To the Bay of Quinté Railway Company, for an extension of their line in a westerly direction from a point at or near Richmond boundary road near Deseronto for a distance not exceeding 2 miles ; also for an extension of their line from its present terminus at Tweed in a northerly direction for a distance of 2 miles, and for an extension of their line from the end of the last 2 miles mentioned in a northerly direction for a distance not exceeding 3 miles—in all 7 miles ; subsidies payable on each of the sections mentioned as each of such sections is completed ;

460. To the Ontario, Belmont and Northern Railway Company, for an extension of their railway from its present terminus at Iron Mines in a north-westerly direction, a distance not exceeding 5 miles ; and also for an extension of the company's railway southerly, from the present southern terminus thereof to the Central Ontario Junction of the Canadian Pacific Railway, a distance not exceeding 2 miles ; but the last mentioned aid for the said 2 miles of railway shall not be granted in case the Railway Committee of the Privy Council finds that adequate running powers on fair terms can be secured to the company over that portion of the line of the Central Ontario Railway between the present southerly end of the Ontario, Belmont and Northern Railway and the Canadian Pacific Railway Company's line at Central Ontario Junction ; subsidies payable on each of the sections mentioned as each of such sections is completed ;

461. For a line of railway from a point on the Pembroke Southern Railway at or near Golden Lake, Ontario, towards a point on the Irondale, Bancroft and Ottawa Railway at or near Bancroft, not exceeding 20 miles ;

462. For a line of railway from Paspebiac, Quebec, to Gaspé in the said province, a distance not exceeding 82 miles ;

463. To the Lake Erie and Detroit River Railway Company, for a line of railway from Ridgetown, Ontario, to St. Thomas, in the said province, a distance not exceeding 44 miles ; this subsidy to be payable only in the event of adequate running rights over the Canada Southern Railway between the two points above mentioned not being granted to the first mentioned company on terms to be approved by the Railway Committee of the Privy Council ;

464. To the Kingston and Pembroke Railway Company, for the construction of branches from the Company's main line to the iron mine at Bluff Point and to the Martele mine in the county of Renfrew, not exceeding 5 miles ;

465. For a railway from the town of Parry Sound extending northerly towards Sudbury, a distance not exceeding 20 miles.

3. The Governor in Council may grant the subsidies hereinafter mentioned towards the construction of the railways also hereinafter mentioned, that is to say :—

466. The Ontario and Rainy River Railway Company, for a railway from a point 80 miles west of Stanley Station, on the Port Arthur, Duluth and Western Railway, to Fort Frances, for a distance of 140 miles, at $6,400 per mile, not exceeding in the whole	$ 896,000 00
467. To the Quebec Bridge Company, towards the construction of a railway bridge over the St. Lawrence River, at Chaudière Basin, near Quebec, one million dollars, 40 per cent of which amount may be paid on monthly progress estimates, approved by the Government engineers, of materials delivered and work done...	1,000,000 00
468. To the South Shore Railway Company, towards the restoration and renewal of the railway bridge over the Yamaska River at Yamaska, Quebec	50,000 00
469. Towards the construction of a bridge over the Richelieu River at Sorel, 15 per cent upon the amount expended thereon, not exceeding	35,000 00
470. Towards the construction of a bridge across the St. Francis River, 15 per cent of the amount expended thereon, not exceeding...	50,000 00
471. Towards the construction of a bridge across the Nicolet River, 15 per cent upon the amount expended thereon, not exceeding....	15,000 00
472. To the Midland Railway Company, Limited, towards the construction of a bridge across the Shubenacadie River, 15 per cent upon the amount expended thereon, not exceeding	33,750 00
473. To the Great Northern Railway Company, towards the construction of a bridge across the St. Maurice River, 15 per cent upon the amount expended thereon, not exceeding	16,425 00
474. Also towards the construction of a bridge across the Rivière du Loup, 15 per cent upon the amount expended thereon, not exceeding	15,000 00
475. Also towards the construction of a steel bridge and viaduct at the Maskinongé River, 15 per cent upon the amount expended thereon, not exceeding	15,000 00

4. The subsidies granted to the Ontario and Rainy River Railway Company, the Canadian Northern Railway Company and the Edmonton, Yukon and Pacific Railway Company are granted upon the condition, and, if received and paid under the authority of this Act to the above mentioned companies respectively, shall be received upon the condition, that the said companies shall not, nor shall any of them, at any time amalgamate with, or lease its line or lines to, any railway company other than those mentioned in this section, except as may be authorized by Parliament; nor shall any of the said railways be leased to or operated by any other company; nor shall any of the said companies make an agreement for a common fund or for pooling its receipts with any other railway company; and any such lease, amalgamation or agreement shall be absolutely void, excepting in so far as such agreement may extend to traffic or running arrangements which have been approved by the Governor in Council.

5. The subsidies hereinbefore mentioned as to be granted to companies named for that purpose shall, if granted by the Governor in Council, be granted to such companies respectively; the other subsidies may be granted to such companies as are 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, unless they are already commenced, shall be commenced within two years from the first day of August next, and completed within a reasonable time, not to exceed four years from the said first day of August, 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, which agreement 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.

6. The granting of such subsidies, and the receipt thereof by the respective companies, shall be subject to the condition that the Governor in Council may at all times provide and secure to other companies such running powers, traffic arrangements and other rights as will afford to all railways connecting with those so subsidized reasonable and proper facilities in exercising such running powers, fair and reasonable traffic arrangements with connecting companies, and equal mileage rates between all such connecting railways; and the Governor in Council shall have absolute control at all times over the rates and tolls to be levied and imposed by any of the companies or upon any of the railways hereby subsidized.

7. 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 the completion of the work subsidized—except as to subsidies with respect to which it is hereinbefore otherwise provided.

8. Every company receiving a subsidy under this Act, its successors or assigns, and any person or company controlling or operating the railway or portion of railway subsidized under this Act, shall each year furnish to the Government of Canada transportation for men, supplies, material and mails over the portion of its line in respect of which it has received such subsidy, and, whenever required, shall furnish mail cars, properly equipped, for such mail service; and such transportation and service shall be performed at such rates as are agreed upon between the Minister of the department of the Government for which such service is being performed and the company performing it, and in case of disagreement, then at such rates as are approved by the Governor in Council; and in or towards payment for such charges the Government of Canada shall be credited by the company with a sum equal to three per cent per annum on the amount of subsidy received by the company under this Act.

9. As respects all railways for which subsidies are granted by this Act, the company at any time owning or operating any of the said railways shall, when required, produce and exhibit to the Minister of Railways and Canals, or any person appointed by him, all books, accounts and vouchers showing the cost of constructing the railway, the cost of operating it, and the earnings thereof.

LAND SUBSIDIES.

By 47 Vic., chap. 25, clause 7, 1884 (*Assented to 19th April, 1884*):—

1. 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., chap. 60, 1885 (*Assented to 20th July, 1885*):—

2. 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.
3. 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.
4. 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.
5. 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*):—

6. To the Manitoba and North-western Railway Company, Dominion lands to the extent of six thousand four hundred acres per mile for each mile of 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.
*7. 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 via 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.

* Lapsed except for the subsidy earned for the 50 miles constructed.

*8. 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 section 5 of this Act authority was given for the incorporation by the Governor in Council of a company to construct the line from Brandon, or other point indicated, to Battleford, subsidized by this Act.

By 50-51 Vic., cap. 22, 1887 *(Assented to 23rd June, 1887)*:—

9. The subsidy to the North-western Coal and Navigation Company, granted by 49 Vic., chap. 60, was increased from 3,800 acres per mile to 3,840 acres per mile.

By 50-51 Vic., cap. 23, 1887 *(Assented to 23rd June, 1887)*:—

*10. To the Alberta and Athabasca 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.

11. 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.

*12. 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."

By 52 Vic., chap. 4, 1889 *(Assented to 2nd May, 1889)*:—

13. To the North-western Coal and Navigation Company (Limited), in addition to the grant provided for by section one of the Act passed in the session held in the

* The subsidies in land grants for the Wood Mountain and Qu'Appelle, the Alberta and Athabasca and the Medicine Hat railways have lapsed.

forty-eighth and forty-ninth years of Her Majesty's reign and chaptered sixty, Dominion lands to an extent not exceeding two thousand six hundred acres for each mile of the company's railway from Dunmore station, on the Canadian Pacific Railway, to Lethbridge, on the Belly River, the present terminus of the said railway, a distance of one hundred and nine and one-half miles,—such additional grant to be made only on condition that the gauge of the said railway be made standard width; and also to the said North-western Coal and Navigation Company (Limited), Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the company's railway from Lethbridge to the international boundary, a distance of about fifty miles.

14. To the Red Deer Valley 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 Cheadle Station, on the Canadian Pacific Railway, to its terminus at a point in or near township twenty-nine, range twenty-three, west of the fourth meridian, a distance of about fifty-five miles.

*__15.__ To the North-western Railway Company of Canada, Dominion lands to an extent not exceeding ten thousand acres for each mile of the company's railway from Calgary, on the Canadian Pacific Railway, northerly to a point on the North Saskatchewan River, at or near Edmonton, a distance of about two hundred and ten miles; and also to the said North-western Railway Company of Canada, Dominion lands to an extent not exceeding ten thousand acres for each mile of the company's railway from Calgary southerly to Lethbridge, a distance of about one hundred and twenty miles.

16. To the Lake Manitoba Railway and Canal Company, Dominion lands to an extent not exceeding six thousand acres for each mile of the company's railway from Portage la Prairie to the southern boundary of Lake Manitoba, a distance of about seventeen 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, 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.

"The Governor in Council may make the grant of land provided for by section three of the Act forty-ninth Victoria, chapter eleven, being for the line of the Wood Mountain and Qu'Appelle Railway, of about two hundred and forty miles in length, applicable to the line of railway of the said company, as authorized by the Act respecting the Wood Mountain and Qu'Appelle Railway Company, passed during the present session of Parliament, upon the like terms and subject to the like conditions as those upon which the grant hereinbefore mentioned was authorized to be made to the said company by the Act in this section first cited."

By the Act 53 Vic., cap. 4, 1890 *(Assented to 16th May, 1890)*:—

17. To the Canadian Pacific Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a branch line to be constructed from Glenboro' westerley a distance of about sixty miles to a point on the proposed branch railway of the said company running from Brandon south-westerly.

18. To the Canadian Pacific Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a branch line of railway from a point at or near Brandon, on the main line of the Canadian Pacific Railway, south-westerly to or near township three, range twenty-seven, west of the first principal meridian, and thence westerly, a total distance of one hundred miles; and also a similar grant, at the same rate per mile, for the

* The North-western Railway of Canada land grant subsidy has lapsed.

said company's proposed branch railway from a point on the line just described at or near township three, range twenty-seven, west of the first principal meridian, easterly to Deloraine, a distance of about twenty-five miles, making the total length of railway to which this grant is applicable one hundred and twenty-five miles.

*19. To the Brandon and South-western Railway Company, Dominion lands to an extent not less than six thousand four hundred acres per mile for the line of railway from a point in township one, in either range twenty-three or twenty-four west of the first principal meridian, to Deloraine, a distance of about seventeen miles.

*20. To the Lac Seul Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a line of railway from a point at or near Shelly Station, on the main line of the Canadian Pacific Railway, to a point at or near White Mud Lake, on the Winnipeg River, a distance of about eighteen miles.

21. To the Calgary and Edmonton Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres for each mile of the company's railway from Calgary to a point at or near Edmonton on the North Saskatchewan River, a distance of about one hundred and ninety miles; and also a grant of six thousand four hundred acres for each mile of the company's railway from Calgary to a point on the international boundary between Canada and the United States, a distance of about one hundred and fifty miles.

*22. To the North-western Coal and Navigation Company (Limited) Dominion lands to an extent not exceeding three thousand eight hundred and forty acres for each mile of the company's railway from Lethbridge to the Crow's Nest Pass, a distance of about one hundred miles.

23. To the Lake Manitoba Railway and Canal Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile, for a line of railway from Portage la Prairie to Lake Winnipegosis, at or near Meadow Portage, a distance of about one hundred and twenty-five miles.

24. To the Manitoba and South-eastern Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile, for a line of railway from Winnipeg southerly or south-easterly to a point on the west side of the Lake of the Woods, a distance of about one hundred and ten miles.

The said grants and each of them may be 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, 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.

The lands by this Act authorized to be granted to the Canadian Pacific Railway Company shall be taken and held, and may be disposed of, free and clear of any encumbrance on the lands or property of the said company created before the passing of this Act.

By the special Act 53 Vic., cap. 3, 1890 *(Assented to 26th March, 1890)*:—

25. The Act 52 Victoria, chapter 4, authorizing, in error, the grant of land to the North-western Coal and Navigation Company, for fifty miles from Lethbridge to the international boundary, was amended—the said grant being made to the Alberta Railway and Coal Company.

By 54-55 Vic., cap. 9, 1891 *(Assented to 30th September, 1891)*:—

26. In lieu of the subsidy in land authorized by the Act 52 Victoria, chapter 4, to be granted to the Red Deer Valley Railway and Coal Company, and subject to the conditions in the said Act mentioned, the Governor in Council may grant

* The land grant subsidy to the Brandon and South-western, the Lac Seul and North-western Coal and Navigation railways has lapsed.

Dominion lands to the said company to an extent not exceeding six thousand four hundred acres for each mile of the said company's railway, from the town of Calgary, in the district of Alberta, in the North-west Territories, to a point in or near township twenty-nine, range twenty-three, west of the fourth meridian, a distance of about fifty-five miles.

By 54-55 Vic., cap. 10, 1891 *(Assented to 30th September, 1891)*:—

27. To the Manitoba South-western Colonization Railway Company, in addition to the subsidy for one hundred and fifty miles of railway authorized by the Act passed in the session held in the forty-eighth and forty-ninth years of Her Majesty's reign, chapter sixty, Dominion lands to the extent of six thousand four hundred acres per mile for the balance of the two hundred and twelve miles of railway which have been constructed and are in operation, that is to say, for a distance of sixty-two miles.

28. Also, to the Manitoba South-western Colonization Railway Company, Dominion lands to the extent of six thousand four hundred acres for each mile of the company's branch line of railway from Carmen to Barnsley, a distance of about six and one-quarter miles.

29. To the Canadian Pacific Railway Company, in addition to the subsidy authorized by the Act 53 Victoria, chapter 4, for the company's branch line running in a south-westerly and westerly direction from a point at or near Brandon for a distance of one hundred miles, Dominion lands to the extent of six thousand four hundred acres for each mile of the extension westward of the said branch line, from the western limit of the said one hundred miles to a point at or near La Roche Percée, situated in township one, range six, west of the second meridian, a distance of about sixty miles.

"The said grants and each of them shall be 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, 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 the Act 57-58 Vic., cap. 6, 1894 *(Assented to 23rd July, 1894)*:—

30. To the Rocky Mountain Railway and Coal Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a line of railway from a point at or near Olds Station on the line of the Calgary and Edmonton Railway in a westerly direction to the Red Deer River and thence along the said river in a westerly direction to the coal fields, a distance of about sixty miles.

31. To the Canadian Pacific Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a line of railway from a point at or near Souris on the Souris Branch of the Canadian Pacific Railway, in a westerly direction to the Pipestone Valley, a distance of about thirty-two miles.

32. To the Brandon and South-western Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a line of railway from a point in township one, in either range twenty-three or twenty-four west of the first principal meridian, to a point at or near Deloraine, a distance of about seventeen miles.

33. To the Saskatchewan and Western Railway Company, Dominion lands to an extent not exceeding six thousand four hundred acres per mile for a line of railway from Minnedosa to Rapid City, a distance of about fifteen miles.

* The land grant subsidy to the Rocky Mountain Railway and Coal Company and the Brandon and South-western Company has lapsed.

The said grants and each of them may be 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 with respect thereto ; 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 the survey of the lands and incidental expenses at the rate of ten cents per acre in cash on the issue of the patents therefor.

The lands authorized by this Act to be granted to the Canadian Pacific Railway Company shall be taken and held, and may be disposed of, free and clear of any encumbrance on the lands or property of the said company created before the passing of this Act

PART IV

MISCELLANEOUS STATEMENTS

No.

SUBSIDY Agreements for the Construction of Railways

Number of Contract.	Date of Signature.	Name of Railway.	Line of Railway to be Constructed.	Acts of Canada granting Subsidies.
	1898.			
13072	Aug. 22..	Pembroke Southern Railway Co.	From Pembroke to Golden Lake	60-61 V., c. 4.
13251	Sept. 5..	Great Northern Railway Co.	From Montcalm and its Junction with Lower Laurentian Railway, near St. Tite, in the vicinity of St. Maurice River.	60-61 V., c. 4.

OTTAWA, Oct. 11, 1899.

1.

entered into during the Fiscal Year ended June 30, 1899.

Amount of Subsidy.		Number of Miles Subsidized.	Maximum Grade Feet per Mile.	Radius of Curvature not less than.	Width of Clearing each side.	Width of Cutting.	Embankment.	Steel Rails, lbs., per Lineal Yard.	Date for Completion.
Per mile.	Not exceeding.								
$	$		Feet.	Feet.	Feet.	Feet.	Feet.	Lbs.	
3,200	6,400 per mile.	20	80	955	50	20	15	56	March 1, 1899.
3,200	182,400 balance remaining unpaid.	67	66	573	50	20	15	56	Aug. 1, 1901.
3,200	6,400	9	53	1,433	.....	.....	.....	.....	

GERARD S. RUEL,
Law Clerk.

No. 2.

CONTRACTS entered into during the Fiscal Year ended June 30, 1899.

1. INTERCOLONIAL RAILWAY.

No. of Contract.	Date of Signature.	Contractor.	General Description.
13234	July 8, 1898.	L. A. Cloutier	Painting on the Drummond County Line.
13235	" 13, 1898.	O. Carbonneau	Supply water for locomotives, &c., at L'Islet.
13247	" 28, 1898.	Rhodes, Curry & Co., Ltd.	Construct a creosoted pile wharf and freight shed at Halifax, N.S.
13248	" 29, 1898.	Dominion Bridge Co., Ltd.	Construct three plate girder bridges.
13252	Aug. 18, 1898.	J. B. McManus	Excavate site for grain elevator at Halifax.
13253	July 29, 1898.	Hamilton Bridge Works Co., Ltd.	Construct and erect in place seven through steel bridges.
*13283	June 30, 1898.	Acadia Coal Co	Supply coal for season 1898-9.
*13289	" 30, 1898.	Cumberland Railway and Coal Co.	" "
13290	Sept. 23, 1898.	John Starr, Son & Co., Ltd.	Installation of electric light plant for the SS. "Mulgrave", and on the shores at Mulgrave and Point Tupper.
13300	" 29, 1898.	Jonathan Weir & Son	Construct and erect a bridge at Elm Tree rock cutting.
13309	Oct. 22, 1898.	Rhodes, Curry & Co., Ltd.	Construct 100 platform cars.
13310	" 22, 1898.	" "	" 150 box freight cars.
13311	Sept. 21, 1898.	M. E. Keefe	" a grain elevator and conveyor, complete, at Halifax.
13312	Oct. 22, 1898.	Crossen Car Mfg. Co., Ltd	" 100 box freight cars.
13317	" 22, 1898.	Rhodes, Curry & Co., Ltd.	" 3 postal and baggage cars.
13318	" 22, 1898.	" "	" 4 baggage cars.
13330	" 22, 1898.	The Rathbun Co., of Deseronto.	" 50 box freight cars.
*13334	June 30, 1898.	The General Mining Association.	Supply coal for season 1898-9.
13336	Nov. 7, 1898.	Rhodes, Curry & Co., Ltd.	Erect a station at Richmond, N.S.
13343	" 19, 1898.	Thomas Gilliland	" Jubilee.
13344	" 28, 1898.	The Wagner Palace Car Co.	Construct 8 sleeping cars, 4 dining cars and 3 first passenger cars.
*13345	" 29, 1897.	Jas. W. Reeves	Supply ties, Oxford and New Glasgow Branch.
13349	Aug. 8, 1898.	Rhodes, Curry & Co., Ltd.	Supply 1,800 33-in. chilled cast iron wheels, and 200 "Special" 33-in. wheels.
13350	Sept. 26, 1898.	" "	Supply 30 26-in. cast iron wheels.
13355	Nov. 19, 1898.	J. B. Woodland	Construct a freight house at Ross Road, N.S.
13356	Dec. 2, 1898.	Geo. A. Appleby	Furnish materials and remove iron trestle at St. John, N.B.
13363	" 24, 1898.	N. K. & M. Connolly	Construct a deep water wharf and dredge docks at St. John, N.B.
13372	Jan. 4, 1899.	The Baldwin Locomotive Works.	Supply 19 compound consolidation locomotives and 1 consolidation locomotive fitted with patent improved steam engine.
13374	Dec. 23, 1898.	The Illinois Steel Co	Supply 5,000 tons of steel rails, 1st quality, with privilege of furnishing a quantity not exceeding 5 p.c. of 2nd quality rails.
13375	" 23, 1898.	The Cambria Steel Co	" " "
13381	Jan. 10, 1899.	James Fleming	Work in connection with iron bridging at Long Wharf, St. John, N.B.
13382	" 26, 1899.	Nap. Halle & Narcisse Marceau.	Hauling of freight and baggage at Lévis between ferry boats and passenger station and freight shed.
13405	Feb. 6, 1899.	J. B. McManus	Construct 338 Standard Farm crossing gates.
13424	" 4, 1899.	Raymond Dand	Supply 62 switch gates and 123 switch stands.
13425	Jan. 23, 1899.	F. E. Sayre	Supply southern hard pitch pine.

* Received too late for last year's report.

SESSIONAL PAPER No. 10

No. 2.—CONTRACTS entered into during the Fiscal Year ended June 30, 1899.—*Con.*

1. INTERCOLONIAL RAILWAY—*Continued.*

No. of Contract.	Date of Signature.	Contractor.	General Description.
13426	Jan. 13, 1899.	Jos. A. Likely	Supply hard pitch pine.
13427	Aug. 18, 1898.	Jno. McDougall & Co.	Supply 1,700 33-in. double plate cast-iron wheels and 1,300 special 33-in. wheels.
13441	Feb. 25, 1899.	Jos. McDonald & Sons	Construct an ice house at Pictou, N.S.
13456	Apl. 30, 1899.	Rhodes, Curry & Co., Ltd.	" grain elevator at St. John, N.B.
13465	Jan. 30, 1899.	F. Gosselin and D. Girard	Discharge coal into shed and deliver same to engines at St. Charles.
13466	Mar. 25, 1899.	W. J. Watkins	Discharge coal into shed and deliver same to engines at Drummondville.
13467	Jan. 11, 1899.	Wilson Estabrooks	Discharge coal into shed and deliver same to engines at Moncton.
13475	Dec. 31, 1898.	Jerome Roy	Handling of coal at Newcastle.
13476	Jan. 25, 1899.	W. A. Johnson	" " Truro.
13480	May 1, 1899.	Rhodes, Curry & Co., Ltd.	Erect a freight shed at St. John, N.B.
13485	Feb. 21, 1899.	Chas. Maisey	Handling of coal at Campbellton.
13486	" 21, 1899.	John Lemieux	" " "
13487	Dec. 31, 1898.	H. H. Cameron	" " Springhill Jct.
13488	May 10, 1899.	Raymond Dand	Erect 1,300 rods of fence.
13489	" 10, 1899.	Dominion Bridge Co., Ltd.	Supply a steel single track through Pony Truss Bridge, P.E.I. Railway.
13490	Feb. 4, 1899.	Eugene Michaud	Handling of coal at Rivière du Loup.
13491	" 4, 1899.	Ernest Joubert	" " "
13492	May 10, 1899.	Enoch Steeves	Erect 3,100 rods of fence.
13493	Jan. 18, 1899.	Damas Charette	Handling of coal at Ste. Flavie.
13494	May 10, 1899.	John Kelly	Erect 2,100 rods of fence.
13495	" 10, 1899.	Jno. McDougall & Co.	Supply 500 33-in. chilled cast-iron wheels.
13501	Dec. 31, 1898.	Jno. McGourty	Handling of coal at St. John, N.B.
13505	June 6, 1899.	W. S. Kinnear & Son	Painting of buildings and bridges.
13506	" 1, 1899.	Geo. P. Rodgers	" "
13507	May 30, 1899.	Jamos Corney	" bridges.
13508	June 1, 1899.	Ludlow Campbell	" "
13509	" 7, 1899.	A. H. McDonald & Son	" buildings.
13510	" 2, 1899.	W. M. Metzler	" " and bridges.
13514	" 3, 1899.	L. A. Cloutier	" bridges.
13515	" 2, 1899.	Stephen Venoit	" buildings and bridges.
13516	" 6, 1899.	Alphonse Caron	" " "
13542	" 19, 1899.	Hamilton Bridge Works Co., Ltd.	Construct 2-deck plate girder bridges.
13545	" 29, 1899.	Rhodes, Curry & Co., Ltd.	Construct 20 Wickes patent refrigerator and ventilated cars.
13610	" 6, 1899.	Jno. McDougall & Co.	Supply 500 33-in. double plate chilled cast-iron wheels.

No. 2.—CONTRACTS entered into during the Fiscal Year ended June 30, 1899—*Con.*

2. CHAMBLY CANAL.

No. of Contract.	Date of Signature.	Contractor.	General Description.
13281	Oct. 11, 1898.	Dominion Bridge Co., Ltd...	Construct 1 steel swing bridge across canal above Ste. Thérèse Island.

3. LACHINE CANAL.

13286	Oct. 11, 1898.	John B. de Lorimier.....	Supply 6,000 cubic yds. building stone for slope walls.

4. RIDEAU CANAL.

13430	Mar. 6, 1899.	Cameron & Co.....	Supply 6,200 cubic ft. of white oak dimension timber.

5. SAULT STE. MARIE CANAL.

13266	Sept. 7, 1898.	David Chalmers	Build abutment and addition to C.P.R. bridge.
13269	" 23, 1898.	Dominion Bridge Co., Ltd...	Construct one railway swing bridge and remove present C.P.R. swing bridge, &c..... .....
13459	May 1, 1899.	Hickler Bros..	Remove masonry pier and fender piers of C.P.R. bridge.

6. SOULANGES CANAL.

13213	July 29, 1898.	Dominion Bridge Co., Ltd ..	Construct sluice gates for locks, weirs and other structures between Cascade Point and Coteau Landing.
13338	Sept. 1, 1898.	Stanislas Houle.....	Painting of five bridges.
13366	Jan. 17, 1899.	Canadian General Electric Co., Ltd.	Erect a power house on section 8 and install an electric plant to operate locks, culverts, &c., and to light the canal.
13435	Feb. 28, 1899.	F. Hyde & Co.....	Supply 10,000 barrels of Portland cement.

7. TRENT CANAL.

13203	Nov. 29, 1898.	Dominion Bridge Co., Ltd ..	Construct hydraulic lift Lock No. 1, Peterborough, Peterborough and Lakefield division.

No. 2.—CONTRACTS entered into during the Fiscal Year ended June 30, 1899—*Con.*

8. WELLAND CANAL.

No. of Contract.	Date of Signature.	Contractor.	General Description.
13244	Sept. 8, 1898.	John Riley	Taking down and rebuilding part of present timber superstructure, West Pier, Port Dalhousie.
13274	" 23, 1898.	Albert H. Irvine & Co	Remove by dredging certain slides on summit level between Allanburgh and Port Colborne.
13403	Mar. 23, 1899.	Gallagher & Cunningham	Supply brass and phosphor bronze castings for 1899.
13420	" 3, 1899.	John McLean	Supply timber and lumber for canal and its branches for 1899.
13422	April 11, 1899.	British Columbia Mills, Timber and Trading Co.	Supply timber for canal and its branches for 1899.

GERARD S. RUEL,
Law Clerk.

OTTAWA, October 11, 1899.

No.

GENERAL

SHOWING Water Power and other Public Property leased by the Department

No. of Lease.	Date of Signature.	Term of Lease.	Lessees.	Property Leased.
	1898.			*1. Intercolonial Railway.*
13224	July 12..	5 years.....	J. Cradock Simpson to the Queen.	Office, No. 143 St. James St., Montreal...
13225	" 13..	5 years.....	James P. Bamford....	South-westerly portion of office No. 143, St. James St., Montreal.
13273	Oct. 25..	1 year.....	Canada Ry. News Co....	News room at Moncton, N.B.....
13417	1899. Jan. 3..	2⅔ years.... ..	Atlantic and Lake Superior Ry. Co.	Room No. 16, Board of Trade Building, Montreal.
13453	Mar. 25..	3 years.....	Clapham Estate to the Queen.	Office marked "I.C.R." on Dufort St., Quebec City.
13502	June 1..	5 years...	James W. Montgomery..	Shop and basement, No. 7, King St., St. John, N.B.
	1898.			*2. Beauharnois Canal.*
13173	Aug. 25..	3½ years, renewable 10 years.	Ella Perkins	Surplus water at lock No. 7 ....
13469	1899. May 8..	During pleasure.	Bell Telephone Company of Montreal.	Privilege to lay an iron pipe carrying electric cables under canal at Valleyfield.
	1898.			*3. Carillon and Grenville Canals.*
13132	July 26..	21 years, renewable.	General Manufacturing Company of Canada.	Surplus water flowing over Carillon dam..
	1899.			
13458	April 25..	During pleasure.	John Brophy.....	Land between old canal and Ottawa River.
	1898.			*4. Lachine Canal.*
13121	Oct. 29..	During pleasure.	Montreal Island Belt Line Ry. Co.	Operate their railway over and across canal reserve between Montreal and Lachine.
13150	1899. April 11..	10 years	Corporation of the City of Montreal..... ...	St. Patrick Park, Montreal..... .....
13212	1898. July 18..	During pleasure.	Damase Parizeau.....	Storage lot No. 3, St. Gabriel Basin, Montreal.
13228	Aug. 12..	" ..	Grand Trunk Ry. Co....	Privilege to lay a track from their present siding to Cantin's lumber yard.
13292	Oct. 20..	" ..	Pierre Tellier.....	Two strips of land, one at head of canal basin No. 1, St. Gabriel, other between same basin and Seminary St.
13293	" 29..	" ..	Joseph Touzin..... .	Land on north side of canal, opposite Seminary St.

3.

STATEMENT

of Railways and Canals during the Fiscal Year ended June 30, 1899.

Area.	For what purpose used.	Amount of Water Power.	Date from which Lease is reckoned.	Terms of Payment.			Remarks.
				Annual Rental.	When due each year.	When first instalment was due.	
				$ cts.			
.....	.....	.....	May 1, '98	1,700 00	Paid quarterly on Jan., Apl., July and Oct. 31.	July 31,'98	
.....	.....	.....	" 1, '98	800 00	" " ..	" 31,'98	
.....	.....	.....	Sept. 1,'98	108 00	Paid quarterly on Mar., June, Sept and Dec. 1.	Sept. 1, '98	
.....	.....	.....	Jan. 1, '99	$500 until May 1,1900, $600 thereafter.	Monthly.....	Jan. 1, '99	
.....	.....	.....	May 1, '99	650 00	Paid quarterly on Feb., May, Aug. and Nov. 1.	Aug. 1, '99	
.....	.....	.....	June 1, '99	900 00	" " ..	" 1, '99	
.....	Manufacturing, &c.	40 horse powers.	Jan. 1, '97	100 00	Paid semi-annually on Jan. and July 1.	Jan. 1, '97	
.....	.....	.....	May 1, '99	10 00	May 1.....	May 1, '99	
.....	Generating electricity, &c.	2,000 horse powers or more.	" 1, '98	Not less than $2,000, and $1 per additional horse power.	" 1.....	" 1, '99	
24¾ acres....	Pasturing purposes.	.....	" 1, '99	20 00	" 1.....	" 1, '99	
.....	.....	.....	" 1, '98	250 00	" 1.....	" 1, '98	
2 acres.....	Public park.....	.....	" 1, '99	1 00	" 1.....	" 1, '99	Surrendered for amendment.
9,444 sq. ft..	Storing lumber.....	..	June 7, '98	188 88	June 7.....	June 7, '98	
.....	Access to said lumber yard.	.....	Aug. 1, '98	10 00	Aug. 1.....	Aug. 1, '98	
8,675 sq. ft.	Storing sand...	.....	May 1, '98	130 00	May 1.....	May 1, '98	
2,625 " ..	" ...	.....	Sept. 1, '98	40 00	Sept. 1.....	Sept. 1, '98	

No. 3.—GENERAL STATEMENT showing Water Power and other Public Property

No. of Lease.	Date of Signature.	Term of Lease.	Lessees.	Property Leased.
	1898.			*4. Lachine Canal*—Concluded.
13295	Oct. 26..	During pleasure.	H. Dobell & Co.	Canal reserve land. ....
13296	Nov. 15..	" ..	William Patterson	" ..... .
13297	Oct. 27..	" ..	Intercolonial Coal Mining Co.	" at new lock No. 2.....
13298	" 27..	" ..	Wilfrid Marsan.....	" .....
13340	Dec. 6.. 1899.	3 years.....	Northern Paving and Construction Co.	Land in municipality of St. Gabriel, and privileges.
13386	Jan. 27.	During pleasure.	W. Pauzé & Sons.....	Lots Nos. 1 & 2, St. Ann's Ward, Montreal
13439	Mar. 11..	" ..	The Wilson Co.....	Lots Nos. 13 & 15 " " ..
13440	" 17..	" .	Montreal Stock Yards Co.	Land at Point St. Charles, St. Ann's Ward, Montreal.
13449	April 7..	" .	Bell Telephone Co. of Canada.	Privilege to lay a cable across canal and canal lands, at end of Seminary St., Montreal.
13450	" 29..	" ..	Chambly Manufacturing Co.	Privilege to lay a cable along basin No. 2 and erect a small terminal house near canal waste weir, Point St. Charles, Montreal.
13497	June 10..	" ..	Imperial Oil Co	Privilege to lay iron pipes under canal tow path, at Côte St. Paul, Montreal.
				5. Rideau Canal.
13217	July 29.. 1899.	During pleasure.	Sisters of the Precious Blood of Ottawa.	Privilege to erect a fence on part of canal reserve.
13223	April 1.. 1896.	" ..	John J. McDonald	Part lot No. 30, concession D, Township of Wolford.
13227	Mar. 11.. 1899.	99 years, renewable.	John Duan	Part road allowance between lots Nos. 21 and 22, Gore of Gloucester, Co. of Carleton
13396	Mar. 6..	During pleasure.	Corporation of the City of Ottawa.	Privilege to lay main trunk sewer under and across canal at head of deep cut.
13454	April 11..	" ..	Ottawa and New York Railway Co.	Privilege to lay and maintain two tracks along certain canal reserve.
	1898.			*6. Sault Ste. Marie Canal.*
13433	Oct. 31.. 1899.	99 years	Edward V. Douglass to the Queen.	Part Section 2, in Township of Awenge, District of Algoma.
13499	June 8..	During pleasure.	Bell Telephone Co. of Canada, Ltd.	Privilege to lay a cable across canal at railway bridge.
	1898.			*7. Welland Canal.*
13146	July 11.. 1899.	" ..	Corporation of Town of Port Colborne.	Privilege to cross canal with an 8-inch water main, and to erect a pump house and stand pipe.
13299	Jan. 7..	" ..	The Wilson Carbide Works Co.	Land on east side of lock 10, old canal, and part of lot No. 13, concession 8, County of Lincoln.

OTTAWA, October 11, 1899.

SESSIONAL PAPER No. 10

Leased by the Department of Railways and Canals, &c.—*Concluded.*

Area.	For what purpose used.	Amount of Water Power.	Date from which Lease is reckoned.	Terms of Payment.			Remarks.
				Annual Rental.	When due each year.	When first instalment was due.	
				$ cts.			
192 sq. ft.	Weighing scales	.....	Sept. 1, '98	20 00	Sept. 1.....	Sept. 1, '98	
588 " ..	" ..	.....	" 1, '98	20 00	" 1.....	" 1, '98	
520 " ..	" ..	.....	" 1, '98	20 00	" 1.....	" 1, '98	
796 " ..	" ..	.....	" 1, '98	40 00	" 1.....	" 1, '98	Cancelled by O.C. Aug. 12, '99.
19,200 " ..	Mechanical construction.	.....	Oct. 1, '98	200 00	Oct. 1.....	Oct. 1, '98	
19,046 " ..	Storing lumber.	.....	Jan. 2, '99	380 92	Jan. 2	Jan. 2, '99	
31,879 " ..	Storing coal and wood.	.....	Mar. 1, '99	433 47	March 1.....	Mar. 1, '99	
10·72 acres..	Company's stock yards.	.....	" 1, '99	100 00	" 1.....	" 1, '99	
.....	.....	.....	April 1, '99	10 00	April 1.....	April 1, '99	
.....	.....	.....	" 1, '99	100 00	" 1.....	" 1, '99	
.....	Pumping oil and feeding boiler.	.....	June 1, '99	40 00	June 1.....	June 1, '99	
.....	Preservation of trees.	.....	Sept. 1, '98	1 00	Sept. 1.....	Sept. 1, '98	
2·10 acres...	Access to Rideau River.	.....	April 1, '99	3 15	April 1.....	April 1, '99	
0·61 acre ...	.....	.....	Mar. 11, '96	1 00	For the whole term.	.....	Received too late for last year's rep't
.....	.....	.....	Feb. 1, '99	10 00	Feb. 1.....	Feb. 1, '99	Cancelled by O.C. of Aug. 2, 1899.
.....	.....	.....	April 1, '99	100 00	April 1.....	April 1, '99	
1·00 acre...	.....	.....	" 1, '96	1 00	April 1.....	April 1, '97	
.....	.....	.....	June 1, '99	5 00	June 1.....	June 1, '99	
.....	.....	.....	May 1, '98	20 00	May 1.....	May 1, '98	
0·09 acre ...	Erecting a store house.	.....	Sept. 1, '98	10 00	Sept. 1.....	Sept. 1, '98	

GERARD S. RUEL,
Law Clerk.

No.

PROPERTY conveyed and damages released to the Department of

No. of Deed.	Date of Signature.	Grantor.	Lot.	District.
	1899.			*1.—Canadian Pacific Ry.*
13554	June 21..	Her Majesty to Canadian Pacific Railway Co.		Village of Keewatin
13555	" 19..	" "		" "
13556	" 22..	" "		
	1898.			
13383	Dec. 22..	Heber Archibald	N.W. ¼ Sec. 7, and S. ½ of S.W. ¼ Sec. 18.	Township 5, Range 4, Pembina Branch.
13483	Jan. 26..	Patrick Carey, *et ux.*	N.W. ¼ Sec. 31	" "
13484	" 26..	" "	S. ½ of the S.W. ¼ Sec. 6	Township 6, Range 4, Pembina Branch.
				2.—Intercolonial Railway.
13276	July 13 ..	Pictou Harbour Commissioners.		Pictou
	1899.			
13461	Mar. 24..	Rhodes Estate	Pts. Nos. 6, 8, 8*a*, and 9 of Cad. plan of St. Laurent Ward.	Lévis
13462	Feb. 27..	Young Estate	Pt. No. 408, Cad. plan of Lauzon Ward.	"
				3.—Beauharnois Canal.
13444	" 1..	Joseph Lauzon	Pt. Lot 249, Official Cad.	St. Timothée
13472	April 10..	Auguste Bergevin, *et ux.*	Pts. Lots. Nos. 342, 343, 344, 345, 346, 347, 348, 349, 350 and 351; and pt. Lot No. 339.	Ste. Cécile
			Also pts. Lots Nos. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 and 21; and pt. Lot No. 1.	St. Stanislas de Kostka
	1898.			*4.—Chambly Canal.*
13409	Aug. 9..	Joseph B. Many	Pt. Lot No. 224	St. Luc
13410	" 9..	Timothé Dupuis	Pt. Lot No. 221	"
13411	" 9..	Joseph Gabouriau	Pts. Lots Nos. 222, 223, 244	"
13412	" 9..	Tharsile Bessette	Pt. Lot No. 218	"
13413	" 9..	Léocadie Dubuc	Pts. Lots Nos. 220, 221	"
13414	Sept. 10..	Léon Chartier, *et al.*	Pt. Lot No. 233	"
13415	Oct. 1..	Joseph Poirier, *et al*	Pt. Lot No. 225	"
13416	Nov. 26..	Patrice Dupuis, *et al*	Pt. Lot No. 219	"
	1899.			
13437	Feb. 6..	Hormisdas Riendeau	24, subdivision of Lot 130	Chambly Basin
13448	Mar. 14..	Her Majesty to H. Riendeau.	Pt. Lot No. 24, subdivision of Lot 130.	"
				5.—Carillon and Grenville Canals.
13446	" 2..	Reuben Weldon, *et ux.*	Pts. Lots Nos. 432 and 436 of Cad. and Book of Reference.	Township of Chatham

4.

Railways and Canals during the fiscal year ended June 30, 1899.

County.	Area.	Amount.	Remarks.
		$ cts.	
Rainy River District	23·74 acres.		Special grant.
"	1·5 "		"
"	0·46 "		"
Thunder Bay District			"
	6·00 acres.		Torrens certificate. Received too late for last year's report.
	4·00 "		" "
	2·00 "		" "
Pictou, N.S.		2,500 00	Release, land and premises, and land covered with water.
		Costs, 221 00	
Lévis	10,024 sq. ft.	5,256 80	
"	1,559 "		
"	10,497 "	8,397 60	
Beauharnois		150 00	Release, right of taking clay and gravel.
"		1,000 00	
"			
St. Johns	3,525 sq. ft.	4 41	
"	4,713 "	5 89	
"	11,527 "	14 40	
"	13,185 "	16 48	
"	9,451 "	11 81	
"	10,373 "	12 97	
"	3,822 "	4 78	
"	2,863 "	3 58	
Chambly		Letters Patent No. 13448.	Release, damages.
"	1,700 sq. ft.	$150 and Release No. 13437.	Letters patent.
Argenteuil	0·227 acres.	600 00	
	0·549 "		
	0·906 "		
	0·369 "		

No. 4.—PROPERTY conveyed and damages released to the Department of

No. of Deed.	Date of Signature.	Grantor.	Lot.	District.
	1898.			*6.—Lachine Canal.*
13357	Nov. 16..	Thomas A. Trenholme...	Cad. 141	Montreal.....
13362	Dec. 15..	Alex and Henry Mills...	Cad. 142.....	" .....
	1899.			
13408	Feb. 8..	Alex. Aubertin.....	3607.....	" .....
	1898.			*7.—Rideau Canal.*
13262	Aug. 19..	Patrick Hogan.....	....	Kingston Mills.....
13308	Oct. 5....	Her Majesty to The Desceronto Navigation Co., Ltd.	....	.....
				8.—Soulanges Canal.
13237	July 7....	Francis Delisle, *et al*....	76 and 77.....	St. Michel de Vaudreuil.....
13256	Aug. 1....	Moïse Leroux.....	Pt. Lot No. 451.....	St. Joseph de Soulanges.....
13285	Feb. 4....	Dame Odile Daoust.....	448, 449, 450 and 451.....	" " .....
13314	Oct. 12...	Alex. Leroux.....	Pts. Lots 344 and 355...	" " .....
13333	Nov. 3...	Arcade Bissonnette. ...	" 147 and 308.....	" " .....
13347	" 17...	Honoré Cuillierier	Pt. Lot 323.....	" " ....
13358	" 21. .	Julienne Dupont, *et al*...	75.....	Cascades Village.....
13369	Aug. 18..	Her Majesty to F. X. Lafrance.	Pts. Lots 441 and 445.....	St. Joseph de Soulanges.....
13370	" 18..	Her Majesty to Ovide Periard.	Pt. Lot 445.....	" " .....
13388	Nov. 30...	L. Joseph Lefaivre, *et al*.	70.....	St. Michel de Vaudreuil.....
13398	Dec. 26...	Maurice Tessier.....	Pt. Lot 331.....	St. Joseph de Soulanges.....
13399	" 26...	Laurent Tessier.....	" 332.....	" " .....
13400	" 26...	Adolphe Tessier.....	" 335.....	" " .....
	1899.			
13406	Feb. 2. . .	Alex. Cuillierier.....	" 354.....	" " .....
13418	Jan. 20...	Ovide Periard....	" 445.....	" " .....
13419	" 20...	F. X. Lafrance.....	Pts. Lots 441 and 445.....	" " .....
13443	" 30...	Mathilde Valois, *et al*...	53.....	Cascades Village..... ....
	1898.			
13447	Aug. 18...	Her Majesty to Moïse Leroux.	Pts. Lots 441 and 445	St. Joseph de Soulanges....
	1899.			
13474	April 18..	Moïse Leroux.....	" "	" " .....

SESSIONAL PAPER No. 10

Railways and Canals during the fiscal Year ended June 30, 1899—*Continued.*

County.	Area.	Amount.	Remarks.
		$ cts.	
Hochelaga		42 00	Release, damages.
"		42 00	" "
Côte St. Paul, Montreal		375 00	" "
Frontenac		200 00	Release, of all claims on buildings, &c.
		100 00	" damages to Str. "Nile" whilst passing through Hogsback Locks.
Vaudreuil		167 00	
Soulanges	0·066 acre	Pr., 300 00 Int., 15 00	
"	0·52 acres 5·63 " 6·39 " 6·57 "	Pr., 5,400 00 Int., 2,033 50	Received too late for last year's report.
"	4·27 " 5·49 "	7,024 00	
"	0·439 " 3·94 " 5·72 "	Pr., 2,860 00 Int., 1,310 84	
"	4·18 "	Pr., 2,008 70 Int., 914 75	
Vaudreuil		Pr., 65 00 Int., 16 68	(Heirs Sylvain Dupont.
Soulanges			Letters Patent.
"			Letters Patent.
Vaudreuil		76 11	(Lefaivre Estate).
Soulanges	4·30 acres	Pr., 2,050 35 956 48	
"	4·00 "	Pr., 2,036 23 Int., 949 56	
"	3·90 "	Pr., 2,326 67 Int., 1,084 99	
"	8·70 "	Pr., 2,752 65 Int., 1,270 79	
"		125 00 and Letters Patent No. 13370	Release, damages.
"		Letters Patent No. 13369	Release.
Vaudreuil		165 43	(Joseph Valois Estate).
Soulanges	0·582 acres 0·01 "		Letters Patent.
"	0·582 " 0·01 "	100 00 and Letters Patent No. 13447	Released, damages.

No. 4.—PROPERTY conveyed and damages released to the Department

No. of Deed.	Date of Signature.	Grantor.	Lot.	District.
	1899.			*Soulanges Canal*—Con.
13511	June 2....	Joseph A. Leroux.....	Pt. Lot 14.....	St. Joseph de Soulanges.....
	1898.			*9.—Trent Canal.*
13238	July 9...	P. Fitzgerald..	Pt. W. ½ of E. ½ Lot 1, Con. 8..	Township of Carden.....
13254	" 30...	Edward Johnson, *et al*...	E. ½ Lot 20, Con. 7....	" Fenelon.....
13255	" 30...	Elizabeth McNeil.... ..	Pt. Lot 32, Con. 8.	" " .....
13279	" 30...	Joseph Hore, *et al*.	E. ½ Lot 25, Con. 7.....	" " .....
13284	Sept. 9....	Peter Hamilton.....	Part Lot 8, Con. 10.....	" Douro.....
13316	Oct. 1....	Angus McIntyre, Jr ...	N. pt. Lot 26, Con. 5.....	" Eldon... .....
13315	Sept. 27...	Angus McIntyre, *et ux*.	" 27, Con. 5.....	" " .....
13331	Oct. 31...	John Suggitt, *et al*	E. pt. Lot 25, Con. 1.....	" Somerville.....
13359	Dec. 13...	Peter Clancy, *et al*	Pt. E. ½ Lot 31, Con. 12.....	" Otonabee .....
13360	" 13...	Wm. Collins and Cornelius Clancy.	" "	" " .....
	1899.			
13397	Jan. 13...	John Grundy, *et ux*.....	24, N. side of Smith St..... ..	Lakefield.....
13428	Feb. 13...	Thos. Fitzgerald and M. Smith.	Pt. Lot 1, E. Caroline St.....	" .....
13464	Mar. 30..	Elizabeth Rippon's Estate	" 11, S. Nelson St.....	" .....
	1895.			
13496	Sept. 28..	James Boulton..... ..	" 8, Con. 10..... .. .	Township of Douro.....
	1898.			*10.—Williamsburg Canals.*
13208	May 17...	William Dillon.....	Pt. W. ½ Lot. 9, Con. 1.....	Township of Edwardsburg...
13233	July 14...	John H. Meikle.....	Pts. Lots 18, 19 and 20. Block 96.	Morrisburg.....
	1898.			
13288	Sept. 15..	Catherine Wright, *et al*..	21, E side of Waddell St. & pt. Lot 1, S. Morrisson St.....	Cardinal...,.....
13319	Oct. 3..	T. F. Chamberlin, *et ux* and W. P. Chamberlin.	Pts. Lots 6 & 5, Block F.	Morrisburg.....
	1897.			
13320	July 30..	John Feeney.....	Pt. Lot 20, E. side of Waddell St.	Cardinal.....
	1898.			
13321	July 21..	Joseph Kerr, *et al*.....	Pts. Lots 25 & 26, Con. 1.	Township of Osnabruck.....
	1897.			
13332	Oct. 20..	Dept. Indian Affairs....	Pt. Drummond Island.....	" Edwardsburg. .
13329	" 15..	Dept. Indian Affairs....	Pt. Spencer's Island.....	" " .
13335	" 21..	Patrick Connell, *et ux*...	Pt. E. ½ Lot 28, Con. 1.....	" Mathilda.....
13337	Nov. 8..	George S. Thompson, *et ux*	Pt. W. ½ Lot 25, Con. 1.....	" " .....
13339	July. 9..	Patrick G. Roddy, *et ux*.	Pts. Lots 25 & 26, Con. 1.....	" Osnabruck.....
13352	Nov. 23..	Mary Serviss..... ..	Pt. E. ½ Lot 26, Con. 1	" Mathilda.....
13353	" 14..	Alex. McGruer.....	E. ½ Lot. 26, Con. 1.....	" " .....
13361	Oct. 21..	Thomas Ward, *et ux*.....	Pt. E. ½ of W. ½ Lot 10, Con. 1.	" Edwardsburg. .
13365	Nov. 21..	Hannah Johnston. . ..	Pt. E. ½ Lot 26, Con. 1..... .	" Mathilda.....
13407	Dec. 31..	Samuel Gore, *et ux*.....	Pt. Lot 19, Con. 1.....	" Edwardsburg.
	1899.			
13468	April 15..	William A. Fisher... ...	Pt. W. ½ Lot 27, Con. 1.....	" Mathilda.....
13482	Mch. 30..	Thomas Hunter..	Pt. front pts. Lots 2 & 3, Con. 1.	" Edwardsburg...
13503	June 1..	Anson Hawley.....	Pt. Lots 10 & 11, S. side Elgin St.	Cardinal.....
13504	May 31..	Sarah Galbraith.....	Pt. Lots 4, 8 & 9, S. of New Canal.	" ....

of Railways and Canals during the Fiscal Year ended June 30, 1899.—*Continued.*

County.	Area.	Amount.	Remarks.
		$ cts.	
Soulanges	5·40 acres	Pr., 1,600 00 Int., 784 00	
Victoria	10·72 "	72 00	
"		100 00	
"		125 00	
"	100 acres	125 00	
Peterborough	11·9 acres	300 00	
Victoria	19·14 "	255 00	
"	16·45 "	235 00	
"		62 00	
Peterborough	5·00 acres	50 00	Release, damages, (Estate E. Clancy).
"			Bond securing other claims. (Executors of E. Clancy.)
"		50 00	
"		125 00	Release, damages.
"	0·06 acre	190 00	
"	0·55 "	20 00	Received too late for last year's report.
Grenville	2·77 acres	625 00	" "
Dundas	0·058 acre	550 00	(Estate Janet McKenzie).
Grenville		1,400 00	
Dundas	60 sq. ft	442 00	
Grenville	0·005 acres	25 00	Received too late for last year's report.
Stormont	0·01, 1·00, 0·36 "	600 00	
Grenville	17·00 "	136 00	Order in Council.
"	4·25 "		" "
Dundas	2·31 "	175 00	
"	4·75 "	2,900 00	
Stormont	0·001, 1·75 "	425 00	
Dundas	3·45 "	1,350 00	
"		125 00	Release, damages.
Grenville	0·66 "	190 40	
Dundas	1·85 "	600 00	(Estate, N. Johnston.)
Grenville	0·50 "	100 00	
Dundas	2·00 "	1,015 00	
Grenville	2·00 "	400 00	
"	0·43 "	775 00	
"	0·1002 "	875 00	

No. 4.—PROPERTY conveyed and damages released to the Department

No. of Deed.	Date of Signature.	Grantor.	Lot.	District.
	1899.			*Williamsburg Canals*—Con.
13512	June 10..	Eliza J. Williams.....	Pt. Lot letter 'F.,' N. side of Dundas St.	Cardinal.....
13513	May 30..	John H. Vancamp.....	Pt. Lot letter 'N.' N. side of Dundas St.	" .....
13519	June 12..	Trustees Cardinal Methodist Church.	Pt. Lot letter 'F.,' N. side of Dundas St.	" .....
13543	May 30..	Henrietta M. Wallace...	Pt. Lot 35, S. side of Lambert St., Block 'L.'	" .....
13557	June 22..	Nelson Gillard, *et al*.	Pt. Lot 26, W. side of Waddell St.	" .....
13558	" 19 .	Albert Kelly, *et ux*.....	Pt. Lot 26&11, E. side Walter St.	" .....
13559	" 1..	Elizabeth Barber, *et al*...	Pt. E. ½ Lot 9, Con. 1.....	Township of Edwardsburg...
13560	April 17..	Sarah A. Hanes, *et al*....	Pt. Lot 4, Block 'F.'.....	Morrisburg.....
13561	June 20..	Adam Lavere, *et ux*. ...	Pt. Lot 22, S. side New Canal..	Cardinal.....
13566	" 5..	Joseph Byers, *et ux*.. ..	N. W. corner of an unnumbered Lot S. of Dundas St.	" .....
13567	" 27..	William Clark, *et al*.....	Pt. Lot letter 'F.,' N. side of Dundas St.	" .....
13571	" 20..	William Blakely, *et ux*..	Pt. Lot 23, N. side Lambert St..	" .....
13592	" 22..	Ashley D. Vancamp.....	Pt. Lots 20 & 21, N. side of Lambert St.	" .....

OTTAWA, October 11, 1899.

of Railways and Canals during the Fiscal Year ended June 30, 1899.—*Concluded.*

County.	Area.	Amount.	Remarks.
		$ cts.	
Grenville	0·084 acres	1,675 00	
"	0.051 "	900 00	
"	0·112 "	300 00	
"	0·007 "	60 00	
"	0·155 "	575 00	
"	0·172 "	1,500 00	
"	0·77 "	475 00	
Dundas	90 sq. ft	900 00	
Grenville	0·060 acres	835 00	
"	0·02 "	1,800 00	
"	0·090 "	325 00	(Trustees Presbyterian Cemetery.)
"	0·060 "	800 00	
"	0·111 "	675 00	(Executor, R. Braithwaite Estate.)

GERARD S. RUEL,
Law Clerk.

PART V

CANAL STATISTICS

CANAL STATISTICS

FOR

SEASON OF NAVIGATION 1898

REVENUE.

The total revenue, exclusive of hydraulic rents for two years, is as follows:

For 1897	$ 346,758 87
For 1898	341,679 23

By comparing the statistics of 1897 with 1898, it will be seen that the gross revenue has decreased $5,079.64.

The increases and decreases are as follows:—

	Increase.	Decrease.
On the Welland Canal		$ 19,935 82
" St. Lawrence Canal	$ 17,353 03	.....
" Chambly Canal		3,982 47
" Ottawa Canals	2,888 34	.....
" Rideau Canal		1,402 32
" St. Peters Canal	27 62	.....
" Trent Valley Canals		59 02
" Murray Canal	29 00	.....
" Sault Ste. Marie Canal	.....	.....
Total	$ 20,297 99	$ 25,377 63
Total decrease		5,079 64

STATEMENT of the Revenue, together with the increases and decreases of all the Canals for the seasons of Navigation from 1889 to 1898, inclusive.

Years.	Revenue.	Increase.	Decrease.
1889	$ 381,109 31	$ 59,675 38	.....
1890	338,059 51	.....	$ 33,049 80
1891	350,351 97	2,292 46	.....
1892	358,711 04	8,359 07	.....
1893	348,012 00	.....	10,699 04
1894	307,824 67	.....	40,187 33
1895	283,211 41	.....	24,613 26
1896	350,061 03	66,849 62	.....
1897	346,758 87	.....	3,302 16
1898	341,679 23	.....	5,079 64

In compliance with the renewed request of forwarders and shippers of Montreal and the management of the Canada Atlantic Railway Co., for a reduction of tolls on certain agricultural products, His Excellency the Governor General in Council on June 1, 1898, authorized a reduction of canal tolls, as follows:—

For the season of 1898 the canal tolls for the passage of the following food products, wheat, indian corn, pease, barley, rye, oats, flax-seed and buckwheat for through passage

eastward through the Welland Canal, shall be 10 cents per ton, and for through passage eastward through the St. Lawrence Canals, only 10 cents per ton, payment of the said tolls of 10 cents per ton for passage through the Welland Canal to entitle these products to free passage through the St. Lawrence Canals, or any portion thereof; further, in the case of any of the above-named products brought down from Parry Sound over the line of the Canada Atlantic Railway Company to their elevator at Coteau Landing, the through rate thereon from that point to Montreal, to be 5 cents per ton.

In consequence of the reduced rate of tolls, as above, being applicable to the said food products, irrespective of their destination, the reduced rate of 10 and 5 cents a ton respectively only was collected, and therefore no refunds were made on these articles for 1898.

It may be observed, however, that the reduction of tolls from 20 to 10 cents per ton on the articles referred to, for passage through the Welland Canal, amounts to $68,887.30.

The quantity of barley, corn, oats, pease, rye and wheat passed down the Welland Canal, from ports west of Port Colborne for a period of seventeen years is as follows:—

	Quantity Passed Down to Montreal.	Quantity on which full Tolls were Paid.	
		To Ports in Ontario.	Quantity from U. S. Ports to U. S. Ports.
	Tons.	Tons.	Tons.
1882	180,694		63,881
1883	186,814	10,650	121,876
1884	142,194	12,153	104,537
1885	96,569	11,909	117,346
1886	203,940	9,881	151,551
1887	185,034	11,838	134,868
1888	160,358	25,599	169,664
1889	267,769	19,075	213,766
1890	288,513	16,899	245,932
1891	295,509	6,805	202,710
1892	261,954	8,942	201,540
1893	501,806	25,555	222,958
1894	273,651 *	16,699	203,979
1895	231,491	32,096	133,823
1896	461,049	73,386	160,372
1897	560,254	53,257	157,756
1898	519,532	31,279	144,612

The tolls on grain for passage through the Welland Canal prior to 1884 were 20 cents a ton; since that date, however, reductions have been made by Orders in Council from year to year as follows:—Upon the urgent request of forwarders and others interested in the grain trade, a reduction was made of one-half the usual rate of tolls on grain passing down the Welland Canal and the St. Lawrence Canals to Montreal; and in 1885 tolls were reduced to 2 cents a ton, and thereafter from year to year including 1891.

In 1892 the tolls were reduced to 2 cents a ton on grain passed down the Welland and St. Lawrence Canals and exported, and in such cases only.

In 1893 by Order in Council of 13th of February, the tolls were reduced to 10 cents a ton on grain passing eastward through the Welland Canal, irrespective of its destination, and the same rate of tolls for 1894 were allowed by O. C., April 16, 1894.

For the year 1895 (O. C., April 1, 1895,) the same rate of tolls was allowed as was granted for the year 1894.

*Of the quantity of grain passed down to Montreal there were transhipped at Ogdensburg in 1891 17,817 tons; in 1892, 4,341 tons; in 1893, 71,445 tons; in 1894, 23,030 tons; in 1895 18,987 tons; in 1896, 77,355 tons; in 1897, 89,659, and in 1898, 40,257.

For the year 1896 (O. C., April 23, 1896,) the same rate of tolls was allowed as was granted for the year 1895.

For the year 1897 (O.C., April 17, 1897,) the same rate of tolls was allowed as was granted for the year 1896.

For the year 1898 (O.C., June 1, 1898,) the same rate of tolls was allowed as was granted for the year 1897.

The rate through the St. Lawrence Canals only, was 10 cents a ton.

It may be remarked that goods having paid full tolls on the Welland Canal are allowed to pass down the St. Lawrence Canals to Montreal free from payment of any further tolls.

During the last decade the quantity of agricultural products, as above passed down the Welland and St. Lawrence Canals to Montreal, has increased from 267,769 tons in 1889 to 519,532 tons in 1898 ; and the quantity passed down the Welland Canal from United States ports to United States, has decreased from 213,766 to 144,612 tons for the same years.

The quantity of barley, buckwheat, corn, oats, pease, rye and wheat, arrived at Montreal via Grand Trunk and Canadian Pacific Railways for a period of 13 years, is reported as follows :—

	Tons.
For 1886	165,613
1887	191,760
1888	113,794
1889	94,943
1890	119,208
1891	184,410
1892	291,680
1893	147,610
1894	60,666
1895	51,114
1896	153,717
1897	228,611
1898	293,391

The quantity of the same articles passed down the whole length of the St. Lawrence Canals to Montreal, for the same period was :—

	Tons.
For 1886	272,133
1887	237,881
1888	166,191
1889	275,414
1890	242,571
1891	320,434
1892	302,899
1893	532,084
1894	288,015
1895	247,550
1896	495,898
1897	604,200
1898	575,097

Comparative shipments of grain by the St. Lawrence route, and rail and water via the state of New York, are as follows:—

QUANTITY OF GRAIN TO SEA-BOARD BY COMPETING ROUTES.

The quantity of grain and pease passed down the whole length of the St. Lawrence Canals to Montreal, is as follows:—

	Tons.
For 1897	604,200
1898	675,097
Showing a decrease of	29,103

The quantity of grain and pease carried to Montreal via Canadian Pacific and Grand Trunk Railways, is reported as follows:—

	Tons.
For 1897	228,611
1898	293,391
Showing an increase of	64,780

The quantity of grain arrived at tide-water by New York canals, is reported as follows:—

	Tons.
For 1897	569,362
1898	459,404
Showing a decrease of	109,958

The quantity of grain carried to tide-water by the New York railways, is reported as follows:—

	Tons.
For 1897	4,132,740
1898	5,371,500
Showing an increase of	1,238,760

The increases and decreases for 1898 as compared with 1897 on the several routes, competing for the carrying trade to the seaboard, are as follows:—

—	Increase.	Decrease.	Increase per cent.	Decrease.
On the St. Lawrence Canals		29,103		5·06
do Canadian Pacific and Grand Trunk Railways.	64,780		28·34	
do New York Canals		109,958		23·95
do do Railways	1,238,760		29·97	

By reference to Appendix U, it will be seen that the quantity of freight from ports west of Port Colborne to the United States ports, Oswego, Ogdensburg, &c., has

increased from 204,315 tons in 1887 to 258,871 tons in 1898, and the quantity to Ontario ports, between Port Dalhousie and Cornwall, has increased from 67,632 tons in 1887 to 110,893 tons in 1898. The quantity passed down to Montreal shows an increase from 213,834 tons in 1887 to 539,305 tons in 1898.

TRANSHIPMENT OF GRAIN.

The quantity of grain passed down the Welland Canal in Canadian and United States vessels to Kingston and Prescott for fourteen years, is as follows :—

In Canadian vessels there were in—

				Tons.
1885,	75	cargoes, with an aggregate quantity of	.....	45,639
1886,	244	do	do	143,330
1887,	284	do	do	178,233
1888,	182	do	do	143,025
1889,	208	do	do	165,117
1890,	203	do	do	184,275
1891,	209	do	do	190,664
1892,	158	do	do	159,018
1893,	146	do	do	148,962
1894,	125	do	do	159,145
1895,	123	do	do	136,617
1896,	196	do	do	227,912
1897,	180	do	do	229,265
1898,	166	do	do	224,021

In United States vessels there were in—

				Tons.
1885,	79	cargoes, with an aggregate quantity of	.....	55,982
1886,	97	do	do	62,222
1887,	19	do	do	12,477
1888,	60	do	do	43,667
1889,	114	do	do	108,358
1890,	35	do	do	35,560
1891,	77	do	do	90,153
1892,	89	do	do	109,812
1893,	257	do	do	328,269
1894,	84	do	do	106,236
1895,	56	do	do	73,987
1896,	158	do	do	217,978
1897,	197	do	do	285,847
1898,	339	do	do	464,852

Seven vessels took cargoes of 2,436 tons through to Montreal intact in 1898, seven of 2,324 in 1897, three of 1,176 in 1896, four of 1,344 tons in 1895, two cargoes of 810 tons in 1894, none in 1893, two in 1892 of 924 tons, and three in 1891 of 1,441 tons. Twenty-five vessels lightened a portion of their cargoes in 1898, against 11 in 1897, 16 in 1896, 6 in 1895, 19 in 1894, 34 in 1893, 25 in 1892, and 44 in 1891; 473 vessels discharged the whole of their cargoes at Kingston in 1898, against 359 in 1897, 335 in 1896, 169 in 1895, 188 in 1894, 369 in 1893, 220 in 1892, and 293 in 1891.

The quantity of grain transhipped at Port Colborne in 1898 and the four previous years is given below.

The total number of grain laden vessels lightened at this port in 1898 was 58, against 147 the previous year.

The quantity of grain lightened was as follows :—

Articles.	1894.	1895.	1896.	1897.	1898.
	Bush.	Bush.	Bush.	Bush.	Bush.
Wheat	104,827	322,662	660,190	642,927	239,518
Corn	260,657	870,705	908,833	697,508	313,689
Rye	Nil	Nil	8,197	Nil	37,380
Oats	63,412	71,648	79,585	12,527	Nil
Barley	..	21,003	6,377	5,119	5,669

Welland Canal.

The total quantity of freight passed on the Welland Canal during the season of 1898 was 1,140,077 tons; of this quantity 19,347 tons were way or local freight.

There were 916,671 tons of freight passed eastwards, and 223,406 tons passed westwards.

East and west bound through freight.

The total quantity of through freight passed through the whole length of the Welland Canal during the season of 1898 was 1,120,730 tons.

Of this quantity 902,519 tons were east bound and 218,211 west bound freight.

Of the east bound through freight Canadian vessels carried 302,625 tons and United States vessels carried 599,894 tons; and of the west bound through freight Canadian vessels carried 7,661 tons, and United States vessels carried 210,550 tons, or a total of 310,286 tons for Canadian and 810,444 tons for American vessels.

St. Lawrence Canals.

The total quantity of freight passed through these canals during 1898 was 1,439,134 tons, of this quantity 1,235,003 tons passed eastward and 204,131 tons passed westward.

East and west bound through freight.

The total quantity of through freight was 813,704 tons; of this quantity 783,976 tons were east bound and 29,728 tons were west bound.

Way freight.

Of the total quantity of (way) or local freight 451,027 tons were east bound and 174,403 tons west bound freight.

THROUGH TRAFFIC BETWEEN MONTREAL AND PORTS ON LAKE ERIE, MICHIGAN, ETC.

The total quantity of through freights passed eastward and westward through the Welland and St. Lawrence Canals, from Lake Erie to Montreal, during fifteen years, is as follows:—

	Eastward to Montreal. Tons.	Westward from Montreal. Tons.
1884	168,715	9,425
1885	132,968	16,115
1886	244,514	16,801
1887	213,834	14,075
1888	183,899	19,310
1889	298,197	25,370
1890	231,746	13,951
1891	309,593	14,060
1892	263,144	9,452
1893	508,016	16,545
1894	292 191	9,439
1895	266,659	10,555
1896	480,077	10,050
1897	584,246	4,542
1898	538,108	4,436

FREIGHT FROM UNITED STATES PORTS TO UNITED STATES PORTS.

The total quantity of freight passed eastward and westward through the Welland Canal, from United States ports to United States ports, for a period of fifteen years, is as follows:—

	Eastward. Tons.	Westward. Tons.	Total. Tons.
1884	163,998	243,081	407,079
1885	168,212	216,297	384,509
1886	224,916	239,562	464,478
1887	189,427	151,074	340,501
1888	221,062	213,689	434,751
1889	297,353	266,231	563,584
1890	318,259	215,698	533,957
1891	306,257	247,543	553,800
1892	300,733	240,332	541,065
1893	384,559	247,108	631,667
1894	361,319	230,948	592,267
1895	255,259	214,520	469,779
1896	385,695	267,518	653,213
1897	353,863	210,831	564,694
1898	277,023	210,516	487,539

The total quantity of freight passed through the Welland Canal from United States ports to United States ports shows a decrease of 77,155 tons, as compared with the previous year; and an increase of 80,460 tons, as compared with 1884.

The following statement shows the aggregate number of vessels, and the total quantity of freight passed through the Welland Canal, and the quantity passed between United States ports during the years 1867 to 1898 inclusive:

Fiscal Year	Aggregate number of Vessels.	Total quantity transported on the Welland Canal.	Quantity passed from United States ports to United States ports.
	No.	Tons.	Tons.
1867	5,405	933,260	458,386
1868	6,157	1,161,821	641,711
1869	6,069	1,231,903	688,700
1870	7,356	1,311,956	747,567
1871	7,729	1,478,122	772,756
Season of Navigation.			
1872	6,063	1,333,104	606,627
1873	6,425	1,506,484	656,208
1874	5,814	1,389,173	748,557
1875	4,242	1,038,050	477,809
1876	4,789	1,099,810	488,815
1877	5,129	1,175,398	493,841
1878	4,429	968,758	373,738
1879	3,960	865,664	284,043
1880	4,104	819,934	179,605
1881	3,332	686,506	194,173
1882	3,334	790,643	282,806
1883	3,267	1,005,156	432,611
1884	3,138	837,811	407,079
1885	2,738	784,928	384,509
1886	3,589	980,135	464,478
1887	2,785	777,918	340,501
1888	2,647	878,800	434,753
1889	2,975	1,085,273	563,584
1890	2,883	1,016,165	533,957
1891	2,594	975,013	553,800
1892	2,615	955,554	541,065
1893	2,843	1,294,823	631,667
1894	2,412	1,008,221	592,267
1895	2,222	869,595	469,779
1896	2,766	1,279,987	653,213
1897	2,725	1,274,292	564,694
1898	2,384	1,140,077	487,539

The total quantity of freight passed through the several divisions of the canals during the season of 1898 is as follows :—

——	Farm Stock.	Forest Produce of Wood.	Manufactures.	Merchandise.	Agricultural Products.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Welland	9	140,031	32,203	235,364	732,470	1,140,077
St. Lawrence	1,106	61,502	76,285	348,091	952,150	1,439,134
Chambly	234	155,939	6,152	99,539	9,472	271,336
Ottawa	1,684	538,250	649	3,200	6,203	549,986
Rideau	19	30,238	2,395	18,989	3,305	54,946
St. Peters	40	5,878	1,449	50,666	6,457	64,490
Murray	6	4,037	3,235	5,067	3,198	15,543
Trent Valley	249	26,606	248	151	422	27,676

The total quantity of freight moved on the Welland Canal was 1,140,077 tons, of which 732,470 tons were agricultural products.

On the St. Lawrence Canals the total quantity of freight moved was 1,439,134 tons, of which 952,150 were agricultural products, and 348,091 tons were merchandise,

On the Ottawa Canals the total quantity of freight moved was 549,986 tons, of this quantity 538,250 tons were the produce of the forest.

STATISTICAL COMPARISON OF VARIOUS UNITED STATES ROUTES.

The statistical comparisons heretofore given in respect to the quantities of the principal articles carried through the Welland Canal, and those carried over routes in the United States, in competition with that work, have been continued to date.

By reference to statement H, as to the quantity of vegetable food carried to tidewater, it will be observed that the quantity carried by the New York Canals was 653,027 tons in 1898, 744,575 tons in 1897, 957,182 tons in 1896, 602,505 in 1895, 1,400,129 in 1894, 1,450,116 in 1893, 937,999 in 1892, and 1,092,355 in 1891.

The quantities of vegetable food carried by the New York Central, Erie and New York, West Shore and Buffalo Railways being :—

	Tons.
In 1898	7,060,542
1897	5,673,638
1896	5,183,540
1895	3,798,574
1894	4,281,056
1893	*5,107,426
1892	5,913,013
1891	3,565,381
1890	4,336,199
1889	3,654,984

	Tons.
In 1888	*3,197,734
1887	*3,847,766
1886	*3,802,262
1885	4,105,594
1884	3,639,805
1883	4,422,461
1882	3,885,557
1880	4,732,385
1869	1,087,809

*Flour and grain only

The following figures are an abstract of the quantities of vegetable food carried to tide-water by the canals and railways of the state of New York during thirty years :—

——	Canals.	Railways.	Total.	Proportions by Canals.
	Tons.	Tons.	Tons.	Tons.
1869	1,302,613	1,087,809	2,390,342	·545
1870	1,295,010	1,766,457	3,061,467	·423
1871	1,850,198	2,205,589	4,055,787	·456
1872	1,674,320	1,870,614	3,544,934	·472
1873	1,745,171	2,036,992	3,782,163	·461
1874	1,767,598	2,791,517	4,559,115	·387
1875	1,305,550	2,343,241	3,648,791	·357
1876	1,064,293	2,875,803	3,940,096	·270
1877	1,498,984	2,493,683	3,992,667	·375
1878	1,912,734	3,695,764	5,608,498	·341
1879	1,833,399	4,353,617	6,187,016	·296
1880	2,371,090	4,732,385	7,103,475	·333
1881	1,116,561	4,983,722	6,100,283	·183
1882	1,118,776	3,885,557	5,004,333	·223
1883	1,379,000	4,422,461	5,801,461	·237
1884	1,236,986	3,639,805	4,876,791	·253
1885	1,063,310	4,105,594	5,168,904	·205
1886	1,489,886	3,802,262	5,292,148	·281
1887	1,539,403	3,847,766	5,387,169	·285
1888	1,166,958	3,197,734	4,364,692	·267
1889	1,296,896	3,654,984	4,951,880	·262
1890	1,167,901	4,336,199	5,504,100	·212
1891	1,092,355	3,565,381	4,657,736	·234
1892	937,999	5,913,013	6,851,012	·137
1893	1,452,563	5,107,426	6,599,989	·284
1894	1,400,129	4,281,056	5,681,185	·327
1895	602,505	3,798,574	4,401,079	·159
1896	957,182	5,183,540	6,140,722	·156
1897	744,575	5,673,638	6,418,213	·116
1898	653,027	7,060,542	7,713,569	·085

COMPARATIVE STATEMENT OF TRAFFIC BY RAILWAYS AND CANALS VIA THE STATE OF NEW YORK.

On reference to the returns made by the railways to the state authorities of New York, and to the canal statistics submitted to the state legislature, I find that of the total tonnage of freight carried by the canals and railways, the state canals carried :—

	Per cent.		Per cent.
In 1859	68·9	In 1884	19·0
1869	47·0	1885	17·1
1879	38·9	1886	16·9
1871	38·9	1887	16·3
1872	40·1	1888	18·8
1873	34·9	1889	15·1
1874	31·7	1890	13·9
1875	28·4	1891	13·4
1876	24·6	1892	9·8
1877	28·3	1893	10·1
1878	27·1	1894	10·2
1879	23·7	1895	9·7
1880	25·1	1896	8·5
1881	18·5	1897	8·3
1882	19·0	1898	6·9
1883	18·7		

SESSIONAL PAPER No. 10

The quantity of freight carried by the canals and railways was greater in 1898 by 5,599,518 tons than the quantity carried in 1897, and an increase of 36,857,856 tons over 1869.

The quantities carried were as follows:—

	Total Tonnage.	Proportion by Canals.
In 1859	5,485,076	·6890
1869	12,453,174	·4705
1870	15,148,274	·3895
1871	15,844,152	·3896
1872	16,631,609	·4012
1873	18,200,208	·3497
1874	18,283,547	·3174
1875	17,101,758	·2841
1876	16,948,627	·2462
1877	17,489,770	·2833
1878	19,017,301	·2719
1879	22,590,766	·2373
1880	25,706,586	·2512
1881	27,857,394	·1859
1882	28,693,054	·1905
1883	30,167,119	·1877
1884	26,293,844	.1905
1885	27,543,948	·1718
1886	31,168,744	·1698
1887	34,029,791	·1632
1888	26,244,610	·1883
1889	35,466,042	·1514
1890	37,624,199	·1394
1891	38,524,179	·1343
1892	43,618,569	·0982
1893	42,953,233	·1009
1894	37,916,412	·1024
1895	36,170,339	·0967
1896	43,756,051	·0849
1897	43,711,512	·0828
1898	49,311,030	·0682

Average freight rates, grain, Chicago to Buffalo:—(as reported by the Secretary Merchants' Exchange, Buffalo).

Year.	Wheat.	Year.	Wheat.
1879	4·7	1890	1·9
1880	5·7	1891	2·5
1881	3·2	1892	2·2
1882	2·5	1893	1·6
1883	3·5	1894	1·2
1884	2·1	1895	1·9
1885	2·0	1896	1·7
1886	3·6	1897	1·5
1887	4·1	1898	1·5
1888	2·7		
1889	2·5	Average twenty years	2·6

COMPARATIVE STATEMENT of the Commerce through the United States, St. Mary's Falls Canal and Canadian Sault Ste. Marie Canal, for the seasons of 1897 and 1898.

		TRAFFIC FOR 1898.		TOTAL TRAFFIC FOR		INCREASE.	DECREASE.
		United States Canal.	Canadian Canal.	Season of 1898.	Season of 1897.	Amount.	Amount.
Vessels	Number.	14,058	3,675	17,733	17,080	655	
Lockages	"	7,008	2,520	9,528	8,571	957	
Tonnage, registered	Net tons.	15,871,609	2,757,630	18,629,239	17,621,318	1,007,921	
" freight	"	18,184,151	3,055,287	21,239,438	18,986,689	2,252,749	
Passengers	Number.	27,558	16,584	44,142	40,450	3,692	
Coal, (hard)	Net tons.	465,188	67,445	532,633	534,726		2,093
" (soft)	"	2,669,904	573,067	3,242,971	2,507,049	735,922	
Flour	barrels.	6,917,025	847,048	7,764,073	8,908,201		1,144,128
Wheat	bushels.	52,693,452	9,746,452	62,439,904	55,931,779	6,508,125	
Grain (excluding wheat)	"	22,950,940	3,188,177	26,139,117	24,968,136	1,170,981	
Manufactured and pig iron	net tons.	237,150	13,655	250,805	136,703	114,102	
Salt	barrels.	271,783	32,370	304,153	290,014	14,139	
Copper	net tons.	118,403	3,515	121,918	130,077		8,159
Iron ore	"	9,841,124	1,831,731	11,672,855	10,621,440	1,051,415	
Lumber	ft, B.M.	885,176,000	13,611,580	898,787,580	802,240,156	96,547,424	
Silver ore	net tons.				5		5
Building stone	"	4,670	2,493	7,163	8,262		1,099
†Unclassified freight	"	544,259	72,697	616,956	588,324	28,632	

† Included in unclassified freight for,—

1897.	Tons.	1898.	Tons.
Wool	2,905	Wool	2,601

The United States canal was open to navigation during the season of—

1889	234	days.
1890	228	"
1891	225	"
1892	233	"
1893	219	"
1894	234	"
1895	231	"
1896	232	"
1897	234	"
1898	241	"

The Canadian canal was open to navigation during the season of—

1895	87	days.
1896	218	"
1897	238	"
1898	243	"

The average number of vessels passing per day through the two canals for the season of 1898 was seventy-four.

R. DEVLIN,
Compiler of Canal Statistics.

OTTAWA, June 8, 1899.

SHIPMENTS of Grain (in Transit through Canada and Export) by Lake from Chicago during 1898.
(From Report of Board of Trade, Chicago.)

SHIPPED TO.	BARLEY.	CORN.		OATS.		RYE.		WHEAT.		TOTALS.
	Export.	Transit.	Export.	Transit.	Export.	Transit.	Export.	Transit.	Export.	
	Bush.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Sarnia, Ont.		247,215		2,961,047						3,208,262
Collingwood, Ont.		138,145	289,060							427,205
Depot Harbour "		759,771	2,338,604		46,375		64,830		609,450	3,819,030
Kingston "			4,258,096		180,150		124,650		758,482	5,321,378
Midland "		916,553	2,599,759					312,018		3,828,330
Owen Sound "		327,075	1,529,383						134,000	1,990,458
Parry Sound "		309,708	3,238,235		50,000				202,100	3,800,043
Prescott "	223,929		3,940,666				204,610		406,078	4,775,283
Totals.	223,929	2,698,467	18,193,803	2,961,047	276,525		394,090	312,018	2,110,110	27,169,989

Exports by Lake from Chicago to Canada during the Season of Navigation in 1898.

(From report of Board of Trade, Chicago.)

Commodities.		Quantity.	Value.
			$ cts.
Barley	Bush.	223,929	89,708 00
Corn	"	18,193,803	6,391,443 00
Flaxseed	"	181,760	159,353 00
Oats	"	276,525	84,927 00
Rye	"	394,090	196,937 00
Wheat	"	2,110,110	1,853,899 00
Grass seed	Sacks	3,405	3,183 00
Flour	Barrels	23,096	90,215 00
Flourine	"	900	1,134 00
Cereal foods	"	130	527 00
Dextrine gum	Sacks	90	360 00
Gluten meal	"	1,968	1,574 00
Malt	"	3,620	1,833 00
Mill stuffs	"	3,520	2,820 00
Starch	Pkgs.	25,375	73,695 00
Sugar	"	72,246	113,205 00
Glucose	Barrels	2,835	33,071 00
Corn oil	"	480	5,618 00
Oils	"	2,080	12,995 00
Oilcake	Sacks	2,265	6,264 00
Cured meats	Barrels	277	3,104 00
Grease	Tierces	620	6,482 00
Lard	"	12,235	205,460 00
Pork	Barrels	10,860	115,974 00
Tallow	Tierces	1,405	13,971 00
Steel rails	Tons	13,977	240,731 00
Steel plates	"	3,788	67,572 00
Angle bars	"	880	18,439 00
Wire rods	"	6,945	118,930 00
Bolts	"	10	324 00
Spikes	"	37	1,082 00
Hardware	Pkgs.	1,551	2,971 00
Cement	Sacks	300	60 00
Coal	Tons	7	24 00
Soap	Boxes	550	1,330 00
Dried fruits	Pkgs.	600	1,155 00
Woods (manufactured)	Feet	1,100	126 00
Miscellaneous merchandise		3,849	5,563 00
Total value			9,926,059 00

GRAIN FREIGHTS BY LAKE, SEASON OF 1898.

THE following were the current rates of freight on Wheat and Corn from Chicago to Buffalo, Kingston, Odgensburg and Montreal (Steam), also to New York by Lake and Erie Canal, for each week, during the Season of Navigation.

1898.	To Buffalo.		To Ogdensburg.		To Kingston.		To Montreal (Steam).		Erie Canal, Buffalo to New York.		Chicago to New York, Lake and Canal, Exclusive of Buffalo Charges.	
	Wheat, per bushel.	Corn, per bushel.	Wheat, per bushel.	Corn, per bushel.	Wheat, per bushel.	Corn, per bushel.	Wheat, per bushel.	Corn, per bushel.	Wheat, per bushel.	Corn, per bushel.	Wheat, per bushel.	Corn, per bushel.
	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
April 2....	1¼	1⅛	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" 9....	1¼	1¼	.....	.....	.....	2⅜	.....	4⅜	.....	.....	.....	.....
" 16....	1¼	1¼	.....	.....	.....	2¼	.....	4⅜	.....	.....	.....	.....
" 23....	1	1¼	.....	.....	.....	3	.....	4⅜	.....	.....	.....	.....
" 30....	1⅛	1¼	.....	2⅞	.....	2⅞	.....	4⅛	.....	.....	.....	.....
May 7....	1⅛	1¼	.....	2¾	.....	2⅜	.....	4⅜	3	2¼	4⅜	3⅜
" 14....	1⅛	1¼	.....	.....	3	2¼	4¾	4⅜	3	2⅜	4⅜	3⅜
" 21....	1⅛	1¼	.....	2½	.....	2⅜	.....	4⅛	3	2¼	4⅜	3⅜
" 28....	1⅛	1¼	.....	.....	.....	2½	.....	4⅛	3	2¼	4⅜	3⅜
June 4....	1⅛	1¼	.....	.....	2¼	.....	4	.....	3	2¼	4¼	3¼
" 11....	1¼	1	.....	.....	.....	1¾	.....	.....	3	2¾	4	3¼
" 18....	1¼	1	.....	.....	.....	.....	.....	.....	3	2⅜	4¼	3⅜
" 25....	1¼	1	.....	.....	.....	1⅝	.....	3¼	3	2⅛	4⅛	3⅜
July 2....	1⅛	⅞	.....	.....	.....	.....	.....	.....	3	2¼	4	3¼
" 9....	1	¾	.....	1⅝	.....	1⅝	.....	3¼	3	2⅜	3⅞	3¼
" 16....	⅞	⅝	.....	.....	.....	.....	.....	.....	2¾	2⅜	4	3⅜
" 23....	1¼	1¼	.....	1⅝	.....	1¾	.....	3⅜	2¼	2¼	4	3⅜
" 30....	1¼	1⅛	.....	1⅞	.....	1⅛	.....	3½	2¼	2⅛	3⅞	3¼
Aug. 6....	1¼	1⅛	.....	.....	2	.....	3¾	.....	2⅜	2⅛	3⅞	3¼
" 13....	1¼	1⅛	.....	.....	.....	2	.....	3⅝	2⅜	2⅛	3⅞	3¼
" 20....	1⅛	1⅛	.....	.....	.....	2⅛	.....	3¾	2⅜	2¼	4⅛	3⅜
" 27....	1⅛	1⅛	.....	.....	.....	2⅛	.....	3¾	2⅜	2⅛	4⅛	3⅜
Sept. 3....	1¼	1¼	.....	.....	2½	.....	4¼	.....	2⅜	2⅛	4	3⅜
" 10....	1⅜	1¼	.....	.....	.....	.....	.....	4	2⅜	2⅛	3⅞	3¼
" 17....	1¼	1⅛	.....	.....	2¼	.....	4	.....	2⅜	2⅛	4⅛	3⅜
" 24....	1⅛	1¼	.....	.....	.....	3	.....	4⅝	2⅜	2⅛	4⅛	3⅜
Oct. 1....	1⅜	1⅜	.....	.....	.....	3	.....	4⅝	2⅜	2⅛	4⅛	4⅛
" 8....	2	1⅝	.....	.....	.....	3⅛	.....	5⅛	2⅜	2⅛	4⅜	4⅛
" 15....	2	1¾	.....	.....	.....	3½	.....	5⅛	2⅝	2⅜	4⅝	4⅜
" 22....	2¼	2	.....	.....	.....	.....	.....	.....	3⅜	3	5⅜	5
" 29....	2½	2¼	.....	.....	.....	.....	.....	.....	3⅜	3	5¾	5¼

Nov. 5....	2¾	2½	....	....	....	....	....	....	3	2⅝	5¾	5⅛
" 12....	2½	2¼	....	....	....	3⅞	....	5½	3	2⅜	5½	4⅞
" 19....	2¼	2	....	....	....	4	....	5⅝	2⅞	2⅜	5⅛	4⅝
" 26....	2¼	2	4¼	....	....	....	....	....	2⅞	2⅝	5⅛	4⅝
Dec. 3....	2¼	2	....	....	....	4	....	5⅜	....	....	....	....
" 10....	2¼	2	....	4½	....	....	....	....	....	....	....	....
" 17....	2¼	2	....	....	....	....	....	....	....	....	....	....

LAKE FREIGHTS FROM CHICAGO TO BUFFALO ON WHEAT AND CORN.

STATEMENT showing the dates of the changes of the ruling rates of Lake freights, on Wheat and Corn, from Chicago to Buffalo, during 1898 (as reported by the Secretary of Merchants' Exchange, Buffalo.)

1898.	Wheat, Bushels.	Corn, Bushels.	1898.	Wheat, Bushels.	Corn, Bushels.
Opening.	cts.	cts.	Opening.	cts.	cts.
April 2	1⅝	1⅛	Aug. 9	1¼	1⅛
do 4		1¼ to 1⅜	do 10		1⅛
do 6		1⅛ to 1¼	do 18		1⅛ to 1¼
do 7		1 to 1⅛	do 20	1¼ to 1⅜	1⅛ to 1¼
do 8		1⅛	do 22		1⅛
do 9	1¼	1⅛	do 31	1¼	1⅛
do 11		1⅛	Sept. 1	1¼	1⅛
do 13	1⅜	1⅛	do 17	1⅜	1¼
do 14		1¼	do 21	1½	1¼
do 16		1⅛	do 22	1⅜	1⅜ to 1½
do 18		1 to 1⅛	do 24		1⅛
do 20	1¼	1⅛	do 26		1½ to 1⅝
do 26		1⅛	do 27	2	1⅝
May 2	1⅜	1¼	Oct. 4	1⅞ to 2	1⅝
do 5		1¼	do 6	2	1⅝
do 9	1⅜	1¼	do 7	2	1¾ to 1⅞
do 10	1⅜	1⅛ to 1¼	do 8	2¼	2
do 11	1⅜	1¼	do 12	2½	2¼
June 2		1⅛	do 15	2¾	2½
do 3		1 to 1⅛	do 19	3	2½ to 2¾
do 4		1	do 20	3¼	3
do 7		⅞ to 1	do 21	3⅛ to 3¼	3
do 8		⅞	do 25	3	2¾ to 2⅞
do 10		1	do 26	2¾	2½ to 2⅝
do 13		⅞	do 27	2¾	2⅝
do 15		⅞	do 31		2½
do 18		⅝ to ⅞	Nov. 2		2¼
do 20		⅞	do 4	2½	2¼
do 27		⅝ to ⅞	do 5		2¼
do 28		⅞	do 7		2⅛ to 2¼
do 29		⅝ to ⅞	do 8		2¼
July 1		⅞	do 11		2⅛
do 21		⅞	do 15	2¼	2
do 26		1	Dec. 1 to close	2	1¾

NOTE.—Corn from Chicago to Kingston ranged from 1⅝ to 3⅞ cents, and wheat, 3 cents per bushel during the season. Corn to Port Huron, ¾ to 1¾ cents.

Rates from Milwaukee about the same as from Chicago.

AVERAGE LAKE FREIGHTS.

The following statement shows the average rates of lake freights on wheat and corn between Chicago and Buffalo during each month in the past ten years, the highest and lowest rate on wheat in each year, and the average rate on wheat each year in cents, per bushel:—

(Per Report of the Secretary of Merchants' Exchange, Buffalo.)

	Grain, bushel.	May. Cents.	June. Cents.	July. Cents.	Aug. Cents.	Sept. Cents.	Oct. Cents.	Nov. Cents
1889	Wheat	2·2	2·0	2·1	2·7	3·0	3·0	2·5
	Corn	2·0	1·8	1·9	2·4	2·7	2·7	2·3

Highest rate, wheat, 1889, 3·6c.; lowest, 2c.; average for the season, 2·5c.

1890	Wheat	1·8	2·2	2·3	1·5	2·0	1·8	2·0
	Corn	1·6	2·0	2·0	1·3	1·8	1·6	1·8

Highest rate, wheat, 1890, 2½c.; lowest, 1·5c.; average for the season, 1·9c.

1891	Wheat	1·4	1·2	2·1	2·7	3·3	2·2	4·1
	Corn	1·2	1·1	2·0	2·5	3·0	2·1	3·8

Highest rate, wheat, 1891, 5¼c.; lowest, 1c.; average for the season, 2·4c.

1892	Wheat	1·9	1·8	2·0	2·3	2·3	2·3	2·6
	Corn	1·7	1·6	1·8	2·1	2·1	2·1	2·3

Highest rate, wheat, 1892, 3c.; lowest, 1c.; average for the season, 2·2c.

1893	Wheat	1·3	1·8	1·2	1·3	1·7	2·1	2·0
	Corn	1·2	1·6	1·1	1·2	1·5	1·9	1·8

Highest rate, wheat, 1893, 2¾c.; lowest, 1c.; average for the season, 1·6c.

1894	Wheat	1·4	1·2	0·9	1·0	1·4	1·1	1·3
	Corn	1·2	1·1	0·9	0·9	1·3	1·0	1·3

Highest rate, wheat, 1894, 3c.; lowest, ⅞c.; average for the season, 1·2c.

1895	Wheat	1·2	1·2	1·1	1·6	2·1	3·0	3·0
	Corn	1·1	1·1	1·0	1·4	1·9	2·9	2·7

Highest rate, wheat, 1895, 3c.; lowest, 1c.; average for the season, 1·9c.

1896	Wheat	1·6	1·5	1·2	1·3	1·4	2·0	2·1
	Corn	1·4	1·3	1·1	1·2	1·2	1·9	1·9

Highest rate, wheat, 1896, 2⅝c.; lowest, 1¼c.; average for the season, 1·7c.

1897	Wheat	1·3	1·2	1·3	1·5	2·0	1·8	1·5
	Corn	1·2	1·1	1·2	1·4	1·8	1·7	1·4

Highest rate, wheat, 1897, 2⅝c.; lowest, 1c.; average for the season, 1·5c.

1898	Wheat	1·3	0·1	0·9	1·2	1·4	2·5	2·3
	Corn	1·2	0·8	0·8	1·1	1·3	2·3	2·1

Highest rate, wheat, 1898, 3¼c.; lowest, 1¼c.; average for the season, 1·5c.

LAKE FREIGHTS FROM DULUTH TO BUFFALO ON WHEAT (AS REPORTED BY THE SEC. OF THE MERCHANTS' EXCHANGE, BUFFALO, N.Y.).

The following statement shows the lake freight rates on wheat from Duluth to Buffalo, during the season of 1898 :—

1898.	Wheat, Bushels.	1898.	Wheat, Bushels.
	cts.		cts.
April 16	1⅜	Oct. 12	2¾
" 22	1¼	" 13	3
May 3	1½	" 17	3¼
" 13	1⅜	" 20	3½
June 14	1¼	" 26	3¼
July 1	1	Nov. 1	3
" 7	1¼	" 5	2½
Aug. 17	1½	" 22	2¾
" 22	1⅜	" 27	2½
Sept. 16	2	Dec. 1	2¾
" 25	2¼	" 2	3½
Oct. 11	2½		

In 1885, the range of freights on wheat, Duluth to Buffalo, was 1½ to 5c. ; in 1886, 3¼ to 8c. ; in 1887, 5 to 8c.; in 1888, 2 to 5c. ; in 1889, 2 to 5c. ; in 1890, 2 to 5c. ; in 1891, 1¼ to 9½c. ; in 1892, 2¼ to 4c. ; in 1893, 1¼ to 3½c.; in 1894, 1¼ to 3c.; in 1895, 2 to 6c.; in 1896, 1¼ to 3c.; in 1897, 1 to 2½c.; in 1898, 1 to 3½c. per bushel.

The first departure by lake, at Duluth in 1898, was on April 16; in 1896 on April 22, and in 1895 on April 27. In 1894, season opened on April 19 ; in 1893, on May 8 ; in 1892, on April 21 ; in 1891, on April 30 ; in 1890, on March 26 ; in 1889, on April 20 ; in 1888, on May 12 ; in 1887, on May 4 ; in 1886, on May 7.

Wheat was shipped at Kingston, Canada, per bushel, during the season of 1887, at 6¼ to 7¾c. ; in 1888, at 4 to 5c.; in 1889, at — ; in 1890, 5¾, 5½, 4½, 4¼, 4c.; in 1891, during May, 3⅜, 3½, 2½c .; during June, 3c.; and on July 25, 2½c. ; in 1892, 5c. in April ; 5 to 5¼c. in May ; 4c. in June ; 4½c. in July ; 3c. in August ; 6 to 6¼c. in October ; in 1893, ranged from 5½ to 4½c. in April ; 4½ to 4⅜c. in May ; 4 to 3½c. in June ; 2¾ to 3c. in July ; 3½ to 3¾c. in September ; no figures quoted after that date. In 1894, ranged from 3¼ to 3½c. in May ; 3½c. in June ; 2½c. in July ; 2½ to 3¼c. in August ; 4c. in September ; and 4¼c. in October. On August 25 and November 3, 1894, wheat to Ogdensburg at 3¼c. and 4½c. respectively. In 1895, wheat to Kingston from 3c. to 5c. In 1896, wheat to Kingston from 3c. to 5½c.; and in 1897, wheat to Kingston 3c. to 3⅛c. according to time of year ; 1898 not given.

LAKE FREIGHTS FROM TOLEDO TO BUFFALO ON WHEAT.

The following statement shows the ruling rates of lake freights, on wheat from Toledo to Buffalo, during the season of 1898, on the dates specified, as reported by the Secretary Merchants' Exchange, Buffalo.

Date, 1898.	Wheat, Bushels.	Date, 1898.	Wheat, Bushels.
	cts.		cts.
Opening to October 24	1	November 1 to close of season	1½
October 24 to November 1	1¼		

The range for 1886 was 1¾ to 3c.; for 1887, 2¼ to 3c.; for 1888, 1½ to 2⅛c.; for 1889, 1¾ to 2c.; for 1890, 1½ to 2c.; for 1891, 1 to 3c.; for 1892, 1½ to 2½c.; for 1893, 1 to 2c.; for 1894, 1 to 2c.; for 1895, 1 to 2¼c.; for 1896, 1¼ to 1⅜c.; for 1897, 1 to 1¼c., and for 1898, 1 to 1½c. per bushel.

From Toledo to Ogdensburg, wheat and corn shipped, at 6 to 7c. in 1887; at 4½ to 6c. for wheat and 5c. for corn in 1888; and 5c. to 5⅞c. for wheat in 1889 per bushel. From Toledo, on October 8, 1887, corn shipped to Kingston at 3½c. and on November 12 at 4½c. per bushel. In 1888, corn Toledo to Kingston at 4½c. to 3c.; and wheat at 3½ to 3c. per bushel. In 1889, wheat Toledo to Kingston, 3c.; and in 1891, rye Toledo to Kingston at 3c. per bushel. From Toledo, on June 2, 1887, wheat shipped to Montreal by propeller at 6½c.; on June 14, corn at same price; but on September 26 the rate on corn was only 5c. per bushel. In 1888, corn Toledo to Montreal, at 6 to 5¾c. and wheat at 5½c. per bushel. From 1889 to 1898, no shipments to Montreal or other places in Canada reports.

Canal Freights from Buffalo to New York.

The following shows the changes in the ruling rates of freight to New York from Buffalo, on the days specified in 1898 as reported by the Secretary, Merchants' Exchange, Buffalo).

Date, 1898.	Wheat. Bush.	Corn. Bush.	Date, 1898.	Wheat. Bush.	Corn. Bush.
	cts.	cts.		cts.	cts.
May 21	3	2⅛	Sept. 10	2⅛	2⅛
June 2	3	2¼	" 20	2⅛	2¼
" 15	2⅞	2¼	" 29	2⅛	2⅛
" 25	3	2⅛	Oct. 4	2⅛	2⅛
July 21	2⅞	2⅛	" 14	2⅛	2⅛
" 22	2⅞	2⅛	" 17	3	2⅛
" 27	2⅞	2¼	" 20	3⅛	2⅞
Aug. 3	2⅛	2⅛	" 22	3⅛	3
" 9	2⅛	2⅛	" 31	3¼	2⅞
" 19	2⅛	2¼	Nov. 1	3¼	2⅞
" 20	2⅞	2¼	" 4	3	2⅛
" 29	2⅞	2⅛	" 14 to close	2⅞	2⅛
Sept. 7	2⅛	2¼			

The freight on oats varied from 1⅝ to 2¼c. per bushel.

Pine lumber per 1,000 feet, was carried from Buffalo and Tonawanda to New York as follows: Opened at $1.25 to $1.75; changed October 10 to $2.00 and continued at that rate to the close. Rates to Albany, $1.50 to $1.75 and continued to close.

AVERAGE CANAL FREIGHTS.

BUFFALO TO NEW YORK.

The following statement shows the average rates of canal freights on wheat and corn between Buffalo and New York during each month in the past ten years, and the highest and lowest rates on wheat and average rate on wheat in each:—

(Reported by Sec. Merchants' Exchange, Buffalo.)

	Grain.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
		Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
1889	Wheat	4·0	3·8	4·0	4·4	5·0	5·0	5·0
	Corn	3·6	3·4	3·6	3·9	4·5	4·5	4·4
Highest rate, wheat, 1889, 5c.; lowest, 3·7c.; average for the season, 4·8c.								
1890	Wheat	3·9	3·8	3·6	3·8	3·9	4·0	3·5
	Corn	3·5	3·4	3·2	3·4	3·5	3·6	3·1
Highest rate, wheat, 1890, 4·2c.; lowest, 3c.; average for the season, 3·8c.								
1891	Wheat	2·8	2·9	2·8	3·8	4·2	4·6	4·0
	Corn	2·5	2·6	2·5	3·5	3·8	4·2	3·6
Highest rate, wheat, 1891, 3¾c.; lowest, 2·5c.; average for the season, 3·5c.								
1892	Wheat	2·7	2·2	2·4	3·0	3·8	4·7	4·6
	Corn	2·4	2·0	2·2	2·6	3·4	4·4	4·3
Highest rate, wheat, 1892, 6c.; lowest, 2½c.; average for the season, 3·5c.								
1893	Wheat	4·8	4·8	4·6	4·6	4·0	4·7	4·8
	Corn	4·4	4·4	4·3	4·2	3·6	4·3	4·5
Highest rate, wheat, 1893, 5c.; lowest, 3·6c.; average for the season, 4·6c.								
1894	Wheat	3·1	2·9	3·3	3·4	3·6	2·9	3·0
	Corn	2·8	2·6	3·0	3·1	3·3	2·6	2·7
Highest rate, wheat, 1894, 4c; lowest, 2·6c. average for the season, 3·2c.								
1895	Wheat	1·9	1·7	2·0	2·0	2·1	2·5	2·7
	Corn	1·7	1·5	1·7	1·7	2·0	2·2	2·5
Highest rate, wheat, 1895, 3c.; lowest, 1·9c; average for the season, 2·2c.								
1896	Wheat	3·7	3·7	3·7	3·7	3·7	3·7	3·8
	Corn	3·5	3·5	3·5	3·5	3·5	3·5	3·6
Highest rate, 1896, 4c.; lowest, 3·1c.; average for the season, 3·7c.								
1897	Wheat	2·6	2·2	2·3	2·5	3·3	3·1	3·5
	Corn	2·2	1·8	2·0	2·2	2·8	2·6	3·0
Highest rate, wheat, 1897, 3·5c; lowest, 2c.; Average for the season, 2·8c.								
1898	Wheat	3·0	2·9	2·8	2·7	2·6	3·0	3·0
	Corn	2·5	2·3	2·4	2·1	2·2	2·6	2·6
Highest rate, wheat, 1898; 3·4c.; lowest, 2·5c.; average for the season, 2·8c.								

NOTE.—Canal free of tolls since 1882.

FREIGHT, TOLLS, ELEVATING AND STORAGE RATES COMPARED.

The following statement shows the receipts of grain and flax-seed at Buffalo, the average canal freight on wheat, and the tolls on wheat to New York, and the elevating and storage rates at Buffalo for a series of years (as reported by Secretary, Merchants' Exchange, Buffalo):

Year.	Grain received.	Average Canal Freight on Wheat.	Tolls on Wheat.	Elevating, including Storage.
	Bush.	cts.	cts.	cts.
1870	32,208,039	11·2	3·1	1¼
1871	61,319,313	12·6	3·1	1¼
1872	58,703,666	13·0	3·1	1¼
1873	65,498,955	11·4	3·1	1¼
1874	55,660,198	10·0	3·1	1¼
1875	52,833,451	7·9	2·0	1
1876	44,207,121	6·6	2·0	1
1877	61,822,292	7·4	1·0	1
1878	78,828,443	6·0	1·0	1
1879	75,089,768	6·8	1·0	1
1880	105,133,009	6·5	1·0	1
1881	56,389,827	4·7	1·0	⅞
1882	51,501,503	5·4	1·0	⅞
1883	65,722,080	4·9	None.	⅞
1884*	58,011,800	4·2	do	⅞
1885*	52,671,090	3·8	do	⅞
1886*	75,570,850	5·0	do	⅞
1887*	87,073,570	4·6	do	⅞
1888*	73,977,390	3·4	do	⅞
1889*	92,290,550	4·8	do	⅞
1890*	91,994,680	3·8	do	⅞
1891*	135,315,510	3·5	do	⅞
1892*	138,872,560	3·5	do	⅞
1893*	140,796,410	4·6	do	⅞
1894*	105,435,577	3·2	do	⅞
1895*	121,225,497	2·2	do	⅞
1896*	172,474,664	3·7	do	⅞
1897*	204,964,103	2·8	do	⅞
1898*	221,383,945	2·8	do	⅝ to

NOTE—Prior to 1870 tolls 6·21 cents per bushel, and the elevating charge 2 cents per bushel.

* Including flax seed.

AVERAGE FREIGHT CHARGES PER BUSHEL.

For the transportation of wheat and corn from Chicago to New York for a series of years.

(From Report of Board of Trade, Chicago.)

	Corn.			Wheat.		
	By lake and canal.	By lake and rail.	By all rail.	By lake and canal.	By lake and rail.	By all rail.
1858	·127	.....	·3619	·1550	.....	·3861
1859	·1570	.....	·3248	·1663	.....	·3480
1860	*a* ·0833	.....	·3248	*a* ·095	.....	·3480
1861	*a* ·1062	.....	·3881	*a* ·1210	.....	·4158
1862	*a* ·0957	.....	·4480	*a* ·1062	.....	·4800
1863	*a* ·063	.....	·4592	*a* ·072	.....	·4920
1864	*a* ·09	.....	·5600	*a* ·0952	.....	·60
1865	*a* ·0864	.....	·4188	*a* ·0894	.....	·4488
1866	*a* ·1075	.....	·4312	*a* ·1377	.....	·4620
1867	*a* ·0511	.....	·4176	*a* ·08	.....	·4475
1868	*a* ·0604	.....	·3532	*a* ·0802	.....	·3784
1869	*a* ·0584	·2355	·3320	*a* ·0651	·2520	·3557
1870	*a* ·16	·2220	·28	*a* ·0677	·2250	·30
1871	*a* ·0754	·2372	·2968	*a* ·0687	·2542	·3180
1872	*a* ·1072	·2660	·3266	*a* ·1110	·2950	·3499
1873	*a* ·0816	·2298	·2893	*a* ·0917	·2461	·3102
1874	*a* ·0382	·1388	·2450	*a* ·0400	·1709	·2625
1875	*a* ·034	·1303	·2240	*a* ·0378	·1389	·2400
1876	*b* ·0875	·1079	·1574	*b* ·0982	·1136	·1686
1877	*b* ·0959	·1406	·1890	*b* ·1109	·1546	·2050
1878	*b* ·0883	·1053	·1652	*b* ·0996	·1209	·1770
1879	*b* ·1049	·1220	·1456	*b* ·1187	·1313	·1774
1880	*b* ·1341	·1443	·1748	*b* ·1313	·1580	·1980
1881	*b* ·0777	·0942	·1340	*b* ·0867	·1049	·1440
1882	*b* ·0672	·1028	·1350	*b* ·0723	·1091	·1447
1883	*b* ·0803	·11	·1512	*b* ·0901	·1163	·1620
1884	*b* ·0655	·085	·1232	*b* ·07	·10	·1320
1885	*b* ·063	·0801	·1232	*b* ·0654	·0902	·1320
1886	*b* ·0845	·1120	·14	*b* ·0910	·12	·1500
1887	*b* ·0850	·1120	·1470	*b* ·0950	·12	·1575
1888	*b* ·0671	·1026	·1354	*b* ·0705	·1114	·1450
1889	*b* ·0632	·0819	·126	*b* ·0692	·0897	·1500
1890	*b* ·0593	·0732	·1136	*b* ·0676	·0852	·1430
1891	*b* ·0632	·0753	·1400	*b* ·0695	·0857	·1500
1892	*b* ·0595	·0721	·1296	*b* ·0645	·0759	·1380
1893	*b* ·0718	·0797	·1365	*b* ·0766	·0848	·1463
1894	*b* ·0493	·0650	·1232	*b* ·0511	·0700	·1320
1895	*b* ·0450	·0640	·1029	*b* ·0486	·0696	·1189
1896	*b* ·0575	·0615	·1050	*b* ·0619	·0661	·1200
1897	*b* ·0453	·0692	·1143	*b* ·0522	·0742	·1250
1898	‡ ·0381	·0441	·0980	‡ ·0445	·0491	·1200

a To Buffalo only. *b* Including Buffalo charges and tolls. ‡ Exclusive of Buffalo charges.

FOREIGN FREIGHT RATES.

ANNUAL average Freight Rates on Grain, Flour and Provisions (per 100 lbs.) from Chicago to European Ports, by all Rail to Sea-board and thence by steamers.

Shipped to	Articles.	1898.	1897.	1896.	1895.	1894.
		$	$	$	$	$
Liverpool	Grain	·3435	·3360	·3350	·3200	·3250
"	Sacked flour	·3766	·3681	·3430	·3400	·3316
"	Provisions	·4715	·4440	·4491	·4181	·4406
Glasgow	Grain	·3600	·3523	·3422	·3419	·3463
"	Sacked flour	·3906	·3906	·3650	·3625	·3503
"	Provisions	·5250	·5250	·4997	·4969	·4659
London	Grain	·3500	·3400	·3348	·3329	·3288
"	Sacked flour	·3725	·3612	·3528	·3513	·3493
"	Provisions	·4969	·4814	·4715	·4603	·4575
Antwerp	"	·5250	·5109	·4969	·4828	·4688
Hamburg	"	·5200	·5100	·5100	·5000	·5000
Amsterdam	"	·5250	·5200	·5200	·5000	·5000
Rotterdam	"	·5250	·5200	·5200	·4800	·5000
Copenhagen	"	·5813	·5728	·5812	·5531	·5531
Stockholm	"	·6925	·6853	·6937	·6656	·6656
Stettin	"	·5813	·5728	·5812	·5531	·5531
Bordeaux	"	·6575	·6413	·6413	·6413	·6250

LAKE FREIGHTS ON COAL FROM BUFFALO TO CHICAGO AND OTHER PORTS.

The following statement shows the ruling freight rates on coal per net ton in cents from Buffalo to ports named during the season of 1898, for the week ending on the dates specified.

1898 Week ending	Chicago.	Milwaukee.	Duluth and Superior Ports	Green Bay	Gladstone.	Sheboygan.	Toledo.	Racine.	Saginaw.	Bay City.
	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.
April 9	20	20	20	20			20	20		
" 16	20	20	20	20			20	20		
" 23	20	20	20	20			20	25		
" 30	20	20	20	20			20	25		
May 7	20	20	20		20			25		
" 14	20	20	20				20			
" 21	20	20	20					25	35	25
" 28	20	20	20				20	25		
June 4	20	20	20				20	25		
" 11	20	20	20	20	20		20			
" 18	20	20	20	20	20		20	25		
" 25	20	20	20	20	20		20	25	35	35
July 2	20	20	20		20		20		35	
" 9	20	20	20		20		20		35	
" 16	20	20	20		20					
" 23	30	30	25		25		20			
" 30	30	30	25	30	25		20	35		
Aug. 6	30	30	25	30		30	20	35	35	25
" 13	25	25	25	25			20			25
" 20	25	25	25		25	30	20	25		25
" 27	30	30	20	30	25		20			
Sept. 3	30	30	20	30			25			
" 10	25	25	20	25	20		25	30		
" 17	25	25	20	25	20		25	30		25
" 24	25	25	20	25	20		25	30		25
Oct. 1	25	25	20		20		25			25
" 8	25	30	20	25	20		25	40		25
" 15	30	50	20		20		20	40		
" 22	50	50	20	40			20	40		
" 29	50	50	20	40	20		20	40		
Nov. 5	40	40	20	50	20		50	40		
" 12	40	40	40	50	40		50	60		
" 19	40	40	40	50	40		50	60		
" 26	40	40	40	50	40		50	60		
Dec. 3	40	40	40	50	40		50	60		
" 10	40	40	40	50	40		50	60		

TOTAL VALUES of Merchandise Received from British North America for Immediate Transit across United States Territory, for Immediate Tran hipment in Ports of the United States to British North America, and so shipped, during each year from 1873 to 1898 inclusive.

YEAR ENDING JUNE 30.	COUNTRIES FROM WHICH RECEIVED.					COUNTRIES TO WHICH SHIPPED.				
	British North America.					British North America.				
	Nova Scotia, New Brunswick, and Prince Edward Island.	Quebec, Ontario, Manitoba and the North-west Territories.	British Columbia.	Newfoundland and Labrador.	Total.	Nova Scotia, New Brunswick, and Prince Edward Island.	Quebec, Ontario, Manitoba and the North-west Territories.	British Columbia.	Newfoundland and Labrador.	Total.
	$	$	$	$	$	$	$	$	$	$
1873	495,289	12,894,164	5,240	.....	13,394,693	5,282,290	21,320,174	181,720	.....	26,784,184
1874	449,655	13,616,344	97,691	.....	14,163,690	7,150,036	19,843,169	317,534	.....	27,310,739
1875	443,570	17,342 933	256,074	.....	18,042,577	8,999,596	20,283,639	517,060	.....	29,800,295
1876	261,443	22,134,275	195,047	1,137	22,591,902	9,102,600	14,658,358	658,836	94	24,419,888
1877	160,658	12,092,619	218,418	.....	12,471,695	2,879,422	15,551,238	544,018	2,475	18,977,153
1878	163,978	11,627,114	412,966	.....	12,204,058	951,268	11,436,470	524,013	934	12,912,685
1879	194,129	11,606,832	280,079	55	12,081,095	889,539	11,520,877	476,824	2,347	12,889,587
1880	215,131	16,782,315	137,271	.....	17,134,717	1,643,716	14,866,663	531,436	288	17,042,103
1881	171,383	16,758,108	72,555	.....	17,002,046	1,778,836	20,857,827	719,268	333	23,356,264
1882	164,990	28,265,083	113,018	87	28,543,178	2,732,665	34,005,845	855,784	1,190	37,595,484
1883	561,791	29,204,031	36,973	25	29,802,820	2,455,557	35,878,389	971,307	7,335	39,312,568
1884	656,233	12,574,953	188,041	.....	13,419,227	1,740,900	19,717,466	1,475,833	5,186	22,939,385
1885	933,806	12,280,483	308,691	633	13,523,613	1,635,442	16,448,942	1,615,293	781	19,700,458
1886	1,165,973	9,303,864	359,104	32,079	10,861,020	2,040,298	16,369,429	1,825,178	6,174	20,241,079
1887	1,684,730	9,606,175	213,816	.....	11,504,721	1,621,748	19,930,296	635,841	70	22,187,955
1888	1,525,048	6,417,701	372,934	27,134	8,542,817	1,781,028	13,459,169	370,322	1,137	13,611,656
1889	2,596,233	8,355,178	294,859	89,853	11,336,123	2,484,787	18,993,957	665,527	2,704	22,146,975
1890	3,070,657	12,449,772	306,897	174,584	16,001,910	5,277,210	21,140,198	913,106	4,690	27,335,204
1891	3,859,079	15,310,945	422,806	187,640	19,780,470	5,605,614	21,695,992	547,144	34,273	27,883,023
1892	4,393,062	19,005,704	201,373	328,116	23,928,255	2,079,783	24,189,181	428,188	6,962	26,704,114
1893	1,009,597	16,404,425	89,565	381,986	17,885,573	2,052,357	20,232,400	409,055	26,289	22,720,111
1894	1,070,676	15,649,881	348,069	273,467	17,342,093	1,831,417	17,880,688	463,471	6,640	20,182,216
1895	1,199,782	17,774,108	411,557	236,415	19,621,862	1,834,745	19,320,714	558,991	7,844	21,722,294
1896	1,118,185	18,038,931	582,469	404,020	20,143,605	1,572,783	19,441,279	772,586	1,768	21,788,416
1897	1,118,055	22,497,151	611,322	367,295	24,593,823	1,682,538	17,660,211	1,312,797	8,130	20,663,676
1898	1,440,950	35,596,039	1,744,289	555,706	39,336,984	1,586,413	22,400,622	2,294,356	19,247	26,250,638

TOTAL VALUES of Merchandise received from the Principal and other Foreign Countries for Immediate Transit across United States Territory or for Immediate Transhipment in Ports of the United States to other foreign countries, and so shipped, for each Year from 1868 to 1898 inclusive.

Year ending June 30.	COUNTRIES FROM WHICH RECEIVED.						COUNTRIES TO WHICH SHIPPED.						Total Value of Merchandise received and shipped.
	Great Britain and Ireland.	Germany.	British North American Possessions.	Mexico.	Cuba.	Other Countries.	Great Britain and Ireland.	Germany.	British North American Possessions.	Mexico.	Cuba.	Other Countries.	
	$	$	$	$	$	$	$	$	$	$	$	$	$
1868	10,664,576	132,074	4,864,209	14,967	4,263,621	1,576,157	2,025,023	3,212,123	14,375,419	481,643	116,521	1,304,875	21,516,604
1869	10,891,698	150,382	5,852,678	60,715	2,373,474	1,767,037	2,693,525	1,547,602	15,033,821	448,300	72,875	1,299,861	21,095,984
1870	10,210,455	302,806	7,215,973	103,977	3,309,227	2,049,422	2,946,053	2,116,249	16,689,037	321,331	135,915	983,275	23,191,860
1871	13,473,915	322,110	7,954,060	344,179	1,367,573	1,913,200	4,031,319	1,033,307	18,406,475	346,872	345,224	1,211,840	25,375,037
1872	17,633,231	227,232	9,276,169	174,104	2,227,422	1,847,162	2,743,494	2,263,819	24,042,790	358,151	179,570	1,797,496	31,385,320
1873	19,144,815	250,704	13,394,693	286,607	5,737,904	1,284,462	5,144,175	5,622,325	26,784,184	235,113	319,771	1,993,617	40,099,185
1874	18,832,900	211,907	14,163,690	151,920	4,563,869	926,390	5,391,201	3,866,642	27,310,739	665,214	520,493	1,096,387	38,850,676
1875	18,657,276	325,648	18,042,577	115,527	1,759,308	1,785,947	7,229,912	1,495,285	29,860,295	1,155,004	248,358	757,429	40,686,283
1876	14,304,197	290,489	22,591,902	226,315	2,962,963	1,686,789	11,791,200	2,958,558	24,419,888	1,129,440	600,061	1,163,508	42,062,655
1877	13,732,085	337,897	12,471,695	158,852	1,095,451	1,460,793	7,758,501	1,108,298	18,977,153	329,577	306,311	776,933	29,256,773
1878	10,084,510	378,768	12,204,058	146,822	3,041,957	1,481,033	9,577,050	2,905,230	12,912,685	316,664	319,611	1,305,908	27,337,148
1879	8,795,340	521,917	12,081,095	222,320	1,954,042	1,521,153	8,175,951	2,252,572	12,889,587	330,968	174,757	1,272,032	25,095,867
1880	10,311,139	620,704	17,134,747	239,655	3,606,099	1,942,405	10,856,579	3,658,477	17,042,103	300,148	224,848	1,775,594	33,857,749
1881	14,898,052	721,344	17,002,046	217,444	2,642,550	2,222,122	9,122,079	2,729,246	23,356,264	671,008	177,340	1,648,121	37,704,048
1882	18,911,637	755,560	28,543,178	380,100	5,662,926	3,812,058	11,592,806	5,336,361	37,595,484	800,025	319,257	2,421,526	58,065,459
1883	20,242,222	1,149,195	29,802,820	281,309	3,126,069	4,276,712	11,089,865	2,758,994	39,312,568	2,282,473	352,552	3,081,875	58,878,327
1884	14,038,694	948,901	13,419,227	408,124	3,655,568	4,345,878	5,288,389	2,960,488	22,939,385	2,748,434	221,061	2,656,635	36,814,392
1885	11,064,186	1,140,548	13,523,613	308,293	4,853,354	3,545,544	7,235,519	3,771,524	19,700,458	1,262,515	119,376	2,346,146	34,435,538
1886	13,142,644	1,462,414	10,861,020	216,078	6,797,879	4,558,229	8,510,097	3,803,566	20,241,079	1,279,399	452,700	2,751,423	37,038,264
1887	17,977,200	1,670,952	11,504,721	111,635	6,780,853	4,720,760	10,052,219	4,353,992	22,187,955	2,002,476	608,121	3,561,358	42,766,121
1888	13,707,240	1,817,511	8,342,817	120,497	4,820,846	4,534,298	6,853,195	2,551,043	15,611,656	3,766,180	563,539	3,997,596	33,343,209
1889	19,080,647	2,582,456	11,336,123	296,654	9,054,736	5,052,610	9,233,659	4,581,064	22,146,975	4,781,110	892,158	5,768,287	47,403,253
1890	20,664,427	2,735,546	16,002,384	639,050	9,759,256	5,898,763	10,656,465	5,097,434	27,335,678	4,944,149	1,215,399	6,450,301	55,699,426
1891	20,879,851	2,819,238	19,780,470	565,338	6,977,901	6,475,119	11,968,808	3,640,940	27,883,023	5,052,318	966,851	7,985,977	57,497,917
1892	21,334,783	2,930,571	23,928,255	1,383,455	11,054,445	8,936,228	20,141,862	6,995,419	26,704,114	4,953,911	1,472,980	9,299,451	69,567,737
1893	20,387,339	3,466,885	17,885,573	1,652,200	10,131,171	14,426,669	18,511,287	7,986,637	22,720,111	4,607,549	2,034,761	12,089,492	67,949,837
1894	19,641,622	3,717,740	17,342,093	1,858,367	9,916,742	19,031,011	18,394,865	11,154,933	20,182,216	4,543,455	2,586,919	16,645,187	71,507,575
1895	18,531,083	4,122,899	19,621,862	2,515,091	10,420,277	10,465,981	20,562,325	6,684,735	21,722,294	4,512,293	1,951,985	10,243,561	65,677,193
1896	19,420,751	3,460,489	20,143,605	1,797,161	11,668,243	13,272,521	20,022,263	7,942,844	21,788,416	5,210,607	1,890,705	12,907,932	69,762,770
1897	17,513,324	3,183,390	24,593,823	1,903,924	9,589,820	13,275,822	24,809,259	5,333,860	20,663,676	5,320,563	2,058,454	11,874,291	70,060,103
1898	18,931,226	3,775,038	39,336,984	2,625,521	4,763,587	11,587,069	33,276,696	3,807,811	26,250,638	5,543,843	1,728,780	10,411,607	81,019,375

FOREIGN CARRYING TRADE.

VALUE of the Imports and Exports of the United States carried respectively in cars and other land vehicles, in American vessels and in foreign vessels during each Fiscal Year, from 1857 to 1898 inclusive, with the percentage car ied in American vessels (coin and bullion are included from 1857 to 1879 inclusive,) as method of transportation of specie and merchandise cannot be separately stated.

Year ending June 30.	Imports.			Exports.			Total Imports and Exports.				Percentage carried in American vessels.
	In cars and other land vehicles	In American vessels.	In Foreign vessels.	In cars and other land vehicles	In American vessels.	In Foreign vessels.	In cars and other land vehicles	In American vessels.	In Foreign vessels.	Total.	
	$	$	$	$	$	$	$	$	$	$	
1857		259,116,170	101,773,971		251,214,857	111,745,825		510,331,027	213,519,796	723,850,823	70·5
1858		203,700,016	78,913,134		243,491,288	81,153,133		447,191,304	160,066,267	607,257,571	73·7
1859		216,123,428	122,644,702		249,617,953	107,171,509		465,741,381	229,816,211	695,557,592	66·9
1860		228,164,855	134,001,399		279,082,902	121,039,394		507,247,757	255,040,793	762,288,550	66·5
1861		201,544,055	134,106,098		179,972,733	69,372,180		381,516,788	203,478,278	584,995,066	65·2
1862		92,274,100	113,497,629		125,421,318	104,517,667		217,695,418	218,015,296	435,710,714	50·0
1863		109,744,580	143,175,340		132,127,891	199,880,691		241,872,471	343,056,031	584,928,502	41·4
1864		81,212,077	248,350,818		102,849,409	237,442,730		184,061,486	485,793,548	669,855,034	27·5
1865		74,385,116	174,170,336		93,017,756	262,839,588		167,402,872	437,010,124	604,412,996	27·7
1866		112,040,395	333,471,763		213,671,466	351,754,928		325,711,861	685,226,691	1,010,938,552	32·2
1867		117,209,536	300,622,035		180,625,368	280,708,368		297,834,904	581,330,403	879,165,307	33·9
1868		122,965,225	248,659,583		175,106,348	301,886,491		297,981,573	550,546,074	848,527,647	35·1
1869		136,802,024	300,512,231		153,154,748	285,979,781		289,956,772	586,492,012	876,448,784	33·1
1870		153,237,077	309,140,510		199,732,324	329,786,978		352,969,401	638,927,488	991,896,889	35·6
1871	15,187,354	163,285,710	363,020,644	7,798,156	190,378,462	392,801,932	22,985,510	353,664,172	755,822,576	1,132,472,258	31·2
1872	17,635,681	177,286,302	445,416,783	10,015,089	168,044,799	393,929,579	27,650,770	345,341,101	839,346,362	1,212,328,233	28·5
1873	17,070,548	174,739,834	471,806,765	10,799,430	171,566,758	494,915,886	27,869,978	346,306,592	966,723,651	1,340,899,221	25·8
1874	14,513,335	176,027,778	405,320,135	8,509,205	174,424,216	533,885,971	23,022,540	350,451,994	939,206,106	1,312,680,640	26·7
1875	13,083,859	157,872,726	382,949,568	7,304,356	156,385,066	501,838,949	20,388,235	314,257,792	884,788,517	1,119,434,544	25·8
1876	12,148,667	143,389,704	321,139,500	6,324,487	167,686,467	492,215,487	18,473,154	311,076,171	813,354,987	1,142,904,312	27·2
1877	10,697,640	151,834,067	329,565,833	6,767,170	164,826,214	530,354,703	17,464,810	316,660,281	859,920,536	1,194,045,627	26·5
1878	12,965,999	146,499,282	307,407,565	7,511,365	166,551,624	569,583,564	20,477,364	313,050,906	876,991,129	1,210,519,399	25·9
1879	11,983,823	143,590,353	310,499,599	7,439,862	128,425,339	600,769,633	19,423,685	272,015,692	911,269,232	1,202,708,609	22·6
1880	15,142,465	149,317,368	503,494,913	5,838,928	109,029,209	720,770,521	20,981,393	258,346,577	1,224,265,434	1,503,593,404	17·18
1881	17,193,213	133,631,146	491,840,269	8,259,308	116,955,324	777,162,714	25,452,521	250,586,470	1,269,002,983	1,545,041,974	16·22
1882	22,854,946	130,266,826	571,517,802	12,118,371	96,962,919	641,460,967	34,973,317	227,229,745	1,212,978,769	1,475,181,831	15·40
1883	23,003,048	136,002,290	564,175,576	25,089,844	104,418,210	694,331,348	48,092,892	240,420,500	1,258,506,024	1,547,020,316	15·54
1884	20,140,294	135,046,207	512,511,192	26,573,774	98,652,828	615,287,007	46,714,068	233,699,035	1,127,798,199	1,408,211,302	16·60
1885	21,149,476	112,864,052	443,513,801	24,183,299	82,001,691	636,004,765	45,332,775	194,865,743	1,079,518,566	1,319,717,084	14·76
1886	24,555,683	118,942,817	491,937,636	19,144,667	78,406,680	581,973,477	43,700,350	197,349,503	1,073,911,113	1,314,960,966	15·01
1887	27,562,059	121,365,493	543,392,216	21,389,666	72,991,253	621,802,292	48,951,725	194,356,746	1,165,194,508	1,408,502,979	13·80

VALUE of the Imports and Exports of the United States carried respectively in cars and other land vehicles, &c.—*Concluded.*

Year ending June 30.	IMPORTS.			EXPORTS.			TOTAL IMPORTS AND EXPORTS.				Percentage carried in American vessels.
	In cars and other land vehicles	In American vessels.	In Foreign vessels.	In cars and other land vehicles	In American vessels.	In Foreign vessels.	In cars and other land vehicles	In American vessels.	In Foreign vessels.	Total.	
	$	$	$	$	$	$	$	$	$	$	
1888	32,209,459	123,525,298	568,222,357	22,147,368	67,332,175	606,474,964	54,356,827	190,857,473	1,174,697,321	1,419,911,621	13·44
1889	38,227,861	120,782,910	586,120,881	28,436,517	83,022,198	630,942,660	66,664,378	203,805,108	1,217,063,541	1,487,533,027	13·70
1890	40,621,361	124,948,948	623,740,100	32,049,902	77,502,138	747,376,644	73,576,263	202,451,086	1,371,116,744	1,647,139,093	12·29
1891	40,932,755	127,471,678	676,511,763	31,923,439	78,968,047	773,589,324	72,856,194	206,439,725	1,450,101,087	1,729,397,006	11·94
1892	39,726,595	139,139,891	648,535,976	33,220,629	81,033,844	916,023,675	72,947,224	220,173,735	1,564,559,651	1,857,680,610	11·85
1893	44,121,094	127,095,434	695,184,394	43,862,947	70,670,073	733,132,174	87,984,041	197,765,507	1,428,316,568	1,714,066,116	12·2
1894	29,623,095	121,561,193	503,810,334	49,221,427	73,707,023	769,212,122	78,844,522	195,268,216	1,273,022,456	1,547,135,194	13·3
1895	33,201,988	108,229,615	590,538,362	49,902,754	62,277,581	695,357,830	83,104,742	170,507,196	1,285,896,192	1,589,508,130	11·7
1896	35,535,079	117,299,074	626,890,521	61,131,125	70,392,813	751,083,000	96,666,204	187,691,887	1,377,973,521	1,662,331,612	12·00
1897	35 812,620	109,133,454	619,784,338	65,082,305	79,441,823	905,969,428	100,894,925	189,075,277	1,525,753,766	1,815,723,968	11·00
1898	30,427,784	93,535,867	492,086,003	73,283,704	67,792,150	1,090,406,476	103,711,488	161,328,017	1,582,492,479	1,847,531,984	9·30

NOTES.—1. The amounts carried in cars and other land vehicles, were not separately stated prior to July 1, 1870. 2. Exports are stated in mixed gold and currency values from 1862 to 1879, inclusive.

SESSIONAL PAPER No. 10

STATEMENT showing the Total Values of Foreign Merchandise transported in the In-Transit and Transhipment Trade of the United States with the British North American Possessions during each year from 1871 to 1898.

Year ending June 30.	Received for transit and transhipment from British North American Possessions.			Shipped in transit to or transhipment for British North American Possessions.		
	By Land.	By Water.	Total.	By Land.	By Water.	Total.
	$	$	$	$	$	$
1871	6,035,585	1,918,475	7,954,060	15,624,591	2,781,884	18,406,475
1872	8,237,859	1,038,310	9,276,169	19,357,342	4,685,448	24,042,790
1873	11,700,787	1,693,906	13,394,693	20,178,666	6,605,518	26,784,184
1874	12,695,590	1,468,100	14,163,690	20,572 299	6,938,430	27,510,739
1875	16,890,022	1,152,555	18,042,577	23,794,129	6,006,166	29,800,295
1876	21,301,262	1,290,640	22,591,902	19,369,958	5,049,930	24,419,888
1877	10,835,642	1,636,053	12,471,695	17,066,855	1,910,298	18,977,153
1878	10,314,534	1,889,524	12,204,058	11,914,321	998,364	12,912,685
1879	10,098,998	1,982,097	12,081,095	12,030,635	858,952	12,889,587
1880	15,265,177	1,869,570	17,134,747	16,388,673	653,430	17,042,003
1881	15,200,967	1,801,079	17,002,046	22,828,270	527,994	23,356,264
1882	24,665,029	3,878,149	28,543,178	36,613,465	982,019	37,595,484
1883	26,382,370	3,420,450	29,802,820	38,389,318	923,250	39,312,568
1884	13,043,498	375,729	13,419,227	22,120,587	818,798	22,939,385
1885	12,755,686	767,927	13,523,613	19,105,476	594,982	19,700,458
1886	9,593,344	1,267,676	10,861,020	19,428,867	812,212	20,241,079
1887	9,377,041	2,127,680	11,504,721	20,178,365	2,009,590	22,187,955
1888	6,309,024	2,033,793	8,342,817	13,347,876	2,063,780	15,611,656
1889	8,303,171	3,032,952	11,336,123	19,299,966	2,849,263	22,149,229
1890	13,524,298	2,477,612	16,001,910	24,788,152	2,547,052	27,335,201
1891	18,065,925	1,714,545	19,780,470	25,185,706	2,697,317	27,883,023
1892	21,346,413	2,581,842	23,928,255	23,989,746	2,714.368	26,704,114
1893	13,807,662	4,077,911	17,885,573	20,151,432	2,568,679	22,720,111
1894	13,501,664	3,840,429	17,342,093	17,974,332	2,207,884	20,182,216
1895	14,068,922	5,552,940	19,621,862	18,752,226	2,970,068	21,722,294
1896	13,408,578	6,735 027	20,143,605	18,335,373	3,453,043	21,788,416
1897	17,665,422	6,928,401	24,593,823	18,430,841	2,232,835	20 663,676
1898	27,277,049	12,059,935	39,336,984	22,792,971	3,457,667	26,250,638

NOTE.—This movement forms no part of the import and export trade.

C.--TABLE showing the Tonnage of the undermentioned Articles moved

Years.	Vegetable Food.						
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Vegetable Food.*
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1869	71,051	670,534	256,475	99,012	92,309	13,489	99,743
1870	54,978	658,524	193,129	123,191	117,941	19,520	127,727
1871	41,211	748,549	672,057	113,992	129,891	34,563	109,935
1872	20,534	403,903	902,753	120,061	92,959	13,357	120,753
1873	19,307	803,064	637,296	70,586	70,023	30,160	114,735
1874	29,134	772,163	519,203	98,654	59,408	8,215	280,821
1875	17,635	744,293	282,031	104,475	62,717	8,309	86,090
1876	9,290	416,376	365,254	96,494	52,147	19,949	104,783
1877	8,923	448,043	723,458	139,453	66,045	35,948	77,114
1878	5,904	844,555	734,993	89,534	85,029	64,613	88,106
1879	7,164	949,466	621,180	96,144	23,164	59,210	77,071
1880	8,266	966,052	1,156,619	106,247	20,893	26,340	86,673
1881	6,926	444,832	475,823	81,587	30,321	15,484	61,588
1882	9,372	642,215	251,687	96,650	22,180	43,372	53,300
1883	9,047	573,740	522,978	58,787	51,607	95,246	67,595
1884	7,251	790,409	198,216	65,008	52,696	71,462	51,944
1885	6,869	565,922	359,982	64,587	8,234	10,211	47,505
1886	9,005	993,129	354,765	62,854	7,278	3,073	59,782
1887	4,089	936,840	446,617	75,458	35,365	6,717	47,678
1888	3,287	491,419	499,218	41,100	70,315	12,532	49,087
1889	4,429	484,141	592,550	66,110	63,674	36,329	49,663
1890	3,489	353,738	616,702	90,754	48,438	21,657	33,123
1891	3,126	756,101	142,141	71,903	16,362	68,771	33,951
1892	4,879	620,768	150,269	51,596	72,444	4,236	33,807
1893	2,367	1,093,927	252,283	49,651	24,714	6,518	20,656
1894	2,909	903,361	275,377	89,700	100,874	5,288	22,620
1895	2,210	283,550	94,403	77,868	87,839	205	59,400
1896	7,963	408,872	100,227	109,967	197,713	77,210	55,230
1897	3,206	180,035	312,776	100,337	50,345	66,387	31,489
1898	1,854	69,986	364,248	89,906	76,244	7,745	43,044

*Apples, meal, all kinds, pease, potatoes.

on all Canals in the State of New York, during a series of thirty years.

	Heavy Goods.					
Total.	Railway Iron.	Other Iron.	Salt.	Coal.	Ores.	Total.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1,302,613	137,677	79,652	263,333	1,324,408	183,992	1,989,062
1,295,010	135,930	89,708	266,740	1,558,185	238,802	2,289,365
1,850,198	178,269	100,310	248,709	1,194,037	289,952	2,011,277
1,674,320	161,667	96,996	248,558	1,462,590	377,592	2,347,403
1,745,171	53,363	62,581	216,706	1,625,859	415,968	2,374,477
1,767,598	24,511	82,955	173,590	1,413,162	232,544	1,926,762
1,305,550	36,603	95,305	186,785	1,217,091	283,219	1,819,003
1,064,293	11,691	69,450	114,070	1,036,698	173,530	1,405,439
1,498,984	10,341	58,828	156,918	1,286,881	250,573	1,763,541
1,912,734	8,385	65,642	139,927	889,873	210,078	1,313,905
1,833,399	27,634	99,568	136,021	971,074	314,411	1,548,708
2,371,090	93,613	139,993	144,487	959,342	370,884	1,709,319
1,116,561	78,650	205,005	113,756	1,092,003	337,873	1,827,287
1,118,776	58,921	122,786	108,040	1,228,435	364,361	1,882,543
1,379,000	46,553	47,412	190,392	1,152,849	293,892	1,731,098
1,236,986	28,513	54,471	161,788	954,288	210,610	1,400,670
1,063,310	12,215	38,726	161,272	1,025,941	195,750	1,433,904
1,489,886	10,878	152,030	112,002	857,884	269,914	1,402,708
1,552,764	21,368	224,979	124,054	905,424	243,578	1,539,403
1,166,958	2,596	43,881	106,344	1,219,680	259,269	1,631,770
1,296,896	3,278	78,135	112,100	1,094,897	234,948	1,523,358
1,167,901	5,800	26,804	93,181	830,154	202,072	1,157,291
1,092,355	1,960	36,770	81,232	881,502	215,686	1,217,150
937,999	524	40,073	93,216	832,397	136,612	1,102,822
1,450,116	536	25,204	52,094	741,934	102,275	922,043
1,400,129	267	22,614	70,353	609,368	37,641	740,243
602,505	4,263	59,402	71,334	766,723	144,076	1,045,798
957,182	1,568	74,651	83,309	682,167	89,998	931,693
744,575	5,080	71,117	66,879	646,803	76,311	866,190
653,027	6,288	101,216	85,525	626,616	73,199	892,844

D.—TABLE showing the total Tonnage of the undermentioned Articles moved Up and Down

YEAR.	VEGETABLE FOOD.						
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles. †
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1869*.....	45,674	313,825	120,599	20,951	.....	904	1,937
1872.....	26,651	239,998	254,902	6,035	7,752	64	2,745
1873.....	30,665	355,847	180,169	8,225	1,194	3	3,777
1874.....	24,019	413,212	181,151	18,871	5,954	513	8,677
1875.....	13,964	253,835	103,749	35,751	3,383	917	6,337
1876	15,778	201,906	144,501	18,455	24,496	1,454	3,198
1877.....	13,558	253,953	169,196	19,870	2,810	2,439	2,355
1878.....	9,121	191,982	185,931	10,979	3,088	.....	2,302
1879.....	10,710	274,570	144,506	4,655	1,239	440	2,444
1880.....	12,679	242,020	163,738	17,772	477	1,016	1,480
1881.....	9,959	127,832	101,075	24,509	.....	1,844	2,086
1882.....	12,261	215,056	54,799	20,126	611	3,226	403
1883.....	13,471	152,794	182,269	10,436	731	1,642	10,983
1884.....	13,683	144,851	118,811	7,155	10,746	1,320	9,168
1885.....	13,334	124,206	117,536	15,801	1,116	.....	1,912
1886.....	19,474	154,169	219,442	1,595	4,911	564	14,657
1887.....	23,949	221,927	114,938	9,574	12,050	.....	12,533
1888.....	16,983	160,963	194,886	5,906	26,629	811	13,608
1889.....	7,931	126,664	353,595	4,272	28,356	2,673	18,552
1890.....	14,461	118,002	327,394	10,830	27,728	1,549	20,876
1891.....	13,517	198,658	185,180	8,113	52,959	65,888	28,042
1892.....	17,046	232,019	192,548	6,433	37,173	9,392	32,815
1893...	15,235	258,392	441,092	18,599	31,283	3,671	36,981
1894.....	33,628	270,993	169,233	28,353	27,962	567	60,673
1895.....	44,044	203,088	164,894	8,689	18,236	1,007	46,463
1896.....	42,425	320,563	320,444	11,368	28,178	9,405	56,591
1897.....	9,065	324,743	390,615	14,173	25,161	8,483	44,674
1898.....	5,578	207,647	437,861	12,286	17,502	16,127	23,182

* Fiscal. † Apples, meal, all kinds, pease, potatoes.

through the Welland Canal, during a period of Twenty-eight years, ended Dec. 31, 1898.

	Heavy Goods.						
Total.	Railway Iron.	Other Iron.	Salt.	Iron and salt having paid full tolls on St. Lawrence Canals.	Coal.	Ores.	Total.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons
503,860	68,064	16,924	91,575	37,153	103,126	58,781	275,623
538,147	26,217	17,141	50,540	44,243	186,932	98,605	423,678
579,880	6,923	20,754	40,850	17,157	339,016	118,685	543,387
647,397	6,032	12,068	23,309	9,579	323,503	56,825	431,316
417,936	1,517	7,588	13,509	9,962	321,306	43,683	397,565
409,788	51	7,997	30,300	20,327	288,211	81,654	378,540
464,181	9,630	9,696	9,173	3,983	323,869	42,758	399,109
403,403	10	11,518	3,980	12,686	295,318	15,229	338,741
438,564	2,782	5,797	7,174	17,796	192,957	19,164	245,670
442,182	5,360	4,812	413	22,273	109,986	34,139	176,983
269,395	4,585	7,013	10	30,682	128,113	18,785	189,188
306,482	.....	5,348	50	17,327	237,559	23,700	283,984
373,326	1,237	7,922	66	17,037	307,058	31,785	365,105
305,734	698	652	461	3,242	274,471	53,205	332,729
273,905	78	2,055	597	14,243	248,272	26,728	291,973
414,812	166	6,123	48	12,324	271,356	27,447	317,464
394,971	1,351	5,636	.....	6,715	145,193	13,866	172,761
419,786	93	3,220	316	13,617	223,871	16,872	257,989
542,043	47	2,479	1,254	20,269	268,305	2,435	294,789
519,291	.....	753	1,027	28,047	202,384	8,138	240,349
367,177	127	1,610	2,567	7,953	224,644	3,415	240,316
527,426	163	1,567	878	3,666	211,616	355	218,245
805,253	6	2,075	374	8,139	233,096	.....	243,690
591,409	.....	3,072	159	977	203,608	.....	207,816
486,421	185	6,245	54	2,819	158,866	1,140	169,309
788.974	1,192	6,332	82	3,264	223,445	1,158	235,473
816,914	7,206	17,012	227	590	176,226	.....	201,261
720,183	1,444	11,722	799	734	162,336	13,433	190,468

E.—Table showing the tonnages of the undermentioned Articles Cleared at Buffalo and Tonawanda, for transit through the Erie Canal, for a series of thirty years.

VEGETABLE FOOD.

Year.	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles *	Total.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.		
1869.	5,609	490,904	219,874	1,978	63,728	2,150	2,193	786,436	.....	.....
1870.	8,258	502,158	165,577	19,944	89,156	10,593	6,906	802,592	2·05	.....
1871.	5,607	570,849	579,709	19,810	106,391	27,622	5,705	1,315,693	67·59	.....
1872.	.....	330,032	866,169	41,515	73,572	5,900	88	1,317,276	67·50	.....
1873.	6	737,167	611,675	8,636	51,615	22,441	634	1,432,174	82·10	.....
1874.	.....	650,161	459,728	3,192	44,079	112	237	1,157,509	47·18	.....
1875.	5,859	695,315	273,006	1,156	36,609	2,242	3,372	1,017,559	29·38	.....
1876.	231	377,317	356,064	6,334	24,488	12,205	4,691	783,331	.....	0·39
1877.	1,710	398,416	709,723	26,351	52,559	27,365	4,976	1,223,100	55·52	.....
1878.	987	775,953	718,714	21,665	69,256	51,064	6,662	1,644,301	109·08	.....
1879.	1,239	892,404	602,171	7,193	14,537	40,471	7,528	1,565,543	99·07	.....
1880.	2,743	897,603	131,857	434	16,154	12,137	4,256	2,065,184	162·06	.....
1881.	1,491	386,605	458,318	86	24,751	107	7,484	878,842	11·75	.....
1882.	1,123	586,019	241,406	1,858	9,046	19,158	6,216	864,826	9·96	.....
1883.	538	535,150	517,219	6,816	47,190	79,010	6,051	1,191,974	51·06	.....
1884.	520	767,784	194,368	4,910	47,060	57,856	4,411	1,078,909	37·18	.....
1885.	323	540,533	356,737	3,317	5,610	6,405	5,427	918,352	14·36	.....
1886.	488	955,851	351,272	6,799	5,180	.....	4,001	1,353,591	72·11	.....
1887.	334	914,152	438,069	15,207	32,907	4,612	44,693	1,449,984	85·64	.....
1888.	534	469,965	494,110	6,589	68,922	10,997	1,717	1,052,834	33·87	.....
1889.	845	457,922	579,526	16,380	61,175	34,167	5,160	1,155,175	46·88	.....
1890.	195	329,531	498,641	58,563	45,202	16,903	4,362	953,397	21·23	.....
1891.	1,071	733,967	137,679	43,779	14,803	66,278	2,594	1,000,171	27·18	.....
1892.	2,485	611,177	141,506	37,570	70,363	3,997	3,472	870,570	10·69	.....
1893.	424	1,086,834	240,767	38,986	21,981	6,156	243	1,395,391	77·43	.....
1894.	327	887,908	265,947	69,707	99,898	5,191	2,123	1,331,101	69·26	.....
1895.	98	271,957	83,611	71,185	85,507	205	15	508,596	.....	35·32
1896.	6,971	402,114	89,726	101,154	194,442	77,162	5,575	877,144	11·53	.....
1897.	8566	168,870	303,761	88,293	48,591	65,490	11,965	688,635	.....	12·44
1898.	7,119	64,760	354,917	85,359	74,336	7,367	20,818	607,557	.....	22·74

*Apples, meals all kinds, pease, potatoes.

STATEMENT to Table E showing the shipment at Oswego during the same period.

VEGETABLE FOOD.

Year.	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles. *	Total.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.		
1869	7,361	141,360	28,585	66,794	1,113	8,569	14,033	267,815	..	.....
1870	11,440	115,732	10,120	77,906	3,953	7,402	11,628	238,181	...	11·06
1871	10,043	123,173	70,218	72,675	1,806	6,250	13,259	297,424	11·05	.....
1872	4,773	57,865	27,148	62,172	684	6,751	10,425	169,818	... ..	36·59
1873	4,061	53,361	10,578	46,337	670	6,019	10,739	131,765	.....	50·80
1874	.....	108,288	46,127	77,007	1,103	7,053	3,747	243,325	.....	9·14
1875	1,728	32,690	3,034	75,083	3,308	4,989	5,931	126,763	.....	52·67
1876	967	21,890	1,324	63,336	117	5,703	6,638	99,975	.....	62·67
1877	855	28,955	3,308	80,306	316	6,603	6,556	126,899	.....	52·61
1878	1,394	24,171	1,383	50,381	.....	10,598	5,222	93,149	.....	65·21
1879	734	25,740	9,268	71,693	....	16,623	3,110	127,168	.....	52·51
1880	951	17,466	15,656	82,743	....	12,598	5,996	135,410	.....	49·43
1881	758	25,352	8,064	62,793	206	14,444	4,027	115,638	.....	56·82
1882	813	20,274	4,401	70,862	416	22,265	7,773	126,804	.....	52·65
1883	432	22,634	535	32,557	.....	14,384	1,967	72,507	.....	73·00
1884	404	5,932	413	48,391	.....	12,173	2,819	70,132	.....	73·43
1885	519	6,484	22	45,264	.....	4,613	2,945	59,847	.....	77·62
1886	737	9,579	154	42,261	.....	1,671	4,814	59,216	. ..	77·88
1887	790	675	2	44,580	.. ...	716	1,370	48,133	.....	82·02
1888	384	2,206	168	6,237	.....	.....	2,196	11,191	....	95·82
1889	473	8,002	8,950	40,096	16	1,405	1,003	59,945	.....	77·61
1890	545	10,378	10,408	26,639	8	4,635	2,356	54,969	.....	79·47
1891	292	4,298	1,652	27,418	.....	2,130	3,620	39,410	.....	85·28
1892	273	4,806	5,657	5,283	. . . .	199	2,340	18,558	....	93·07
1893	119	2,036	3,968	8,476	.....	237	2,784	17,620	.....	93·43
1894	8	10,293	10,514	17,160	....	.....	2,609	40,584	.....	84·84
1895	66	3,073	7,352	1,900	1,816	.....	258	14,465	.....	94·23
1896	.....	1,825	7,778	7,552	.....	.....	2,468	19,623	...	93·01
1897	.....	6,588	5,550	7,349	498	219	245	20,449	.....	92·37
1898	160	2,111	5,886	1,450	16	.....	784	10,407	.....	96·12

* Apples, meal all kinds, potatoes.

F.—TABLE showing the Total Way and Through Tonnage of the undermentioned Articles cleared downward on the Welland Canal, during a series of Twenty-eight Years, ended December 31, 1898.

VEGETABLE FOOD.

Year.	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles. †	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1869*	44,110	310,090	119,541	3,920	.....	680	1,541	479,882
1872	26,648	231,056	254,534	693	7,594	64	2,300	524,889
1873	30,660	345,720	180,042	643	1,188	3	3,557	563,813
1874	24,017	406,157	181,128	377	5,953	.....	3,301	620,933
1875	13,930	248,555	103,477	813	3,383	500	4,304	374,962
1876	15,735	194,559	144,501	1,110	24,496	1,454	2,949	384,807
1877	13,588	248,894	169,185	10,216	2,810	2,405	1,833	448,931
1878	8,854	188,106	185,931	1,217	3,088	.....	2,100	389,296
1879	10,588	271,545	114,276	803	1,196	.....	2,387	430,795
1880	12,467	240,601	162,891	.....	477	.....	1,418	417,853
1881	9,655	121,393	103,075	252	.....	6	1,371	235,752
1882	12,205	205,876	54,797	537	.....	1,954	225	275,594
1883	13,256	146,741	182,143	975	731	518	10,971	355,335
1884	13,626	135,804	118,811	270	10,746	477	9,018	288,752
1885	13,322	114,090	117,536	618	1,116	.....	1,628	248,310
1886	19,418	146,151	218,897	.....	4,891	.....	14,581	403,928
1887	23,940	210,755	114,938	1,711	12,050	.....	12,149	375,543
1888	16,973	150,833	194,886	555	26,629	811	13,358	404,045
1889	7,922	120,498	353,595	197	28,356	1,918	18,273	530,759
1890	14,461	114,924	327,394	6,519	27,728	1,121	20,836	512,983
1891	13,517	196,326	185,177	8,113	52,959	65,071	27,895	549,058
1892	17,046	229,569	192,548	6,433	37,173	9,392	32,548	524,709
1893	15,232	257,203	441,092	18,461	31,283	3,671	36,981	803,923
1894	33,628	270,514	169,233	28,353	27,962	.....	60,587	590,277
1895	43,895	202,636	164,894	8,689	18,236	.....	46,435	484,785
1896	42,159	319,388	320,444	11,368	28,178	8,970	54,031	784,538
1897	9,025	322,993	390,615	14,173	25,127	8,483	44,651	815,067
1898	5,578	206,313	437,849	12,286	17,491	16,127	23,170	718,814

* Fiscal † Apples, meal all kinds, pease, potatoes.

G.—TABLE showing the Tonnage of the undermentioned Articles passed through the Welland Canal in transit between Ports in the United States during a series of Twenty eight Years, ended December 31, 1898.

YEAR.	VEGETABLE FOOD.								HEAVY GOODS.					
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles.*	Total.	Railway Iron.	Other Iron.	Salt.	Coal.	Ores.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1869	30,681	211,085	91,149	2,942	.....	667	1,006	337,530	68,064	14,334	89,086	28,566	35,912	235,962
1872	10,482	124,695	89,761	1,391	7,400	.....	608	234,337	24,040	13,239	49,843	95,741	59,401	242,264
1873	10,805	127,727	101,329	1,920	1,188	3	392	243,366	4,659	13,826	40,507	170,242	62,942	292,176
1874	8,230	229,053	125,627	.....	5,948	.....	5,368	374,226	5,742	8,941	22,888	203,673	19,651	260,895
1875	1,881	113,832	54,188	2,641	2,946	500	1,920	177,908	14	4,123	12,931	192,767	34,616	244,451
1876	5,187	96,247	58,138	.....	1,905	525	403	162,405	.....	5,531	29,395	167,110	25,808	227,844
1877	3,342	107,396	65,260	1,603	2,314	258	413	180,586	8,976	8,688	8,336	172,868	41,107	239,975
1878	1,316	65,542	60,026	859	277	.....	341	128,361	.....	10,713	3,892	150,583	13,535	178,723
1879	159	53,791	33,401	.....	464	.....	11	87,826	2,405	3,648	6,318	118,573	17,797	148,741
1880	.....	30,611	16,122	1,551	296	.....	.....	48,580	4,743	3,515	371	65,945	18,380	92,954
1881	.....	34,320	30,031	924	.....	.....	10	65,285	1,313	5,570	.....	83,858	6,464	97,205
1882	107	30,227	32,433	537	.....	684	14	64,002	.....	4,076	.....	158,552	14,533	177,161
1883	2,041	54,382	66,128	735	731	.....	8,579	132,496	1,209	6,901	8	196,462	24,891	229,471
1884	1,715	40,956	53,707	.....	9,874	.....	8,170	114,422	698	599	.....	210,790	15,100	227,187
1885	124	53,235	63,229	732	882	.....	1	118,203	.....	1,594	.....	198,416	15,029	215,039
1886	7,591	53,258	94,048	.....	4,790	.....	13,201	172,888	156	5,328	1	189,964	11,364	206,813
1887	11,780	37,678	83,431	1,732	12,050	.....	10,859	157,530	15	4,406	.....	82,780	6,7	87,828
1888	8,563	39,999	102,974	2	26,510	179	11,598	189,825	63	1,601	56	173,259	2,309	177,288
1889	5,017	39,229	147,045	.....	27,492	.....	17,225	236,208	.....	1,587	896	227,476	1,204	231,163
1890	9,204	31,527	180,842	6,519	27,030	.....	20,497	275,619	.....	504	208	162,231	1,620	164,563
1891	6,802	32,097	127,494	8,113	52,823	.....	26,115	253,444	.....	292	705	186,572	1,773	189,342
1892	11,018	26,950	131,222	6,433	36,935	.....	31,992	244,550	.....	576	2	183,895	.....	184,473
1893	6,588	28,187	198,777	16,751	23,870	864	36,352	311,389	.....	344	.....	206,827	.....	207,171
1894	17,795	53,846	10,539	28,095	27,621	.....	60,462	198,358	.....	297	.....	188,521	.....	188,818
1895	10,169	27,881	100,512	7,904	17,020	.....	46,316	209,802	181	246	.....	149,490	.....	149,917
1896	16,224	34,878	175,094	11,128	16,137	490	46,456	300,407	.....	146	.....	207,348	.....	207,494
1897	7,237	28,919	169,057	14,173	14,969	.....	41,887	276,242	965	15	.....	165,143	.....	166,123
1898	4,212	11,268	150,667	6,909	12,732	1,197	22,671	209,656	770	339	4	156,814	.....	157,927

*Apples, meals all kinds, pease, potatoes.

H.—TABLE showing the Tonnage of Vegetable Food carried on each of the Lines of Canals and the two principal Railways, competing for the Carrying Trade between Lake Erie and Tidewater, for a series of Twenty-eight years, ended December 31, 1898.

Year.	Total on New York Canals.	Total on Welland Canal.	Total on New York Central and Erie Railways.	Quantity cleared at Buffalo and Tonawanda by Erie Canal.	Quantity cleared at Oswego by Canal.	Quantity cleared through the Welland Canal in transit between ports in the United States.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1869*	1,302,613	503,860	1,087,809	786,436	267,815	337,530
1872	1,674,320	538,147	1,870,614	1,317,276	169,818	234,337
1873	1,745,171	579,880	2,036,992	1,432,174	131,765	243,366
1874	1,767,598	647,397	2,791,517	1,557,509	243,325	374,226
1875	1,305,550	417,936	2,343,241	1,017,559	126,763	177,908
1876	1,064,293	409,788	2,875,803	783,331	99,975	162,405
1877	1,498,984	464,181	2,493,683	1,223,100	126,899	180,586
1878	1,912,734	403,403	3,695,764	1,644,301	93,149	128,361
1879	1,833,399	438,564	4,353,617	1,565,543	127,168	87,826
1880	2,371,090	442,182	4,732,385	2,065,184	135,410	48,580
1881	1,116,561	269,395	4,983,722	878,842	115,638	65,285
1882	1,118,776	306,482	3,885,557	864,826	126,804	64,002
1883	1,379,000	372,236	4,422,461	1,191,974	72,507	132,496
1884	1,236,986	305,734	3,639,805	1,078,909	70,132	114,422
1885	1,063,310	273,905	4,105,594	918,352	59,847	118,203
1886	1,489,886	414,812	3,802,262	1,353,591	59,216	172,898
1887	1,552,764	394,971	3,847,766	1,449,984	48,133	157,530
1888	1,166,958	419,786	3,197,734	1,052,834	11,191	189,825
1889	1,296,896	542,043	3,654,984	1,155,175	59,945	236,208
1890	1,167,901	519,291	4,336,199	953,397	54,969	275,619
1891	1,092,355	367,177	3,565,381	1,000,171	39,410	253,444
1892	937,999	527,426	5,913,013	870,570	18,558	244,550
1893	1,452,563	805,253	5,107,426	1,395,391	17,620	311,389
1894	1,400,129	591,409	4,281,056	1,331,101	40,584	293,148
1895	602,505	486,421	3,798,574	508,596	14,465	209,802
1896	957,182	788,974	5,183,540	877,144	19,623	300,407
1897	744,575	816,914	5,673,638	688,635	20,449	276,242
1898	653,027	720,183	7,060,542	607,557	10,407	209,656

*Fiscal.

1.—STATEMENT showing the Quantity of Through Freight passed DOWN the Welland Canal in Canadian and United States Vessels entering the Canal at Port Colborne during the seasons of Navigation in 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897 and 1898.

ARTICLES.	CANADIAN VESSELS.				AMERICAN VESSELS.				TOTAL.	
	Steam.		Sail.		Steam.		Sail.		Steam and Sail	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	250	86,344	372	101,745	107	94,029	163	46,152	892	328,270
1887.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat		80,757		81,652		200		46,186		208,796
Corn		12,341		14,775		65,981		20,582		113,679
Barley						9		575		584
Oats				1,376		11,098		279		12,753
Pease				362						362
Rye										
Coal		1,436		25,165				2,108		28,709
Miscellaneous merchandise		2,179		4,609		24,395		415		31,598
Shingles, woodenware, &c.		1,716		1,081		26				2,823
Sawed lumber ..... Ft. B.M.		2,894,767		12,329,728		4,161,349		15,091,355		34,477,199
Square timber.....Cub. ft.		498,770		1,285,594						1,784,364
Staves.....No.				266,697						266,697
Firewood.....Cords		299		466						765
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	242	86,838	339	93,450	114	104,505	219	60,500	914	345,293
1888.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat		45,481		60,379		1,353		40,779		147,992
Corn		38,620		14,251		71,988		71,175		196,024
Barley										
Oats		672				24,967		1,311		26,950
Pease				54		57				111
Rye						71		632		703
Coal		1,603		20,064				4,208		25,897
Miscellaneous merchandise		2,165		3,291		22,719		3,722		31,875
Shingles, woodenware, &c.		66		84		141		6		297
Sawed lumber .....Ft. B.M.		5,262,700		11,977,905		4,451,360		12,539,672		34,230,637
Square timber.....Cub. ft.		687,728		1,555,307		19,000				2,262,035
Staves.....No.		106,972		211,436				34,000		352,408
Firewood.....Cords.		179		201						380
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	317	106,048	427	118,071	208	172,873	268	92,442	1220	489,434
1889.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat		38,127		28,054		1,679		46,767		114,627
Corn		60,218		42,819		152,858		96,700		353,595
Barley										
Oats		320				25,347		2,145		27,812
Pease										
Rye		948		634		336				1,918
Coal		3,976		21,148		712		1,664		27,500
Miscellaneous merchandise		6,339		5,749		25,082		3,030		40,200
Shingles, woodenware, &c.				1				51		52
Sawed lumber .....Ft. B.M.		5,789,226		11,632,330		11,792,850		21,026,211		50,240,617
Square timber. ... Cub. ft.		924,645		2,934,989						3,859,634
Staves ..... No.		35,700		174,649						220,349
Firewood ..... Cords.				46						46

I.—STATEMENT showing the Quantity of Through Freight passed DOWN the Welland Canal in Canadian and United States Vessels, &c.—*Continued.*

ARTICLES.	CANADIAN VESSELS.				UNITED STATES VESSELS.				TOTAL.	
	Steam.		Sail.		Steam.		Sail.		Steam and Sail	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	342	110,056	443	117,400	202	204,542	142	50,622	1129	482,620
1890.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	43,308		35,633		7,514		32,239		118,694	
Corn	63,095		51,439		172,756		40,104		327,394	
Barley					3,304		3,215		6,519	
Oats	479		73		27,030				27,582	
Pease					14				14	
Rye	1,121								1,121	
Coal	1,049		21,732				615		23,396	
Miscellaneous merchandise	3,146		5,683		32,194		2,510		43,533	
Shingles, woodenware, &c.	15		1,266		8				1,289	
Sawed lumber.....Ft. B.M.	5,921,240		5,167,201		10,274,335		14,290,800		35,653,576	
Square timber .....Cub. ft.	1,141,194		3,395,832						4,537,026	
Staves .....No.	12,255		19,947						32,202	
Firewood.....Cords.	15		566						581	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	256	107,575	173	68,061	241	241,317	130	50,063	800	467,016
1891.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	62,859		56,953		36,425		33,853		190,090	
Corn	20,510		9,550		137,852		17,039		184,951	
Barley					5,444		4,061		9,505	
Oats					50,212		1,076		51,288	
Pease	390								390	
Rye	29,581		11,296		16,361		7,343		64,581	
Coal	158		20,388				3,851		24,397	
Miscellaneous merchandise	8,369		6,607		37,537		2,578		54,491	
Shingles, woodenware, &c							4		4	
Sawed lumber.....Ft. B.M.	4,268,874		4,648,824		8,067,351		18,745,628		35,730,677	
Square timber.....Cub. ft.	449,406		566,109						1,015,515	
Staves.....No.	1,000								1,000	
Firewood .....Cords.										
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage	No.	Tonnage.	No.	Tonnage.
	239	100,324	186	73,140	245	248,837	134	52,087	804	474,388
1892.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	74,578		54,764		60,364		36,898		226,604	
Corn	17,477		7,369		146,080		21,631		192,548	
Barley					3,995		2,438		6,433	
Oats					36,935				36,935	
Pease	524								524	
Rye	5,066				3,718		608		9,392	
Coal	775		13,350				1,365		15,490	
Miscellaneous merchandise	2,139		2,786		44,117				49,042	
Shingles, woodenware, &c	1				45		9		55	
Sawed lumber.....Ft. B.M.	6,278,253		7,504,256		10,494,692		26,832,564		51,109,765	
Square timber.....Cub. ft.	754,213		1,421,260		2,601		1,310		2,179,384	
Staves.....No.	46,800		32,838						79,638	
Firewood..... Cords.										

SESSIONAL PAPER No. 10

I.—STATEMENT showing the Quantity of Through Freight passed DOWN the Welland Canal in Canadian and United States Vessels, &c.—*Continued.*

ARTICLES.	CANADIAN VESSELS.				UNITED STATES VESSELS.				TOTAL.	
	Steam.		Sail.		Steam.		Sail.		Steam and Sail	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	193	100,107	143	58,652	390	375,682	236	122,326	962	656,767
1893.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	83,447		31,185		72,671		68,628		255,931	
Corn	23,817		12,946		313,246		91,083		441,092	
Barley	1,527		183		16,189		562		18,461	
Oats	223				27,903		3,038		31,164	
Pease										
Rye					3,216		455		3,671	
Coal	638		13,580				5,849		20,067	
Miscellaneous merchandise	6,179		286		44,976		1,647		53,088	
Shingles, woodenware, &c			15		22				37	
Sawed lumber Ft. B.M.	13,750,267		2,748,941		17,359,573		41,863,852		75,722,633	
Square timber Cub. ft.	836,048		1,437,893		5,133				2,279,074	
Staves No.			18,484						18,484	
Firewood Cords										
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage
	199	104,649	112	57,668	287	279,621	144	63,770	742	505,708
1894.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	98,586		54,444		79,715		37,095		268,840	
Corn	10,368		5,614		122,211		31,040		169,233	
Barley	258				28,095				28,353	
Oats	175		107		27,621				27,903	
Pease										
Rye										
Coal	1,483		1,892		61		11,109		14,545	
Miscellaneous merchandise	16,949		664		83,198		1,977		102,788	
Shingles, woodenware, &c	22								22	
Sawed lumber Ft. B.M.	8,423,295		279,330		11,719,664		31,891,456		52,313,745	
Square timber Cub. ft.	771,328		1,578,981						2,350,309	
Staves No.										
Firewood Cords										
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	209	108,776	151	73,895	205	223,743	101	41,327	666	447,741
1895.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	72,895		68,935		29,345		30,723		201,898	
Corn	16,854		3,724		126,943		17,369		164,890	
Barley	798		162		7,729				8,689	
Oats	1,531		246		16,442				18,219	
Pease										
Rye										
Coal	2		3,984				4,426		8,412	
Miscellaneous merchandise	37,356		2,361		67,705		1,324		108,746	
Shingles, woodenware, &c	20				863		1,079		1,962	
Sawed lumber Ft. B.M.	1,057,146		248,071		9,385,890		14,929,734		25,620,841	
Square timber Cub. ft.	1,027,913		2,049,368				35,000		3,112,281	
Staves No.										
Firewood Cords										

I.—STATEMENT showing the Quantity of Through Freight passed DOWN the Welland Canal in Canadian and United States Vessels, &c.—*Concluded.*

ARTICLES.	CANADIAN VESSELS.				UNITED STATES VESSELS.				TOTAL.	
	Steam.		Sail.		Steam.		Sail.		Steam and Sail	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	224	122,521	181	82,543	343	337,983	163	96,506	911	639,553
1896.	Tons.		Tons.		Tons.		Tons.		Tons	
Wheat	113,331		90,979		78,741		34,476		317,527	
Corn	9,360		3,855		218,315		88,914		320,440	
Barley	240		...		11,128		...		11,368	
Oats	441		1,270		24,847		1,620		28,178	
Pease	1,403		1,354		...		273		3,030	
Rye	5,035		644		2,837		454		8,970	
Coal	7		11,106		1,255		629		11,997	
Miscellaneous merchandise	29,820		1,452		82,319		4,374		117,965	
Shingles, woodenware, &c.	134		...		22		...		156	
Sawed lumber.....Ft. B.M.	2,123,213		...		18,259,810		27,796,146		48,179,169	
Square timber. ... Cub. ft.	942,923		1,649,145		...		246,024		2,838,092	
Staves .....No.	...		...		...		...		...	
Firewood.....Cords.	...		...		...		55		55	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	225	131,907	163	76,760	388	382,231	144	86,675	920	677,573
1897.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	121,762		55,724		106,064		37,891		321,441	
Corn	33,694		15,244		274,355		66,822		390,615	
Barley	...		...		14,173		...		14,173	
Oats	223		...		23,515		1,168		24,906	
Pease	1,851		...		...		...		1,851	
Rye	2,047		919		5,517		...		8,483	
Coal	3,873		3,947		368		1,615		9,803	
Miscellaneous merchandise	15,739		3,290		70,968		4,174		94,071	
Shingles, woodenware, &c.	1,268		5		404		...		1,677	
Sawed lumber.....Ft. B.M.	1,573,447		...		20,284,446		20,673,202		42,531,095	
Square timber.....Cub. ft.	1,327,823		2,217,629		...		616,093		4,161,545	
Staves .....No.	2,577,160		...		...		...		2,577,160	
Firewood.....Cords.	4		...		...		...		4	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	216	126,398	104	59,532	354	355,702	195	108,720	869	650,352
1898.	Tons.		Tons.		Tons.		Tons.		Tons.	
Wheat	95,567		36,157		54,934		18,355		205,013	
Corn	56,538		30,455		284,059		66,761		437,813	
Barley	...		...		9,465		2,821		12,286	
Oats	...		...		17,329		...		17,329	
Pease	260		...		45		...		305	
Rye	3,564		1,480		9,135		1,948		16,127	
Coal	575		1,916		759		2,620		5,870	
Miscellaneous merchandise	19,385		4,104		47,271		8,758		79,518	
Shingles, woodenware, &c.	2		9		...		...		11	
Sawed lumber .... Ft. B.M.	4,910,669		1,641,783		16,220,972		24,484,283		47,257,707	
Square timber.....Cub. ft.	825,545		1,183,821		...		388,410		2,397,776	
Staves.....No.	...		...		...		...		...	
Firewood.....Cords.	249		...		...		...		249	

SESSIONAL PAPER No. 10

STATEMENT showing the Quantity of Through Freight passed up the Welland Canal in Canadian and United States Vessels during the Season of 1898.

ARTICLES.	CANADIAN VESSELS.				UNITED STATES VESSELS.				TOTAL.	
	Steam.		Sail.		Steam.		Sail.		Steam and Sail	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	208	127,509	104	58,103	336	348,241	137	80,887	785	614,740
1898.	Tons.		Tons.		Tons.		Tons.		Tons.	
Class 3.										
Cement and water lime	996								996	
Fish	10				87				97	
Iron railway										
" pig										
" all other	1,248				15				1,263	
Salt	35				4				39	
Steel	19				183				202	
Articles not enumerated	416				470		5		891	
Class 4.										
Crockery and earthenware	52				1				53	
Marble										
Manilla					112				112	
Nails	313								313	
Paint	31								31	
Pitch and tar	44								14	
Sugar	634				5,261				5,895	
Tin	237				34				271	
Merchandise not enumerated	2,129				48,151				50,280	
Class 5.										
Produce of wood	561				172				733	
Special Class.										
Coal	985				121,907		34,148		157,041	
Unenumerated articles										
Total	7,661				176,397		34,153		218,211	

Canadian steam vessels carried	7,661
" sailing vessels carried	
United States steam vessels carried	176,397
" " sailing vessels carried	34,153

WELLAND CANAL THROUGH FREIGHT RECAPITULATION.

WELLAND CANAL—WEST BOUND FREIGHT.

The total quantity of Through Freight passed Up the Welland Canal in Canadian and United States Vessels, during the Season of Navigation in 1898, is as follows:—

SUMMARY.	Tons.	Tons.
In Canadian steam vessels	7,661	
do sail do		
Total quantity in Canadian vessels		7,661
In United States steam vessels	176,397	
do sail do	34,153	
Total, in United States vessels		210,550
Grand total freight passed up the Welland Canal in Canadian and United States vessels		218,211

STATEMENT of the Quantity of Through Freight passed Up and Down on the Welland Canal during the Season of Navigation in 1898.

SUMMARY.	Tons.	Tons.
In Canadian steam vessels up	7,661	
do do down	202,077	
Total in Canadian steam vessels		209,738
In Canadian sail vessels up		
do do down	100,548	
Total in Canadian vessels		100,548
Total quantity in Canadian sail vessels		310,286
In United States steam vessels up	176,397	
do do down	450,042	
Total in United States steam vessels		626,439
In United States sail vessels up	34,153	
do do down	149,852	
Total in United States sail vessels		184,005
Total quantity in United States vessels		810,444
Total in Canadian and United States vessels		1,120,729
	East bound.	West bound.
In Canadian vessels	302,625	7,661
In United States vessels	599,894	210,550
Total	902,519	218,211

J.—STATEMENT of Large Class of Vessels Lightened at the Welland Railway Elevator at Port Colborne, showing the Tonnage, Dimensions, Depth of Water, Number of Cargoes passed through the enlarged Welland Canal, during the Season of Navigation in 1898.

CANADIAN STEAM VESSELS.

Date of Arrival.	Name of Vessels.	Registered Tonnage	Dimensions. Length over all.	Width of beam.	Depth of hold.	Depth of Water on Arrival. Forward.	Aft.	Original Cargo to the Welland Canal. Wheat.	Wheat.	Corn.	Corn.	Barley.	Barley.	Rye.	Rye.	Oats.	Rolling Freight.	Lighterage over Welland Railway. Wheat.	Corn.	Barley.	Rye.	Lighterage over Welland Railway in Tons. Wheat.	Corn.	Barley.	Rye.	Oats.	Rolling Freight.	Grain Cargo and Rolling Freight through Welland Canal. Wheat.	Corn.	Barley.	Rye.	Wheat.	Corn.	Barley.	Rye.	Oats.	Rolling Freight.	Total Cargo through Canal.	Depth of Water, Midship through Canal.	Destination. From	To	Cost of Lighterage per bushel.	Time occupied in Lightage. Hrs.	Min.
1898.		Tons.	Feet.	Ft. in.	Ft. in.	Ft. in.	Ft. in.	Bushels.	Tons.	Bushels.	Tons.	Bushels	Tons.	Bushels.	Tons.	Tons.	Tons.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Ft. in.			$ cts.		
May 16	Rosemount..	989	253	41	24 3	15 0	15 11	79,802	2,395									15,890				477						63,912				1,918						1,918	14	Ft. William	Kingston	0 02	4	30
" 26	Bannockburn	1,035	245	40	18 4	16 7	16 2	79,501	2,386									19,365				581						60,136				1,805						1,805	14	"	"	0 02	3	30
" 30	Rosemount..	989	253	41	24 3	16 0	15 10	79,928	2,398									16,430				493						63,498				1,906						1,906	13 11	"	"	0 02	6	15
Oct. 17	Arabian	770	180	31	18 6	13 11	14 0	41,000	1,231									3,832				115						37,168				1,116						1,116	13	Duluth	Prescott	0 02	1	30
" 27	Rosemount	989	253	41	24 3	14 0	14 0	64,000	1,921									2,650				80						61,350				1,841						1,841	13 9	Ft. William	Kingston	0 02	1	35
" 30	Rosedale	977	254	35	22 6	14 0	14 0	60,000	1,800									10,910				328						49,090				1,472						1,472	13 6	Duluth	"	0 02	3	10
Nov. 11	Rosemount.	989	253	41	24 3	15 3	15 7	74,500	2,236									13,729				412						60,771				1,824						1,824	13 10	Ft. William	"	0 02	3	10
" 13	Bannockburn	1,035	245	40	18 4	15 1	15 3	70,000	2,101									9,245				278						60,755				1,823						1,822	14	"	"	0 02	2	10
" 23	Rosemount	989	253	41	24 3	15 3	15 5	74,000	2,221									13,260				398						60,740				1,823						1,823	13 10	"	"	0 02	3	30
Dec. 2	Bannockburn	1,035	245	40	18 4	15 4	14 10	70,000	2,101									11,242				338						58,758				1,763						1,763	13 11	"	"	0 02	2	00
" 6	Rosemount	989	253	41	24 3	15 2	15 5	73,000	2,191									16,653				500						56,347				1,691						1,691	13 05	"	"	0 02	3	10
								765,731	22,981									133,206				4,000						632,525				18,981						18,981						

CANADIAN SAILING VESSELS.

Oct. 27	Melrose	740	184	34 5	14 5	14 9	14 3	51,500	1,546									3,816				115						47,684				1,431						1,431	13 9	Ft. William	Kingston	0 02	1	05
" 27	Selkirk	719	183	34 5	14 5	15	14 6	50,000	1,501									5,523				166						44,477				1,335						1,335	13 10	"	"	0 02	2	00
Nov. 12	Minnedosa	1,041	240	36 3	15 2	14 6	14 6	64,672	1,941									5,483				165						59,189				1,776						1,776	13 10	"	"	0 02	2	00
Dec. 2	"	1,041	240	36 3	15 2	14 6	14 6	64,500	1,936									4,806				145						59,694				1,791						1,791	14 00	"	"	0 02	1	30
								230,672	6,924									19,628				591						211,044				6,333						6,333						

UNITED STATES STEAM VESSELS.

Apr. 22	Germanic	892	216	36 2	18 2	15 7	15 8	61,000	1,831									11,895				357						49,105				1,474						1,474	14	Chicago	Kingston	0 02	3	05
" 22	Black Rock	1,330	237	43	16 5	15 7	15 5			87,800	2,459								17,097			479						70,703				1,980						1,980	13 11	"	"	0 02	4	05
" 22	St. Lawrence	1,030	239	41 1	20	15 2	16 0			80,000	2,241								17,020			477						62,980				1,764						1,764	13 10	"	"	0 02	4	
" 22	Elfinmere	796	190	34	21	15	15 6			50,000	1,401								8,254			232						41,746				1,169						1,169	13 10	"	Ogdensburg	0 02	2	10
" 23	D. C. Whitney	1,013	229	40	14 2	15 7	15 6													14,138				396				52,462										1,469	14	"	Prescott	0 02	3	05
" 24	J. R. Langdon	1,550	240	42	23 4	14 4	15 4			69,978	1,960					58			13,568			380						56,410				1,580					58	1,638	14	"	Ogdensburg	0 02	3	30
" 25	W. J. Averill	1,425	265	36 7	25 5	14 6	15 3			60,000	1,681					89			7,705			216						52,295				1,465					89	1,554	14	"	"	0 02	2	20
" 25	A. McVittie	1,553	240	42	23 4	14 8	15 2			70,000	1,961					45			11,344			318						58,656				1,643					45	1,688	13 10	"	"	0 02	3	
" 25	Samoa	837	205	34 5	17 7	15	15 2			53,112	1,488								8,778			246						44,334				1,242						1,242	14	"	"	0 02	2	30
" 25	H. R. James	1,553	240	42	23 4	14 8	15 4			70,000	1,961					49			11,290			317						58,710				1,644					49	1,693	13 11	"	"	0 02	3	40
" 26	Niko	929	189	35	13	15 6	15 6	49,100	1,474									9,218			277						39,882				1,197						1,197	14	"	Kingston	0 02	3	25
" 26	W. A. Haskell	1,441	265	37	25 6	13 7	14 8			14,700	412					971	252		2,848			80						11,852				332				971	252	1,555	14	"	Ogdensburg	0 02	0	30
" 28	Escanaba	918	201	35 6	20 1	15 1	14 8			50,000	1,401								5,368			151						44,632				1,250						1,250	14	"	Prescott	0 02	1	15
" 28	J. N. Glidden	1,111	221	35 1	19 3	15 2	15 5			56,200	1,575								10,111			284						46,089				1,291						1,291	13 11	"	Ogdensburg	0 02	3	
May 3	Gov. Smith	1,547	240	42	23 4	15 3	15 6			69,396	1,944					137			14,521			407						54,875				1,537					137	1,674	13 11	"	"	0 02	3	30
" 5	F. H. Prince	1,548	240	42	23 4	15 6	16			70,604	1,978					252			17,290			485						53,314				1,493					252	1,745	13 11	"	"	0 02	4	35
" 7	Elfinmere	796	190	34	21	14 8	15 6							50,515	1,416					7,792				219				42,723										1,197	14	Duluth	"	0 02	2	
" 9	J. R. Langdon	1,550	240	42	23 4	14 11	15 4			69,999	1,961					103			15,825			444						54,174				1,517					103	1,620	13 10	Chicago	"	0 02	4	
" 10	Black Rock	1,330	237	43	16 5	16 3	16	86,500	2,596									20,395			612						66,105				1,984						1,984	13 11	"	Kingston	0 02	4	15
" 11	W. J. Averill	1,425	265	36 7	25 5	15	15 3			50,000	1,401					428			10,066			282						39,934				1,119					428	1,547	13 11	"	Ogdensburg	0 02	2	20
" 11	A. McVittie	1,553	240	42	23 4	14 8	15 8			70,000	1,961					128			12,721			357						57,279				1,604					128	1,732	13 11	"	"	0 02	3	
" 16	H. R. James	1,553	240	42	23 4	15 2	15 6			70,000	1,961					115			13,638			382						56,362				1,579					115	1,694	13 10	"	"	0 02	3	15
" 16	W. A. Haskell	1,441	265	37	25 6	14 8	15 3			40,000	1,121					703			10,108			284						29,892				837					703	1,540	13 11	"	"	0 02	2	15
" 27	Black Rock	1,330	237	43	16 5	15 11	15 11	86,500	2,596									19,162			575						67,338				2,021						2,021	14	"	Kingston	0 02	4	
Oct. 29	Pueblo	1,054	225	36	19	14	14 3					63,000	1,513							3,635			88						59,345			1,425						1,425	13	"	Oswego	0 02	0	50
Nov. 8	Gov. Smith	1,547	240	42	23 4	14 8	15 3			50,000	1,401					565			9,536			268						40,464				1,133					565	1,698	14	"	Ogdensburg	0 02	2	00
" 8	A. McVittie	1,553	240	42	23 4	14 4	14 10	30,000	901							955	5,572				168						24,428				733					955	1,688	14	"	"	0 02	2	
" 9	H. R. James	1,553	240	42	23 4	14 5	14 10			50,000	1,401					436			8,708			244						41,292				1,157					436	1,593	13 9	"	"	0 02	3	30
" 11	Mont Eagle	1,035	237	35	19 8	15 9	15 10			59,570	1,669								11,876			333						47,694				1,336						1,336	13 9	"	Prescott	0 02	3	15
" 17	John Ruges	950	216	35 1	18 7	14 10	15 1			57,000	1,597								7,808			219						49,192				1,378						1,378	14	"	"	0 02	2	
" 25	J. R. Langdon	1,550	240	42	23 4	13 10	15 4	50,008	1,502							417	9,637				290						40,371				1,212					417	1,629	13 6	"	Ogdensburg	0 02	3	20
" 27	Gov. Smith	1,547	240	42	23 4	14 6	14 10			50,000	1,401					511			9,497			266						40,503				1,135					511	1,646	14	"	"	0 02	2	10
Dec. 1	A. McVittie	1,553	240	42	23 4	13 8	15			50,000	1,401					407			3,904			110						46,096				1,291					407	1,698	13	"	"	0 02	0	45
" 1	H. R. James	1,553	240	42	23 4	14 9	15 4			60,000	1,681					287			10,695			300						49,305				1,381					287	1,668	13 11	"	"	0 02	2	20
" 3	W. B. Morley	1,565	240	42 5	20 9	14 1	14 1					86,500	2,077							2,014			49						34,486			2,028						2,028	13 9	Milwaukee	Oswego	0 02	1	
" 6	W. J. Averill	1,425	265	36 7	25 5	14 8	14 8			54,000	1,513					213			7,573			213						46,427				1,300					213	1,513	13 9	Chicago	Ogdensburg	0 02	2	
" 6	F. H. Prince	1,548	240	42	23 4	13 11	14 11			66,000	1,849					31			5,783			162						60,217				1,687					31	1,718	13 10	"	"	0 02	1	40
								363,108	10,900	1,598,359	44,780	149,500	3,590	117,115	3,281	971	6,181	75,879	282,932	5,669	21,930	2,279	7,936	137	615			287,229	1,315,427	143,831	95,185	8,621	36,844	3,453	2,666	971	6,181	58,736						

UNITED STATES SAILING VESSELS.

Apr. 22	E. C. Hutchinson	700	195	34 2	14 0	14 8	14 8			52,200	1,463								5,154			145						47,046				1,318						1,318	14	Chicago	Kingston	0 02	1	10
" 24	Wayne	917	186	34 2	13 7	15 3	15 3			54,470	1,526								8,475			238						45,995				1,288						1,288	13 11	"	Ogdensburg	0 02	2	25
" 26	Churchill	960	202	38 3	16 3	15 8	15 7	68,200	2,074									10,805			325					57,395				1,722						1,722	13 11	"	Kingston	0 02	3	00
" 26	Tasmania	931	221	35 0	16 0	15 3	15 3			61,600	1,726								8,956			251						52,644				1,475						1,475	14	"	"	0 02	3	00
" 29	Dundee	992	211	35 0	16 6	15 3	14 11			70,930	1,987								8,172			229						62,758				1,758						1,758	14	"	Ogdensburg	0 02	2	10
May 9	J. C. Fitzpatrick	1,207	242	39 0	17 0	15 8	15 7							85,000	2,381					15,450				433				69,550										1,948	14	Duluth	Prescott	0 02	4	40
								68,200	2,047	239,200	6,702			85,000	2,381			10,805	30,757		15,450	325	863		433			57,395	208,443		69,550	1,722	5,839		1,948			9,509							

RECAPITULATION.

	Number.																																												
Canadian Vessels—																																												
Steam	11	765,731	22,981															133,206				4,000						632,525				18,981						18,981						
Sail	4	230,672	6,924															19,628				591						211,044				6,333						6,333						
Total, Canadian	15	996,503	29,905															152,834				4,591						843,569				25,314						25,314						
United States Vessels—																																												
Steam	37	363,108	10,900	1,598,359	44,780	149,500	3,590	117,115	3,281	971	6,181	75,879	282,932	5,669	21,930	2,279	7,936	137	615			287,229	1,315,427	143,831	95,185	8,621	36,844	3,453	2,666	971	6,181	58,736						
Sail	6	68,200	2,047	239,200	6,702			85,000	2,381			10,805	30,757		15,450	325	863		433			57,395	208,443		69,550	1,722	5,839		1,948			9,509						
Total, United States	43	431,308	12,947	1,837,559	51,482	149,500	3,590	202,115	5,662	971	6,181	86,684	313,689	5,669	37,380	2,604	8,799	137	1,048			344,624	1,523,870	143,831	164,735	10,343	42,683	3,453	4,614	971	6,181	68,245						
Total, Canadian and United States	58	1,427,711	42,852	1,837,559	51,482	149,500	3,590	202,115	5,662	971	6,181	239,518	313,689	5,669	37,380	7,195	8,799	137	1,048			1,188,193	1,523,870	143,831	164,735	35,657	42,683	3,453	4,614	971	6,181	93,559						

K.—STATEMENT showing the Quantity of Freight passed Eastward, from Lake Erie, through the whole length of the Welland and St. Lawrence Canals, to Montreal, during the Seasons of Navigation in 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897 and 1898.

Articles.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 3.													
Cement and water lime											12		
Clay, lime and sand												38	52
Iron, pig						371			195	79	5		
do all other	15		418						1	1,766	2,020	7,564	6,217
Steel										394	542	375	1,351
Stone for cutting											200		
Apples	49	33					54		50	28	1,263		
Barley								600	258	959	240		3,960
Corn	116,517	24,609	66,443	195,350	139,798	52,539	53,689	278,564	60,661	70,235	182,330	267,583	310,498
Flaxseed												3,293	5,687
Flour	2,934	6,140	3,865	6,841	3,065	3,324	2,874	5,514	16,503	30,916	11,964	1,029	653
Meal, all kinds	125	87	100	148	222	67	16		4	65			
Oats				320	479			9,761	175	1,654	12,373	6,847	3,975
Pease	608	362				390	524				3,020	2,078	260
Rye				1,284	1,120	64,978	9,119	3,669			8,323	8,435	15,488
Salt												216	144
Seeds, all kinds	33		12	3	2	2	75				20		
Tobacco, raw	25					1						51	
Wheat	86,815	160,063	93,915	70,815	75,515	159,785	194,281	209,212	212,557	158,643	255,198	278,498	184,154
All other agricultural products, vegetable		17		798	3	2			29		29		56
Hides, skins, horns and hoofs							20						
Horses	1	1	2	2	3	2	2	1	1	1	1	1	4
Lard and lard oil	22		54			100							
Pork	936	418	265	1,220	221	201			717		1		
All other agricultural products, animal	68	29	39	32	117		103						
Total, Class 3	208,148	191,759	165,113	276,813	220,545	281,762	260,757	507,321	201,151	264,740	477,541	576,008	532,499
Class 4.													
Ashes	44	113	85	107	70	40	17	23	19	34	94	133	73
Crockery											5		

K.—STATEMENT showing the Quantity of Freight passed Eastward, from Lake Erie, through the whole length of the Welland and St. Lawrence Canals, to Montreal, &c.—*Concluded.*

Articles.	1886.	1887.	1888.	1889.	1890.	1891.	1802.	1893.	1894.	1895.	1896.	1897.	1898.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 4—Con.													
Furniture	6	9	2	.....	1	2	1	.....	2	.....	.....	1	.....
Glass, all kinds	.....	.....	3	.....	1	1	.....	.....	.....	.....	9	53	75
Molasses	28	.....	.....	.....	.....	.....	.....	.....	.....	100	167	9	56
Nails	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oil	6	14	.....	4	6	.....	.....	.....	.....	6	23	112	1,141
Paint	1	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....
Pitch and tar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rags	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....
Sugar	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Stone, wrought	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Turpentine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Whisky, beer, and other spirits	8	.....	3	20	26	105	6	1	.....	101	.....	46	4
Merchandise, not enumerated	100	72	105	193	142	278	36	4	330	558	376	1,226	866
Total, Class 4	193	236	198	324	246	426	60	28	351	801	679	1,580	2,215
Class 5.													
Barrels, empty	6	88	40	.....	.....	.....	1	.....	.....	1	.....	.....	.....
Hoops	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	257	.....
Sawed lumber	18,707	7,001	5,175	6,118	3,579	3,908	1,678	667	683	1,117	657	478	3,065
Staves, pipe and barrel	332	184	139	.....	.....	.....	8	.....	.....	.....	.....	4,716	.....
" West India and pipe	287	131	1,623	270	.....	.....	200	.....	.....	.....	.....	.....	.....
Timber, square, in vessels	1,330	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" in rafts	15,410	14,390	11,586	9,302	.....	5,680	400	.....	.....	.....	1,200	1,207	329
Woodenware	101	45	25	.....	1	.....	.....	.....	6	.....	.....	.....	.....
Total, Class 5	36,173	21,839	18,588	15,690	3,580	9,588	2,327	667	689	1,118	1,857	6,658	3,394
Special Class.													
Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand total	244,514	213,834	183,899	292,827	224,371	291,776	263,144	508,016	292,191	266,659	480,077	584,246	538,108

L.—STATEMENT showing the Quantity of Freight passed Westward from Montreal, through the whole length of the St. Lawrence and Welland Canal to Lake Erie, during the Seasons of Navigation in 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897 and 1898.

Articles.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 3.													
Bricks	66	3	187	84	252	469	.....	.....	1	24	15	70	70
Cement and water lime	498	1,740	1,177	823	62	2,380	1,570	3,169	2,281	1,859	1,686	837	996
Clay, lime and sand	1	134	95	3	8	206	240	.....	253	.....	.....	4	144
Fish	1	95	1	80	26	7	426	465	512	.....	11	10	9
Gypsum	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron, railway	6,629	153	9,148	15,513	20,003	2,855	1,171	6,576	20	.....	1,687	.....	.....
" pig	10	368	573	250	20	112	74	25	.....	56	28	6	.....
" all other	76	1,997	297	290	584	595	387	543	114	1,831	727	559	699
Salt	5,609	4,197	3,599	4,216	7,440	4,391	2,034	995	843	932	822	25	35
Steel	1	423	3	3	1	.....	269	426	248	528	.....	.....	19
Stone for cutting	.....	.....	.....	.....	12	.....	145	.....	.....	.....	4	62	.....
Four	.....	.....	.....	.....	48	.....	.....	3	.....	.....	.....	.....	.....
Hay	.....	.....	.....	.....	.....	.....	.....	.....	.....	124	.....	.....	.....
Meals	.....	.....	31	.....	.....	.....	.....	.....	15	.....	.....	.....	.....
Oats	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potatoes	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Seeds, all kinds	.....	.....	24	215	100	.....	.....	.....	33	25	99	121	56
Agricultural products not enumerated, vegetables	.....	.....	35	19	.....	52	.....	.....	5	26	.....	4	.....
Hides and skins	.....	.....	.....	.....	.....	.....	.....	.....	.....	26	.....	.....	.....
Horses	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	1	.....	1
Lard and lard oil	.....	3	.....	.....	72	.....	16	.....	.....	1	.....	.....	2
Pork	.....	.....	.....	.....	33	.....	.....	.....	.....	.....	.....	.....	.....
Wool	.....	4	.....	.....	13	2	13	.....	.....	.....	.....	.....	.....
All other articles not enumerated	6	4	77	.....	1	2	.....	.....	10	.....	.....	.....	.....
Total, Class 3	12,897	9,125	15,247	21,498	28,675	11,071	6,345	12,202	4,335	5,432	5,080	1,698	2,031
Class 4.													
Ashes, pot and pearl	20	.....	.....	.....	10	31	88	.....	.....	.....	.....	1	.....
Crockery and earthenware	40	164	336	112	11	251	8	98	107	12	83	4	33
Dye woods, &c	1	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Furniture	9	1	1	.....	.....	1	3	.....	.....	.....	.....	2	.....

L.—STATEMENT showing the Quantity of Freight passed Westward from Montreal, through the whole length of the St. Lawrence and Welland Canals to Lake Erie, &c.—*Concluded.*

Articles.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1888.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 4—Con.													
Glass, all kinds	39	53	77	71	23	30	152	365	175	394	612	799	150
Manilla	7	5	1						11				
Molasses	23	1	7	56			32	43	42	20	1		
Nails	389	147	578	736	453	560	276	472	500	1,149	409	129	229
Oil, in barrels	82	28	22	9	11	64	2	44	8	31	33	12	15
Paint	36	80	59	49	24	61	15	70	8	75	49	20	35
Pitch and tar	5	1			13	22	15	26	152	67	60	20	37
Resin					1								
Soda, ash	975	1,116	1,196	766	554	377	352	68	94	84	74	249	88
Stone, wrought								14			17	25	31
Sugar	316	207	98	7	551	412	1,320	2,218	2,724	1,430	1,873	311	566
Tin	549	2,225	198	480	40	23	27	34	327	396	395	359	237
Turpentine	1	1	1	1	2								
White lead	3	4	2	4	19	3	6	35	2	7	10	5	
Whiting		7		33	34	50	71	31	1	113	56	104	93
Whisky, beer, &c	174	287	228	124	350	294	220	26	53	77	51	93	98
Merchandise not enumerated	1,008	619	1,259	1,422	1,180	810	538	799	900	1,268	1,247	711	793
Total, Class 4	3,677	4,950	4,063	3,870	3,276	2,989	3,125	4,343	5,104	5,123	4,970	2,844	2,405
Class 5.													
Barrels, empty	227			2									
Lumber, sawn, in vessels													
Woodenware													
Total, Class 5	227			2									
Special Class.													
Coal													
Grand total	16,801	14,075	19,310	25,370	31,951	14,060	9,470	16,545	9,439	10,555	10,050	4,542	4,436

M.—STATEMENT showing the Quantity of Freight passed Eastward through the Welland Canal, from United States Ports to United States Ports, during the Season of Navigation from 1886 to 1898, inclusive.

Articles.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 3.													
Bricks	41				4							845	
Cement and water lime	31		4										300
Fish		2				1		5	5				
Iron, railway										181		965	770
" all other	45			520	1	10	1	102		214			324
Salt	1					494							
Steel			3				1				498		2,951
Stone for cutting													
Apples													
Barley		1,709	2		6,519	8,113	6,433	16,751	28,095	7,904	11,128	14,173	6,909
Corn	93,503	83,431	102,974	147,045	180,342	127,494	131,222	198,777	105,329	100,512	175,094	169,057	150,667
Flour	7,591	11,780	8,563	5,017	9,204	6,802	11,018	6,588	17,795	10,169	16,224	7,237	4,212
Hay, pressed												301	
Meal, all kinds	13,201	10,726	11,598	17,224	20,482	26,096	31,724	36,352	60,390	46,316	46,456	41,644	22,626
Oil cake									29				
Oats	4,790	12,050	26,510	27,492	27,030	52,823	36,935	23,870	27,621	16,442	16,137	14,969	12,729
Pease													45
Potatoes				1	1								
Rye			179					864			490		1,197
Seeds, all kinds	236	44	48	151	135	256	50	16		14	78	299	44
Wheat	53,258	37,678	39,999	39,229	31,527	32,097	26,950	28,187	53,846	27,881	34,878	28,919	11,268
Agricultural products, vegetables	2	2			14	42							
Hides and skins, &c.	414	170	39							8	41	23	
Horses	1	2		1	1	3		2	4		3	3	2
Lard and lard oil, &c	13	14	19	32	30	10		1		6	1,348	1,444	3,671
Meats, other than pork	1	18	14	3	15	2	29			30			
Pork	106	108	19	21	88	73	1	52	56	87	390	243	1,271
Sheep													
Tallow													359
Wool	1,125	86	18	452		1,237	70	80	1,484	1,536	900	197	89
Total, Class 3	174,359	157,820	189,989	237,188	275,893	255,553	244,434	311,647	294,654	211,300	303,665	280,319	219,434
Class 4.													
Agricultural implements		9											
Crockery and earthenware			1	1									
Furniture	21	24	30	30	21	7		6		2			2

M.—STATEMENT showing the Quantity of Freight passed Eastward through the Welland Canal, from United States Ports to United States Ports, during the Season of Navigation from 1886 to 1898, inclusive—*Concluded.*

Articles.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 4—Con.													
Glass, all kinds	2					1							
Nails	4								57				
Oil, in barrels	6	8				1				30	1,005	198	119
Paint					3		44						3
Soda, ash													
Stone, wrought	38			2									
Sugar										59	165	31	
White lead					1								
Whisky, beer and all other spirits	21	63	151	190	228	167	46	83		15			34
Merchandise	824	469	1,453	1,679	1,822	1,865	1,331	1,693	2,976	7,656	3,990	3,591	3,828
Total, Class 4	916	573	1,635	1,902	2,075	2,041	1,421	1,782	3,033	7,762	5,160	3,820	3,986
Class 5.													
Empty barrels								9			10		
Firewood in vessels											165		
Lumber, sawn, in vessels	43,776	29,845	28,333	55,074	38,030	45,504	54,173	68,985	62,905	41,974	75,515	68,280	52,844
Masts and spars, in vessels												403	
Hoops													
Railway ties, in vessels										446			
Shingles	463		6	51				13					
Staves, barrel			82										
Timber, square, in vessels										500		1,040	
Woodenware, &c	2	26	141	333	8	4	54				12	1	
Total, Class 5	44,241	29,871	28,562	55,458	38,038	45,508	54,227	69,007	62,905	42,920	75,702	69,724	52,844
Special Class.													
Coal	5,400	1,163	878	1,124	615	1,382	651	2,123	727	603	1,255		759
Stone, not suitable for cutting				1,681	18								
Kryolite					1,620	1,773							
Total, Special Class	5,400	1,163	878	2,805	2,253	3,155	651	2,123	727	603	1,255		759
Grand Total	224,916	189,427	221,064	297, 53	318,259	306,257	300,733	384,559	361,319	262,585	385,782	353,863	277,023

N.—STATEMENT showing the number of Vessels which took their Cargoes of Wheat through the Welland Canal from ports west of Port Colborne, the quantity transhipped at Kingston and Prescott, and the quantity of each Cargo through the St. Lawrence Canals to Montreal during the Season of Navigation in 1898.

Name of Vessels.	Original quantity through the Welland Canal.	Quantity transhipped at Kingston and Prescott.	Cargo through the St. Lawrence Canals to Montreal.
	Tons.	Tons.	Tons.
Canadian Steamer "Arabian"	1,200	648	552
" "	1,200	673	527
" "	1,200	696	504
" "	1,200	684	516
" "	1,230	748	482
" "	1,215	691	524
" "Cuba"	360	.....	360
" "	360	.....	360
" "Iona"	300	.....	300
" "	360	.....	360
" "	360	.....	360
" "Melbourne"	360	.....	360
" "Lake Michigan"	540	227	313
" "	528	228	300
" "	525	224	301
" "S. L. Tilley"	841	490	351
" "	1,200	780	420
" "	1,200	792	408
" "	1,202	814	388
Canadian Schooner "Dunmore"	1,260	520	740
" "Winnipeg"	1,500	861	639
Total	18,141	9,076	9,065

Number of cargoes of wheat	21	
Quantity through Welland Canal to Kingston and Prescott	18,141	tons.
" transhipped at Kingston and Prescott	9,076	"
" taken to Montreal in vessels in which it arrived at Kingston and Prescott	9,065	"

N.—STATEMENT showing the number of Vessels which took their Cargoes of Corn through the Welland Canal from ports west of Port Colborne, the quantity transhipped at Kingston and Prescott, and the quantity of each Cargo through the St. Lawrence Canals to Montreal during the Season of Navigation in 1898.

Name of Vessels.	Original quantity through the Welland Canal.	Quantity transhipped at Kingston and Prescott.	Cargo through the St. Lawrence Canals to Montreal.
	Tons.	Tons.	Tons.
Canadian Steamer "Arabian"	1,176	678	498
" "Cuba"	336	.....	336
Canadian Schooner "Dunmore"	1,204	420	784
" "	1,187	431	756
" "Melrose"	1,529	843	686
" "	1,497	475	1,022
" "Selkirk"	1,476	832	644
" "	1,470	840	630
" "Winnipeg"	1,493	844	649
" "	1,475	831	644
" "	1,476	846	630
Total	14,319	7,040	7,279

Number of cargoes of corn	11	
Quantity through Welland Canal to Kingston and Prescott	14,319	tons.
" transhipped at Kingston and Prescott	7,040	"
" taken to Montreal in vessels in which it arrived at Kingston and Prescott	7,279	"

RECAPITULATION of the number of Vessels passed down the Welland Canal, with cargoes of grain for Montreal, the quantity transhipped at Kingston and Prescott, and the quantity taken to Montreal for the season of 1898.

——	Number of Cargoes.	Total Number
Wheat	21	
Corn	11	
Total		32
	Tons.	Tons.
Quantity of wheat through the Welland Canal bound for Montreal	18,141	
" corn " " " " "	14,319	
Total through Welland Canal		32,460
Quantity of the above transhipped at Kingston and Prescott:—		
Wheat	9,076	
Corn	7,040	
Total transhipped		16,116
Quantity of the above cargoes taken to Montreal in vessels in which it arrived at Kingston and Prescott:—		
Wheat	9,065	
Corn	7,279	
Total quantity to Montreal		16,344
Total		32,460

SESSIONAL PAPER No. 10

O.—STATEMENT showing the quantity of Grain passed down the Welland Canal to Kingston, Prescott, Ogdensburg and other ports, in Canadian and United States vessels, entering the canal at Port Colborne during the season of navigation in 1898.

	CANADIAN VESSELS.				UNITED STATES VESSELS.				TOTAL.	
	Steam.		Sail.		Steam.		Sail.		Steam and Sail.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
	118	90,337	48	35,036	271	310,431	68	48,194	505	483,998
	Tons.		Tons.		Tons.		Tons.		Tons.	
Barley					9,465		2,821		12,286	
Corn		56,538		30,455	284,059		66,761		437,813	
Oats					17,329				17,329	
Pease		260			45				305	
Rye		3,564		1,480	9,135		1,948		16,127	
Wheat		95,567		36,157	54,934		18,355		205,013	
Total		155,929		68,092	374,967		89,885		688,873	

118 cargoes in Canadian steam vessels, total quantity..... 155,929 tons.
48 " " sail " " " ..... 68,092 "
271 " United States steam vessels, total quantity..... 374,967 "
68 " " sail " " " ..... 89,885 "

P.—STATEMENT of the Quantity of Grain arrived at Kingston, Prescott and Ogdensburg in Vessels which passed down the Welland Canal during the Season of Navigation in 1898.

Summary.	Tons.	Tons.
Canadian steam vessels, 118 cargoes of grain	155,929	
" sail " 48 " "	68,092	
Total in Canadian vessels		224,021
United States steam vessels, 271 cargoes of grain	374,967	
" sail " 68 " "	89,885	
Total in United States vessels		464,852
Total in Canadian and United States vessels		688,873
Distributed as follows :—		
32 cargoes arrived at Kingston and Prescott in Canadian vessels with an aggregate quantity of	32,460	
Transhipped at Kingston and Prescott	16,116	
Quantity taken to Montreal in vessels in which it arrived at Kingston and Brescott		16,344
Vessels arrived at Kingston and Prescott and discharged all their cargoes as follows :—		
134 cargoes in Canadian vessels 191,561		
339 " United States vessels 464,852		
Quantity discharged	656,413	
Quantity transhipped to Montreal	480,522	
Total quantity transhipped from Kingston, Prescott and Ogdensburg to Montreal		*496,638
" " " " " Cardinal		4,450
" remaining at Kingston, Prescott and Ogdensburg		171,441
Total		688,873

* Of this quantity 38,203 tons were transhipped from Ogdensburg to Montreal.

Q.—Comparative Statement of the Quantity of Grain passed Down the Welland Canal to Kingston, Prescott and Ogdensburg, for the Seasons of Navigation in 1897 and 1898.

	1897.		1898.	
	No. of Cargoes.	Tons.	No. of Cargoes.	Tons.
Quantity arrived at Kingston and Prescott in Canadian vessels	180	229,265	166	224,021
Quantity arrived at Kingston, Prescott and Ogdensburg in United States vessels	197	285,847	339	464,852
Total	377	515,112	505	688,873
Quantity transhipped at Kingston, Prescott and Ogdensburg in Canadian vessels for Montreal		457,250		496,638
Quantity taken to Montreal in vessels in which it arrived at Kingston and Prescott		8,131		16,344
Quantity remaining at Kingston, Prescott, Ogdensburg and Cardinal	*	49,731		175,891
Total		515,112		688,873

*Of this quantity 6,550 tons were transhipped to Montreal in 1898.
7 vessels took their cargoes through to Montreal intact in 1898, against 7 in 1897.
25 " discharged part of their cargo in 1898 against 11 in 1897.
473 " " all their cargoes in 1898 " 359 in 1897.

R.—STATEMENT showing the number of Vessels, their Tonnage, Number of Passengers, and Tons of Freight passed Down the Rapids of the St. Lawrence Canals, during the season of Navigation in 1898.

Destination.	Number of sections.	Number of vessels.	Tonnage of vessels.	Number of passengers.	Class Three.	Class Four.	Class Five.	Tolls.
					Tons.	Tons.	Tons.	$ cts.
Prescott to Montreal	4	161	65,597	10,445	84	1,132	....	1,776 52
" Lachine	3	29	15,309	952	1,417	390	.....	375 81
" Valleyfield	2	2	1,046	153	.....	4	.....	11 98
Valleyfield to Montreal	2	20	7,660	93	.....	5	2	34 59
" Lachine	1	166	29,596	3,619	1,320	345	21	213 82
Lachine to Montreal	1	338	63,859	16,273	910	431	.. .	538 72
Total	....	716	183,067	31,535	3,731	2,307	23	2,951 44

S.—The quantity of Coal passed through the Welland Canal during a series of years from 1885 to 1898, inclusive, and the amount of Tolls collected thereon, is as follows :—

Year.	From Canadian Ports to Canadian Ports.	From Canadian Ports to Canadian Ports.	From United States Ports to United States Ports.		From United States Ports to Canadian Ports.		Total Tons.	Amount of Tolls Paid — Rate 20 cents a ton.
	Up.	Down.	Up.	Down.	Up.	Down.		
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.		$ cts.
1885			193,442	4,974	10,321	31,350	240,087	48,017 40
1886			184,564	5,400	22,187	49,724	261,875	52,375 00
1887			81,617	1,163	26,775	25,968	135,523	27,104 60
1888			172,381	878	17,365	27,183	217,807	43,561 40
1889			226,352	1,124	12,036	25,931	265,443	53,188 60
1890	80		116,616	615	17,280	22,781	202,372	38,222 30
1891			185,190	1,382	17,374	20,698	224,644	44,928 20
1892			183,244	651	12,391	15,330	211,616	42,284 13
1893			204,704	2,123	8,325	17,944	233,096	46,619 20
1894			187,794	727	1,269	13,947	203,737	40,789 93
1895	4		148,887	603	1,565	7,807	158,866	31,773 05
1896	20	210	206,093	1,255	4,127	11,740	223,445	44,668 20
1897		4	165,143		1,277	9,799	176,223	35,244 60
1898			156,055	759	986	4,536	162,336	32,467 20

NOTE.—Tolls on soft coal passed down the Welland Canal, during the season of 1890, were reduced from 20 to 10 cents a ton, per O.C. May 11, 1890, for the season of 1890 only, the rate for 1891, 1892, 1893, 1894, 1895, 1896, 1897 and 1898, being 20 cents a ton for passage either eastward or westward.

T.—STATEMENT showing the quantity of Coal passed through the whole length of the St. Lawrence Canals during the seasons of 1885 to 1898, inclusive.

Year.	Quantity passed up Free of Tolls.	Quantity passed down to Montreal.	Total Quantity passed up and down.	Amount of tolls on Quantity passed down to Montreal.
	Tons.	Tons.	Tons.	$ cts.
1885	5,035	122,829	127,864	18,424 35
1886	3,301	118,802	122,103	17,820 70
1887	7,579	121,618	129,197	18,242 70
1888	8,341	123,050	131,391	18,423 90
1889	5,360	124,290	129,650	18,604 90
1890	6,538	135,168	141,706	20,275 20
1891	7,951	141,701	149,652	21,255 15
1892	7,543	157,134	164,677	23,570 10
1893	2,285	147,139	149,424	22,070 85
1894	16,213	169,552	185,765	25,432 80
1895		165,151	165,151	24,772 65
1896	689	161,551	162,240	24,232 65
1897	40	164,963	165,003	24,722 37
1898	400	175,609	176,009	26,341 05

NOTE.—Coal is allowed to pass free up the St. Lawrence Canals.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, showing the Quantity to Montreal, the Quantity to Canadian Ports between Port Dalhousie and Cornwall, and the Quantity to United States Ports, Oswego, Ogdensburg, &c., on the south side of Lake Ontario, for the years 1887 to 1898, inclusive.

Articles.	Quantity passed down to Montreal.	Quantity passed down Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1887.	Tons.	Tons.	Tons.
Ashes, pot and pearl	113		
Apples	33		
Agricultural products, not enumerated, vegetable			2
Agricultural implements			9
Barley			1,709
Coal		25,968	1,163
Corn	24,609	6,898	83,431
Fish			2
Flour	6,140		11,780
Furniture	9	9	24
Horses	1	1	2
Hides, skins, &c			170
Iron, pig		1,137	
" all other		7	
Lard, and lard oil		6	14
Meal, all kinds	87	42	10,726
Meats, other than pork	29	15	18
Nails	1		
Oats			12,050
Oil	14	190	8
Oil cake	17		
Pease	362		
Pork	418	86	108
Stone, for cutting		3,531	
" wrought	12	543	
Seeds		4	44
Sugar	15		1
Spirits		99	63
Wheat	160,063	4,940	37,678
Wool			86
All other merchandise not enumerated	72	123	468
Barrels, empty	88		24
Lumber, sawn	7,001	1,816	44,733
Staves and headings, barrel		27	
" " pipe	184		
" " West India	131	838	
Timber, square	14,390	21,351	
Woodenware and wood partly manufactured	45	1	2
Total	213,834	67,632	204,315

A refund of 18 cents per ton was allowed on wheat, corn, pease, barley and rye passed down to Montreal, per O. C. March 21, 1898.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1888.	Tons.	Tons.	Tons.
Ashes, pot and pearl	85		
Apples		45	
Barley			2
Cement and water lime			4
Coal		27,183	878
Corn	66,443	25,469	102,974
Crockery and earthenware		4	1
Flour	3,865		8,563
Furniture	2	1	30
Glass, all kinds	3	2	
Hay, pressed		20	
Horses	2		
Hides and skins			39
Iron, pig		549	
" all other	418	490	
Lard and lard oil	54	12	18
Meal, all kinds	100		11,598
Meats, other than pork	39	6	14
Oats			26,510
Oil		3	
Pease		54	
Pork	265	61	19
Rags			14
Rye		632	179
Stone, for cutting		6,535	
" wrought		126	
Seeds, all kinds	12	1	48
Steel			3
Sugar		2	4
Spirits	3	2	151
Tallow			1
Wheat	93,915	14,365	39,999
Wool			18
All other goods and merchandise not enumerated	105	34	1,435
Barrels, empty	40		133
Lumber, sawn	5,174	4,515	45,818
Staves and headings, barrel	15	7	
" " pipe	124		
" " West Indies	1,623	13	
" " salt barrel	1	1	
Shingles			6
Timber, square, in vessels	11,586	33,669	
Woodenware	25		8
Total	183,899	113,801	238,467

A refund of 18 cents per ton was allowed on wheat, corn, pease, barley and rye passed down Montreal, per O. C. April 20, 1838.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadians Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1889.	Tons.	Tons.	Tons.
Ashes, pot and pearl	107	5	.....
Coal	.....	25,931	1,124
Corn	195,350	11,200	147,045
Crockery and earthenware	.....	1	1
Fish	.....	5	.....
Flour	6,841	.....	5,017
Furniture	.....	4	30
Horses	2	.....	1
Iron, pig	.....	613	.....
" all other	.....	.....	520
Lard and lard oil	.....	5	19
Meal, all kinds	148	.....	17,224
Meats, other than pork	32	2	3
Molasses	.....	.....	88
Oats	320	.....	27,492
Oil, in barrels	4	2	.....
Oil cake	798	.....	.....
Potatoes	.....	.....	1
Pork	1,220	114	21
Rye	1,284	634	.....
Salt	.....	316	.....
Stone, for cutting	.....	6,784	.....
" wrought	.....	11	2
" not suitable for cutting	.....	375	1,681
Seeds, all kinds	3	.....	151
Spirits, beer, &c	20	8	190
Tallow	.....	.....	13
Wheat	70,815	7,241	39,229
Wool	.....	.....	452
Merchandise	193	129	1,591
Barrels, empty	.....	.....	173
Lumber, sawn	6,118	4,669	71,055
Masts, spars, &c	.....	220	.....
Railway ties	.....	852	.....
Saw logs	.....	.....	158
Staves and headings, barrel	.....	4	.....
" " pipe	202	304	.....
" " West India	68	559	.....
Shingles	.....	.....	51
Split posts, &c	.....	17	.....
Timber, square	9,302	70,579	240
Woodenware, &c	.....	.....	2
Total	292,827	130,584	313,574

A refund of 18 cents per ton was allowed on wheat, corn, pease, barley and rye, passsd down to Montreal, per Order in Council March 18, 1889.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1890.	Tons.	Tons.	Tons.
Ashes	70		
All other products, animal	14		
" vegetable	1		
Barley			6,519
Bricks			4
Coal		22,781	615
Corn	134,966	11,584	180,842
Fish	49		
Flour	3,065		9,204
Furniture	1	1	21
Glass, all kinds	1		
Horses	3		1
Iron, all other			1
Kryolite		1,280	1,620
Lard and lard oil		5	30
Meal	222		20,482
Meats			15
Oats	479	73	27,030
Oil, in barrels	6		
Oil cake	2		
Paint			3
Pease			14
Pork	221	19	88
Potatoes			1
Rye	1,120	1	
Salt		701	
Stone, for cutting		5,761	
" wrought		639	18
Seeds, all kinds	2		135
Spirits, &c	26		228
Tallow	54		
Wheat	75,515	5,241	31,527
White lead			1
Merchandise	142	32	1,822
Barrels, empty			7
Firewood, in vessels		1,398	
Lumber, sawn, in vessels	3,195	3,767	47,590
" " rafts	384		
Staves and headings, pipe		187	
" " West Indies		36	
Shingles			14
Square timber, in vessels		73,112	
" " rafts		17,683	
Woodenware	1		1
	219,539	144,301	327,833
Corn 16,033			
Oats 400			
	16,433		*16,433
Total	235,972	144,301	311,400

* This quantity of grain was transhipped at Ogdensburg and passed down the St. Lawrence canals to Montreal.

A refund of 18 cents Welland Canal tolls was allowed on wheat, Indian corn, pease, barley, rye (and oats for export), when shipped for Montreal or some port east of that point, per Orders in Council February 26 and May 5, 1890.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1891.	Tons.	Tons.	Tons.
Ashes	40		
Agricultural products	2		42
Barley			8,113
Corn	52,539	5,144	127,494
Coal		20,698	1,382
Flour	3,324		6,802
Fish			1
Furniture	2	2	7
Glass	1		1
Horses	2	2	3
Hay		21	
Iron, pig	371	128	
" all other		1,036	10
Lard and lard oil	100	16	10
Meal, all kinds	67		26,096
Meats, other than pork		1	2
Molasses		20	18
Oats			52,823
Oil			1
Pease	390		
Pork	201		73
Rags			60
Rye	64,978	969	
Seeds, all kinds	2		256
Salt		1,861	494
Stone for cutting		6,602	
" wrought		7	
Tobacco	1		
Tallow		9	8
Wheat	159,785	692	32,097
Staves, pipe		8	
Whisky and all other liquors	105	57	167
Wool			1,237
Merchandise	278	6	1,779
Kryolite		1,098	1,773
Lumber, in vessels	2,991	1,300	56,456
" in rafts	917		
Timber, square, in rafts	5,680	14,638	
Barrels			4
	291,776	54,315	317,209
Corn 12,169			
Wheat 5,648			
	17,817		*17,817
Total	309,593	54,315	299,392

* This quantity of grain was transhipped at Ogdensburg and passed down the St. Lawrence Canals to Montreal.

A refund of 18 cents a ton, Welland Canal tolls, on wheat, Indian corn, pease, barley, rye and (for export) oats, originally shipped for Montreal or some port east of Montreal, per Order in Council, March 25, 1891.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1892.	Tons.	Tons.	Tons.
Ashes, pot and pearl	17	2	
Apples	54		
Barley			6,433
Corn	53,689	7,637	131,222
Coal		14,839	651
Flour	2,874		11,018
Fish	9		
Furniture	1		7
Hides and skins	20		
Horses	2		
Iron, railway		100	
" all other		765	1
Meal, all kinds	16		31,724
Meats, other than pork	94		29
Oats			36,935
Oil		7	
Pease	524		
Potatoes			1
Pork			44
Rye	9,119	273	
Salt		865	
Seeds, all kinds	75		50
Steel			1
Stone for cutting		1,264	
Sugar			20
Wheat	194,281	5,373	26,950
Whisky, beer, spirits, &c.	6	15	46
Wool			70
Merchandise not enumerated	36	13	1,304
Barrels, empty	1		29
Lumber, sawn, in vessels	1,678	150	83,403
Square timber	440	42,768	440
Staves and headings, pipe	8	80	
" " West India	200	76	
Shingles			25
Total	263,144	74,227	330,403
*Wheat	+4,341	—4,341	
Total	267,485	69,886	330,403

*This quantity of wheat was taken from Kingston to Ogdensburg and stored in elevators, and subsequently transhipped to Montreal.

A refund of 18 cents a ton, Welland Canal tolls, was allowed on wheat, Indian corn, pease, barley, rye, oats, flaxseed and buckwheat which passed down the whole length of the Welland and St. Lawrence Canals, to Montreal, or any port east of Montreal, and such products exported out of the country, and in such cases only.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.— *Continued*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1893.	Tons.	Tons.	Tons.
Ashes, pot and pearl	23		
Barley	600	1,110	16,751
Bricks		1,251	
Corn	278,564	5,752	156,776
Coal		17,944	2,123
Flour	5,514		6,588
Fish			5
Furniture			6
Horses	1	1	2
Iron, pig			100
" all other			2
Meal, all kinds		1,025	36,352
Meats, other than pork			1
Oats	9,761	1,090	20,313
Pork			52
Rye	3,669	1	1
Salt		286	
Seeds, all kinds			16
Wheat	209,212	17,602	29,117
Whisky, beer, &c.	1		83
Wool			80
Merchandise not enumerated	4	2	1,693
Barrels empty			9
Firewood (in rafts)		15	
Lumber, sawn, in vessels	667	1,981	123,665
Shingles			13
Square timber		45,605	
Staves and headings, barrel		12	
" pipe		7	
" West India		53	
Total	508,016	93,737	393,748

There was no rebate allowed of the Welland Canal toll on grain passed down to Montreal during the season of navigation in 1893.

The tolls were, however, reduced by Order in Council of February 13, 1893, as follows:—"For the season of 1893, the canal toll for the passage of the following food products: wheat, Indian corn, pease, barley, rye, oats, flaxseed and buckwheat, for passage eastward through the Welland Canal be ten cents per ton; and for passage eastward through the St. Lawrence Canals only, ten cents per ton, payment of the said toll of ten cents a ton for passage through the Welland Canal to entitle these products to free passage through the St. Lawrence Canals."

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1894.	Tons.	Tons.	Tons.
Apples	50	.....	.....
Ashes	19	.....	.....
Barley	258	.....	28,095
Bricks	.....	552	.....
Coal	.....	13,818	727
Corn	60,661	3,243	105,329
Dye woods and dye stuffs	.....	4	2
Fish	.....	.....	5
Flour	16,503	41	16,880
Furniture	2	3	.....
Horses	1	2	4
Iron, pig	195	2,170	.....
" all other	1	183	.....
Meals	4	.....	60,390
Nails	.....	.....	57
Oats	175	107	27,621
Oil cake	29	.....	.....
" in barrels	.....	27	.....
Pork	717	.....	56
Salt	.....	133	.....
Spirits, beer, &c	.....	3	.....
Sugar	.....	.....	52
Wheat	212,557	13,349	42,934
White lead	16	.....	.....
Wool	.....	.....	1,484
Merchandise not enumerated	314	.....	2,889
Barrels, empty	.....	16	.....
Sawn lumber, in vessels	683	.....	86,545
Square timber, "	.....	47,030	.....
Woodenware	6	.....	.....
Total	292,191	80,681	373,070

There was no rebate allowed of the Welland Canal toll on grain passed down to Montreal during the season of navigation in 1894.

The tolls were, however, reduced by Order in Council of April 16, 1894, as follows:—For the season of 1894, the canal tolls for the passage of the following food products: wheat, Indian corn, pease, barley, rye, oats, flaxseed and buckwheat, for passage eastward through the Welland Canal be ten cents per ton; and for passage eastward through the St Lawrence Canals only, ten cents per ton, payment of the said toll of ten cents a ton for passage through the Welland Canal to entitle these products to free passage through the St. Lawrence Canals."

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1895.	Tons.	Tons.	Tons.
Apples	28		
Ashes	34	15	
Barley	959		7,730
Bricks		651	
Coal		7,809	603
Corn	70,235	2,912	91,743
Flour	30,916	1,824	10,265
Furniture		12	2
Glass		1	
Horses	1	1	
Hides, skins, &c			8
Iron, railway			181
" pig	79	1,994	
" all other	1,766	1,408	214
Lard and lard oil			6
Meal, all kinds	65		46,316
Meats other than pork			30
Molasses	100		
Oats	1,654	123	16,442
Oil, in barrels	6	41	30
Pork			87
Paint	2		
Salt		36	
Stone for cutting		430	
Seeds, all kinds			14
Steel	394		462
Sugar			59
Spirits, beer, &c	101	84	15
Tobacco		16	
Wheat	*158,643	29,061	17,908
Wool			1,536
Merchandise not enumerated	558	1,302	7,656
Barrels, empty	1		
Sawn lumber in vessels	1,117	492	43,286
Railway ties "			1,942
Shingles		19	
Square timber in vessels		63,715	500
Total	266,659	111,946	247,035

*Of this amount 3,469 tons came down to Kingston in 1894—was stored there and taken to Montrea in 1895 and 245 tons came down to Ogdensburg in 1894, stored there and transhipped to Montreal in 1895.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1896.	Tons.	Tons.	Tons.
All other (vegetable)	29		
Apples	†1,263		
Ashes	94		
Barley	240		11,128
Cement and water lime	12		
Coal		11,742	1,255
Corn	182,330	19,688	118,426
Crockery	5		
Fish		2	
Flour	11,964	13,846	16,224
Furniture		3	
Glass	9	3	
Hay, pressed		563	
Hides, skins, &c			41
Horses	1	1	3
Iron, railway		1,192	
" pig	5	1,559	
" all other	2,020	1,725	
Lard and lard oil			1,348
Meal, all kinds		500	46,456
Molasses	167		
Oats	12,373	1,454	14,351
Oil, in barrels	23		1,005
Pease	3,020	10	
Pork	1		390
Rags	4		
Rye	8,323	647	
Salt		80	
Seeds, all kinds	20		78
Steel	542	11,317	498
Sugar	1		165
Tobacco		1	
Wheat	254,763	51,587	16,467
Wool		8	900
Merchandise, not enumerated	376	54	3,990
Barrels, empty			10
Firewood in vessels			165
Sawn lumber "	657	1,286	78,397
Shingles		94	40
Square timber in vessels		55,588	
" rafts	1,200		
Woodenware			12
Total	479,442	172,950	311,349

†523 tons of this quantity of apples paid full tolls by sections on the Welland Canal, and consequently does not appear on the Welland through statement.

*Of this amount 5,290 tons came down to Kingston in 1895, was stored there, and transhipped to Montreal in 1896.

U.—COMPARATIVE STATEMENT of the Quantities of Through Freight passed Down the Welland Canal, &c.—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports, between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1897.	Tons.	Tons.	Tons.
Agricultural products, vegetable			32
Ashes	133		
Barley			14,173
Bricks		739	845
Clay, lime and sand	38	430	
Coal		9,803	
Corn	*264,396	11,103	115,689
Flax seed	3,293	169	
Flour	1,029	211	7,237
Furniture	1	5	
Glass	53	9	
Hay, pressed			301
Horses	1	1	3
Hides and skins, &c			23
Iron, railway		6,241	965
" pig		2,828	
" all other	7,564	6,143	
Lard and lard oil			1,444
Meal, all kinds		699	41,644
Molasses	9		
Oats	*6,847	3,046	15,233
Oil, in barrels	112	51	198
Pease	*2,078	3	
Pork			243
Rye	8,435	48	
Salt	216		
Stone for cutting		330	
Seeds, all kinds			299
Steel	375	4,680	
Sugar			31
Spirits, beer, &c	46		
Tobacco	51		
Wheat	*278,498	†39,057	12,661
Wool			197
Merchandise, not enumerated	1,214	347	3,591
Firewood, in vessels		12	
Hoops	257	8	
Lumber, sawn, in vessels	478	1,158	69,710
Masts " "			403
" " rafts		5	
Railway ties, in vessels		999	
Split posts "		4	
Timber, square "	1,207	81,117	1,040
Staves and headings, salt barrel	4,716		
Woodenware			1
Total	581,047	169,246	285,963

* Of this quantity of corn 573 tons came down to Ogdensburg and Prescott in 1896, were stored there and transhipped to Montreal in 1897.

* Of this quantity of oats, 50 tons came down to Prescott in 1896 and passed down to Montreal in 1897 and 170 tons passed through on St. Catharines Reports; 136 tons of which passed down to Montreal.

* Of this quantity of pease 230 tons were transhipped and passed through on St. Catharines Reports.

* Of this quantity of wheat 624 tons were transhipped and passed through on St. Catharines Reports, and 7,072 tons came down to Kingston and Prescott in 1896, and passed down to Montreal in 1897.

† Of this quantity, 1,079 tons were transhipped and passed through on St. Catharines Reports.

U.—COMPARATIVE STATEMENT of the Quantity of Through Freight passed Down the Welland Canal, &c.—*Concluded.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports.
1898.	Tons.	Tons.	Tons.
Agricultural products, vegetable	56		
Ashes	73		
Barley	3,960	1,417	6,909
Cement and water lime			300
Clay, lime and sand	52	1	
Coal		4,536	759
Corn	*310,498	13,338	116,317
Flax seed	5,687	9	
Flour	653		4,212
Furniture			2
Glass	75		
Horses	4		
Iron, railway		674	770
" pig		4,187	
" all other	6,217	257	324
" ore		13,433	
Lard and lard oil			3,671
Meal, all kinds			22,626
Molasses	56		
Oats	3,975	625	12,729
Oil, in barrels	1,141	15	119
Paint			3
Pease	260		45
Pork			1,271
Rye	*16,133	39	
Salt	144	644	
Seeds, all kinds			44
Spirits, beer, &c	4		34
Steel	1,351	3,122	2,951
Stone for cutting		554	
Tallow			359
Wheat	*184,706	15,860	8,612
Wool			89
Merchandise, not enumerated	866	25	3,828
Firewood, in vessels		747	
Lumber, sawn, in vessels	3,065	2,840	72,897
Railway ties "		190	
Shingles		11	
Square timber	329	48,369	
Total	539,305	110,893	258,871

* Of this quantity of corn 2,340 tons came down to Ogdensburg and Prescott in 1897, were stored there and transhipped to Montreal in 1898.

* Of this quantity of rye 45 tons came down to Prescott in 1897, were stored there and transhipped to Montreal in 1898.

* Of this quantity of wheat 4,165 tons came down to Kingston in 1897, were stored there and transhipped to Montreal in 1898.

U.—STATEMENT showing the Quantity of Through Freight passed Down the Welland Canal to Canadian Ports, &c.—*Continued.*

RECAPITULATION.

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports on the south side of Lake Ontario.
1887.	Tons.	Tons.	Tons.
Barley	.....	.....	1,709
Corn	24,609	6,898	83,431
*Oats	.....	.....	12,050
Pease	362	.....	.....
Rye	.....	.....	.....
Wheat	160,063	4,940	37,678
Total grain	185,034	11,838	134,868
Other articles	28,800	55,794	69,447
Total	213,834	67,632	204,315
1888.			
Barley	.....	.....	2
Corn	66,443	25,469	102,974
*Oats	.....	.....	26,510
Pease	.....	54	.....
Rye	.....	632	179
Wheat	93,915	14,365	39,999
Total grain	160,358	† 40,520	169,664
Other articles	23,541	73,281	68,803
Total	183,899	113,801	238,467
1889.			
Barley	.....	.....	.....
Corn	195,350	11,200	147,045
*Oats	320	.....	27,492
Pease	.....	.....	.....
Rye	1,284	634	.....
Wheat	70,815	7,241	39,229
Total grain	267,769	19,075	213,766
Other articles	25,158	111,509	99,808
Total	292,927	130,584	313,574
1890.			
Barley	.....	.....	6,519
Corn	150,999	11,584	180,842
Oats	879	73	27,030
Pease	.....	.....	14
Rye	1,120	1	.....
Wheat	75,515	5,241	31,527
Total grain	228,513	16,899	‡245,932
Other articles	7,459	127,502	81,901
Total	235,972	144,301	327,833

* There was no rebate on oats for 1887, 1888 or 1889.

† Owing to a break in the Cornwall Canal 14,921 tons of the above quantity of grain were transhipped to Montreal via Canadian Pacific and Grand Trunk Railways, and the refund of 18 cents per ton allowed.

‡ Of this quantity of grain 16,433 tons were transhipped at Ogdensburg to Montreal.

U.—STATEMENT showing the Quantity of Through Freight passed down the Welland Canal to Canadian Ports, &c.—*Continued.*

RECAPITULATION—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports on the south side of Lake Ontario.
1891.	Tons.	Tons.	Tons.
Barley			8,113
Corn	52,539	5,144	127,494
Oats			52,823
Pease	390		
Rye	64,978	969	
Wheat	159,785	692	32,097
Total grain	277,692	6,805	220,527
Transhipped at Ogdensburg to Montreal	+17,817		−17,817
Total	295,509		202,710
Other articles	14,084	47,510	96,682
Grand total	309,593	54,315	299,392
1892.			
Barley			6,433
Corn	53,689	7,637	131,222
Oats			36,935
Pease	524		
Rye	9,119	273	
Wheat	194,281	5,373	26,950
Total grain	257,613	13,283	201,540
Quantity taken to Ogdensburg and transhipped to Montreal	* 4,341	4,341	
Total	261,954	8,942	201,540
Other articles	5,531	60,944	128,863
Total	267,485	69,886	330,403
1893.			
Barley	600	1,110	16,751
Corn	278,564	5,752	156,776
Oats	9,761	1,090	20,313
Pease			
Rye	3,669	1	1
Wheat	209,212	17,602	29,117
Total grain	501,806	25,555	222,958
Other articles	6,210	68,182	170,790
Total	508,016	93,737	393,748
1894.			
Barley	258		28,095
Corn	60,661	3,243	105,329
Oats	175	107	27,621
Pease			
Rye			
Wheat	212,557	13,349	42,934
Total grain	273,651	16,699	203,979
Other articles	18,540	63,982	169,091
Total	292,191	80,681	373,070

*This quantity of wheat was taken from Kingston to Ogdensburg, stored in elevators and subsequently transhipped to Montreal.

SESSIONAL PAPER No. 10

U.—STATEMENT showing the Quantity of Through Freight passed Down the Welland Canal to Canadian Ports, &c.—*Concluded.*

RECAPITULATION—*Concluded.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports on the south side of Lake Ontario.
1895.	Tons.	Tons.	Tons.
Barley	959	.....	7,730
Corn	70,265	2,912	91,743
Oats	1,654	123	16,442
Rye	.....	.....	.....
Wheat	*158,643	29,061	17,908
Total grain	231,491	32,096	133,823
Other articles	35,168	79,850	113,212
Total	266,659	111,946	247,035
1896.			
Barley	240	.....	11,128
Corn	182,330	19,688	118,426
Oats	12,373	1,454	14,351
Pease	3,020	10	.....
Rye	8,323	647	.....
Wheat	254,763	51,587	16,467
Total grain	†461,049	73,386	160,372
Other articles	18,393	99,564	150,977
Total	479,442	172,950	311,349
1897.			
Barley	.....	.....	14,173
Corn	264,396	11,103	115,689
Oats	6,847	3,046	15,233
Pease	2,078	3	.....
Rye	8,435	48	.....
Wheat	278,498	39,057	12,661
Total grain	‡560,254	53,257	157,756
Other articles	20,793	115,989	128,207
Total	581,047	169,246	285,963
1898.			
Barley	3,960	1,417	6,909
Corn	310,498	13,338	116,317
Oats	3,975	625	12,729
Pease	260	.....	45
Rye	16,133	39	.....
Wheat	184,706	15,860	8,612
Total grain	**519,532	31,279	144,612
Other articles	19,773	79,614	114,259
Total	539,305	110,893	258,871

* Of this amount, 3,469 tons came down to Kingston in 1894, was stored there and taken to Montreal in 1895, and 245 tons came down to Ogdensburg in 1894, was stored there and transhipped to Montreal in 1895.

† Of this amount, 5,290 tons came down to Kingston in 1895, was stored there and transhipped to Montreal in 1896.

‡ Of this quantity, 7,695 tons came down in 1896 and were transhipped to Montreal in 1897.

** Of this quantity, 6 550 tons came down in 1897 and were transhipped to Montreal in 1898.

CANAL

COMPARATIVE STATEMENT for years

——	January.	February.	March.	April.	May.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Welland Canal, 1897			11 98	9,217 52	20,735 71
" 1898			0 47	14,721 18	30,259 38
Increase				5,503 66	9,523 67
Decrease			11 51		
St. Lawrence Canals, 1897		150 00		374 61	11,955 97
" 1898		75 00		2,857 12	14,427 08
Increase				2,482 51	2,471 11
Decrease		75 00			
Chambly Canal, 1897				18 07	3,995 00
" 1898				30 84	3,125 07
Increase				12 77	
Decrease					869 93
Ottawa Canals, 1897				1,107 28	5,661 67
" 1898				35 13	5,888 45
Increase					226 78
Decrease				1,072 15	
Rideau Canal, 1897					580 11
" 1898				20 16	567 63
Increase				20 16	
Decrease					12 48
St. Peter's Canal, 1897	0 78		17 18	30 44	215 57
" 1898	3 32		5 98	92 78	311 29
Increase	2 54			62 34	95 72
Decrease			11 20		
Trent Valley Canals, 1897			0 25	38 22	76 69
" 1898			31 15	66 23	117 30
Increase			30 90	28 01	40 61
Decrease					
Murray Canal, 1897				1 79	71 81
" 1898				38 40	77 39
Increase				36 61	5 58
Decrease					
Sault Ste. Marie Canal, 1897					
" 1898					
Increase					
Decrease					
Total, increase	2 54		8 19	7,073 91	11,481 06
Total, decrease		75 00			

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

SESSIONAL PAPER No. 10

REVENUE.

ended 31st December, 1897 and 1898.

June.	July.	August.	September.	October.	November.	December.	Total.
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
20,598 37	27,907 44	26,773 32	31,104 78	26,720 52	21,125 73	4,455 86	188,651 23
22,435 01	20,870 53	24,287 40	19,676 04	20,769 33	12,676 47	3,019 60	168,715 41
1,836 64	.....	.....	.....	.....	.....	.....	.....
....	7,036 91	2,485 92	11,428 74	5,951 19	8,449 26	1,436 26	19,935 82
12,749 37	13,302 41	13,392 10	13,235 20	12,764 42	11,575 80	188 50	89,688 38
13,957 50	17,128 92	17,685 67	15,010 03	15,174 10	10,659 43	66 56	107,041 41
1,208 13	3,826 51	4,293 57	1,774 83	2,409 68	.....	.....	17,353 03
....	....	....	....	....	916 37	121 94	.. ..
4,179 83	4,035 68	3,358 46	3,174 93	2,606 66	1,939 90	....	23,308 53
3,476 53	3,489 03	2,810 83	2,981 09	2 468 06	944 61	.. ..	19,326 06
....	....	....	....	....	....	....	....
703 30	546 65	547 63	193 84	138 60	995 29	....	3,982 47
7,846 53	5,959 58	4,566 18	3,688 72	2,607 22	2,603 10	.....	34,040 28
5,911 00	6,283 53	6,471 90	4,624 60	4,217 60	3,496 41	. ....	36,928 62
.....	323 95	1,905 72	935 88	1,610 38	893 31	..... .	2,888 34
1,935 53	.....	....	....	....	.....	.....	....
868 14	1,308 82	1,408 85	1,020 23	891 21	247 41	0 32	6,325 09
782 70	697 14	891 53	668 32	601 61	693 68	.....	4,922 77
....	....	....	....	....	446 27	....	....
85 44	611 68	517 32	351 91	289 60	.....	0 32	1,402 32
391 63	422 98	361 49	468 54	423 10	335 21	189 78	2,856 70
352 47	348 71	440 86	457 35	358 66	326 28	186 62	2,884 32
....	....	79 37	.. ..	....	....	....	27 62
39 16	74 27	.....	11 19	64 44	8 93	3 16	.....
160 67	285 30	238 98	189 33	175 61	68 60	....	1,233 65
228 67	232 22	214 52	133 16	104 31	49 07	.... .	1,176 63
63 00	....	....	....	....	....	....	....
....	53 08	24 46	56 17	71 30	19 53	.. ..	57 02
73 30	115 15	148 52	93 79	79 97	70 68	.....	655 01
68 61	100 42	148 42	88 67	97 69	64 41	.....	684 01
....	....	....	....	17 72	....	....	29 00
4 69	14 73	0 10	5 12	.....	6 27	.....	....
....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....
....	....	....	....	....	....	.. ..	....
....	....	....	....	....	....	....	....
344 65	....	2,703 23	....	....	....	....	....
....	4,186 86	....	9,336 26	2,477 35	9,056 07	1,561 68	5,079 64

Total for year 1897 ..... 346,758 87
Total for year 1898 ..... 341,679 23

RICHARD DEVLIN, *Compiler of Canal Statistics.*

COMPARATIVE STATEMENT showing the Quantity of Vegetable Food and Lumber passed through the Canals during the Years ended December 31, 1897 and 1898.

	Vegetable Food.								Lumber.	Total.
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Buck-wheat.	All other.		
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Welland Canal, 1897	9,065	324,743	390,615	14,173	25,161	8,483	.....	44,674	72,270	889,184
do 1898	5,578	207,647	437,861	12,2 6	17,502	16,127	.....	23,182	80,574	800,757
Increase	.....	.....	47,246	.....	.....	.....	.....	.....	8,304	.....
Decrease	3,478	117,069	.....	1,887	7,659	7,644	.....	21,492	.....	88,427
St. Lawrence Canals, 1897	3,951	322,937	272,541	4,800	58,169	22,832	6,537	43,365	32,796	767,928
do 1898	26,094	274,335	501,836	6,496	53,048	25,976	3,051	25,036	21,744	937,616
Increase	22,143	.....	229,295	1,696	.....	3,144	.....	.....	.....	169,688
Decrease	.....	48,602	.....	.....	5,121	.....	3,486	18,329	11,052	.....
Chambly Canal, 1897	552	.....	.....	.....	2,666	.....	.....	313	53,838	57,369
do 1898	460	1	.....	.....	3,894	.....	.....	1,292	26,606	32,253
Increase	.....	1	.....	.....	1,228	.....	.....	979	.....	.....
Decrease	92	.....	.....	.....	.....	.....	.....	.....	27,232	25,116
Ottawa Canals, 1897	7	.....	.....	5	1,623	8	189	417	399,583	401,832
do 1898	41	225	.....	40	2,158	10	59	602	442,382	445,517
Increase	34	225	.....	35	535	2	.....	185	42,799	43,685
Decrease	.....	.....	.....	.....	.....	.....	130	.....	.....	.....
Rideau Canal, 1897	518	625	155	6	448	5	153	150	32,029	34,089
do 1898	335	264	93	4	1,393	8	110	204	21,556	23,967
Increase	.....	.....	.....	.....	945	3	.....	54	.....	.....
Decrease	183	361	62	2	.....	.....	43	.....	10,473	10,122

St. Peter's Canal, 1897	2,846	68	25	39	1,256			2,534	5,434	12,202
do 1898	2,177				894			1,888	4,955	9,914
Increase										
Decrease	669	68	25	39	362			646	479	2,288
Trent Valley Canals, 1897	20	49			8			31	1,807	1,915
do 1898		417			3			2	1,662	2,084
Increase		368								169
Decrease	20				5			29	145	
Murray Canal, 1897		243		65	43	340	70	1,268	443	2,472
do 1898	29	320	12	644	162	215	154	1,370	429	3,335
Increase	29	77	12	579	119		84	102		863
Decrease						125			14	
Sault Ste. Marie Canal, 1896	121,526	537,775	7,213	15,991	15,277	5,698		21,629	13,015	738,124
do 1897	94,099	292,398	21,524	6,305	13,869	15,814		15,290	22,701	482,000
Increase			14,311			10,116			9,686	
Decrease	27,427	245,377		9,686	1 408			6,339		256,124
Total increase			290,777			20,784			11,394	
Total decrease	9,672	410,833		9,304	11,728		3,575	45,515		167,672
Total for year 1897										2,905,115
do 1898										2,737,443

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

APPENDIX A.

No. (A) 1.—GENERAL STATEMENT showing the Quantity of each Article transported on the Welland Canal and the Amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Ashes, pot and pearl		20			23			53	23	73	96	3 45	14 60	18 05
Apples	11	239							11	239	250	1 65	5 99	7 64
Agricultural products not enumerated, vegetables	5	37		400				19	5	456	461	0 75	31 20	31 95
Agricultural products not enumerated, animal														
Agricultural implements														
Barley						6,909		5,377		12,286	12,286		1,228 60	1,228 60
Bricks	43								43		43	4 86		4 86
Bones														
Brimstone														
Buckwheat														
Cement and water lime	53					300			53	300	353	1 24	60 00	61 24
Clay, lime and sand	105	50						439	105	489	594	1 98	21 50	23 48
Coal					156,055	759	986	4,536	157,041	5,295	162,336	31,408 20	1,059 00	32,467 20
Corn	7	36	5			150,667		287,146	12	437,849	437,861	1 14	43,782 21	43,783 35
Cattle														
Cotton (raw)														
Crockery and earthenware	19				1				20		20	3 00		3 00
Dye wood and dye stuffs														
Fish	44				44				88		88	13 20		13 20
Flax and hemp					135				135		135	20 25		20 25
Flour		743				4,212		623		5,578	5,578		990 84	990 84
Furniture	4	1	7			2			11	3	14	1 13	0 43	1 56
Gypsum														
Glass (all kinds)	34	2						73	34	75	109	3 92	15 00	18 92
Hay (pressed)														
Hogs														
Horses	2				2	2		2	4	4	8	0 34	0 80	1 14

Hides and skins, horns and hoofs					93				93		93	13 95			13 95
Ice															
Iron, railway						770		674		1,444	1,444			288 80	288 80
" pig	74	74						4,187	74	4,261	4,335	1 38		839 25	840 63
" all other	508	18	48		15	324		6,474	571	6,816	7,387	84 74		1,360 05	1,444 79
Iron ore		575						12,858		13,433	13,433			671 65	671 65
Kryolite chemical ore and other ore, except iron															
Lard and lard oil	8					3,671			8	3,671	3,679	1 20		734 20	735 40
Meal, all kinds						22,626				22,626	22,626			4,525 20	4,525 20
Meats, other than pork	23								23		23	3 19			3 19
Marble					205				205		205	30 75			30 75
Manilla					119				119		119	17 85			17 85
Molasses	3				36			56	39	56	95	5 85		11 20	17 05
Nails	127								127		127	13 44			13 44
Oats	8	162			3	12,729		4,600	11	17,491	17,502	0 90		1,749 10	1,750 00
Oil (in barrels)	20				1	119		1,156	21	1,275	1,296	1 59		255 00	256 59
Oil cake															
Pease	1					45		260	1	305	306	0 02		30 50	30 52
Potatoes															
Pork	11					1,271			11	1,271	1,282	1 65		254 20	255 85
Paint	22					3			22	3	25	0 57		0 60	1 17
Pitch and tar	11								11		11	1 26			1 26
Rags															
Rye						1,197		14,930		16,127	16,127			1,612 70	1,612 70
Flax seed								5,676		5,696	5,696			569 60	569 60
Rosin															
Salt	7	773			4			15	11	788	799	0 74		157 60	158 34
Stone intended for cutting								554		554	554			110 80	110 80
" wrought															
" not suitable for cutting, unwrought	361	60							361	60	421	19 86		3 00	22 86
Seeds, all kinds	24				50	44			74	44	118	8 89		8 80	17 69
Sheep															
Soda ash	10								10		10	0 20			0 20
Steel					183	2,951		4,473	183	7,424	7,607	27 45		1,484 80	1,512 25
Sugar	128		32		5,261				5,421		5,421	801 12			801 12
Spirits, beer, &c	96	9	27		195	34		4	318	47	365	44 71		7 83	52 54
Tobacco (raw)															
Tallow					175	359			175	359	534	26 25		71 80	98 05
Tin	6				34				40		40	5 22			5 22
Turpentine	1								1		1	0 15			0 15
Wheat	391	79,989	943			11,268		115,056	1,334	206,313	207,647	98 02		20,612 93	20,710 95
White lead															
Whiting	1								1		1	0 02			0 02
Wool						89				89	89			17 80	17 80
All other goods and merchandise not enumerated	2,122	1,310	61		47,710	3,828		891	49,893	6,029	55,922	7,291 23		976 85	8,268 08
Bark															

No. (A) 1.—GENERAL STATEMENT showing the Quantity of each Article transported on the Welland Canal, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
												3 02		
Barrels, empty	14	1			6				20	1	21		0 18	3 20
Boat knees														
Floats														
Fire wood, in vessels	6	6,250			156				162	6,250	6,412	10 70	346 16	356 86
" " rafts														
Hoops														
Hop poles														
Lumber, sawn, in vessels		4,063	540	20,053		52,844		3,074	540	80,034	80,574	97 05	14,314 70	14,411 75
" " rafts														
Masts, spars, and telegraph poles, in vessels														
Masts, spars, and telegraph poles, in rafts														
Railway ties, in vessels		190								190	190		30 04	30 04
" " rafts														
Saw logs	341	1,913	917	504					1,258	2,417	3,675	19 13	134 41	153 54
Staves and headings, barrel				40						40	40		3 20	3 20
" " pipe														
" " West India														
" salt barrel														
Shingles		12								12	12		7 28	7 28
Split posts and fence rails, in vessels														
Split posts and fence rails, in rafts														
Timber, square, in vessels	200	9,712						39,186	200	48,898	49,098	3 75	7,305 10	7,308 85
" " rafts	30								30		30	0 85		85
Traverses														
Woodenware and wood partly manufactured	7				10				17		17	6 80		6 80
Total freight paying tolls	4,888	106,239	2,580	20,997	210,516	277,023	986	512,412	218,970	916,671	1,135,641	40,108 61	105,705 50	145,814 11

Articles having paid full tolls on the St. Lawrence Canals, free:—														
Bricks	34		36						70		70			
Cement and water lime	413		583						996		996			
Clay, lime and sand	130		14						144		144			
Crockery and earthenware	15		18						33		33			
Fish			9						9		9			
Glass	58		92						150		150			
Horses	1								1		1			
Iron, all other	142		557						699		699			
Lard and lard oil	2								2		2			
Nails	60		169						229		229			
Oils	3		12						15		15			
Paint	6		29						35		35			
Pitch and tar	7		30						37		37			
Salt	5		30						35		35			
Seeds, all other	29		27						56		56			
Soda ash	24		64						88		88			
Steel	3		16						19		19			
Stone, wrought	31								31		31			
Sugar	109		457						566		566			
Tin	3		234						237		237			
Whiting	48		45						93		93			
Whiskey, etc.	50		48						98		98			
Merchandise	282		511						793		793			
Grand total freight	6,343	106,239	5,561	20,997	210,516	277,023	986	512,412	223,406	916,671	1,140,077			

Total tolls on vessels	10,580 65	11,648 14	22,228 79
" passengers	273 95	281 22	555 17
" free goods $665.40			
Total tolls	50,963 21	117,634 86	168,598 07
Fines			75 00
*Damages			
Harbour dues			42 34
Total revenue, exclusive of hydraulic rents	50,963 21	117,634 86	168,715 41

* Amount of damages not included in above, $276.06.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, November 18, 1893.

RICHARD DEVLIN,
Compiler of Canal Statistics.

No. (A) 2.—GENERAL STATEMENT showing the Quantity of each Article of Through Freight transported on the Welland Canal, and the Amount of Tolls collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Ashes, pot and pearl		20			23			53	23	73	96	3 45	14 60	18 05
Apples	11								11		11	1 65		1 65
Agricultural products not enumerated, vegetable	5	37						19	5	56	61	0 75	11 20	11 95
Agricultural products not enumerated, animal														
Agricultural implements														
Barley						6,909		5,377		12,286	12,286		1,228 60	1,228 60
Bricks	30								30		30	4 50		4 50
Bones														
Brimstone														
Buckwheat														
Cement and water lime						300				300	300		60 00	60 00
Clay, lime and sand								53		53	53		10 60	10 60
Coal					156,055	759	986	4,536	157,041	5,295	162,336	31,408 20	1,059 00	32,467 20
Corn			5			150,667		287,146	5	437,813	437,818	0 75	43,781 30	43,782 05
Cattle														
Cotton (raw)														
Crockery and earthenware	19				1				20		20	3 00		3 00
Dye, wood and dye stuffs														
Fish	44				44				88		88	13 20		13 20
Flax and hemp					135				135		135	20 25		20 25
Flour		30				4,212		623		4,865	4,865		973 00	973 00
Furniture			7			2			7	2	9	1 05	0 40	1 45
Gypsum														
Glass (all kinds)	25	2						73	25	75	100	3 75	15 00	18 75
Hay (pressed)														
Hogs														
Horses					2	2		2	2	4	6	0 30	0 80	1 10

Hides and skins, horns and hoofs					93				93		93	13 95		13 95
Ice														
Iron, railway						770		674		1,444	1,444		288 80	288 80
" pig								4,187		4,187	4,187		837 40	837 40
" all other	501		48		15	324		6,474	564	6,798	7,362	84 60	1,359 60	1,444 20
Iron ore		575						12,858		13,433	13,433		671 65	671 65
Kryolite chemical ore and other ore, except iron														
Lard and lard oil	8					3,671			8	3,671	3,679	1 20	734 20	735 40
Meal, all kinds						22,626				22,626	22,626		4,525 20	4,525 20
Meats, other than pork	21								21		21	3 15		3 15
Marble					205				205		205	30 75		30 75
Manilla					119				119		119	17 83		17 85
Molasses	3				36			56	39	56	95	5 85	11 20	17 05
Nails	84								84		84	12 60		12 60
Oats					3	12,729		4,600	3	17,329	17,332	0 45	1,732 90	1,733 35
Oil (in barrels)	8				1	119		1,156	9	1,275	1,284	1 35	255 00	256 35
Oil cake														
Pease						45		260		305	305		30 50	30 50
Potatoes														
Pork	11					1,271			11	1,271	1,282	1 65	254 20	255 85
Paint	1					3			1	3	4	0 15	0 60	0 75
Pitch and tar	8								8		8	1 20		1 20
Rags														
Rye						1,197		14,930		16,127	16,127		1,612 70	1,612 70
Flax seed								5,696		5,696	5,696		569 60	569 60
Rosin														
Salt		773			4			15	4	788	792	0 60	157 60	158 20
Stone intended for cutting								554		554	554		110 80	110 80
" wrought														
" not suitable for cutting, unwrought														
Seeds, all kinds	7				50	44			57	44	101	8 55	8 80	17 35
Sheep														
Soda ash														
Steel					183	2,951		4,473	183	7,424	7,607	27 45	1,484 80	1,512 25
Sugar	36		32		5,261				5,329		5,329	799 35		799 35
Spirits, beer, &c	73		27		195	34		4	295	38	333	44 25	7 60	51 85
Tobacco (raw)														
Tallow					175	359			175	359	534	26 25	71 80	98 05
Tin					34				34		34	5 10		5 10
Turpentine	1								1		1	0 15		0 15
Wheat		78,689	12			11,268		115,056	12	205,013	205,025	1 80	20,501 30	20,503 10
White lead														
Whiting														
Wool						89				89	89		17 80	17 80
All other goods and merchandise not enumerated	624		61		47,710	3,828		891	48,395	4,719	53,114	7,259 25	943 80	8,203 05
Bark														

No. (A) 2.—GENERAL STATEMENT showing the Quantity of each Article of Through Freight transported on the Welland Canal, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Barrels, empty	14				6				20		20	3 02		3 02
Boat knees														
Floats														
Firewood, in vessels		747			156				156	747	903	10 40	49 80	60 20
" rafts.														
Hoops														
Hop poles														
Lumber, sawn, in vessels		2,831	540	20,053		52,844		3,074	540	78,802	79,342	97 05	14,176 22	14,273 27
" " rafts														
Masts, spars and telegraph poles, in vessels														
" " in rafts.														
Railway ties, in vessels		190								190	190		30 04	30 04
" rafts														
Sawlogs														
Staves and headings, barrel														
" " pipe														
" " West India														
Staves, salt barrel														
Shingles		11								11	11		6 90	6 90
Split posts and fence rails, in vessels														
" " in rafts.														
Timber, square, in vessels		9,512						39,186		48,698	48,698		7,301 35	7,301 35
" " in rafts														
Traverses														
Woodenware and wood partly manufactured	7				10				17		17	6 80		6 80
Total freight paying tolls	1,541	93,417	732	20,053	210,516	277,023	986	512,026	213,775	902,519	1,116,294	39,925 62	104,906 66	144,832 28

Articles having paid full tolls on the St. Lawrence canals, free:—											
Bricks	34		36					70		70	
Cement and water lime	413		583					996		996	
Clay, lime and sand	130		14					144		144	
Crockery and earthenware	15		18					33		33	
Fish			9					9		9	
Glass	58		92					150		150	
Horses	1							1		1	
Iron, all other	142		557					699		699	
Lard and lard oil	2							2		2	
Nails	60		169					229		229	
Oils	3		12					15		15	
Paint	6		29					35		35	
Pitch and tar	7		30					37		37	
Salt	5		30					35		35	
Seeds, all other	29		27					56		56	
Soda ash	24		64					88		88	
Steel	3		16					19		19	
Stone wrought	31							31		31	
Sugar	109		457					566		566	
Tin	3		234					237		237	
Whiting	48		45					93		93	
Whisky, &c	50		48					98		98	
Merchandise	282		511					793		793	
Grand total through freight	2,996	93,417	3,713	20,053	210,516	277,023	986	512,026	218,211	902,519	1,120,730

Total through tolls on vessels	10,352 62	11,321 60	21,674 22
" " passengers	103 05	113 65	216 70
" " free goods $ 665 40			
Total through tolls	50,381 29	116,341 91	166,723 20

RICHARD DEVLIN,
Compiler Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX A—*Continued.*

No. (A) 3.—GENERAL STATEMENT showing the Quantity of each Article of Way Freight transported on the Welland Canal, and the Amount of Tolls collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Ashes, pot and pearl														
Apples		239								239	239		5 99	5 99
Agricultural products not enumerated, vegetable				400						400	400		20 00	20 00
Agricultural products not enumerated, animals														
Agricultural implements														
Barley														
Bricks	13								13		13	0 36		0 36
Bones														
Brimstone														
Buckwheat														
Cement and water lime	53								53		53	1 24		1 24
Clay, lime and sand	105	50						386	105	436	541	1 98	10 90	12 88
Coal														
Corn	7	36							7	36	43	0 39	0 91	1 30
Cattle														
Cotton (raw)														
Crockery and earthenware														
Dye wood and dye stuffs														
Fish														
Flax and hemp														
Flour		713								713	713		17 84	17 84
Furniture	4	1							4	1	5	0 08	0 03	0 11
Gypsum														
Glass (all kinds)	9								9		9	0 17		0 17
Hay (pressed)														
Hogs														
Horses	2								2		2	0 04		0 04

Hides and skins, horns and hoofs												
Ice												
Iron, railway												
" pig	74	74					74	71	148	1 38	1 85	3 23
" all other	7	18					7	18	25	0 14	0 45	0 59
" ore												
Kryolite chemical ore and other ore, except iron												
Lard and lard oil												
Meal, all kinds												
Meats, other than pork	2						2		2	0 04		0 04
Marble												
Manilla												
Molasses												
Nails	43						43		43	0 84		0 84
Oats	8	162					8	162	170	0 45	16 20	16 65
Oil (in barrels)	12						12		12	0 24		0 24
Oil cake												
Pease	1						1		1	0 02		0 02
Potatoes												
Pork												
Paint	21						21		21	0 42		0 42
Pitch and tar	3						3		3	0 06		0 06
Rags												
Rye												
Flax seed												
Rosin												
Salt	7						7		7	0 14		0 14
Stone intended for cutting												
" wrought												
" not suitable for cutting, unwrought	361	60					361	60	421	19 86	3 00	22 86
Seeds, all kinds	17						17		17	0 34		0 34
Sheep												
Soda ash	10						10		10	0 20		0 20
Steel												
Sugar	92						92		92	1 77		1 77
Spirits, beer, &c	23	9					23	9	32	0 46	0 23	0 69
Tobacco (raw)												
Tallow												
Tin	6						6		6	0 12		0 12
Turpentine												
Wheat	391	1,300	931				1,322	1,300	2,622	96 22	111 63	207 85
White lead												
Whiting	1						1		1	0 02		0 02
Wool												
All other goods and merchandise not enumerated	1,498	1,310					1,498	1,310	2,808	31 98	33 05	65 03
Bark												

No. (A) 3.—GENERAL STATEMENT showing the Quantity of each Article of Way Freight transported on the Welland Canal, &c.—*Concl'd.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Barrels empty		1								1	1		0 18	0 18
Boat knees														
Floats														
Fire wood, in vessels	6	5,503							6	5,503	5,509	0 30	296 36	296 66
" in rafts														
Hoops														
Hop poles														
Lumber, sawn, in vessels		1,232								1,232	1,232		138 48	138 48
" in rafts														
Masts, spars and telegraph poles, in vessels														
Masts, spars and telegraph poles, in rafts														
Railway ties, in vessels														
" in rafts														
Saw logs	341	1,913	917	504					1,258	2,417	3,675	19 13	134 41	153 54
Staves and headings, barrel				40						40	40		3 20	3 20
" " pipe														
" " West India														
Staves, salt barrel														
Shingles		1								1	1		0 38	0 38
Split posts and fence rails, in vessels														
Split posts and fence rails, in rafts														
Timber, square, in vessels	200	200							200	200	400	3 75	3 75	7 50
" in rafts	30								30		30	0 85		0 85
Traverses														

Woodenware and wood partly manufactured.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total day freight paying tolls	3,347	12,822	1,848	944	.....	.....	.....	386	5,195	14,152	19,347	182 99	798 84	981 83
											Total way tolls on vessels.....	228 03	326 54	554 57
											" passengers	170 90	167 57	338 47
											Total way tolls.....	581 92	1,292 95	1,874 87

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

No. (A) 4.—GENERAL STATEMENT showing the Quantity of each Article transported on the St. Lawrence Canals and the Amount of Revenue collected during the Season of navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total, Tons.	Amount of Tolls, Up.	Amount of Tolls Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Ashes, pot and pearl		22								22	22		4 40	4 40
Apples	4	1,762							4	1,762	1,766	0 28	251 39	251 67
Agricultural products not enumerated, vegetables	444	2,105							444	2,105	2,549	52 27	224 96	277 23
Agricultural products not enumerated, animal	1,008	1,832		479			18	956	1,026	3,267	4,293	51 59	440 64	492 23
Agricultural implements	71	1							71	1	72	10 61	0 10	10 71
Barley		2,536								2,536	2,536		213 59	213 59
Bricks	7,882	185	36				133		8,051	185	8,236	418 54	6 95	425 49
Bones		18								18	18		1 32	1 32
Brimstone	770								770		770	78 23		78 23
Buckwheat	103	2,948							103	2,948	3,051	2 58	190 25	192 83
Cement and water lime	15,790	224	668						16,458	224	16,682	1,542 40	10 60	1,553 00
Clay, lime and sand	12,347	8,418	14	31			3,033	200	15,394	8,649	24,043	607 98	420 00	1,027 98
Coal		38,891				275		149,796		188,962	188,962		27,253 65	27,253 65
Corn	729	182,643				28		3,488	729	186,159	186,888	18 68	8,801 56	8,820 24
Cattle	18	316							18	316	334	1 18	24 12	25 30
Cotton (raw)	10								10		10	0 98		0 98
Crockery and earthenware	110	7	22						132	7	139	24 24	1 10	25 34
Dye wood and dye stuffs	14	8		4			4		18	12	30	3 00	0 75	3 75
Fish	43	16	8						51	16	67	5 41	0 61	6 02
Flax and hemp	4	35							4	35	39	0 15	2 63	2 78
Flour	1,486	23,955							1,486	23,955	25,441	74 09	1,850 10	1,924 19
Furniture	279	916	33					173	312	1,089	1,401	54 63	153 40	208 03
Gypsum	1,236								1,236		1,236	16 05		16 05
Glass (all kinds)	478	49	89						567	49	616	109 81	5 65	115 46
Hay (pressed)	168	554							168	554	722	6 77	38 05	44 82
Hogs														
Horses	226	469							226	469	695	11 52	32 53	44 05

Hides and skins, horns and hoofs		10								10	10			1	36	1 36
Ice																
Iron, railway	82	306						420	82	726	808	3	65	63	69	67 34
" pig	10	1,449					322		332	1,449	1,781	13	32	191	45	404 77
" all other	4,224	1,283	564		125		1,227	80	6,140	1,363	7,503	520	50	81	44	601 94
Iron ore																
Kryolite chemical ore and other ore, except iron																
Lard and lard oil	74	1,500							74	1,500	1,574	7	35	117	22	124 57
Meal, all kinds	196	2,721							196	2,721	2,917	10	90	192	64	203 54
Meats, other than pork	6	340							6	340	346	0	60	25	48	26 48
Marble	3								3		3	0	39			0 39
Manilla	9	2							9	2	11	0	90	0	10	1 00
Molasses	1,042	260							1,042	260	1,302	86	72	13	00	99 72
Nails	2,265	687	127						2,392	687	3,079	330	07	35	65	365 72
Oats	874	48,199							874	48,199	49,073	22	00	2,142	22	2,164 22
Oil (in barrels)	473	700	23				34		530	700	1,230	89	00	88	75	177 75
Oil cake	6	4,001							6	4,001	4,007	0	35	300	14	300 49
Pease	450	19,506							450	19,506	19,956	11	28	1,687	76	1,699 04
Potatoes	120	17							120	17	137	11	27	2	04	13 31
Pork	186	1,816							186	1,816	2,002	18	08	133	63	151 71
Paint	293	156	69				3	10	365	166	531	66	12	13	25	79 37
Pitch and tar	257	122	30				210		497	122	619	53	01	18	60	71 61
Rags	160	104							160	104	264	21	80	19	85	41 65
Rye		9,928						560		10,488	10,488			815	47	815 47
Flax seed		13,081								13,081	13,081			654	05	654 05
Rosin	17	10					1,721		1,738	10	1,748	104	15	0	50	104 65
Salt	2,591	43	33						2,624	43	2,667	292	77	1	65	294 42
Stone, intended for cutting	242	1,908	1,908						242	1,908	2,150	5	84	129	99	135 83
" wrought	537	100							537	100	637	58	64	10	00	68 64
" not suitable for cutting, unwrought		468								468	468			12	00	12 00
Seeds, all kinds	5,239	276	16						5,255	276	5,531	236	36	19	36	255 72
Sheep	1	72							1	72	73	0	06	5	45	5 51
Soda ash	971	340	54						1,025	340	1,365	203	39	66	50	269 89
Steel	904	6	14					815	918	821	1,739	127	20	61	37	188 57
Sugar	6,150	4,059	466						6,616	4,059	10,675	1,291	17	402	40	1,693 57
Spirits, beer, &c.	328	139	54						382	139	521	68	89	24	20	93 09
Tobacco (raw)	9	8							9	8	17	0	88	0	30	1 18
Tallow		294								294	294			22	06	22 06
Tin	1,509	44	461						1,970	44	2,014	385	29	5	20	390 49
Turpentine	4	23					208		211	23	234	11	00	1	15	12 15
Wheat	1,804	88,377							1,804	88,377	90,181	47	37	4,757	58	4,804 95
White lead	65	39	1				26		92	39	131	14	22	1	95	16 17
Whiting	488	17	44						532	17	549	103	72	0	85	104 59
Wool	24	14							24	14	38	3	49	2	10	5 57
All other goods and merchandise not enumerated	7,460	7,444	548	81	266	554	623	107	8,897	8,186	17,083	1,275	93	1,033	99	2,309 92
Bark																

No. (A) 4.—GENERAL STATEMENT showing the Quantity of each Article transported on the St. Lawrence Canals, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Barrels, empty	177	103				15			177	118	295	18 33	7 99	26 32
Boat knees														
Floats	52	1,246							52	1,246	1,298	1 23	21 81	23 04
Firewood, in vessels	2,316	6,198						174	2,316	6,372	8,688	38 60	113 80	152 40
" rafts														
Hoops														
Hop poles														
Lumber, sawn, in vessels	12,297	4,023		25	7	90		151	12,304	4,289	16,593	349 00	119 92	468 92
" " rafts	51	1,892							51	1,892	1,943	2 25	85 46	87 71
Masts, spars and telegraph poles, in vessels	66								66		66	2 48		2 48
Masts, spars and telegraph poles, in rafts		16,107								16,107	16,107		402 05	402 05
Railway ties, in vessels	57								57		57	1 14		1 14
" " rafts														
Saw-logs	262	7,706							262	7,706	7,968	6 00	175 72	181 72
Staves and headings, barrel		48								48	48		0 96	0 96
" " pipe														
" " West India														
Staves, salt barrel														
Shingles	3	18							3	18	21	0 80	2 93	3 73
Split posts and fence rails, in vessels														
Split posts and fence rails, in rafts														
Timber, square, in vessels	264	109							264	109	373	9 90	1 92	11 82
" " rafts	80	3,455							80	3,455	3,535	2 00	86 50	88 50
Traverses		1,200								1,200	1,200		7 42	7 42
Woodenware and wood, partly manufactured	64	5							64	5	69	18 00	1 00	19 00
Total freight paying tolls	97,981	519,889	3,374	620	398	962	7,562	156,930	109,315	678,401	787,716	9,038 40	54,112 22	63,150 62

Free articles having paid full tolls on the Welland Canal:											
Ashes		48					25		73	73	
Barley		3,960							3,960	3,960	
Clay, lime and sand		37					15		52	52	
Corn		281,578					33,370		314,948	314,948	
Flax seed		5,687							5,687	5,687	
Flour		293					360		653	653	
Glass		25					50		75	75	
Horses		3					1		4	4	
Iron, all other		1,410					4,807		6,217	6,217	
Merchandise		476					390		866	866	
Molasses		39					17		56	56	
Oats		3,975							3,975	3,975	
Oils		370					771		1,141	1,141	
Pease		260							260	260	
Rye		15,152					336		15,488	15,488	
Salt		144							144	144	
Steel		49					852		1,351	1,351	
Vegetables, all other		56							56	56	
Wheat		179,881					4,273		184,154	184,154	
Whisky, &c							4		4	4	
Lumber, sawn, in vessels		2,802					263		3,065	3,065	
Timber, square, in rafts		329							329	329	
Coal, free, per Order in Council	74,197						20,619	94,816		94,816	
Free articles for canal construction, O.C., 1884:											
Stone, wrought		10,341							10,341	10,341	
Merchandise		20							20	20	
Lumber, sawn, in vessels		143							143	143	
Railway ties, in vessels		68							68	68	
Coal		1,100					2,372		3,472	3,472	
Grand total, freight	172,178	1,028,585	3,374	620	398	962	28,181	204,836	204,131	1,235,003	1,439,134

Total tolls on vessels		13,392 48	11,356 74	24,749 22
" passengers		855 51	2,099 58	2,955 09
" free goods	$61,427.47			
Total tolls		23,286 39	67,568 54	90,854 93
Fines				197 00
*Damages				
Wharfage and storage				2,300 15
Other receipts				13,689 33
Total revenue, exclusive of hydraulic rents				107,041 41

*Amount of damages not included in above, $382.51.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

No. (A) 5.—GENERAL STATEMENT showing the Quantity of each Article of Through Freight transported on the St. Lawrence Canals, and the Amount of Tolls collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Ashes, pot and pearl		22								22	22		4 40	4 40
Apples		1,622								1,622	1,622		243 30	243 30
Agricultural products not enumerated, vegetable	255	1,152							255	1,152	1,407	38 25	172 80	211 05
Agricultural products not enumerated, animal		1,503						956		2,459	2,459		368 85	368 85
Agricultural implements														
Barley		2,001								2,001	2,001		200 10	200 10
Bricks	441		36						477		477	71 55		71 55
Bones														
Brimstone	60								60		60	9 00		9 00
Buckwheat		1,537								1,537	1,537		153 70	153 70
Cement and water lime	6,183	19	628						6,811	19	6,830	1,021 65	2 85	1,024 50
Clay, lime and sand	52	522	14						66	522	588	9 90	78 30	88 20
Coal		37,193						138,416		175,609	175,609		26,341 05	26,341 05
Corn		1,736						3,488		5,224	5,224		522 40	522 40
Cattle		9								9	9		1 35	1 35
Cotton, raw														
Crockery and earthenware	47	4	22						69	4	73	13 80	0 80	14 60
Dye wood and dye stuffs	14	1							14	1	15	2 80	0 20	3 00
Fish	9		8						17		17	2 55		2 55
Flax and hemp														
Flour	1	1,230							1	1,230	1,231	0 15	184 50	184 65
Furniture	174	470	28					153	202	623	825	40 60	124 60	165 20
Gypsum	2								2		2	0 30		0 30
Glass, all kinds	405	16	89						494	16	510	98 80	3 20	102 00
Hay, pressed														
Hogs														
Horses	2	100							2	100	102	0 30	15 00	15 30

Hides and skins, horns and hoofs		8								8	8		1 20	1 20
Ice														
Iron, railway	3	184							3	184	187	0 45	27 60	28 05
" pig	5	1,448							5	1,448	1,453	0 75	191 41	192 16
" all other	1,622	234	564						2,186	234	2,420	327 90	35 10	363 00
Iron ore														
Kryolite chemical ore and other ore, except iron														
Lard and lard oil	2	126							2	126	128	0 30	18 90	19 20
Meal, all kinds		47								47	47		7 05	7 05
Meats, other than pork														
Marble														
Manilla														
Molasses	33								33		33	6 60		6 60
Nails	621	4	127						748	4	752	149 60	0 80	150 40
Oats		11,033								11,033	11,033		1,103 40	1,103 40
Oil, in barrels	263	246	23						286	246	532	57 20	49 20	106 40
Oil cake														
Pease		15,960								15,960	15,960		1,596 10	1,596 10
Potatoes	43	10							43	10	53	6 45	1 50	7 95
Pork														
Paint	186	23	69					10	255	33	288	51 00	6 60	57 60
Pitch and tar	132	82	30						162	82	244	32 40	16 40	48 80
Rags	46	95							46	95	141	9 20	19 00	28 20
Rye		6,205						560		6,765	6,765		676 50	676 50
Flax seed														
Rosin	10								10		10	2 00		2 00
Salt	1,003		33						1,036		1,036	155 40		155 40
Stone, intended for cutting														
" wrought	211								211		211	42 20		42 20
" not suitable for cutting, unwrought		45								45	45		3 60	3 60
Seeds, all kinds	325	8	16						341	8	349	51 15	1 20	52 35
Sheep														
Soda ash	951	330	54						1,005	330	1,335	201 00	66 00	267 00
Steel	798		14						812		812	121 80		121 80
Sugar	5,346	21	466						5,812	21	5,833	1,162 40	4 20	1,166 60
Spirits, beer, &c	177	115	54						231	115	346	46 20	23 00	69 20
Tobacco, raw														
Tallow														
Tin	1,335	20	461						1,796	20	1,816	359 20	4 00	363 20
Turpentine	3								3		3	0 60		0 60
Wheat		14,242								14,242	14,242		1,424 20	1,424 20
White lead	46		1						47		47	9 40		9 40
Whiting	444		44						488		488	97 60		97 60
Wool	23	14							23	14	37	3 45	2 10	5 55
All other goods and merchandise not enumerated	3,831	2,595	544					15	4,375	2,610	6,985	875 00	522 00	1,397 00
Bark														

No. (A) 5.—GENERAL STATEMENT showing the Quantity of each Article of Through Freight transported on the St. Lawrence Canals, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Barrels, empty	55								55		55	9 56		9 56
Boat knees														
Floats														
Fire wood, in vessels														
" rafts														
Hoops														
Hop poles														
Lumber, sawn, in vessels	814	20							814	20	834	72 75	1 80	74 55
" " rafts														
Masts, spars and telegraph poles, in vessels														
Masts, spars and telegraph poles, in rafts														
Railway ties, in vessels														
" rafts														
Saw logs														
Staves and headings, barrel														
" " pipe														
" " W. India														
Staves, salt barrel														
Shingles														
Split posts and fence rails, in vessels														
Split posts and fence rails, in rafts		18								18	18		0 54	0 54
Timber, square, in vessels														
" " rafts														
Traverses														
Woodenware and wood partly manufactured	30								30		30	12 00		12 00
Total freight paying tolls	26,003	102,270	3,325					143,598	29,328	245,868	275,196	5,173 21	34,220 80	39,394 01

10—v—8½

Free articles having paid full tolls on the Welland Canal:														
Ashes		48					25		73	73				
Barley		3,960							3,960	3,960				
Clay, lime and sand		37					15		52	52				
Corn		278,930					31,568		310,498	310,498				
Flax seed		5,687							5,687	5,687				
Flour		293					360		653	653				
Glass		25					50		75	75				
Horses		3					1		4	4				
Iron, all other		1,410					4,807		6,217	6,217				
Merchandise		476					390		866	866				
Molasses		39					17		56	56				
Oats		3,975							3,975	3,975				
Oils		370					771		1,141	1,141				
Pease		260							260	260				
Rye		15,152					336		15,488	15,488				
Salt		144							144	144				
Steel		499					852		1,351	1,351				
Vegetables, all other		56							56	56				
Wheat		179,881					4,273		184,154	184,154				
Whisky							4		4	4				
Lumber, sawn, in vessels		2,602					263		3,065	3,065				
Timber, square, in rafts		329							329	329				
Coal, free per Order in Council	400							400		400				
Grand total, freight	26,403	596,646	3,325				187,330	29,728	783.976	813,704				
Total through tolls on vessels											8,302 03	8,868 15	17,170 18	
" " passengers											414 00	1,332 80	1,746 80	
" " free goods										$54,546 99				
Total through tolls											13,889 24	44,421 75	58,310 99	

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

No. (A) 6.—GENERAL STATEMENT showing the Quantity of each Article of Way Freight, transported on the St. Lawrence Canals and the amount of Tolls collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Ashes, pot and pearl														
Apples	4	140							4	140	144	0 28	8 09	8 37
Agricultural products not enumerated, vegetable	189	953							198	953	1,142	14 02	52 16	66 18
Agricultural products not enumerated, animal	1,008	329		479			18		1,026	808	1,834	51 59	71 79	123 38
Agricultural implements	71	1							71	1	72	10 61	0 10	10 71
Barley		535								535	535		13 49	11 49
Bricks	7,441	185					133		7,574	185	7,759	346 99	6 95	353 94
Bones		18								18	18		1 32	1 32
Brimstone	710								710		710	69 23		69 23
Buckwheat	103	1,411							103	1,411	1,514	2 58	36 55	39 13
Cement and water lime	9,607	205	40						9,647	205	9,852	520 75	7 75	528 50
Clay, lime and sand	12,295	7,896		31			3,033	200	15,328	8,127	23,455	598 08	341 70	939 78
Coal		1,698				275		11,380		13,353	13,353		912 60	912 60
Corn	729	180,907				28			729	180,935	181,664	18 68	8,279 16	8,297 84
Cattle	18	307							18	307	325	1 18	22 77	23 95
Cotton (raw)	10								10		10	0 98		0 98
Crockery and earthenware	63	3							63	3	66	10 44	0 30	10 74
Dye wood and dye stuffs		7		4			4		4	11	15	0 20	0 55	0 75
Fish	34	16							34	16	50	2 86	0 61	3 47
Flax and hemp	4	35							4	35	39	0 15	2 63	2 78
Flour	1,485	22,725							1,485	22,725	24,210	73 94	1,665 60	1,739 54
Furniture	105	446	5					20	110	466	576	14 03	28 80	42 83
Gypsum	1,234								1,234		1,234	15 75		15 75
Glass (all kinds)	73	33							73	33	106	11 01	2 45	13 46
Hay (pressed)	168	554							168	554	722	6 77	38 05	44 82
Hogs														
Horses	224	369							224	369	593	11 22	17 53	28 75

Hides and skins, horns and hoofs		2								2	2			0 16		0 16
Ice																
Iron railway	79	122						420	79	542	621	3	20	36 09		39 29
" pig	5	1					322		327	1	328	12	57	0 04		12 61
" all other	2,602	1,049			125		1,227	80	3,954	1,129	5,083	192	60	46 34		238 94
Iron ore																
Kryolite chemical ore and other ore, except iron																
Lard and lard oil	72	1,374							72	1,374	1,446	7	05	98 32		105 37
Meal, all kinds	196	2,674							196	2,674	2,870	10	90	185 59		196 49
Meats, other than pork	6	340							6	340	346	0	60	25 48		26 08
Marble	3								3		3	0	39			0 39
Manilla	6	2							9	2	11	0	90	0 10		1 00
Molasses	1,009	260							1,009	260	1,269	80	12	13 00		93 12
Nails	1,644	683							1,644	683	2,327	180	47	34 85		215 32
Oats	874	37,166							874	37,166	38,040	22	00	1,038 82		1,060 82
Oil (in barrels)	210	454					34		244	454	698	31	80	39 55		71 35
Oil cake	6	4,001							6	4,001	4,007	0	35	300 14		300 49
Pease	450	3,546							450	3,546	3,996	11	28	91 66		102 94
Potatoes	77	7							77	7	84	4	82	0 54		5 36
Pork	186	1,816							186	1,816	2,002	18	08	133 63		151 71
Paint	107	133					3		110	133	243	15	12	6 65		21 77
Pitch and tar	125	40					210		335	40	375	20	61	2 20		22 81
Rags	114	9							114	9	123	12	60	0 85		13 45
Rye		3,723								3,723	3,723			138 97		138 97
Flax seed		13,081								13,081	13,081			654 05		654 05
Rosin	7	10					1,721		1,728	10	1,738	102	15	0 50		102 65
Salt	1,588	43							1,588	43	1,631	137	37	1 65		139 02
Stone intended for cutting	242	1,908							242	1,908	2,150	5	84	129 99		135 83
" wrought	326	100							326	100	426	16	44	10 00		26 44
" not suitable for cutting, unwrought		423								423	423			8 40		8 40
Seees, (all kinds)	4,914	268							4,914	268	5,182	185	21	18 16		203 37
Sheep	1	72							1	72	73	0	06	5 45		5 51
Soda ash	20	10							20	10	30	2	39	0 50		2 89
Steel	106	6						815	106	821	927	5	40	61 37		[illegible]
Sugar	804	4,038							804	4,038	4,842	128	77	398 20		526 97
Spirits, beer, &c	151	24							151	24	175	22	69	1 20		23 89
Tobacco (raw)	9	8							9	8	17	0	88	0 30		1 18
Tallow		294								294	294			22 06		22 06
Tin	174	24							174	24	198	26	09	1 20		27 29
Turpentine		23					208		208	23	231	10	40	1 15		11 55
Wheat	1,804	74,135							1,804	74,135	75,939	47	37	3,333 38		3,380 75
White lead	19	39					26		45	39	84	4	82	1 95		6 77
Whiting	44	17							44	17	61	6	12	0 85		6 97
Wool	1								1		1	0	04			0 04
All other goods and merchandise not enumerated	3,629	4,849	4	81	266	554	623	92	4,522	5,576	10,098	400	93	511 99		912 92
Bark																

No. (A) 6.—GENERAL STATEMENT showing the Quantity of each Article of Way Freight transported on the St. Lawrence Canals, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls, Up.	Amount of Tolls, Down.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
												$ cts.	$ cts.	$ cts.
Barrels, empty	122	103				15			122	118	240	8 77	7 99	16 76
Boat knees														
Floats	52	1,246							52	1,246	1,298	1 23	21 81	23 04
Fire wood, in vessels	2,316	6,198						174	2,316	6,372	8,688	38 60	113 80	152 40
" in rafts														
Hoops														
Hop poles														
Lumber, sawn, in vessels	11,483	4,003		25	7	90		151	11,490	4,269	15,759	276 25	118 12	394 37
" " rafts	51	1,892							51	1,892	1,943	2 25	85 46	87 71
Masts, spars, and telegraph poles, in vessels	66								66		66	2 48		2 48
Masts, spars, and telegraph poles, in rafts		16,107								16,107	16,107		402 05	402 05
Railway ties, in vessels	57								57		57	1 14		1 14
" " rafts														
Saw logs	262	7,706							262	7,706	7,968	6 00	175 72	181 72
Staves and headings, barrel		48								48	48		0 96	0 96
" " pipe														
" " W. India														
Staves, salt barrel														
Shingles	3	18							3	18	21	0 80	2 93	3 73
Split posts and fence rails, in vessels														
Split posts and fence rails, in rafts														
Timber, square, in vessels	264	91							264	91	355	9 90	1 38	11 28
" " rafts	80	3,455							80	3,455	3,535	2 00	86 50	88 50
Traverses		1,200								1,200	1,200		7 42	7 42
Woodenware and wood partly manufactured	34	5							34	5	39	6 00	1 00	7 00
Total freight paying tolls	71,978	417,619	49	620	398	962	7,562	13,332	79,987	432,533	512,520	3,865 19	19,891 42	23,756 61

Free articles having paid full tolls on the Welland Canal:													
Corn	.....	2,648	.....	.....	.....	.....	.....	1,802	.....	4,450	4,450		
Coal, free, per Order in Council.	73,797	.....	.....	.....	.....	.....	20,619	.....	94,416	.....	94,416		
Free articles for canal construction, O. C., 1884:													
Stone, wrought	.....	10,341	.....	.....	.....	.....	.....	.....	.....	10,341	10,341		
Merchandise	.....	20	.....	.....	.....	.....	.....	.....	.....	20	20		
Lumber, sawn, in vessels	.....	143	.....	.....	.....	.....	.....	.....	.....	143	143		
Railway ties "	.....	68	.....	.....	.....	.....	.....	.....	.....	68	68		
Coal	.....	1,100	.....	.....	.....	.....	.....	2,372	.....	3,472	3,472		
Grand total, freight...	145,775	431,939	49	620	398	962	28,181	17,506	174,403	451,027	625,430		
Total way tolls on vessels												5,090 45	2,488 59	7,579 04
" " passengers												441 15	766 78	1,208 29
" " free goods											$6,880 48	.....	.....	.....
Total way tolls												9,397 15	23,146 79	32,543 94

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX A—*Continued.*

No. (A) 7.—GENERAL STATEMENT showing the Quantity of each Article transported on the Ottawa Canals, and the Amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Ashes, pot and pearl												
Apples		72								72	72	4 30
Agricultural products not enumerated, vegetable		25								25	25	1 58
" " " animal		2,743								2,743	2,743	248 36
Agricultural implements	1	5							1	5	6	1 00
Barley		40								40	40	3 75
Bricks	206	150							206	150	356	13 12
Bones		6								6	6	0 48
Brimstone												
Buckwheat		59								59	59	5 42
Cement and water lime		180								180	180	3 60
Clay, lime and sand	135	2,505							135	2,505	2,640	60 17
Coal												
Corn												
Cattle	3	902							3	902	905	70 39
Cotton (raw)												
Crockery and earthenware												
Dye wood and dye stuffs												
Fish		3								3	3	0 22
Flax and hemp												
Flour		41								41	41	3 89
Furniture	5	23							5	23	28	3 68
Gypsum												
Glass (all kinds)												
Hay (pressed)	5	229							5	229	234	20 71
Hogs		116								116	116	8 75
Horses	23	259							23	259	282	12 34
Hides and skins, horns and hoofs		13								13	13	1 18
Ice												

Iron, railway													
" pig													
" all other	2	29							2	29	31	2	75
Iron ore													
Kryolite chemical ore and other ore, except iron													
Lard and lard oil		6								6	6	0	28
Meal, all kinds		9								9	9	0	66
Meats, other than pork		3								3	3	0	30
Marble													
Manilla													
Molasses													
Nails	1								1		1	0	14
Oats		2,158								2,158	2,158	182	06
Oil (in barrels)													
Oil cake		2								2	2	0	20
Pease		330								330	330	26	00
Potatoes		191								191	191	12	91
Pork		13								13	13	0	92
Paint	1								1		1	0	05
Pitch and tar		13								13	13	2	47
Rags		113								113	113	20	57
Rye		10								10	10	0	98
Flax seed													
Rosin													
Salt		1								1	1	0	10
Stone intended for cutting													
" wrought													
" not suitable for cutting, unwrought													
Seeds, all kinds	1	3							1	3	4	0	24
Sheep		381								381	381	32	47
Soda ash													
Steel													
Sugar	2								2		2	0	28
Spirits, beer, &c		1								1	1	0	19
Tobacco (raw)										5	5	0	30
Tallow		5											
Tin													
Turpentine													
Wheat		225								225	225	21	94
White lead													
Whiting													
Wool		16								16	16	1	60
All other goods and merchandise not enumerated	9	434							9	434	443	71	46
Bark													
Barrels, empty		28								28	28	3	29
Boat knees													
Floats	300	29,565							300	29,565	29,865	245	43
Firewood, in vessels	135	20,457		779					135	21,236	21,371	828	95
" rafts		3,598								3,598	3,598	30	20
Hoops		2								2	2	0	24

No. (A) 7.—GENERAL STATEMENT showing the Quantity of each Article transported on the Ottawa Canals, and the Amount of Revenue collected, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Hop poles												
Lumber, sawn, in vessels	59	386,874		54,525					59	441,399	441,458	30,864 91
" " rafts		829								829	829	7 21
Masts, spars, and telegraph poles, in vessels												
" " " rafts		20								20	20	0 25
Railway ties, in vessels		2,547		569						3,116	3,116	464 26
" " rafts												
Saw logs	513	7,825							513	7,825	8,338	175 84
Staves and headings, barrel												
" " pipe												
" " West India												
Staves, salt barrel												
Shingles		86								86	86	17 59
Split posts and fence rails, in vessels												
" " rafts												
Timber, square, in vessels		1,160								1,160	1,160	12 18
" " rafts		3,060								3,060	3,060	38 75
Traverses												
Woodenware and wood partly manufactured												
Total freight paying tolls	1,401	467,365		55,873					1,401	523,238	524,639	33,530 91
Free per Order in Council, 27th June, 1890.												
Floats		17,200								17,200	17,200	
Firewood, in rafts		150								150	150	
Lumber, sawn, in rafts		95								95	95	
Timber, square, in rafts		4,540								4,540	4,540	
Saw logs		3,362								3,362	3,362	
Freight, grand total	1,401	492,712		55,873					1,401	548,585	549,986	

Total tolls on vessels		3,214 82
" passengers		175 43
" free goods	$280 07	
Other receipts		8 00
Total revenue, exclusive of hydraulic rents		36,928 62

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX A—*Continued.*

No. (A) 8.—GENERAL STATEMENT showing the Quantity of each Article transported on the Chambly Canal, and the Amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total tons.	Amount of Tolls.
	Up	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Ashes, pot and pearl												
Apples		812						81		893	893	87 64
Agricultural products not enumerated, vegetable												
" " " animal												
Agricultural implements												
Barley												
Bricks										680	680	68 00
Bones			298					680	298		298	29 80
Brimstone			7,029					923	7,029	923	7,952	795 20
Buckwheat												
Cement and water lime	4							143	4	143	147	9 70
Clay, lime and sand	590	64						4,175	590	4,239	4,829	548 59
Coal	24							79,355	24	79,355	79,379	7,847 93
Corn												
Cattle	4	126							4	126	130	4 59
Cotton (raw)												
Crockery and earthenware		1						4		5	5	0 50
Dye woods and dye stuffs								10		10	10	1 00
Fish												
Flax and hemp												
Flour	460								460		460	15 56
Furniture												
Gypsum												
Glass (all kinds)												
Hay (pressed)	23	3,491							23	3,491	3,514	127 64
Hogs												
Horses	9	41							9	41	50	2 20
Hides and skins, horns and hoofs												
Ice												
Iron, railway												

" pig								160		160	160	16	00
" all other	70	1						2,054	70	2,055	2,125	232	09
Iron ore													
Kyrolite chemical ore and other ore, except iron													
Lard and lard oil		4								4	4	0	40
Meal, all kinds													
Meats, other than pork													
Marble													
Manilla													
Molasses	8								8		8	0	27
Nails													
Oats	4	3,890							4	3,890	3,894	132	52
Oil (in barrels)		2						46		48	48	4	77
Oil cake													
Pease	1	375							1	375	376	12	67
Potatoes	9	10	4						13	10	23	1	48
Pork													
Paint								6		6	6	0	60
Pitch and tar		3						287		290	290	44	80
Rags													
Rye													
Flax seed													
Rosin								2,384		2,384	2,384	265	57
Salt	160							487	160	487	647	54	08
Stone intended for cutting													
" wrought													
" not suitable for cutting, unwrought													
Seeds, all kinds	9								9		9	0	34
Sheep		54								54	54	2	06
Soda ash		29								29	29	2	90
Steel													
Sugar													
Spirits, beer, &c		2								2	2	0	20
Tobacco (raw)													
Tallow													
Tin													
Turpentine		21						238		259	259	25	90
Wheat	1								1		1	0	04
White lead													
Whiting													
Wool													
All other goods and merchandise not enumerated	923	340	3,003					2,456	3,926	2,796	6,722	539	70
Bark													
Barrels, empty		6						3		9	9	1	34
Boat knees													
Floats													
Firewood, in vessels	258	930	127,004						127,262	930	128,192	4,256	31
" rafts													
Hoops													
Hop poles													

No. (A) 8.—GENERAL STATEMENT showing the Quantity of each Article transported on the Chambly Canal, and the Amount of Revenue collected, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Total.		Total tons.	Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Lumber, sawn, in vessels	3,811	70	22,725						26,536	70	26,606	1,568 08
" " rafts												
Masts, spars and telegraph poles, in vessels												
" " rafts												
Railway ties, in vessels			1,120						1,120		1,120	89 47
" rafts												
Saw logs												
Staves and headings, barrel												
" " pipe												
" " West India												
Staves, salt barrel												
Shingles	17								17		17	5 34
Split posts and fence rails, in vessels	4								4		4	0 60
" " rafts												
Timber, square, in vessels												
" rafts												
Traverses												
Woodenware and wood partly manufactured												
Total freight paying tolls	6,389	10,272	161,183				93,492		167,572	103,764	271,336	16,795 88
Total tolls on vessels												2,477 99
" passengers												52 19
Total revenue exclusive of hydraulic rents												19,326 06

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

APPENDIX A—*Continued.*

No. (A) 9.—GENERAL STATEMENT showing the Quantity of each Article transported on the Rideau Canal and the Amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Ashes, pot and pearl												
Apples	1	115							1	115	116	2 83
Agricultural products not enumerated, vegetable	1	1							1	1	2	0 06
" animal	126	499							126	499	625	17 74
Agricultural implements	23	54							23	54	77	8 46
Barley	4								4		4	0 10
Bricks	103	61							103	61	164	4 07
Bones	3								3		3	0 08
Brimstone												
Buckwheat	5	105							5	105	110	3 20
Cement and water lime	643	20							643	20	663	16 68
Clay, lime and sand	5,563	18							5,563	18	5,581	130 79
Coal		1,665						9,144		10,809	10,809	400 04
Corn	3	90							3	90	93	2 34
Cattle		2								2	2	0 06
Cotton (raw)												
Crockery and earthenware	10	24							10	24	34	3 31
Dye wood and dye stuffs												
Fish	12								12		12	0 40
Flax and hemp												
Flour	101	234							101	234	335	8 71
Furniture	7	21							7	21	28	2 52
Gypsum												
Glass (all kinds)	41	6							41	6	47	4 26
Hay (pressed)	86								86		86	2 05
Hogs												
Horses	8	9							8	9	17	0 51
Hides and skins, horns and hoofs	5	1							5	1	6	0 16
Ice		40								40	40	0 67
Iron, railway												
" pig	6								6		6	0 28

No. (A) 9.—GENERAL STATEMENT showing the Quantity of each Article transported on the Rideau Canal, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Iron, all other	388	26							388	26	414	11 73
Iron ore												
Kyrolite chemical ore and other ore, except iron		20								20	20	1 00
Lard and lard oil	45	7							45	7	52	1 26
Meal, all kinds		28								28	28	0 67
Meats, other than pork												
Marble												
Manilla	7	1							7	1	8	0 70
Molasses	112								112		112	9 80
Nails	93	1							93	1	94	10 04
Oats	244	1,149							244	1,149	1,393	71 90
Oil (in barrels)	84	42							83	42	125	12 18
Oil cake		1								1	1	0 03
Pease		3								3	3	0 07
Potatoes	21	36							21	36	57	1 65
Pork	75	21							75	21	96	2 61
Paint	23								23		23	2 67
Pitch and tar	18	1							18	1	19	1 70
Rags	3	13							3	13	16	1 42
Rye		8								8	8	0 38
Flax seed												
Rosin	2								2		2	0 18
Salt	931	328							931	328	1,259	33 77
Stone intended for cutting	2								2		2	0 05
" wrought												
" not suitable for cutting, unwrought	23								23		23	0 28
Seeds, all kinds	10	2							10	2	12	0 30
Sheep												
Soda ash	3								3		3	0 26
Steel	12								12		12	0 29
Sugar	436	36							436	36	472	42 54
Spirits, beer, &c.	41	20							41	20	61	5 45
Tobacco (raw)	4								4		4	0 10
Tallow												

Tin	6							6		6	0	54
Turpentine												
Wheat	3	261						3	261	264	6	16
White lead	10	1						10	1	11	0	99
Whiting	4							4		4	0	36
Wool												
All other goods and merchandise not enumerated	723	394	5				5	728	399	1,127	115	67
Bark	4							4		4	0	10
Barrels, empty	7	10						7	10	17	1	12
Boat knees												
Floats	380	40						380	40	420	17	85
Firewood, in vessels	4,980	528						4,980	528	5,508	101	05
" rafts	12							12		12	0	26
Hoops												
Hop poles	42							42		42	6	00
Lumber, sawn, in vessels	1,811	3,437	6,734	9,106				8,545	12,543	21,088	1,880	93
" rafts	468							468		468	44	00
Masts, spars and telegraph poles, in vessels												
" " rafts												
Railway ties, in vessels	1,427		544					1,971		1,971	220	28
" rafts	343							343		343	36	50
Saw logs		75							75	75	1	70
Staves and headings, barrel												
" " pipe												
" " West India												
Staves, salt barrel												
Shingles	119	42						119	42	161	28	00
Split posts and fence rails, in vessels	4	2						4	2	6	0	13
" " rafts												
Timber, square, in vessels												
" rafts	60							60		60	1	12
Traverses	80							80		80	0	51
Woodenware and wood partly manufactured												
Total freight paying tolls	19,810	9,498	7,283	9,106			9,149	27,093	27,753	54,846	3,286	42
Coal, free, per Order in Council	100							100		100		
Grand total freight	19,910	9,498	7,283	9,106			9,149	27,193	27,753	54,946		

Total tolls on vessels		1,396 49
" passengers		111 10
" free coal	$2.68	
Wharfage and storage		8 44
Other receipts		120 32
Total revenue, exclusive of hydraulic rents		4,922 77

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

APPENDIX A—*Continued.*

No. (A) 10.—GENERAL STATEMENT showing the Quantity of each Article transported on the St. Peter's Canal, and the amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Ashes, pot and pearl									18	1	19	0 19
Apples	18	1							133		133	1 33
Agricultural products, not enumerated, vegetable	133								9		9	0 09
" " animals	9								4		4	0 04
Agricultural implements	4											
Barley												
Bricks												
Bones												
Brimstone												
Buckwheat									50	967	1,017	10 17
Cement and water lime	50	967								894	894	8 94
Clay, lime and sand		894							308	37,233	37,541	375 41
Coal	308	37,233										
Corn									38		38	0 38
Cattle	38											
Cotton (raw)									2		2	0 02
Crockery and earthenware	2											
Dye wood and dye stuffs									64	1,607	1,671	16 71
Fish	64	1,607										
Flax and hemp									2,116	61	2,177	21 77
Flour	1,827	61					289					
Furniture										1,119	1,119	11 19
Gypsum		1,119										
Glass (all kinds)									1,319	5	1,324	13 24
Hay (pressed)	1,319	5										
Hogs												
Horses												
Hides and skins, horns and hoofs												
Ice												
Iron, railway	1						20		21		21	0 21

" pig													
" all other													
" ore													
Kryolite chemical ore and other ore, except iron													
Lard and lard oil													
Meal, all kinds	423	4					101		524	4	528	5	28
Meats, other than pork	4								4		4	0	04
Marble													
Manilla													
Molasses	142	6							142	6	148	1	48
Nails	4								4		4	0	04
Oats	878	16							878	16	894	8	94
Oil (in barrels)	73	29					14		87	29	116	1	16
Oil cake													
Pease													
Potatoes	1,317	24							1,317	24	1,341	13	41
Pork	15	4							15	4	19	0	19
Paint	1								1		1	0	01
Pitch and tar													
Rags													
Rye													
Flax seed													
Rosin													
Salt	423	48							423	48	471	4	71
Stone intended for cutting		75					4		4	75	79	0	79
" wrought		3,250								3,250	3,250	32	50
" not suitable for cutting, unwrought		3,390								3,390	3,390	33	90
Seeds, all kinds													
Sheep													
Soda ash	2								2		2	0	02
Steel													
Sugar	51								51		51	0	51
Spirits, beer, &c	22								22		22	0	22
Tobacco (raw)													
Tallow	9								9		9	0	09
Tin	28								28		28	0	28
Turpentine	3								3		3	0	03
Wheat													
White lead	3								3		3	0	03
Whiting													
Wool													
All other goods and merchandise not enumeratad	1,895	42					314		2,209	42	2,251	22	51
Bark													
Barrels, empty		14								14	14	0	14
Boat knees	7								7		7	0	07
Floats													
Fire wood, in vessels	203	421							203	421	624	6	24
" rafts													
Hoops													
Hop poles													

10—4½

No. (A) 10.—GENERAL STATEMENT showing the Quantity of each Article transported on the St. Peter's Canal, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts
Lumber, sawn, in vessels	4,907	47							4,907	47	4,954	49 54
" " rafts	1								1		1	0 01
Masts, spars, and telegraph poles, in vessels	20	23							20	23	43	0 43
" " " rafts												
Railway ties, in vessels												
" rafts												
Saw logs												
Staves and headings, barrels												
" " pipe												
" " West India												
Staves, salt barrel												
Shingles												
Split posts and fence rails, in vessels	30	6							30	6	36	0 36
" " rafts												
Timber, square in vessels	178	35							178	35	213	2 13
" rafts												
Traverses												
Woodenware and wood partly manufactured	15								15		15	0 15
Total freight paying tolls	14,427	49,321					742		15,169	49,321	64,490	644 90
Total tolls on vessels												2,231 42
Other receipts												8 00
Total receipts												2,884 32

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

APPENDIX A—*Continued.*

No. (A) 11.—GENERAL STATEMENT showing the Quantity of each Article transported on the Trent Valley Canals, and the Amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Ashes, pot and pearl												
Apples												
Agricultural products not enumerated, vegetable												
" " " animal												
Agricultural implements		1								1	1	0 03
Barley												
Bricks	10	237							10	237	247	2 77
Bones												
Brimstone												
Buckwheat												
Cement and water lime												
Clay, lime and sand												
Coal												
Corn												
Cattle	104	2							104	2	106	1 06
Cotton (raw)												
Crockery and earthenware												
Dye wood and dye stuffs												
Fish												
Flax and hemp												
Flour												
Furniture												
Gypsum												
Glass (all kinds)												
Hay (pressed)												
Hogs	136								136		136	1 36
Horses	2	4							2	4	6	0 06
Hides and skins, horns and hoofs												
I												
Iron railway												

No. (A) 11.—GENERAL STATEMENT showing the Quantity of each Article transported on the Trent Valley Canals, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Total Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Iron, pig												
" all other												
" ore												
Kryolite chemical ore and other ore, except iron												
Lard and lard oil												
Meal, all kinds												
Meats, other than pork												
Marble												
Manilla												
Molasses												
Nails												
Oats	3								3		3	0 03
Oil (in barrels)												
Oil cake												
Pease												
Potatoes	2								2		2	0 02
Pork												
Paint												
Pitch and tar												
Rags												
Rye												
Flax seed												
Rosin												
Salt												
Stone intended for cutting												
" wrought												
" not suitable for cutting, unwrought												
Seeds, all kinds												
Sheep	1								1		1	0 01
Soda ash												
Steel												
Sugar												
Spirits, beer, &c.												
Tobacco (raw)												

Tallow												
Tin												
Turpentine												
Wheat	417								417		417	4 17
White lead												
Whiting												
Wool												
All other goods and merchandise not enumerated	31	120							31	120	151	4 53
Bark	36								36		36	1 40
Barrels, empty												
Boat knees												
Floats	1,304	3,418							1,304	3,418	4,722	27 50
Firewood, in vessels	13,985	1,806							13,985	1,806	15,791	166 75
" rafts												
Hoops												
Hop poles												
Lumber, sawn, in vessels	1,161	398							1,161	398	1,559	27 58
" " rafts	37	66							37	66	103	6 00
Masts, spars and telegraph poles, in vessels												
" " rafts												
Railway ties, in vessels	13								13		13	0 50
" rafts	291								291		291	11 50
Saw logs	3,383	448							3383	448	3,831	33 57
Staves and headings, barrel												
" " pipe												
" " West India												
Staves, salt barrel												
Shingles	251	9							251	9	260	22 63
Split posts and fence rails, in vessels												
" " rafts												
Timber, square, in vessels												
" rafts												
Traverses												
Woodenware and wood partly manufactured												
Total freight paying tolls	21,167	6,509							21,167	6,509	27,676	311 47

Total tolls on vessels	589 76
" passengers	193 40
Other receipts	82 00
Total revenue, exclusive of hydraulic rents	1,176 63

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX A—*Continued.*

No. (A) 12.—GENERAL STATEMENT showing the Quantity of each Article transported on the Murray Canal, and the Amount of Revenue collected during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Ashes, pot and pearl												
Apples	204	82							204	82	286	5 49
Agricultural products not enumerated, vegetable	18	102							48	102	150	3 19
" " " animal		1								1	1	0 02
Agricultural implements		1								1	1	0 03
Barley	300	344							300	344	644	12 10
Bricks	147								147		147	2 79
Bones												
Brimstone												
Buckwheat	36	118							36	118	154	2 90
Cement and water lime	268	14	27						295	14	309	5 86
Clay, lime and sand												
Coal	80	660						549	80	1,209	1,289	24 21
Corn	12								12		12	0 23
Cattle												
Cotton (raw)												
Crockery and earthenware	12	24							12	24	36	0 92
Dye wood and dye stuffs												
Fish	1								1		1	0 02
Flax and hemp	6								6		6	0 12
Flour		9						20		29	29	0 55
Furniture	161	18	5					1	166	19	185	4 88
Gypsum												
Glass (all kinds)	41								41		41	1 03
Hay (pressed)												
Hogs												
Horses	6								6		6	0 12
Hides and skins, horns and hoofs												
Ice												
Iron, railway	1								1		1	0 02

" pig		253								253	253	4	75
" all other	92	302	36					280	128	582	710	13	37
Iron ore													
Kryolite chemical ore and other ore, except iron													
Lard and lard oil		21								21	21	0	40
Meal, all kinds													
Meats, other than pork													
Marble													
Manilla													
Molasses	4								4		4	0	10
Nails	7	2	14						21	2	23	0	59
Oats	60	102							60	102	162	3	05
Oil (in barrels)	34	128	10						44	128	172	4	32
Oil cake													
Pease	72	943							72	943	1,015	19	10
Potatoes	69								69		69	1	32
Pork													
Paint	17		8						25		25	0	65
Pitch and tar	10								10		10	0	25
Rags	32	8							32	8	40	1	00
Rye	28	187							28	187	215	4	07
Flax seed	1								1		1	0	02
Rosin													
Salt	58							15	58	15	73	1	39
Stone intended for cutting													
" wrought	16								16		16	0	40
" not suitable for cutting, unwrought	300	15					53		353	15	368	3	68
Seeds, all kinds	100	6	3						103	6	109	2	07
Sheep													
Soda ash	309		5						314		314	7	86
Steel	29								29		29	0	55
Sugar	752	18	10						762	18	780	19	54
Spirits, beer, &c	12	38	7						19	38	57	1	43
Tobacco (raw)													
Tallow													
Tin	7								7		7	0	18
Turpentine													
Wheat	48	272							48	272	320	6	06
White lead	9								9		9	0	23
Whiting	113								113		113	2	83
Wool	4								4		4	0	08
All other goods and merchandise not enumerated	1,660	1,599	5					16	1,665	1,615	3,280	82	25
Bark													
Barrels, empty	9								9		9		23
Boat knees													
Floats													
Firewood, in vessels	255		195						450		450	3	76
" rafts													
Hoops													
Hop poles													

No. (A) 12.—GENERAL STATEMENT showing the Quantity of each Article transported on the Murray Canal, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
												$ cts.
Lumber, sawn, in vessels	241		188						429		429	4 82
" " raft												
Masts, spars, and telegraph poles, in vessels												
" " " " rafts												
Railway ties, in vessels												
" " rafts												
Saw logs												
Staves and headings, barrel												
" " pipe												
" " West India												
" salt barrel												
Shingles			18						18		18	1 50
Split posts and fence rails, in vessels												
" " " " rafts												
Timber, square, in vessels												
" " rafts		3,140								3,140	3,140	39 25
Traverses												
Woodenware and wood partly manufactured												
Total freight paying tolls	5,671	8,407	531				53	881	6,255	9,288	15,543	295 58
											Total tolls on vessels	230 21
											" passengers	158 22
											Total revenue exclusive of hydraulic rents	684 01

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

APPENDIX A—*Continued.*

No. (A) 13.—GENERAL STATEMENT showing the Quantity of each Article transported on the (Canadian) Sault Ste. Marie Canal during the Season of Navigation in 1898.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	
Ashes, pot and pearl											
Apples	15		809						824		824
Agricultural products not enumerated, vegetable	2								2		2
" " animal											
Agricultural implements											
Barley						6,305				6,305	6,305
Bricks	11		46		228				285		285
Bones											
Brimstone											
Buckwheat											
Cement and water lime	363	8	62						425	8	433
Clay, lime and sand		1,284		3						1,287	1,287
Coal, soft	1,902				526,869	680	42,666	950	571,437	1,630	573,067
" hard					57,513	3,000	6,932		64,445	3,000	67,445
Corn						17,548		3,976		21,524	21,524
Cattle	18		5	3					23	3	26
Cotton (raw)											
Crockery and earthenware	36		14						50		50
Dye wood and dye stuffs											
Fish		30		484		188		16		718	718
Flax and hemp								93		93	93
Flour	41	10,436			5	54,648		28,969	46	94,053	94,099
Furniture	9	3	75			2	1	4	85	9	94
Gypsum											
Glass (all kinds)	12		63						75		75
Hay (pressed)	174	2	220		204	26	55		653	28	681
Hogs	2		2						4		4
Horses	51		15	2		6		1	66	9	75
Hides and skins, horns and hoofs					110	82		3	110	85	195
Ice											

No. (A) 13.—GENERAL STATEMENT showing the Quantity of each Article transported on the (Canadian) Sault Ste. Marie Canal, &c.—*Concluded.*

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	
Iron, railway	217				6,626		1,905		8,748		8,748
" pig						1,676				1,676	1,676
" all other	508		79		2,644				3,231		3,231
Iron ore						1,831,731				1,831,731	1,831,731
Copper ore						3,489		26		3,515	3,515
Kryolite chemical ore and other ore, except iron											
Lard and lard oil	2		25						27		27
Meal, all kinds	1					14,259		152	1	14,411	14,412
Meats, other than pork	1								1		1
Marble	16								16		16
Manilla											
Molasses	2								2		2
Nails	81		581		1,025				1,687		1,687
Oats	130		42			12,422		1,275	172	13,697	13,869
Oil (in barrels)	17	1	574		3		30	89	624	90	714
Oil cake											
Pease											
Potatoes		26				23	3		3	49	52
Pork	11								11		11
Paint			22						22		22
Pitch and tar											
Rags											
Rye						14,406		1,408		15,814	15,814
Flax seed						18,987		418		19,405	19,405
Rosin											
Salt	656		522		3,448				4,626		4,626
Stone intended for cutting	282		12		2,199				2,493		2,493
" wrought			1						1		1
" not suitable for cutting, unwrought	2				2,280				2,282		2,282
Seeds, all kinds	4								4		4
Sheep			6						6		6
Soda ash											

Steel	1								1		1
Sugar	65		145		380				590		590
Spirits, beer, &c	319		136						455		455
Tobacco (raw)											
Tallow								2		2	2
Tin	25								25		25
Turpentine											
Wheat		94,053		9,655		137,284		51,406		292,398	292,398
White lead	11		3						14		14
Whiting	38								38		38
Wool						700		30		730	730
All other goods and merchandise not enumerated	9,215	196	5,692	24	13,526	4,013	25	340	28,458	4,573	33,031
Bark											
Barrels empty								3		3	3
Boat, knees											
Floats											
Firewood, in vessels		381		2,200		2,212	12	789	12	5,582	5,594
" rafts		81								81	81
Hoops	12								12		12
Hop poles											
Lumber, sawn, in vessels	2,133	599	9			19,950	10		2,152	20,549	22,701
" rafts											
Masts, spars and telegraph poles, in vessels											
" " rafts											
Railway ties, in vessels											
" rafts											
Saw logs	72	1,244	47		1,134	1,053	14		1,267	2,297	3,564
Staves and headings, barrels											
" pipe											
" West India											
Staves, salt barrel											
Shingles	1					2,310		215	1	2,525	2,526
Split posts and fence rails, in vessels											
" " rafts											
Timber, square, in vessels					400	136		1,200	400	1,336	1,736
" rafts	43								43		43
Traverses											
Woodenware and wood partly manufactured	2		114						116		116
Total freight	16,503	108,344	9,321	12,371	618,594	2,147,136	51,653	91,365	696,071	2,359,216	3,055,287

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX

(No. (A) 14.—STATEMENT of Traffic on the undermentiond Canals, and

Articles.	Welland Canal.		St. Lawrence Canals.		Chambly Canal.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
Class No. 1.		$ cts.		$ cts.		$ cts.
Canadian vessels, steam	382,698	4,521 40	702,438	4,608 39	74,075	227 49
United States vessels, steam	705,765	10,585 21	56,180	368 60	222	3 02
Canadian vessels, sail	135,880	2,868 34	1,628,762	18,147 99	23,638	251 09
United States vessels, sail	188,544	4,253 84	127,554	1,624 24	154,771	1,996 39
Total, Class No. 1	1,412,887	22,228 79	2,514,934	24,749 22	252,706	2,477 99
Class No. 2.	No.		No.		No.	
Passengers	33,267	555 17	61,656	2,955 09	3,260	52 19
Class No. 3.	Tons.		Tons.		Tons.	
Bricks	43	4 86	8,236	425 49	680	68 00
Brimstone			770	78 23	7,952	795 20
Cement and water lime	353	61 24	16,682	1,553 00	147	9 70
Clay, lime and sand	594	23 48	24,043	1,027 98	4,829	548 59
Fish	88	13 20	67	6 02		
Gypsum			1,236	16 05		
Iron, railway	1,444	288 80	808	67 34		
" pig	4,335	840 63	1,781	204 77	160	16 00
" all other	7,387	1,444 79	7,503	601 94	2,125	232 09
Steel	7,607	1,512 25	1,739	188 57		
Salt	799	158 34	2,667	294 42	647	54 08
Stone, for cutting	554	110 80	2,150	135 83		
Apples	250	7 64	1,776	251 67	893	87 64
Barley	12,286	1,228 60	2,536	213 59		
Buckwheat			3,051	192 83		
Corn	437,861	43,783 35	186,888	8,820 24		
Cotton, raw			10	0 98		
Flax and hemp	135	20 25	39	2 78		
Flour	5,578	990 84	25,441	1,924 19	460	15 56
Hay, pressed			722	44 82	3,514	127 64
Meals, all kinds	22,626	4,525 20	2,917	203 54		
Oil cake			4,007	300 49		
Oats	17,502	1,750 00	49,073	2,164 22	3,894	132 52
Pease	306	30 52	19,956	1,699 04	376	12 67
Potatoes			137	13 31	23	1 48
Rye	16,127	1,612 70	10,488	815 47		
Flax seed	5,696	569 60	13,081	645 05		
Seeds, all kinds	118	17 69	5,531	255 72	9	0 34
Tobacco, raw			17	1 18		
Wheat	207,647	20,710 95	90,181	4,804 95	1	0 04
All other agricultural products, vegetable	461	31 95	2,549	277 23		
Bones			18	1 32	298	29 80
Cattle			334	25 30	130	4 59
Hogs						
Hides and skins, horns and hoofs	93	13 95	10	1 36		
Horses	8	1 14	695	44 05	50	2 20
Lard and lard oil	3,679	735 40	1,574	124 57	4	0 40
Meats, other than pork	23	3 19	346	26 08		
Pork	1,282	255 85	2,002	151 71		
Sheep			73	5 51	54	2 06
Tallow	534	98 05	294	22 06		
Wool	89	17 80	38	5 59		
All other agricultural products, animal			4,293	492 23		
Total, Class No. 4	755,505	80,863 06	495,749	28,139 72	26,246	2,140 60

SESSIONAL PAPER No. 10

A—*Continued.*

the Amount of Tolls collected during the Season of Navigation in 1898.

Murray Canal.		Ottawa Canals.		Rideau Canal.		St. Peter's Canal.		Trent Valley Canals.	
Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
	$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
177,944	184 33	148,262	660 89	114,429	776 32	31,856	638 70	76,662	426 51
608	3 03	5	0 25	692	10 38	342	6 84	.....	.....
10,848	39 60	143,405	1,957 66	29,657	440 35	76,662	1,533 88	40,769	163 25
207	3 25	24,966	595 48	8,308	169 44	2,600	52 00	.....	.....
189,607	230 21	316,638	3,214 28	153,086	1,396 49	111,460	2,231 42	117,431	589 76
No.		No.		No.		No.		No.	
13,873	158 22	13,076	175 43	4,830	111 10	.....	.....	31,436	193 40
Tons.		Tons.		Tons.		Tons.		Tons.	
147	2 79	356	13 12	164	4 07	.....	.....	247	2 77
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
309	586	180	3 60	663	16 68	1,017	10 17	.....	.....
.....	.....	2,640	60 17	5,581	130 79	894	8 94	.....	.....
1	0 02	3	0 22	12	0 40	16 71	16 71	.....	.....
.....	.....	.....	.....	.....	.....	1,119	11 19	.....	.....
1	0 02	.....	.....	.....	.....	21	0 21	.....	.....
253	4 75	.....	.....	6	0 28	.....	.....	.....	.....
710	13 37	31	2 75	414	11 73	.....	.....	.....	.....
29	0 55	.....	.....	12	0 29	.....	.....	.....	.....
73	1 39	1	0 10	1,259	33 77	471	4 71	.....	.....
.....	.....	.....	.....	2	0 05	79	0 79	.....	.....
286	5 49	72	4 30	116	2 83	19	0 19	.....	.....
644	12 10	40	3 75	4	0 10	.....	.....	.....	.....
154	2 90	59	5 42	110	3 20	.....	.....	.....	.....
12	0 23	.....	.....	93	2 34	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	0 12	.....	.....	.....	.....	.....	.....	.....	.....
29	0 55	41	3 89	335	8 71	2,177	21 77	.....	.....
.....	.....	234	20 71	86	2 05	1,324	13 24	.....	.....
.....	.....	9	0 66	28	0 67	.....	.....	.....	.....
.....	.....	2	0 20	1	0 03	528	5 28	.....	.....
162	3 05	2,158	182 06	1,393	71 90	894	8 94	3	0 03
1,015	19 10	330	26 00	3	0 07	.....	.....	.....	.....
69	1 32	191	12 91	57	1 65	1,341	13 41	2	0 02
215	4 07	10	0 98	8	0 38	.....	.....	.....	.....
1	0 02	.....	.....	.....	.....	.....	.....	.....	.....
109	2 07	4	0 24	12	0 30	.....	.....	.....	.....
.....	.....	.....	.....	4	0 10	.....	.....	.....	.....
320	6 06	225	21 94	264	6 16	.....	.....	417	4 17
150	3 19	25	1 58	2	0 06	133	1 33	.....	.....
.....	.....	6	0 48	3	0 08	.....	.....	.....	.....
.....	.....	905	70 39	2	0 06	38	0 38	106	1 06
.....	.....	116	8 75	.....	.....	.....	.....	136	136
.....	.....	13	1 18	6	16	.....	.....	.....	.....
6	0 12	282	12 34	17	0 51	.....	.....	6	0 06
21	0 40	6	0 28	52	1 26	.....	.....	.....	.....
.....	.....	3	0 30	.....	.....	4	0 04	.....	.....
.....	.....	13	0 92	96	2 61	19	0 19	.....	.....
.....	.....	321	32 47	.....	.....	2	0 02	1	0 01
.....	.....	5	30	.....	.....	9	0 09	.....	.....
4	0 08	16	160	.....	.....	.....	.....	.....	.....
1	0 02	2,743	248 36	625	17 74	9	0 09	.....	.....
4,727	89 64	11,100	741 97	11,430	321 03	11,769	117 69	918	9 48

No. (A) 14.—STATEMENT of Traffic on the undermentioned

Articles.	Welland Canal.		St. Lawrence Canals.		Chambly Canal.	
	Tons.	Tolls.	Tons.	Tolls	Tons.	Tolls.
Class No. 4.		$ cts.		$ cts.		$ cts.
Ashes, pot and pearl	96	18 05	22	4 40		
Agricultural implements			72	10 71		
Crockery and earthenware	20	3 00	139	25 34	5	0 50
Dye woods and dye stuffs			30	3 75	10	1 00
Furniture	14	1 56	1,401	208 03		
Glass, all kinds	109	18 92	616	115 46		
Marble	205	30 75	3	0 39		
Manilla	119	17 85	11	1 00		
Molasses	95	17 05	1,302	99 72	8	0 27
Nails	127	13 44	3,079	365 72		
Oil, in barrels	1,296	256 59	1,230	177 75	48	4 77
Paint	25	1 17	531	79 37	6	0 60
Pitch and tar	11	1 26	619	71 61	290	44 80
Rags			264	41 65		
Rosin			1,748	104 65	2,384	265 57
Soda ash	10	0 20	1,365	269 89	29	2 90
Sugar	5,421	801 12	10,675	1,693 57		
Stone, wrought			637	68 64		
Tin	40	5 22	2,014	390 49		
Turpentine	1	0 15	234	12 15	259	25 90
White lead			131	16 17		
Whiting	1	0 02	549	104 57		
Whisky and all other spirits	365	52 54	521	93 09	2	0 20
Merchandise, not enumerated	55,922	8,268 08	17,083	2,309 92	6,722	539 70
Total, Class No. 4	63,877	9,506 97	44,276	6,268 04	9,763	886 21
Class. No. 2.						
Bark						
Barrels, empty	21	3 20	295	26 32	9	1 34
Boat knees						
Floats			1,298	23 04		
Fire wood, in vessels	6,412	356 86	8,868	152 40	128,192	4,256 31
" rafts						
Lumber, sawn, in vessels	80,574	14,411 75	16,593	468 92	26,606	1,568 08
" rafts			1,943	87 71		
Hoops						
Railway ties, in vessels	190	30 04	57	1 14	1,120	89 47
" rafts						
Masts, spars and telegraph poles, in vessels			66	2 48		
Masts, spars and telegraph poles, in rafts			16,107	402 05		
Square timber, in vessels	49,098	7,308 85	373	11 82		
" rafts	30	0 85	3,535	88 50		
Woodenware and wood, partly manufactured	17	6 80	69	19 00		
Shingles	12	7 28	21	3 73	17	5 34
Split posts and fence rails, in vessels					4	0 60
" " rafts						
Saw-logs	3,675	153 54	7,968	181 72		
Staves and headings, barrel	40	3 20				
" " pipe						
" " West India						
" " salt barrel			48	0 96		
Traverses			1,500	7 42		
Hop poles						
Total, Class No. 5	140,069	22,282 37	58 61	1,477 21	155,948	5,921 14

Canals, and the Amount of Tolls collected, &c.—*Continued.*

Murray Canal.		Ottawa Canals.		Rideau Canal.		St. Peter's Canal.		Trent Valley Canals.	
Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
	$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
								1	0 03
1	0 03	6	1 00	77	8 46	4	0 04		
36	0 92			34	3 31	2	0 02		
185	4 88	28	3 68	28	2 52				
41	1 03			47	4 26				
				8	0 70				
4	0 10			112	9 80	148	1 48		
23	0 59	1	0 14	94	10 04	4	0 04		
172	4 32			125	12 18	116	1 16		
25	0 65	1	0 05	23	2 67	1	0 01		
10	0 25	13	2 47	19	1 70				
40	1 00	113	20 57	16	1 42				
				2	0 18				
314	7 86			3	0 26				
780	19 54	2	0 28	472	42 54	51	0 51		
16	0 40					3,250	32 50		
7	0 18			6	0 54	28	0 28		
						3	0 03		
9	0 23			11	0 99	3	0 03		
113	2 83			4	0 36				
57	1 43	1	0 19	61	5 45	22	0 22		
3,280	82 25	443	71 46	1,127	115 67	2,251	22 51	151	4 53
5,113	128 49	608	99 84	2,269	223 05	5,883	58 83	152	4 56
				4	0 10			36	1 40
9	0 23	28	3 29	17	1 12	14	0 14		
						7	0 07		
		29,865	245 43	420	17 85			4,722	27 50
450	3 76	21,371	828 95	5,508	101 05	624	6 24	15,791	166 75
		3,598	30 20	12	0 26				
429	4 82	441,458	30,864 91	21,088	1,880 93	4,954	49 54	1,559	27 58
		829	7 21	468	44 00	1	0 01	103	6 00
		2	0 24						
		3,116	464 26	1,971	220 28			13	0 50
				343	36 50			291	11 50
						43	0 43		
		20	0 25						
		1,160	12 18			213	2 13		
3,140	39 25	3,060	38 75	60	1 12				
						15	0 15		
18	1 50	86	17 59	161	28 00			260	22 63
				6	0 93	36	0 36		
		8,338	175 84	75	1 70			3,831	33 57
				80	0 51				
				42	6 00				
4,046	49 56	512,931	32,689 10	30,255	2,340 35	5,907	59 07	26,606	297 43

No. (A) 14.—STATEMENT of Traffic on the undermentioned

Articles.	Welland Canal.		St. Lawrence Canals.		Chambly Canal.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
Special Class.		$ cts.		$ cts.		$ cts.
Coal	162,336	32,467 20	188,962	27,253 65	79,379	7,847 93
Kryolite or chemical ore	.....	.....	.....	.....	.....	.....
Iron ore	13,433	671 65	.....	.....	.....	.....
Stone, unwrought, not suitable for cutting	421	22 86	468	12 00	.....	.....
Ice	.....	.....	.....	.....	.....	.....
Total, Special Class	176,190	33,161 71	189,430	27,265 65	79,379	7,847 93
Total freight and tolls	1,135,641	168,598 07	787,716	90,854 93	271,336	19,326 06
Timber and other wood, free	.....	.....	3,605	341 32	.....	.....
Wheat, corn, flour, iron, salt, coal, &c., &c., free	4,436	665 40	647,813	61,086 15	.....	.....
Grand Totals (passengers and tonnage of vessels not included)	1,140,077	169,263 47	1,439,134	152,282 40	271,336	19,326 06

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

SESSIONAL PAPER No. 10

Canals, and the Amount of Tolls collected, &c.—*Concluded.*

Murray Canal.		Ottawa Canals.		Rideau Canal.		St. Peter's Canal.		Trent Valley Canals.	
Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
	$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
1,289	24 21	.....	.....	10,809	400 04	37,541	375 41	.....	.....
.....	.....	.....	.....	20	1 00	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
368	3 68	.....	.....	23	0 28	3,390	33 90	.....	.....
.....	.....	.....	.....	40	0 67	.....	.....	.....	.....
1,657	27 89	.....	.....	10,892	401 99	40,931	409 31		
15,543	684 01	524,639	36,920 62	54,846	4,794 01	.....	.....	27,676	1,094 63
.....	.....	25,347	280 07	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	100	2 68	.....	.....	.....	.....
15,543	684 01	549,986	37,200 69	54,946	4,796 69	64,490	2,876 32	27,676	1,094 63

RICHARD DEVLIN.
Compiler of Canal Statistics.

APPENDIX

No. (A) 15.—SUMMARY STATEMENT of Traffic on the undermentioned Canals during of each description of property passed through,

Articles.	Welland Canal.		St. Lawrence Canals.		Chambly Canal.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
		$ cts.		$ cts.		$ cts.
Vessels of all kinds	1,412,887	22,228 79	2,514,934	24,749 22	252,706	2,477 99
	No.		No.		No.	
Passengers	33,267	555 17	61,656	2,955 09	3,260	52 19
Forest, Produce of Wood.	Tons.		Tons.		Tons.	
Bark						
Boat knees						
Floats			1,298	23 04		
" Free						
Firewood	6,412	356 86	8,688	152 40	128,192	4,256 31
" Free						
Hop and hop poles						
Lumber, sawed	80,574	14,411 75	18,536	556 63	26,606	1,568 08
" Free			3,208			
Masts spars, &c.			16,173	404 53		
Railway ties	190	30 04	57	1 14	1,120	89 47
" Free			68			
Saw logs	3,675	153 54	7,968	181 72		
" Free						
Staves, all kinds	40	3 20	48	0 96		
Shingles	12	7 28	21	3 73	17	5 34
Split posts and rails					4	60
Timber, square	49,128	7,309 70	3,908	100 32		
" Free			329			
Traverses			1,200	7 42		
Total	140,031	22,272 37	61,502	1,431 89	155,939	5,919 80
Farm Stock.						
Cattle			334	25 30	130	4 59
Hogs						
Horses	8	1 14	695	44 05	50	2 20
" Free	1		4			
Sheep			73	5 51	54	2 06
Total	9	1 14	1,106	74 86	234	8 85
Produce of Animals.						
Bones			18	1 32	298	29 80
Horns and hoofs, hides and skins (raw)	93	13 95	10	1 36		
Lard and lard oil	3,679	735 40	1,574	124 57	4	40
" Free	2					
Meats other than pork	23	3 19	346	26 08		
Pork	1,282	255 85	2,002	151 71		
Tallow	534	98 05	294	22 06		
Wool	89	17 80	38	5 59		
Agricultural products not enumerated (animal)			4,293	492 23		
Total	5,702	1,124 24	8,575	824 92	302	30 20

SESSIONAL PAPER No. 10

A.—*Continued.*

the Season of Navigation ended December 31, 1898, showing the Total Quantity and the Amount of Tolls collected thereon.

Murray Canal.		Ottawa Canals.		Rideau Canal.		St. Peter's Canal.		Trent Valley Canals.	
Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
	$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
189,607	230 21	316,638	3,214 28	153,086	1,396 49	111,460	2,231 42	117,431	589 76
No. 13,873	158 22	No. 13,076	175 43	No. 4,830	111 10	No.	.....	No. 31,436	193 40
Tons.		Tons.		Tons.		Tons.		Tons.	
.....	.....	.....	.....	4	0 10	.....	.....	36	1 40
.....	.....	.....	.....	.....	.....	7	0 07	.....	.....
.....	.....	28,865	245 43	420	17 85	.....	.....	4,722	27 50
.....	.....	17,200	.....	.....	.....	.....	.....	.....	.....
450	3 76	24,969	859 15	5,520	101 31	624	6 24	15,791	166 75
.....	.....	150	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	0 24	42	6 00	.....	.....	.....	.....
429	4 82	442,287	30,872 12	21,556	1,924 93	4,955	49 55	1,662	33 58
.....	.....	95	.....	.....	.....	.....	.....	.....	.....
.....	.....	20	0 25	.....	.....	43	0 43	.....	.....
.....	.....	3,116	464 26	2,314	256 78	.....	.....	304	12 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	8,338	175 84	75	1 70	.....	.....	3,831	33 57
.....	.....	3,362	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	1 50	86	17 59	161	28 00	.....	.....	260	22 63
.....	.....	.....	.....	6	0 93	36	0 36	.....	.....
3,140	39 25	4,220	50 93	60	1 12	213	2 13	.....	.....
.....	.....	4,540	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	80	0 51	.....	.....	.....	.....
4,037	49 33	538,250	32,685 81	30,238	2,339 23	5,878	58 78	26,606	297 43
.....	.....	905	70 39	2	0 06	38	0 38	106	1 06
.....	.....	116	8 75	.....	.....	.....	.....	136	1 36
6	0 12	282	12 34	17	0 51	.....	.....	6	0 06
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	381	32 47	.....	.....	2	0 02	1	0 01
6	0 12	1,684	123 95	19	0 57	40	0 40	249	2 49
.....	.....	6	48	3	0 08	.....	.....	.....	.....
.....	.....	13	1 18	6	0 16	.....	.....	.....	.....
21	0 40	6	0 28	52	1 26	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	3	0 30	.....	.....	4	0 04	.....	.....
.....	.....	13	0 92	96	2 61	19	0 19	.....	.....
.....	.....	5	0 30	.....	.....	9	0 09	.....	.....
4	0 08	16	1 60	.....	.....	.....	.....	.....	.....
1	0 02	2,743	248 36	625	17 74	9	0 09	.....	.....
26	0 50	2,805	253 42	782	21 85	41	0 41	.....	.....

No. (A) 15.—SUMMARY STATEMENT of Traffic on the undermentioned Canals

Articles.	Welland Canal.		St. Lawrence Canals.		Chambly Canal.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
Agricultural Products.		$ cts.		$ cts.		$ cts.
Agricultural products not enumerated, vegetable	461	31 95	2,549	277 23		
" " Free			56			
Apples	250	7 64	1,766	251 67	893	87 64
Barley	12,286	1,228 60	2,536	213 59		
" Free			3,960			
Buckwheat			3,051	192 83		
Cotton			19	0 98		
Corn	437,861	43,783 35	186,888	8,820 24		
" Free			314,948			
Flax and hemp	135	20 25	39	2 78		
" Free			1,841			
Flour	5,578	990 84	25,441	1,924 19	460	15 56
" Free			653			
Hay, pressed			722	44 82	3,514	127 64
Meals, all kinds	22,626	4,525 20	2,917	203 54		
Manilla	119	17 85	11	1 00		
Oats	17,502	1,750 00	49,073	2,164 22	3,894	132 52
" Free			3,975			
Pease	306	30 52	19,956	1,699 04	376	12 67
" Free			260			
Potatoes			137	13 31	23	1 48
Rye	16,127	1,612 70	10,488	815 47		
" Free			15,488			
Seed, flax, clover and grass	5,814	587 29	18,612	909 77	9	34
" " Free	56		3,846			
Tobacco, raw			18	1 18		
Wheat	207,647	20,710 95	90,181	4,804 95	1	0 04
" Free			184,154			
Total	726,768	75,297 14	943,575	22,340 81	9,170	377 89
Manufactures.						
Ashes, pot and pearl	96	18 05	22	4 40		
" " Free			73			
Agricultural implements			72	10 71		
Barrels, empty	21	3 20	295	26 32	9	1 34
Bricks	43	4 86	8,236	425 49	680	68 00
" Free	70					
Cement and water lime	353	61 24	16,682	1,553 00	147	9 70
" " Free	996					
Crockery and earthenware	20	3 00	139	25 34	5	0 50
" " Free	33					
Furniture	14	1 56	1,401	208 03		
Glass of all kinds	109	18 92	616	115 46		
" Free	150		75			
Iron, railway	1,444	288 80	808	67 34		
" pig	4,335	840 63	1,781	204 77	160	16 00
" all other	7,387	1,144 79	7,503	601 94	2,125	232 09
" " Free	699		6,217			
Molasses	95	17 05	1,302	99 72	8	0 27
" Free			55			
Nails	127	13 44	3,079	365 72		
" Free	229					
Oil	1,296	256 59	1,230	177 75	48	4 77
" Free	15		1,141			
Oil cake			4,007	300 49		
Paint	25	1 17	531	79 37	6	0 60

SESSIONAL PAPER No. 10

during the Season of Navigation ended December 31, 1898, &c.—*Continued.*

Murray Canal		Ottawa Canals.		Rideau Canal.		St. Peter's Canal.		Trent Valley Canals.	
Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
	$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
150	3 19	25	1 58	2	0 06	133	1 33	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
286	5 49	72	4 30	116	2 83	19	0 19	.....	.....
644	12 10	40	3 75	4	0 10	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
154	2 90	59	5 42	110	3 20	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	0 23	.....	.....	93	2 34	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	0 12	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	0 55	41	3 89	335	8 71	2,177	21 77	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	234	20 71	86	2 05	1,324	13 24	.....	.....
.....	.....	9	0 66	28	0 67	528	5 28	.....	.....
.....	.....	.....	.....	8	0 70	.....	.....	.....	.....
162	3 05	2,158	182 06	1,393	71 90	894	8 94	3	0 03
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,015	19 10	330	26 00	3	0 07	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
69	1 32	191	12 91	57	1 65	1,341	13 41	2	0 02
215	4 07	10	0 98	8	0 38	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
110	2 09	4	0 24	12	0 30	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	4	0 10	.....	.....	.....	.....
320	6 06	225	21 94	264	6 16	.....	.....	417	4 17
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3,172	60 27	3,398	284 44	2,523	101 22	6,416	64 16	422	4 22
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	0 03	6	1 00	77	8 46	4	0 04	1	0 03
9	0 23	28	3 29	17	1 12	14	0 14	.....	.....
147	2 79	356	13 12	164	4 07	.....	.....	247	2 77
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
309	5 86	180	3 60	663	16 68	1,017	10 17	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	0 92	.....	.....	34	3 31	2	0 02	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
185	4 88	28	3 68	28	2 52	.....	.....	.....	.....
41	1 03	.....	.....	47	4 26	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1	0 02	.....	.....	.....	.....	21	0 21	.....	.....
253	4 75	.....	.....	6	0 28	.....	.....	.....	.....
710	13 37	31	2 75	414	11 73	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	0 10	.....	.....	112	9 80	148	1 48	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	0 59	1	0 14	94	10 04	4	0 04	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
172	4 32	.....	.....	125	12 18	116	1 16	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	2	0 20	1	0 03	.....	.....	.....	.....
25	0 65	1	0 05	23	2 67	1	0 01	.....	.....

No. (A) 15.—SUMMARY STATEMENT of Traffic on the undermentioned Canals

Articles.	Welland Canal.		St. Lawrence Canals.		Chambly Canal.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
Manufactures– Concluded.		$ cts.		$ cts.		$ cts.
Paint.....Free	35					
Pitch and tar.	11	1 26	619	71 61	290	44 80
"	37					
Rosin			1,748	104 65	2,384	265 57
Soda ash	10	0 20	1,365	269 89	29	2 90
"Free	88					
Spirits, whiskey, &c.	365	52 54	521	93 09	2	0 20
"Free	98		4			
Steel	7,607	1,512 25	1,739	188 57		
"Free	19		1,351			
Sugar	5,421	801 12	10,675	1,693 57		
"Free	566					
Tin	40	5 22	2,014	390 49		
"Free	237					
White lead			131	16 17		
Turpentine	1	0 15	234	12 15	259	25 90
Whiting	1	0 02	549	104 57		
"Free	93					
Woodenware	17	6 80	69	19 00		
Total	32,203	5,352 86	76,285	7,229 61	6,152	672 64
Merchandise.						
Brimstone, crude			770	78 23	7,952	795 20
Clay, lime and sand	594	23 48	24,043	1,027 98	4,829	548 59
"Free	144		52			
Coal	162,336	32,467 20	188,962	27,253 65	79,379	7,847 93
"Free			98,288			
Dye woods and dye stuffs			30	3 75	10	1 00
Fish	88	13 20	67	6 02		
"Free	9					
Gypsum			1,236	16 05		
Ores, all kinds	13,433	671 65				
Marble	205	30 75	3	0 39		
Rags			264	41 65		
Salt	799	158 34	2,667	294 42	647	54 08
"Free	35		144			
Stone, all kinds	975	133 66	3,255	216 47		
"Free	31		10,341			
All other goods and merchandise, not enumerated	55,922	8,268 08	17,083	2,309 92	6,722	539 70
" " Free	793		886			
Total	235,364	41,766 36	348,091	31,248 53	99,539	9,786 50
Grand totals, passengers and tonnage of vessels not included	1,140,077	168,593 07	1,439,134	90,854 93	271,336	19,326 06

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

during the Season of Navigation ended December 31, 1898, &c.—*Concluded.*

Murray Canal.		Ottawa Canals.		Rideau Canal.		St. Peter's Canal.		Trent Valley Canals.	
Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
	$ cts.		$ cts.		$ cts.		$ cts.		$ cts.
10	0 25	13	2 47	19	1 70				
				2	0 18				
314	7 86			3	0 26				
57	1 43	1	0 19	61	5 45	22	0 22		
29	0 55			12	0 29				
780	19 54	2	0 28	472	42 54	51	0 51		
7	0 18			6	0 54	28	0 28		
9	0 23			11	0 99	3	0 03		
						3	0 03		
113	2 83			4	0 36				
						15	0 15		
3,235	72 41	649	30 77	2,395	139 46	1,449	14 49	248	2 80
		2,640	60 17	5,581	130 79	894	8 94		
1,289	24 21			10,809	400 04	37,541	375 41		
				100					
1	0 02	3	0 22	12	0 40	1,671	16 71		
						1,119	11 19		
				20	1 00				
40	1 00	113	20 57	16	1 42				
73	1 39	1	0 10	1,259	33 77	471	4 71		
384	4 08			25	0 33	6,719	67 19		
3,280	82 25	443	71 46	1,167	116 34	2,251	22 51	151	4 53
5,067	112 95	3,200	152 52	18,989	684 09	50,666	506 66	151	4 53
15,543	684 01	549,986	36,920 62	54,946	4,794 01	64,490	2,876 32	27,676	1,094 63

RICHARD DEVLIN,
Compiler of Canal Statistics.

No. (A) 16.—STATEMENT showing the Amount of Tolls accrued each month during the Season of Navigation ended December 31, 1898.

Canals and Offices.	January	March.	April.	May.	June.	July.	August.	September	October.	November	December	Total.
WELLAND CANAL.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts	$ cts.
Chippawa			0 25	2 20	4 40	9 01	3 00	0 50		2 50		21 86
Colborne			11,620 63	22,501 10	15,020 32	14,683 17	15,568 51	13,312 52	14,057 25	7,583 25	2,423 06	116,769 81
Dalhousie			3,033 90	7,480 15	7,224 77	6,010 04	8,598 99	6,259 88	6,615 81	4,962 00	594 70	50,780 24
Dunnville			9 21	122 44	112 86	82 79	0 50	2 33	47 28	58 80		436 21
Maitland												
St. Catharines		0 47	37 19	135 77	51 82	74 52	115 30	71 17	48 01	55 70		589 95
Total Welland Canal		0 47	14,701 18	30,241 66	22,414 17	20,859 53	24,286 30	19,646 40	20,768 35	12,662 25	3,017 76	168,598 07
ST. LAWRENCE CANALS.												
Beauharnois			5 38	516 89	1,335 59	2,865 12	2,961 92	3,659 73	3,390 54	1,599 24		16,334 41
Cardinal			2 52	77 46	37 46	45 55	48 66	41 44	59 07	52 55	8 97	373 68
Cornwall			1,248 00	4,853 57	4,146 30	3,986 78	4,665 28	3,422 59	4,205 82	3,322 50	40 76	29,891 60
Kingston			635 89	2,291 01	1,309 66	2,128 83	1,755 55	1,605 60	2,349 62	1,455 49		13,531 65
Lachine			30 83	230 60	250 92	333 01	444 47	434 18	312 74	302 99		2,339 77
Montreal			793 01	4,662 33	4,024 61	4,610 34	4,783 18	3,505 24	3,167 05	2,821 95	16 11	28,383 82
Total St. Lawrence Canals			2,715 63	12,631 86	11,104 54	13,969 66	14,659 06	12,668 78	13,484 84	9,554 72	65 84	90,854 93
CHAMBLY CANAL.												
Chambly				711 98	1,767 33	1,376 12	1,617 40	1,294 59	808 03	295 72		7,871 17
St. Johns				2,364 29	1,642 21	2,032 73	1,117 28	1,579 45	1,529 67	566 02		10,831 65
St. Ours			30 84	48 80	66 99	80 18	76 15	107 05	130 36	82 87		623 24
Total Chambly Canal			30 84	3,125 07	3,476 53	3,489 03	2,810 83	2,981 09	2,468 06	944 61		19,326 06

Ottawa Canals.												
Ottawa			1 75	5,393 20	4,942 17	5,158 80	5,619 78	3,660 68	3,025 95	2,530 40		30,272 73
Carillon				4 98	4 95	10 73	5 95	8 61	3 10	2 29		40 61
Grenville			14 76	402 66	804 80	970 88	602 84	825 10	1,038 29	886 59		5,545 92
St. Anne's			10 62	87 61	159 08	143 12	243 33	190 21	150 26	77 13		1,061 36
Total Ottawa Canals			27 13	5,888 45	5,911 00	6,283 53	6,471 90	4,624 60	4,217 60	3,496 41		36,920 62
Bideau Canal.												
Kingston Mills				73 82	155 58	123 83	155 08	157 25	121 05	38 55		825 16
Ottawa			1 16	374 29	537 31	469 81	604 60	423 06	387 81	598 18		3,396 22
Smith's Falls				67 14	66 85	103 50	131 85	80 01	84 45	38 83		572 63
Total Rideau Canal			1 16	515 25	759 74	697 14	891 53	660 32	593 31	675 56		4,794 01
St. Peter's Canal.												
St. Peter's	3 32	1 98	88 78	311 29	352 47	348 71	440 86	457 35	358 66	326 28	186 62	2,876 32
Trent Valley Canals.												
Bobcaygeon		0 25	9 55	47 00	82 88	68 69	50 83	29 25	37 65	9 14		335 24
Buckhorn			2 47	6 95	27 60	23 27	16 93	15 15	19 50	1 00		112 87
Burleigh			2 64	2 19	8 30	17 05	21 95	4 85	3 69	6 15		66 82
Fenelon Falls			1 40	18 79	34 82	27 69	26 44	22 10	2 60	8 50		142 34
Hastings			0 75	10 65	6 70	3 75	5 50	4 75	7 77	2 95		42 82
Peterborough		0 90	17 42	27 72	64 37	91 77	90 87	57 06	23 10	21 33		394 54
Total Trent Valley Canals		1 15	34 25	113 30	224 67	232 22	212 52	133 16	94 31	49 07		1,094 63
Murray Canal.												
Brighton			38 40	77 39	68 61	100 42	148 42	88 67	97 69	64 41		684 01
Grand Total	3 32	3 60	17,637 35	52,904 27	44,311 73	45,980 24	49,921 42	41,260 37	42,082 82	27,773 31	3,270 22	325,148 65

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX A—*Continued.*

No. (A) 17.—SUMMARY STATEMENT showing the Number, Tonnage and Nationality of Vessels passed through all the Canals during the Season of Navigation ended December 31, 1898, and the amount of Tolls collected thereon.

Vessels.	Total Number.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
WELLAND CANAL.													$ cts.
Canadian vessels, steam	968	101,433	99,905	86,711	2,387	.....	.....	4,082	88,180	192,226	190,472	382,698	4,521 40
" sail	357	26,501	27,993	41,156	148	.....	.....	.....	40,082	67,657	68,223	135,880	2,868 34
Total Canadian	1,325	127,934	127,898	127,867	2,535	.....	.....	4,082	128,262	259,883	258,695	518,578	7,389 74
United States vessels, steam	733	171	.....	78,625	1,810	269,208	220,808	1,078	134,065	349,082	356,683	705,765	10,585 21
" sail	326	3	5	43,113	4,839	32,770	49,148	3,406	55,260	79,292	109,252	188,544	4,253 84
Total United States	1,059	174	5	121,738	6,649	301,978	269,956	4,484	189,325	428,374	465,935	894,309	14,839 05
Grand Total, Welland Canal	2,384	128,108	127,903	249,605	9,184	301,978	269,956	8,566	317,587	688,257	724,630	1,412,887	22,228 79
ST. LAWRENCE CANALS.													
Canadian vessels, steam	3,740	364,611	296,914	18,174	98	.....	.....	.....	22,641	382,785	319,653	702,438	4,608 39
" sail	6,642	839,023	663,407	45,147	180	.....	19	.....	80,986	884,170	744,592	1,628,762	18,147 99
Total Canadian	10,382	1,203,634	960,321	63,321	278	.....	19	.....	103,627	1,266,955	1,064,245	2,331,200	22,756 38
United States vessels, steam	652	182	468	17,190	250	5,899	10,668	741	20,782	24,012	32,168	56,180	368 60
" sail	514	3,782	5,992	29,928	1,194	941	24,688	25,564	35,465	60,215	67,339	127,554	1,624 24
Total United States	1,166	3,964	6,460	47,118	1,444	6,840	35,356	26,305	56,247	84,227	99,507	183,734	1,992 84
Grand Total, St. Lawrence Canals	11,548	1,207,598	966,781	110,439	1,722	6,840	35,375	26,305	159,874	1,351,182	1,163,752	2,514,934	24,749 22
CHAMBLY CANAL.													
Canadian vessels, steam	368	35,264	38,481	141	.....	.....	.....	.....	189	35,405	38,670	74,075	227 49
" sail	385	7,865	8,285	3,168	.....	.....	.....	.....	4,320	11,033	12,605	23,638	251 09
Total Canadian	753	43,129	46,766	3,309	.....	.....	.....	.....	4,509	46,438	51,275	97,713	478 58

United States vessels, steam	10			130					92	130	92	222	3 02
" sail	1,578	182	1,565	63,860					89,164	64,042	90,729	154,771	1,996 39
Total United States.	1,588	182	1,565	63,990					89,256	64,172	90,821	154,993	1,999 41
Grand Total, Chambly Canal	2,341	43,311	48,331	67,299					93,765	110,610	142,096	252,706	2,477 99
OTTAWA CANALS.													
Canadian vessels, steam	987	42,946	105,260		56					42,946	105,316	148,262	660 89
" sail	1,160	3,650	138,221		1,534					3,650	139,755	143,405	1,957 66
Total Canadian	2,147	46,596	243,481		1,590					46,596	245,071	291,667	2,618 55
United States vessels, steam	1		5								5	5	0 25
" sail	253	3,479	310		21,177					3,479	21,487	24,966	595 48
Total United States	254	3,479	315		21,177					3,479	21,492	24,971	595 73
Grand Total, Ottawa Canals	2,401	50,075	243,796		22,767					50,075	266,563	316,638	3,214 28
RIDEAU CANAL.													
Canadian vessels, steam	1,488	54,590	55,056	1,846					2,937	56,436	57,993	114,429	776 32
" sail	719	11,980	12,123	2,777					2,777	14,757	14,900	29,657	440 35
Total Canadian	2,207	66,570	67,179	4,623					5,714	71,193	72,893	144,086	1,216 67
United States vessels, steam	41	84	38	230					340	314	378	692	10 38
" sail	119	3,279	712	379	3,457				481	3,658	4,650	8,308	169 44
Total United States	160	3,363	750	609	3,457				821	3,972	5,028	9,000	179 82
Grand Total, Rideau Canal	2,367	69,933	67,929	5,232	3,457				6,535	75,165	77,921	153,086	1,396 49
ST. PETER'S CANAL.													
Canadian vessels, steam	236	16,802	12,984	338				1,732		18,872	12,984	31,856	638 70
" sail	1,443	38,026	38,179					457		38,483	38,179	76,662	1,533 88
Total Canadian	1,679	54,828	51,163	338				2,189		57,355	51,163	108,518	2,172 58
United States vessels, steam	2	171	171							171	171	342	6 84
" sail	11	762	166		153			1,519		2,281	319	2,600	52 00
Total United States	13	933	337		153			1,519		2,452	490	2,942	58 84
Grand Total, St. Peter's Canal	1,692	55,761	51,500	338	153			3,708		59,807	51,653	111,460	2,231 42

No. (A) 17.—SUMMARY STATEMENT showing the Number, Tonnage and Nationality of Vessels, &c.—*Continued.*

Vessels.	Total Number.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
TRENT VALLEY CANALS.													$ cts.
Canadian vessels, steam	1,617	39,058	37,604							39,058	37,604	76,662	426 51
" sail	746	19,506	21,263							19,506	21,263	40,769	163 25
Total Canadian	2,363	58,564	58,867							58,564	58,867	117,431	589 76
United States vessels, steam													
" sail													
Total United States													
Grand Total, Trent Valley Canals	2,363	58,564	58,867							58,564	58,867	117,431	589 76
MURRAY CANAL.													
Canadian vessels, steam	490	99,139	47,951	15,556	499	499	499	499	13,302	115,693	62,251	117,944	184 33
" sail	163	4,267	5,629	379	25			35	513	4,681	6,167	10,848	39 60
Total Canadian	653	103,406	53,580	15,935	524	499	499	534	13,815	120,374	68,418	188,792	223 93
United States vessels, steam	11	47	109	19			98	23	312	89	519	608	3 03
" sail	13			50		60	54		43	110	97	207	3 25
Total United States	24	47	109	69		60	152	23	355	199	616	815	6 28
Grand Total, Murray Canal	677	103,453	53,689	16,004	524	559	651	557	14,170	120,573	69,034	189,607	230 21

No. (A) 17.—SUMMARY STATEMENT showing the Number, Tonnage and Nationality of Vessels, &c.—*Concluded.*

RECAPITULATION.

Vessels.	Total Number.	From Canadian to Canadian Ports.		From Canadian to United States. Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
CANADIAN VESSELS. *Steam and Sail.*													$ cts.
Welland	1,325	127,934	127,898	127,867	2,535	.....	.....	4,082	128,262	259,883	258,695	518,578	7,389 74
St. Lawrence	10,382	1,203,634	960,321	63,321	278	.....	19	.....	103,627	1,266,955	1,064,245	2,331,200	22,756 38
Chambly	753	43,129	46,766	3,309	.....	.....	.....	.....	4,509	46,438	51,275	97,713	478 58
Ottawa	2,147	46,596	243,481	.....	1,590	.....	.....	.....	.....	46,596	245,071	291,667	2,618 57
Rideau	2,207	66,570	67,179	4,623	.....	.....	.....	.....	5,714	71,193	72,893	144,086	1,216 67
St. Peter's	1,679	54,828	51,163	338	.....	.....	.....	2,189	.....	57,355	51,163	108,518	2,172 58
Trent Valley	2,363	58,564	58,867	.....	.....	.....	.....	.....	.....	58,564	58,867	117,431	589 76
Murray	653	103,406	53,580	15,935	524	499	499	534	13,815	120,374	8,418	188,792	223 93
Total Canadian	21,509	1,704,661	1,609,255	215,393	4,927	499	518	6,805	255,927	1,927,358	1,870,627	3,797,985	37,446 19
UNITED STATES VESSELS. *Steam and Sail.*													
Welland	1,059	174	5	121,738	6,649	301,978	269,956	4,484	189,325	428,374	465,935	894,309	14,839 05
St. Lawrence	1,166	3,964	6,460	47,118	1,444	6,840	35,356	26,305	56,247	84,227	99,507	183,734	1,992 84
Chambly	1,588	182	1,565	63,990	.....	.....	.....	.....	89,256	64,172	90,821	154,993	1,999 41
Ottawa	254	3,479	315	.....	21,177	.....	.....	.....	.....	3,479	21,492	24,971	595 73
Rideau	160	3,363	750	609	3,457	.....	.....	.....	821	3,972	5,028	9,000	179 82
St. Peter's	13	933	337	.....	153	.....	.....	1,519	.....	2,452	490	2,942	58 84
Trent Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Murray	24	47	109	69	.....	60	152	23	355	199	616	815	6 28
Total United States	4,264	12,142	9,541	233,524	32,880	308,878	305,464	32,331	336,004	586,875	683,889	1,270,764	19,671 97
Grand total, Canadian and United States	25,773	1,716,803	1,618,796	448,917	37,807	309,377	305,982	39,136	591,931	2,514,233	2,554,516	5,068,749	57,118 16

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

APPENDIX A—*Continued.*

No. (A) 18.—COMPARATIVE STATEMENT of Grand Total Freight passed through the undermentioned Canals during the Seasons of Navigation of 1897 and 1898, and the Amount of Tolls collected on the same, including Tolls on Vessels and Passengers.

——	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Amount of Tolls.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
1897.												$ cts.
Welland	6,478	175,480	5,613	4,518	210,831	353,863	1,277	516,232	224,199	1,050,093	1,274,292	188,432 17
St. Lawrence	150,563	757,205	4,491	1,809	128	759	32,979	283,431	188,161	1,043,204	1,231,365	70,718 09
Chambly	8,106	7,747	241,906	174				94,203	250,012	102,124	352,136	23,308 53
Ottawa	81	511,262		51,027					81	562,289	562,370	34,032 28
Rideau	34,244	13,177	9,679	8,393			283	11,500	44,206	33,070	77,276	6,131 35
St. Peter's	18,317	48,770							18,317	48,776	67,093	2,844 70
Trent Valley	29,586	6,555							29,586	6,555	36,141	1,095 55
Murray	5,897	6,525	586					223	6,483	6,748	13,231	655 01
Sault Ste. Marie	22,315	186,547	6,425	122,039	458,183	4,014,692	74,248	62,614	561,171	4,385,892	4,947,063	
Grand total	275,587	1,713,274	268,700	187,960	669,142	4,369,314	108,787	968,203	1,322,216	7,238,751	8,560,967	327,217 78
1898.												
Welland	6,343	106,239	5,561	20,997	210,516	277,023	986	512,412	223,406	916,671	1,140,077	168,598 07
St. Lawrence	172,178	1,028,585	3,374	620	398	962	28,181	204,836	204,131	1,235,003	1,439,134	90,854 93
Chambly	6,389	10,272	161,183					93,492	167,572	103,764	271,336	19,326 06
Ottawa	1,401	492,712		55,873					1,401	548,585	549,986	36,920 62
Rideau	19,910	9,498	7,283	9,106				9,149	27,193	27,753	54,946	4,794 01
St. Peter's	14,427	49,321					742		15,169	49,321	64,490	2,876 32
Trent Valley	21,167	6,509							21,167	6,509	27,676	1,094 63
Murray	5,671	8,407	531				53	881	6,255	9,288	15,543	684 01
Sault Ste. Marie	16,503	108,344	9,321	12,371	618,594	2,147,136	51,653	91,365	696,071	2,359,216	3,055,287	
Grand total	263,989	1,819,887	187,253	98,967	829,508	2,425,121	81,615	912,135	1,362,365	5,256,110	6,618,475	325,148 65

RICHARD DEVLIN,
Compiler of Canal Statistics.

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

APPENDIX A—*Continued.*

No. (A) 19.—STATEMENT of the Number and Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation in 1898.

WELLAND CANAL.

	CANADIAN.				UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
8	3	24	2	16	2	16		
10	2	20	1	10	1	10		
15	1	15			2	30		
20	3	60			3	60	2	40
25	2	50						
30	4	120						
35	6	210						
40			6	240	1	40	1	40
45			3	135				
50	3	150	1	50	1	50		
55			1	55				
60	2	120	1	60	1	60	2	120
70					1	70		
75			3	225	1	75		
80					1	80		
85	1	85						
95					1	95		
100			1	100				
110			1	110			2	220
130					1	130		
135	1	135						
140					1	140		
150			1	150			2	300
155			1	155				
160	1	160						
165	1	165						
175					1	175		
180			2	360				
190	1	190	2	380				
195					1	195		
200			1	200	1	200		
220	3	660						
230			1	230				
245			1	245				
260					1	260	1	260
265	1	265			1	265	2	530
270			1	270				
275							1	275
280					3	840	1	280
285					1	285		
290	1	290	1	290			1	290
295	1	295	1	295				
300					2	600	3	900
305	1	305					1	305
310	1	310			1	310	2	620
315			1	315	1	315	3	945
320			2	640	1	320		
325			1	325				
330			2	660				
335			3	1,005				
355							1	355
360	1	360			1	360		
380			1	380				
385					1	385		
400					1	400		
405	1	405					1	405
415	1	415			1	415		

No. (A) 19.—STATEMENT of the Number and Tonnage of all kinds of Vessels, &c.—*Continued.*

WELLAND CANAL—*Continued.*

	CANADIAN.				UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
435							1	435
440	1	440						
455	1	455	2	910	1	455	1	455
460			1	460				
470							1	470
475							2	950
480	1	480						
485	1	485	2	970	1	490	1	485
490					1	495	2	980
495								
500	2	1,000						
510					1	510		
515							2	1,030
520							1	520
525					1	525		525
530	1	530						
540					2	1,080	2	1,080
545	1	545	2	1,090			1	545
555					1	555	1	555
560	1	560						
575	1	575						
580							2	1,160
585					1	585	4	2,340
590	1	590	1	590	1	590	1	590
595					1	595	1	595
600	1	600	1	600			2	1,200
605					1	605		
615					1	615		
620					1	620	2	1,240
625					2	1,250	1	625
640							3	1,920
645					1	645	1	645
650					2	1,300		
655					1	655		
660					1	660	1	660
665							1	665
675					1	675		
685			1	685			2	1,370
690							1	690
695					1	695	1	695
700					1	700	2	1,400
707							1	707
709					1	709		
710							2	1,420
712							1	712
719			1	719				
722	1	722						
723							1	723
739							1	739
740			1	740			3	2,220
742	1	742						
753							1	753
760					1	760		
769	1	769					1	769
771	1	771						
775					1	775		
784					1	784	1	784
787					1	787	1	787
793							1	793

No. (A) 19.—STATEMENT of the Number and Tonnage of all kinds of Vessels, &c.—*Continued.*

WELLAND CANAL—*Continued.*

CANADIAN.					UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
796					1	796	1	796
800							1	800
802			1	802			1	802
806							1	806
811					1	811		
819							1	819
837					1	839		
838							1	838
841							1	841
849							1	849
870							1	870
873							1	873
882					1	882		
891							1	891
892					1	892		
900					1	900		
904					1	904		
908			1	908				
911					2	1,844		
917					1	917	1	917
918					1	918		
929					1	929		
931							1	931
940					2	1,880		
944					1	944		
950					1	950		
957							1	957
960							1	960
962					1	962		
963					1	963		
966					1	966		
977	1	977						
978					1	978		
989	1	989						
992							1	992
994							1	994
995							1	995
1,013					1	1,013		
1,023							1	1,023
1,024					1	1,024		
1,029					1	1,029		
1,030					1	1,030		
1,034							1	1,034
1,035	1	1,035			1	1,035		
1,041			1	1,041				
1,053					1	1,053		
1,054					1	1,054		
1,068					1	1,068		
1,072					1	1,072		
1,078							1	1,078
1,079					1	1,079		
1,083					1	1,083		
1,085							2	1,270
1,086							1	1,086
1,103					2	2,206		
1,111					3	3,333		
1,118					1	1,118		
1,123					2	2,246		
1,160					1	1,160		

No. (A) 19.—STATEMENT of the Number and Tonnage of all kinds of Vessels, &c.—*Concluded.*

WELLAND CANAL—*Concluded.*

CANADIAN.					UNITED STATES.			
Steam Vessels.			Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
1,172	1	1,172						
1,180							1	1,180
1,203					1	1,203		
1,207					1	1,207	1	1,207
1,212								
1,213							1	1,213
1,330					1	1,230		
1,402							1	1,402
1,425					1	1,425		
1,441					1	1,441		
1,547					1	1,547		
1,548					1	1,548		
1,550					1	1,550		
1,553					2	3,106		
1,565					1	1,565		
Total...	62	18,246	57	16,416	115	80,096	108	66 541

APPENDIX A—*Continued.*

No. (A) 20.—STATEMENT of the Number and Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation in 1898.

ST. LAWRENCE CANALS.

	CANADIAN.				UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
8	29	232	11	88	6	48		
10	9	90	7	70	2	20	1	10
15	10	150	2	30	2	30		
20	11	220	6	120	2	40		
25	13	325	6	150			1	25
30	12	360	10	300				
35	9	315	2	70	2	70		
40	8	320	18	720	3	120	6	240
45	4	180	2	90	1	45		
50	7	350	4	200	1	50		
55	6	330	2	110				
60	4	240	41	2,460	1	60		
65	2	130	1	65				
70	1	70	5	350			2	140
75	3	225	7	525	1	75		
80	2	160	12	960	1	80		
85	4	340	4	340			1	85
90	3	270	6	540			9	810
95			8	760	2	190	44	4,180
100	4	400	24	2,400			61	6,100
105	4	420	6	630			14	1,470
110	2	220	11	1,210			11	1,210
115	3	345	7	805	1	115	11	1,265
120	2	240	8	960	1	120	5	600
125	1	125	3	375			1	125
130	2	260	3	390				
135			8	1,080	1	135		
140	1	140	9	1,260			1	140
145	2	290	9	1,305				
150			20	300				
155	2	310	33	5,115				
160			14	2,240			2	320
165	1	165	13	2,145				
170			6	1,020				
175			5	875				
180			8	1,440				
185			3	555				
190	1	190	4	760				
195			4	780				
200	2	400	2	400				
215			1	215				
220			2	440				
225			1	225				
230	2	460	4	920				
245			1	245				
255			1	255				
260			2	320				
265	1	265	1	265	1	265		
270			2	540				
275			1	275	2	550		
290	1	290	4	1,160			2	580
300			3	900				
305			3	915	1	305		
310			4	1,240				
315			3	945			1	315
320			4	1,280				

No. (A) 20.—STATEMENT of the Number and Tonnage of all kinds of Vessels, &c.—*Continued.*

ST. LAWRENCE CANALS—*Continued.*

	CANADIAN.				UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
325			6	1,950				
330			2	660				
335	2	670	4	1,340				
340	1	340	4	1,360				
345	1	345	3	1,035			1	345
350			1	350				
360			2	720				
365	1	365	4	1,460				
370			4	1,480				
375			2	750	1	375		
390			1	390				
395			2	790				
400							1	400
415			2	830	1	415		
420			1	420				
435			1	435			1	435
440			1	440			1	440
445			1	445				
450			1	450				
455	1	455						
460			1	460				
475	1	475	1	475			1	475
480			1	480				
485			1	485				
490			1	490			1	490
500	1	500	1	500				
508	1	508						
516			2	1,032				
518			1	518				
520			1	520				
541	1	541	1	541				
543			1	543			1	543
544	1	544						
567			1	567				
575	1	575						
577							1	577
578			1	578				
585			1	585			1	585
586	1	586	1	586				
590			1	590				
593	1	593						
597							1	597
599	1	599						
607			1	607				
616							1	616
617					1	617		
636							1	636
639							2	1,278
660							1	660
662							1	662
680			1	680				
681			1	681				
691	1	691					1	691
694					1	694		
696							1	696
700							1	700
712							1	712
715	1	715						
719			1	719				

No. (A) 20.—STATEMENT of the Number and Tonnage of all kinds of Vessels, &c.—*Concluded.*

ST. LAWRENCE CANALS—*Concluded.*

	CANADIAN.				UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
722							1	722
738							1	738
740			1	740				
753							1	753
768							1	768
769			1	769				
771			1	771				
777					1	777		
784					1	784	1	784
793							1	793
801							1	801
803			1	803				
805							1	805
819							1	819
838					1	838		
943							1	943
995							1	995
1,023							1	1,023
1,034							1	1,034
1,072	1	1,072						
1,086							1	1,086
1,103					1	1,103		
1,180							1	1,180
1,207							1	1,207
1,212							1	1,212
1,299	1	1,299						
1,402							1	1,402
Total...	187	19,700	458	74,158	39	7,921	211	46,218

APPENDIX A—*Continued.*

No. (A) 21.—STATEMENT of the Number and Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation in 1898.

RIDEAU, OTTAWA AND CHAMBLY CANALS.

	CANADIAN.				UNITED STATES.			
	Steam Vessels.		Sailing Vessels.		Steam Vessels.		Sailing Vessels.	
Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.	Number.	Total Tonnage.
8	40	320	193	1,544			13	104
10	11	110	12	120	1	10		
15	8	120	4	60	6	90		
20	5	100	8	160			2	40
25	8	200	4	100	1	25		
30	3	90	3	90	1	30		
35	1	35	1	35				
40	9	360	5	200	2	80		
45	1	45						
50	2	100	8	400			1	50
55	3	165	1	55				
60	3	180	2	120				
65	1	65	1	65				
70					1	70	2	140
75	4	300	7	525				
80	1	80	2	160			3	240
85	1	85	3	255			7	595
90	1	90	9	810			23	2,070
95			2	190			111	10,545
100	2	200	5	500			155	15,500
105	2	210	3	315			43	4,515
110			4	440			35	3,850
115			5	575			17	1,955
120	1	120	2	240			9	1,080
125	2	250	3	375			1	125
130	1	130	2	260			1	130
135			3	405				
140	1	140	8	1,120				
145	2	290	10	1,450				
150			15	2,250			1	150
155	1	155	29	4,495				
160			13	2,080				
165			10	1,650				
170			4	680			1	170
175			2	350				
180			1	180				
185			1	185				
190			2	380				
195			1	195				
200	1	200	2	400				
228	1	228						
256			1	156				
262	1	262						
324	1	324						
332	1	332						
397	1	397						
Total	120	5,683	391	23,670	12	305	425	41,259

APPENDIX A—*Concluded.*

No. (A) 22.—STATEMENT showing the Classified Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation in 1898.

WELLAND CANAL.

	CANADIAN.						UNITED STATES.					
Class.	Steam Vessels.	No.	Tonnage.	Class.	Sailing Vessels.	No.	Tonnage.	Class.	Steam Vessels.	No.	Tonnage.	Class.	Sailing Vessels.	No.	Tonnage.
1	250 to 1,172 tons...	28	16,082	1	250 to 1,041 tons...	28	13,685	1	250 to 1,565 tons...	95	78,670	1	250 to 1,402 tons...	99	65,821
2	200 " 249 " ..	3	660	2	200 " 249 " ..	3	675	2	200 " 249 " ..	1	200	2	200 " 249 " ..	..	..
3	150 " 199 " ..	3	515	3	150 " 199 " ..	6	1,055	3	150 " 199 " ..	2	370	3	150 " 199 " ..	2	300
4	100 " 149 " ..	1	135	4	100 " 149 " ..	2	210	4	100 " 149 " ..	2	270	4	100 " 149 " ..	2	220
5	50 " 99 " ..	6	350	5	50 " 99 " ..	6	390	5	50 " 99 " ..	6	430	5	50 " 99 " ..	2	120
6	Under 50 " ..	21	499	6	Under 50 " ..	12	401	6	Under 50 " ..	9	156	6	Under 50 " ..	3	80
	Total.....	62	18,246		Total.....	57	16,416		Total	115	80,096		Total.....	108	66,541

ST. LAWRENCE CANALS.

1	250 to 1,299 tons...	21	11,428	1	250 to 803 tons....	95	38,120	1	250 to 1,103 tons...	12	6,723	1	250 to 1,402 tons...	41	29,498
2	200 " 249 " ..	4	860	2	200 " 249 "	11	2,445	2	200 " 249 " ..	..	.....	2	200 " 250 " ..	..	....
3	150 " 199 " ..	4	665	3	150 " 199 "	110	15,230	3	150 " 199 " ..	..	.....	3	150 " 199 " ..	2	320
4	100 " 149 " ..	21	2,440	4	100 " 149 "	88	10,415	4	100 " 149 " ..	3	370	4	100 " 149 " ..	104	10,910
5	50 " 99 " ..	32	2,115	5	50 " 99 "	90	6,310	5	50 " 99 " ..	6	455	5	50 " 99 " ..	56	5,215
6	Under 50 " ..	105	2,192	6	Under 50 "	64	1,638	6	Under 50 " ..	18	373	6	Under 50 " ..	8	275
	Total.....	187	19,700		Total.....	458	74,158		Total	39	7,921		Total.....	211	46,218

No. (A) 22.—STATEMENT showing the Classified Tonnage of all kinds of Vessels passed through the Canals during the Season of Navigation in 1898—*Concluded.*

RIDEAU, OTTAWA AND CHAMBLY CANALS.

CANADIAN.								UNITED STATES.							
Class.	Steam Vessels.	No.	Tonnage.	Class.	Sailing Vessels.	No.	Tonnage.	Class.	Steam Vessels.	No.	Tonnage.	Class.	Sailing Vessels.	No.	Tonnage.
1	250 to 397 tons	4	1,315	1	250 to 256 tons	1	256	1	250 to — tons	..	.....	1	250 to — tons	.....	.....
2	200 " 249 "	2	428	2	209 " 249 "	2	400	2	200 " 249 "	.....	.....	2	200 " 249 "	.....	.....
3	150 " 199 "	1	155	3	150 " 199 "	78	12,445	3	150 " 199 "	..	.....	3	150 " 199 "	2	320
4	100 " 149 "	11	1,340	4	100 " 149 "	45	5,680	4	100 " 149 "	.....	.....	4	100 " 149 "	261	27,155
5	50 " 99 "	16	1,065	5	50 " 99 "	35	2,580	5	50 " 99 "	1	70	5	50 " 99 "	147	13,640
6	Under 50 "	86	1,380	6	Under 50 "	230	2,309	6	Under 50 "	11	235	6	Under 50 "	15	144
	Total	120	5,683		Total	391	23,670		Total	12	305		Total	425	41,259

DEPARTMENT OF RAILWAYS AND CANALS,
OTTAWA, June 8, 1899.

RICHARD DEVLIN,
Compiler of Canal Statistics.

CONSOLIDATED TARIFF OF TOLLS

CANALS

CONSOLIDATED

Sec. 1.

No. 23.—RATES OF TOLLS ON THE CANALS

WELLAND, ST. LAWRENCE, RIDEAU, OTTAWA, CHAMBLY AND MURRAY CANALS.

(O. C., April 18, 1873.)

The Rates of Tolls are divided into Six Classes, as under, and are per ton, unless otherwise specified.	Welland, Canal, westward.	Welland Canal, eastward.	Lake Erie to Montreal.	St. Lawrence Canals, each way.	Chambly Canal and St. Ours Lock.	Rideau Canal, each way.	Ottawa Canals, and St. Ann's Lock, each way.	Ottawa to St. Johns, each way.	Murray Canal, each way.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Class No. 1.									
Vessel, steam.....per ton	01½	0 01½	0 02½	0 00¾	0 00¾	0 01½	0 00⅝	0 01½	0 3/32
" sail and other.....	0 02¼	0 02¼	0 03¾	0 01½	0 01¼	0 02¼	0 01	0 02⅝	0 1/16
Class No. 2.									
Passengers, 21 years of age and upwards...	0 10	0 10	0 20	0 10	0 05	0 08	0 02½	0 09¾	0 1¼
" under 21 years each.....	0 05	0 05	0 10	0 05	0 02	0 04	0 01¼	0 04½	0 0⅝
Class No. 3.									
Bricks, cement and water lime.....									
Clay, lime and sand.....									
Brimstone.....									
Corn.....									
Flour.....									
Iron, railway.....									
" pig.....									
" all other, including steel (O.C., Feb. 1, 1888).....	15	0 20	0 20	0 15	0 10	0 07	0 06	0 19¾	0 1⅞
Plaster, gypsum.....									
Salt.....									
Salt meats or fish, in barrels or otherwise..									
Agricultural products, vegetable, not enumerated.....									
Agricultural products, animal, not enumerated.....									
Stone, for cutting.....									
Wheat.....									
Class No. 4.									
All other articles not enumerated.....	0 15	0 20	0 20	0 20	0 10	0 26	0 14	0 29	0 2½

REVENUE

TARIFF OF TOLLS

OF THE DOMINION OF CANADA, 1898.

TRENT VALLEY CANALS.

(O. C., July 25, 1888.)

1st Section.	2nd Section.	3rd Section.	4th Section.	Through.	Peterborough to Hastings, each way.
Fenelon Falls to Bobcaygeon.	Bobcaygeon to Buckhorn.	Buckhorn to Burleigh.	Burleigh to Lakefield.	Fenelon Falls to Lakefield.	Tolls Chargeable at Peterborough and Hastings.
Tolls Chargeable at Fenelon Falls.	Tolls Chargeable at Bobcaygeon.	Tolls Chargeable at Buckhorn.	Tolls Chargeable at Burleigh.	Tolls Chargeable at Fenelon Falls.	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
0 00 3/16 0 00 1/4	0 00 3/16 0 00 1/4	0 00 3/16 0 00 1/4	0 00 3/16 0 00 1/4	0 00 3/4 0 01	0 00 3/16 0 00 1/4
01 0 00 1/2	0 01 0 00 1/2	0 01 0 00 1/2	0 01 0 00 1/2	0 04 0 02	0 01 0 00 1/2
	0 01	0 01	0 01	0 04	01
	0 03	0 03	0 03	0 12	0 03

RATES OF TOLLS

WELLAND, ST. LAWRENCE, RIDEAU, OTTAWA, CHAMBLY AND MURRAY CANALS.

The Rates of Tolls are divided into Six Classes, as under, and are per ton, unless otherwise specified.	Welland Canal, westward.	Welland Canal, eastward.	Lake Erie to Montreal.	St. Lawrence Canals, each way.	Chambly Canal and St. Ours Lock, each way.	Rideau Canal, each way.	Ottawa Canals and St. Ann's Lock, each way.	Ottawa to St. Johns, each way.	Murray Canal, each way.
Class No. 5.									
Bark	0 20	0 20	0 20	0 15	0 10	0 07	0 06	0 19½	0 01⅞
Barrels, empty, each	0 02	0 02	0 02	0 02	0 02	0 02	0 01	0 03¾	0 00½
Boat knees, each	0 05	0 05	0 05	0 02	0 02	0 02	0 01	0 03½	0 00½
Floats, per 1,000 lineal feet	1 40	1 40	1 40	1 40	1 20	1 05	0 50	2 05	0 17½
Firewood, per cord, in vessels	0 20	0 20	0 20	0 20	0 10	0 15	0 08	0 23	0 02½
" " rafts	0 25	0 25	0 25	0 25	0 15	0 19	0 09	0 30¼	0 03⅛
Hoops	0 25	0 25	0 25	0 20	0 15	0 15	0 10	0 30	0 02½
Masts and spars, telegraph poles, per ton of 40 cubic feet, in vessels	0 15	0 15	0 15	0 05	0 05	0 08	0 07	0 13¼	0 00⅝
Masts and spars, telegraph poles, per ton of 40 cubic feet, in rafts	0 20	0 20	0 20	0 10	0 10	0 15	0 10	0 22½	0 01¼
Railway ties, in vessels, each	0 01	0 01	0 01	0 00⅓	0 00½	0 00¾	0 00⅝	0 01⅜	0 00⅛
" rafts, each	0 02	0 02	0 02	0 01	0 01	0 02	0 01	0 02¼	0 00⅛
Sawed stuff, boards, plank, scantling and sawed timber, per M feet, board measure, in vessels	0 30	0 30	0 30	0 15	0 10	0 11¼	0 06¾	0 20	0 01⅞
Sawed stuff, boards, plank, scantling and sawed timber, per M feet, board measure, in rafts	0 60	0 60	0 60	0 30	0 20	0 19	0 09	0 36½	0 03¾
Square timber, per M cubic feet, in vessels	3 00	3 00	3 00	1 00	1 00	0 56	0 44	1 69	0 12½
" " rafts	4 50	4 50	4 50	2 00	2 00	1 12	0 63	3 13	0 25
Wagon stuff, woodenware and wood, partly manufactured, per ton of 40 cubic feet	0 40	0 40	0 40	0 40	0 25	0 30	0 20	0 55	0 05
Shingles, per M	0 06	0 06	0 06	0 06	0 04	0 04½	0 02½	0 08	0 00¾
Split posts and fence rails, per M, in vessels	0 40	0 40	0 40	0 40	0 20	0 23	0 12	0 42	0 05
" " " rafts	0 80	0 80	0 80	0 80	0 40	0 38	0 17	0 77	0 10
Saw logs, each, standard log	0 08	0 08	0 08	0 08	0 05	0 06	0 06	0 13	0 01
Staves and headings, barrel, per M	0 40	0 40	0 40	0 20	0 15	0 15	0 10	0 30	0 02½
" " pipe, per M	1 50	1 50	1 50	1 00	1 00	0 75	0 50	1 75	0 12½
" " West India, per M	0 75	0 75	0 75	0 60	0 25	0 45	0 25	0 65	0 07½
" " salt barrel, sawn or cut, per M	0 08	0 08	0 08	0 04	0 03	0 03	0 02	0 06	0 00½
Traverses, per 100 pieces	0 50	0 50	0 50	0 50	0 40	0 38	0 15	0 67½	0 06¾
Hop poles, per 1,000 pieces	2 00	2 00	2 00	2 00	1 50	1 50	0 65	2 65	0 25
Special Class.									
Gypsum, crude (per O.C., 28th Oct., 1892)	0 15	0 05	..	0 05	West ward		..	..	..
Coal	0 20	0 20	0 20	0 15	0 10	0 08	0 05	0 17¾	0 01⅞
Stone, unwrought, corded, and not suitable for cutting, per cord	0 75	0 75	0 75	0 60	0 37½	0 28	0 24	0 77½	0 07½
Kryolite, iron ore or chemical ore	0 05	0 05	0 05	0 05	0 05	0 05	0 05	0 05	0 05
Ice	0 05	0 05	0 05	0 05	0 05	0 05	0 05	0 11	0 05

ON THE CANALS—*Continued.*

TRENT VALLEY CANALS.

1st section.	2nd section.	3rd section.	4th section.	Through.	Peterborough to Hastings, each way.
Fenelon Falls to Bobcaygeon.	Bobcaygeon to Buckhorn.	Buckhorn to Burleigh.	Burleigh to Lakefield.	Fenelon Falls to Lakefield.	
Tolls Chargeable at Fenelon Falls.	Tolls Chargeable at Bobcaygeon.	Tolls Chargeable at Buckhorn.	Tolls Chargeable at Burleigh.	Tolls Chargeable at Fenelon Falls.	Tolls Chargeable at Peterborough and Hastings.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
0 01	0 01	0 01	0 01	0 04	0 01
0 00¼	0 00¼	0 00¼	0 00¼	0 01	0 00¼
0 00¼	0 00¼	0 00¼	0 00¼	0 01	0 00¼
0 13	0 13	0 13	0 13	0 52	0 13
0 03	0 03	0 03	0 03	0 10	0 03
0 04	0 04	0 04	0 04	0 14	0 04
0 02	0 02	0 02	0 02	0 08	0 02
0 02	0 02	0 02	0 02	0 08	0 02
0 01	0 01	0 01	0 01	0 04	0 01
0 00⅛	0 00⅛	0 00⅛	0 00⅛	0 00½	0 00⅛
0 00¼	0 00¼	0 00¼	0 00¼	0 01	0 00¼
0 03	0 03	0 03	0 03	0 10	0 03
0 04	0 04	0 04	0 04	0 14	0 04
0 07	0 07	0 07	0 07	0 28	0 07
0 14	0 14	0 14	0 14	0 56	0 14
0 04	0 04	0 04	0 04	0 16	0 04
0 00¾	0 00¾	0 00¾	0 00¾	0 03	0 00¾
0 03	0 03	0 03	0 03	0 12	0 03
0 05	0 05	0 05	0 05	0 20	0 05
0 00¾	0 00¾	0 00¾	0 00¾	0 03	0 00¾
0 02	0 02	0 02	0 02	0 08	0 02
0 10	0 10	0 10	0 10	0 40	0 10
0 05½	0 05½	0 05½	0 05½	0 22	0 05½
0 00½	0 00½	0 00½	0 00½	0 02	0 00½
0 05	0 05	0 05	0 05	0 20	0 05
0 20	0 20	0 20	0 20	0 80	0 20
Free.	Free.	Free.	Free.	Free.	Free.
0 01	0 01	0 01	0 01	0 04	0 01
0 03½	0 03½	0 03½	0 03½	0 14	0 03½
0 00¾	0 00¾	0 00¾	0 00¾	0 03	0 00¾
Free.	Free.	Free.	Free.	Free.	Free.

St. Peter's Canal.

Sec. **2.** On each and every vessel passing through the said canal, two cents per ton on the vessel and one cent per ton on the freight, each way. O. C. June 23, 1883. Con. O. C. Oct. 26, 1889, sec. 109.

SPECIAL REGULATIONS RELATING TO TOLLS ON SOME OF THE CANALS.

Sec. **3.** Coal may pass up all canals, except the Welland Canal, free of toll. O. C. June 6, 1869. Con. O. C. Oct. 26, 1889, sec. 83.

Sec. **4.** Logs, lumber or other produce may pass free of toll down the Chippawa Creek, between the Aqueduct and Port Robinson. O. C. May 18, 1863. Con. O. C. Oct. 26, 1889, sec. 84.

Sec. **5.** (*a*) In view of the dam constructed across the Ottawa River at Carillon whereby the passage of the rapids at that point through the river is rendered difficult and at times impracticable, it appears necessary, owing to the continued difficulty attending passage through the slide built in the dam, that the canal should be used by rafts, and until otherwise ordered, free passage be given to rafts through the Carillon Canal, subject to such regulations as the Department of Railways and Canals may find necessary in the interest of the traffic of the canal to adopt. O. C. July 6, 1888.

Sec. **5.** (*b.*) "Save in cases for which special permission may be given the Grenville Canal is closed to the passage of rafts, or any portion of a raft of any kind whatever." O. C. June 27, 1890.

Sault Ste. Marie Canal

Sec. **6.** All vessels and freight shall be permitted to pass through the Sault Ste. Marie Canal free of toll upon such vessels and freight, until otherwise ordered.

Sec. **7.** (*a.*) All up bound goods on which full tolls have been paid for passage through the whole of the St Lawrence Canals, or for passage through the Lachine Canal, the Ottawa and Rideau Canals or for passage through the Ottawa and Rideau Canals shall be entitled to pass free through the Welland Canal, or any portion thereof, and tolls paid for passage through the Chambly Canal, or goods thereafter so becoming entitled to the above privilege, shall be refunded at Montreal. All down bound goods on which full tolls have been paid for passage through the Welland Canal shall be entitled to pass free through any or all of the above mentioned Canals, or through any portion thereof. O. C. May 17, 1897.

(*b.*) All articles, goods or merchandise, not enumerated above, shall be charged to class No. 4. O. C. April 18, 1873. Con. O. C. Oct. 26, 1889, sec. 86.

Sec. **8.** Goods shipped to any port west of the St. Lawrence Canals, tolls upon which have already been paid for passage through such canals, may be re-shipped from such port and be passed through the Welland Canal free of tolls, in the same way as if they had been shipped through direct in the first instance; and goods going eastward, having paid Welland Canal tolls, may be transhipped at any port on Lake Ontario, and thereafter pass free through the St. Lawrence Canals, as if they had been shipped through direct in the first instance. O. C. June 23, 1883. Con. O. C. Oct. 26, 1889, sec. 87.

Sec. **9.** Iron ore, kryolite or chemical ore, may pass through one section, or through all the canal sections aforesaid, for 5 cents per ton.

Sec. **10.** No let-passes shall be issued to steam tugs or other small vessels for less than 25 cents, as a minimum charge; but such vessels, not carrying freight or passengers, can obtain, on payment of $30 a season "Let-Pass," which will pass them up and down the canals as often as desired. O. C. April 18, 1873. Con. O. C. Oct. 26, 1889, sec. 86.

Sec. **11.** All vessels owned or chartered by persons having contracts for the enlargements or repair of any of the canals, and employed by them in removing earth or carrying materials necessary for the prosecution of such works, shall be entitled to pass through such canals free of toll upon such vessel and cargo. O. C. April 22, 1884. Con. O. C. Oct. 26, 1889, sec. 35.

Sec. **12.** Government dredges and scows shall be permitted to pass through the canals free of tolls, but that such dredges and scows shall not be so passed as to interfere with the passage of other vessels of any kind whatever. O. C. May 18, 1891.

HARBOUR DUES.

Sec. **13.** Vessels receiving or discharging freight at the premises of the Welland Railway, at Ports Colborne or Dalhousie, are to be free from harbour dues; but all other vessels discharging or receiving cargo at Port Dalhousie, Port Colborne or Port Maitland, shall pay on every ton of freight so received or discharged, two cents. O. C. April 18, 1873. Con. O. C. Oct. 26, 1889.

WAY RATES.

Sec. 14. The following way rates are to be levied on vessels and property passing the several subdivisions of the Canals:—

Welland Canal.

	Rate.
1. From Port Maitland, Dunnville and Port Colborne to Port Robinson or Allanburg, not passing the lock, each way	½
2. From Chippawa Cut, or any part thereof, to Dunnville, Port Maitland or Port Colborne	⅝
3. From Dunnville to Port Colborne	½
4. From Thorold to St. Catharines or Port Dalhousie	½
5. From Maitland, Dunnville, Colborne or Port Robinson to Marshville and intermediate places	⅜
6. From Marshville or intermediate places to Port Maitland, Dunnville, Port Colborne and Port Robinson	⅜
7. From Port Robinson to Allanburg or Thorold	⅜
8. From Port Robinson to St. Catharines or Port Dalhousie	½
9. From St. Catharines to Port Dalhousie	⅛
10. From Dunnville to Maitland	¼
11. From Port Robinson through the Lock and Chippawa Cut	¼
12. Form Port Colborne to Port Maitland	½
13. From Chippawa Cut through Lock to Port Robinson	¼
14. From Colborne, Dunnville, Maitland and Marshville to Thorold	⅝
15. From Colborne, Dunnville, Maitland and Marshville to St. Catharines	⅞
16. Through the Chippawa Cut only	⅛
17. Through the Port Robinson Lock only	⅛

St. Lawrence Canals.

Sec. 15. The navigation is divided into four sections, viz., Cardinal, Cornwall, Beauharnois and Lachine. Tolls are to be levied on all vessels and property in proportion to the number of sections passed through.

Chambly Canal.

	Rate.
Sec. 16. Vessels and property passing from Sorel to Chambly, to pay	⅛
Vessels and property passing from Chambly to St. Johns, to pay	⅛

Ottawa Canals.

Sec. 17. The navigation is divided into three sections, viz., Grenville, Carillon and Ste. Anne's. Tolls are to be levied on all vessels and property in proportion to the number of sections passed through.

Rideau Canal.

Sec. 18. The navigation of this canal is divided into three sections, viz., Ottawa, Smith's Falls and Kingston Mills. Vessels and freight passing one section are to be charged one-third; two sections, two-thirds. O.C. April 18, 1873. Con. O.C. Oct. 26, 1889, secs. 77, 78, 79, 80 and 81.—

Tay Canal to be part of the Rideau Canal and the following rates of tolls to be levied upon the said Tay Branch of the Rideau Canal system, viz.:—

Perth to Smith's Falls, 1 section, or one-third of Rideau Canal rates, each way.

Perth to Kingston, 2 sections, or two-thirds Rideau Canal rates, each way.

Perth to Ottawa Basin, 2 sections, or two-thirds Rideau Canal rates, each way.

Perth to River Ottawa, 3 sections, full Rideau Canal rates, each way. O.C. Sept. 27, 1890.

General.

Sec. 19. (*a.*) Any fraction of a ton freight is to be charged one ton, and portions of sections are to be charged as a whole section on all the above canals.

(*b.*) The passing of saw-logs or other lumber through any of the canals, or sections thereof, shall be at all times governed by the regulations for their management. O.C. April 18, 1873. Con. O.C. Oct. 26, 1889, sec. 82.

Sec. 20.—STANDARD FOR ESTIMATING WEIGHTS, FOR CANAL TOLLS.

—	Tons.	—	Tons.
2,000 lbs. avoirdupois	1	Stone, 12 cubic feet	1
Per M. is per thousand feet	.....	Stone, 1 cord	7½
Per mille is per thousand pieces	.....	Whisky, 4 barrels or 215 gallons	1
Green fruit, 9 barrels are	1	Empty barrels, 10	1
Ashes, 3 barrels are	1	Barrel hoops, 10 mille	1
Bark, 4 cords	1	Board and other sawed lumber, 600 feet board measure	1
Beef, 7 barrels	1	Boat knees, 4	1
Biscuit and crackers, 9 barrels	1	Firewood, 1 cord	3
Bricks, common, 1,000	2	Hop poles, 60 or cubic feet	1
Butter, 22 kegs or 7 barrels	1	Shingles, 12 M. or bundles	1
Cattle, 3	1	Split posts and fence rails, 1 mille	1
Cement and water lime, 7 barrels	1	Staves and headings, pipe, 1 mille	8
Fire-bricks, 1,000	3	" " W. India, 1 mille	4
Fish, 7 barrels	1	" " barrel, 1 mille	2½
Flour, 9 barrels	1	" " salt barrel, 1 mille	0½
Gypsum and manganese, 6 barrels	1	Saw-logs, standard, 1	0⅔
Horses, 2	1	Square timber, 50 cubic feet	1
Lard and tallow, 7 barrels or 22 kegs	1	Telegraph poles, 10, or 40 cubic feet	1
Liquors and spirits, 215 gallons	1	Masts and spars, 40 cubic feet	1
Liquids, all others, 215 gallons	1	Railroad ties, 16, or 50 cubic feet	1
Nuts, 9 barrels	1	All other woodenware, or partly manufactured wood, 40 cubic feet as per tariff	1
Systers, 6 barrels	1	Traverses, 40 cubic feet, or 5 pieces	1
Pork, 7 barrels	1	Floats, 50 lineal feet	1
Salt, 7 barrels	1		
Seeds, 9 barrels	1		
Sheep, 20	1		

NOTE.—By the Weights and Measures Act, chapter 104 of the Revised Statutes of Canada, section 14, all the following named articles are to be estimated by the cental of 100 lbs.

The weight equivalent to a bushel being as follows:—Wheat, 60 lbs.; Indian corn, 56 lbs.; rye, 56 lbs.; pease, 60 lbs.; barley, 48 lbs.; oats, 34 lbs.; beans, 60 lbs.; clover seed, 60 lbs.; timothy seed, 48 lbs.; buckwheat, 48 lbs.; flax seed, 50 lbs.; blue grass seed, 14 lbs.; hemp seed, 44 lbs.; malt, 36 lbs.; castor beans, 40 lbs.; potatoes, turnips, carrots, parsnips, beets and onions, 60 lbs.; bituminous coal, 70 lbs.

TOLLS AT SHEDS AT LACHINE CANAL BASIN.

Sec. 21. The following tolls shall be levied upon property stored at the sheds at the Lachine Canal Basin:—

			Cents.
Wheat and other grain,	per week,	per bushel	1
Meal	"	per barrel	4
Pork, beef, butter and lard	"	"	5
Muscovado sugar	"	per hhd., 10 cents; per brl	5
Liquors	"	per pipe, 15 cents; per pun	12
		per hhd., 10 cents; per qr. cask	7
Iron, bars	"	per ton	24
Iron, pig	"	"	12
Salt, except at the St. Gabriel sheds	"	per 100 minots	36
Salt at the St. Gabriel sheds, Montreal, after the first 48 hours	"	per bag	½
Bales, crates, cases, &c.	"	per ton weight or measurement	24
Coals	"	per chaldron	12

Sec. 22. (*a.*) No charge shall be made for property stored in the sheds of the Lachine Canal Basin for the first forty-eight hours, after which period, except in the case of flour, the foregoing rate of storage for the use of the sheds are to be raised, levied and collected.

(*b.*) Articles unenumerated are to be charged according to the above rates as nearly as the same can be computed.

(*c.*) All property stored in the sheds remaining after the first forty-eight hours will be liable to one week's storage, although it should only have been stored for a portion of the same, and so on for each succeeding week.

(*d.*) The labour of receiving property into the sheds and delivering the same shall be at the expense of and be furnished by the owners of the property or their agents.

(*e.*) All property stored in these sheds shall be at the risk of the proprietor from damage by fire or otherwise.

(*f.*) All dues for storage shall be paid before the removal of the property. O. C. August 21, 1846, October 28, 1846. Con. O. C. Oct. 26, 1889, secs. 90 and 91.

Flour.

Sec. 23. (*a.*) Flour shall be allowed to remain in the sheds for two whole days free of charge.

(*b.*) If kept there beyond two days or 48 hours, such flour shall be liable to a charge of one cent per day per barrel for the first four days after the expiration of the 48 hours of the exemption.

(*c.*) Should the flour be kept in the sheds beyond four days at one cent per day per barrel, it shall be liable to pay two cents per day per barrel for every day subsequent to the expiration of such four days.

(*d.*) Any part of a day shall be considered as one day. O. C. May 31, 1856. Con. O. C. Oct. 26, 1889, sec. 92.

WHARFAGE DUES ON COAL FOR LOCAL CONSUMPTION IN MONTREAL.

Sec. 24. Coal for local consumption in Montreal, landed on canal property between Montreal Harbour and Côte St. Paul, from vessels other than sea-going, and entering the Lachine Canal from Montreal Harbour, shall be charged wharfage dues at the rate of five cents a ton.

Coal screening shall be charged 3 cents a ton. Con. O. C. Oct. 26, 1889, sec. 93. O. C. May, 18, 1892.

CHARGES FOR WHARFAGE ON FIREWOOD ON WHARVES AND BANKS OF LACHINE CANAL.

Sec. 25. The following rates of tolls shall be collected as herein mentioned that is to say:—

(*a.*) Firewood landed on wharves or banks of the Lachine Canal, or in boats, barges or other craft occupying any of the basins between Wellington Street Bridge and Lock No. 3, four cents per cord, and for every day the wood is allowed to remain in either the canal or basin, or on the wharfs or banks after the first five days, an additional charge of four cents per cord. O. C. August 7, 1860. Con. O. C. Oct. 26, 1889, sec. 94.

(*b.*) The clause next preceding shall not only apply to the rates of toll to be collected on firewood on wharfs at Lachine and the Lachine Canal and basin, but are also extended and made applicable to the banks and grounds at Côte St. Paul and at Lachine. O. C. Jan. 27, 1862. Con. O. C. 1889, sec. 94.

CANAL BASINS IN MONTREAL PART OF MONTREAL HARBOUR.

Sec. 26. Whereas under existing regulations for the collection of canal tolls, eastern bound vessels having paid the charges one way in full through the Welland Canal are chargeable one Section Canal Toll if re-entering the Lachine Canal;

And whereas vessels loaded with grain destined for the Montreal Harbour frequently unload only part of their cargoes on board sea-going vessels in the harbour, and re-enter the Lachine Canal for the purpose of unloading the balance of their cargoes either in elevators or mills located along the canal basins;

It is ordered that the Lachine Canal basins, within the Montreal city limits, be considered as part of the Montreal Harbour, in so far only as regards the collection of tolls on the class of vessels above referred to, which re-enter that portion of the canal for the purpose of unloading the balance of their cargoes, but that the same shall not apply any further, as in the event of vessels returning to the harbour to take cargo, in which case the usual toll shall be charged against them on passing out of the canal a second time into the harbour. O. C. Aug. 8, 1878. Con. O. C. Oct. 26, 1889, sec. 95.

PHOSPHATES.

Sec. 27. Whereas vessels laden with grain for delivery in Montreal Harbour frequently carry also deck loads of phosphates, and being compelled to proceed at once to the harbour for the discharge of the grain, they pay tolls through to that point, subsequently re-entering the Lachine Canal for the storage of the phosphates, and in accordance with the existing regulations, paying canal dues a second time for such re-entry;

It is ordered that the Lachine Canal basins, within the Montreal city limits, be considered as part of the Montreal Harbour, for the purpose of the unloading of phosphates carried by vessels in addition to their grain cargoes as described in this section; it being, however, provided that in the event of their returning to the harbour to take cargo, the usual tolls shall be charged against such vessels on their passing out of the canal a second time. O. C. July 12, 1881. Con. O. C. Oct. 26, 1889, sec. 96.

WHARFAGE DUES IN ALL BASINS OF THE LACHINE CANAL ON SEA-GOING VESSELS.

Sec. 28. The Montreal Harbour Commissioners shall be allowed to retain the right of levying dues in respect of the old lower basin of the Lachine Canal, but the Government shall retain full control of the new works and basin of said canal and of the revenue that may be derived from their use.

All property delivered or received by sea-going vessels in the Lachine Canal basins at Montreal (except the old lower basin) shall be charged wharfage dues as follows:—

All goods, wares and merchandise not elsewhere specified	25 cents per ton.
Hay, straw, pig and scrap iron, pot and pearl ashes	20 "
Apples, crates and their contents, flour and meal, fish, meats, pitch, potatoes, tar, horses, neat cattle, sheep and swine	15 "
Ballast, clay, fire-bricks, gypsum, lime, marble, phosphate, sand, salt	10 "
Coal and coke, grain and seeds of all kinds	7½ "
Special—Bricks, 10 cents per 1,000; cordwood, 5 cents per cord; lumber, 10 cents per 1,000 feet, board measure.	
Bullion specie	Free.
Coal screenings	3 "

Each entry shall pay not less than 5 cents.

All property landed on the canal wharfs for re-shipment, or transhipped in canal waters, shall pay one wharfage only.

Lumber upon which tolls have been paid for passage down the Lachine Canal, and which is reshipped from the wharfs or vessels into sea-going vessels, shall pay wharfage dues equal to one section of canal tolls, viz., 3¾ cents per 1,000 feet board measure. O.C. Jan. 26, 1883. Con. O.C. Oct. 26, 1889, secs. 98, 99, 100 and 101. O.C. May 18, 1892.

Sec. **29.**—*Standard for Estimating Weights.*

Ashes, pot or pearl	3 brls. to 1 ton.
Apples, flour, meal, potatoes	9 " 1 "
Fish, meat, pitch, tar	7 " 1 "
Horses	2 to 1 ton.
Neat cattle	3 to 1 "
Sheep	15 to 1 "
Swine	10 to 1 "

O.C. April 1, 1881. Con. O.C. Oct. 26, 1889, sec. 102.

TOLLS ON FLOATED TIMBER, ETC., ENTERING THE BASIN AT LACHINE.

Sec. **30.** The following rates of tolls shall be collected on floated timber, lumber and firewood entering the basin at Lachine and Lachine Canal :—

Kinds of Timber.	For receiving Timber, &c., to include use of Basin and Wharf for one Month.	For each succeeding month during the Season of Navigation.	For Wintering in Basin or on Wharf.
	Cents.	Cents.	Cents.
Timber, square or round, of all kinds, above 12 x 12, per M cubic feet	25	20	35
Timber, round or flatted, of all kinds, under 12 x 12, per M lineal feet	20	15	30
Planks and boards to include all kinds of sawed lumber in rafts, per M feet, board measure	3	2	3
Saw logs, 12 feet long, if longer in same proportion per log	1	½	2
Floats, per 100	10	5	10
Traverses, per 100	10	5	10
Fence posts and rails, per M	10	5	10
Staves, barrel, per M	8	4	8
" pipe "	8	4	8
" West India, per M	8	4	8
Firewood on bank of canal between Lock No. 3 and Lock No. 5, and also on wharves in canal basin at Lachine	3	3	3

Note.

Sec. **31.** (*a.*) No allowance shall be made for fractional parts of a month or winter season.

(*b.*) The firewood shall be corded across the bank while being delivered from the boat in such manner and at such points as the superintending engineer may direct.

(*c.*) The rates on timber to take effect upon the completion of the booms in Lachine Canal. O.C. June 8, 1860. Con. O.C. Oct. 26, 1889, secs. 103 and 104.

CHARGES ON VESSELS WINTERING IN LACHINE CANAL.

Sec. **32.** The following rates per ton shall be charged for wintering vessels in the Lachine Canal, viz. :—For each boat, barge, scow or other vessel of ten tons measurement or under, seventy cents per vessel for the entire winter, and every ten tons above the first ten, an additional rate of eight cents. O.C. Aug. 22, 1879. Con. O.C. Oct. 26, 1889, sec. 97.

CHARGES FOR WINTERING VESSELS IN RIDEAU CANAL.

Sec. **33.** The winterage dues for vessels wintering in the canal basin, at Ottawa, or other points along the line of the Rideau Canal, shall be as follows :—

In canal basin, Ottawa, steamers per season	$ 8 00
" " barges "	4 00
Inside locks " steamers "	50 00
" other stations " "	15 00

If the Minister of Railways and Canals deems it advisable, he is authorized to take security from parties wintering their vessels in locks against damage to Government property by fire. O.C. March 19, 1887. Con. O.C. Oct. 26, 1889, sec. 105.

CHARGES FOR WINTERING VESSELS IN THE OTTAWA RIVER CANALS AND LOCKS.

Sec. 34. The charge for vessels wintering on the Ottawa River canals and locks, and the same is hereby prescribed accordingly, namely :

In Carillon Canal, steamers per season	$ 8 00
" barges "	4 00
Grenville Canal, steamers "	8 00
" barges "	4 00
Inside Locks, Ste. Anne, Carillon and Grenville Canals, steamers per season	25 00
" Culbute Canal, per season	15 00

Such security against damage by fire to be taken by way of bond as, in the opinion of the Minister of Railways and Canals, may seem desirable. O.C. Oct. 14, 1892.

Sec. 35. No charges to be made for vessels wintering outside the locks of any government canal. O.C. Dec. 12, 1889.

CHARGES FOR REPAIRING VESSELS ON THE BANKS OF CANALS.

Sec. 36. (*a.*) Persons using the banks of the Lachine Canal as a site for the repair of their vessels shall be subject to a charge of four dollars, payable in advance, for each vessel; the period during which such site may be occupied under any one payment being limited to six months, and permission for repairing being first obtained from the proper officer, in conformity with the existing canal regulations.

(*b.*) In the event of failure to remove vessels so occupying the banks at the expiration of the period named, no fresh permits having been obtained, such vessels may be sold under the 16th section of the canal regulations. O.C. March 5, 1880. Con. O.C. Oct. 26, 1889, sec. 106.

Sec. 37. Rules with respect to the repairing of vessels on the banks of the Lachine Canal, the Beauharnois and the Chambly :—

(*a.*) Repairs shall only be executed at such points as may be indicated and approved by the superintending engineer.

(*b.*) For each vessel hauled up or beached for repairs, a charge of one dollar, over and above all other charges, shall be made, carrying the privilege of remaining one month, a further sum of one dollar being charged for each additional month, or fraction of a month, the vessel may remain.

(*c.*) In cases, however, where a vessel hauled up for repairs upon the canal bank remains there throughout the winter, a charge of four dollars only shall be made (in addition to the ordinary winterage dues), the period covered being from the 1st of November to the 1st of June, inclusive.

(*d.*) Any vessel remaining on the canal bank after having wintered thereon shall be charged at the rate of one dollar a month or fraction of a month of her subsequent stay.

(*e.*) Any vessel remaining more than one year on the bank of the canal shall for such time as she may remain in excess of that period pay at the rate of two dollars a month or fraction of a month throughout the whole year.

(*f.*) All charges shall be payable at the collector's office in advance on the first day of each month.

(*g.*) These rules shall be understood as applying to all cases where the canal bank is used in any manner for the repairs of vessels, whether such vessels are actually hauled up or not. O. C. August 6, 1881. Con. O. C. Oct. 26, 1889, sec. 107.

DRY DOCK CHARGES.

Trent Valley Canal.

Sec. 38. The following tolls and dues shall be charged for the use of the dry dock at Bobcaygeon, and of any of the locks on the Trent Valley Canal, during the winter or other shorter period :—

For Vessels	Wintering.	Per day.	Per week.
Over 15 tons	$30 00	$4 00	$12 00
15 tons and under	20 00	3 00	10 00

(O. C. Oct. 31, 1890.)

Rideau Canal.

Sec. 39. The following tariff of tolls and regulations shall be, and the same are hereby established for the use of the dry dock on the Rideau Canal at Ottawa :—

(1) Steamers entering dock	$ 8 00
Each day or portion of a day after day of entrance	2 50
(2) Barges entering dock	5 00
Each day or portion of a day after day of entrance	2 50
(3) Steam yachts or launches	5 00
Each day or portion of a day after day of entrance	2 50
(4) Boats wintering in the dry dock from the close to the opening of navigation	50 00
For every day such boat remains in the dock after the opening of navigation	8 00

(5) No vessel of any class shall be in the dock over six days after notice is given in writing by the lockmaster that the dock is required for another vessel unless a satisfactory agreement between all parties interested is arrived at.

(6) All entrances and discharge of vessels are covered by entrance fee.

(7) All drying off of vessels of all classes in the locks at Ottawa or Hartwell's during the season of navigation is prohibited unless for special reasons.

The owners of vessels of all classes to render the required assistance to open and close the gate under the supervision of the superintending engineer.

Vessel owners to supply all blocks, &c., to shove their boats up to make the necessary repairs and all refuse to be properly cleared out to the entire satisfaction of the lockmaster before leaving the dock.

(O. C. Dec. 28, 1893.)

Sec. **40.** The use of horses for towage purposes between the lower entrance of the Cornwall Canal and lock No. 20, be prohibited during the works of enlargement of that portion of the Cornwall Canal.

(O.C. Aug. 20, 1890.)

Sec. **41.** As the prohibition of the use of horses for towing purposes, between the lower entrance of the Cornwall Canal and Lock No. 20 during the progress of the works of canal enlargement, has entailed the use of tugs and consequently expenses to the parties concerned, that all tugs, used solely for the purposes of towing on the section in question, be permitted to pass free of toll, up and down the canal between the lower entrance of the canal and lock No. 20, until the completion of the enlargement of the works on that section. (O. C. Sept. 27, 1890.)

SPECIAL RATES FOR 1898 ONLY.

Sec. **42.** For season of 1898 the Canal Tolls for the passage of the following food products:—wheat, Indian corn, pease, barley, rye, oats, flax seed and buckwheat, for through passage eastward through the Welland Canal, be ten cents per ton, and for through passage eastward through the St. Lawrence Canals only, ten cents per ton; payment of the said toll of ten cents per ton through the Welland Canal to entitle these products to free passage through the St. Lawrence Canals, or any portion thereof; further, in the case of any of the above-mentioned products brought down from Parry Sound over the line of the Canada Atlantic Railway Company to their elevator at Coteau Landing, the through rate thereon from that point to Montreal to be five cents per ton. (O. C. June 1, 1898.)

Sec. **43.** *(a.)* That for the current season of navigation of 1898, there shall be allowed in the case of steamships specially chartered for the conveyance of excursion parties, going and coming the same day, a reduction of one-half of the usual passenger tolls for passage through the Government canals, it being distinctly understood that no freight is to be carried by the said steamers on such excursions. (O. C. June 20, 1898.)

Sec. **43.** *(b.)* Whereas the Canal Tolls payable for passage through the Welland and St. Lawrence Canals of barrel staves and headings, are 40 cents per 1,000 in the case of ordinary materials, such as those for sugar and flour barrels; while in the case of staves and headings for salt barrels the charge is 8 cents per 1,000 only.

And whereas application is made to have this distinction removed on the ground that sugar and flour cooperage is of the same weight as salt cooperage.

His Excellency in virtue of the provisions of chapter 38 of the Revised Statutes of Canada, intituled "An Act respecting the Department of Railways and Canals," and by and with the advice of the Queen's Privy Council for Canada, is pleased to order that Class 5 of the existing Tariff of tolls for passage through the Canals of the Dominion, established by the Order in Council of the 25th March, 1895, shall be and the same is hereby amended to the effect, and to that effect only, of removing the distinction between ordinary and salt barrel staves and headings, and making the tolls payable for these articles the same, namely, those at present charged on salt barrel staves and headings, on all the Canals of the Dominion. (O. C. May 28, 1897.)

SPECIAL RATES ON SAND AND STONE.

Sec. **43.** *(c.)* On the recommendation of the Acting Minister of Railways and Canals, the rate of tolls on sand and stone used in the construction of the bridge being built at Cornwall by the Ottawa and New York Railway was reduced from 15 and 20 cents to 7½ and 10 cents respectively. (O. C. August 27, 1898.)

PART VI

RAILWAY STATISTICS

RAILWAY STATISTICS

OF THE

DOMINION OF CANADA

FOR THE YEAR ENDED JUNE 30, 1899

Compiled by Mr. Thomas Ridout, C.E., from sworn Returns furnished by the several Railway Companies

COLLINGWOOD SCHREIBER,

Deputy Minister and Chief Engineer of Railways and Canals.

TABLE showing the growth of the Railways from year to year, since the opening of the first line in 1836.

Year.	Miles in Operation.	Year.	Miles in Operation.
1835	0	1868	2,278
1836	16	1869	2,524
1837	16	1870	2,617
1838	16	1871	2,695
1839	16	1872	2,899
1840	16	1873	3,613
1841	16	1874	3,832
1842	16	1875	4,331
1843	16	1876	4,804
1844	16	1877	5,218
1845	16	1878	5,782
1846	16	1879	6,126
1847	54	1880	6,858
1848	54	1881	7,194
1849	54	1882	7,331
1850	66	1883	8,697
1851	159	1884	9,577
1852	205	1885	10,273
1853	506	1886	10,773
1854	764	1887	11,793
1855	877	1888	12,184
1856	1,414	1889	12,585
1857	1,444	1890	13,151
1858	1,863	1891	13,838
1859	1,994	1892	14,564
1860	2,065	1893	15,005
1861	2,146	1894	15,627
1862	2,189	1895	15,977
1863	2,189	1896	16,270
1864	2,189	1897	16,550
1865	2,240	1898	16,870
1866	2,278	1899	17,250
1867	2,278		

THE SUMMARY of Tables for the Years ended June 30, 1898, and June 30, 1899.

	Comparative Statement.	
	June 30, 1898.	June 30, 1899.
Miles of railway completed (track laid)	16,870	17,358
" sidings	2,248	2,402
" iron rails in main line	248	178
" steel "	16,622	17,180
" " " double track	553	562
Capital paid (including the four following items)	$ 941,297,037	$ 964,699,784
Government (Dominion and Provincial) bonuses paid	$ 161,136,218	$ 165,534,900
" " loans paid	$ 21,569,149	$ 20,468,245
" (Provincial only) subscription to shares paid	$ 300,000	$ 300,000
Municipal aid paid	$ 15,660,668	$ 15,740,668
Miles in operation	16,718	17,250
Gross earnings	$ 59,715,105	$ 62,243,784
Working expenses	$ 39,137,549	$ 40,706,217
Net earnings	$ 20,577,556	$ 21,537,567
Passengers carried	18,444,049	19,133,365
Freight carried (tons)	28,785,903	31,211,753
Train mileage	50,688,283	52,215,207
Passengers killed	5	20
Number of elevators	108	163
" guarded level crossings—public roads	171	197
" unguarded " "	11,646	11,813
" overhead bridges	432	430
" level crossings of other railways	243	276
" junctions with other railways	349	347
" " branch lines	227	234
" engines owned	2,026	2,142
" " hired	86	75
" sleeper and parlour cars owned	188	231
" " " hired	38	37
" first class cars owned	1,176	1,170
" " hired	38	69
" second class and immigrant cars owned	623	621
" " " hired	5	19
" baggage, mail and express cars owned	647	639
" " " hired	21	29
" refrigerator cars owned	398	665
" " hired	122	122
" cattle and box freight cars owned	35,459	38,039
" " " hired	3,361	3,112
" platform cars owned	15,864	15,434
" " hired	442	377
" coal and dump cars owned	5,181	5,540
" " hired	.....	42
" conductors' vans owned	1,017	1,008
" " hired	7	5
" tool cars owned	202	*910
" " hired	3	8
" snow ploughs owned	292	302
" " hired	2	2
" flangers owned	154	186
" " hired	1	1

* Including steam shovels, pile-drivers, water tank cars, store cars, gravel cars, boarding cars, &c.

NOMINAL Capital paid up to the June 30, 1899.

——	Miles constructed.	Amount.	Per mile.	Remarks.
		$ cts.	$ cts.	
Ordinary share capital	17,358	270,325,495 67	15,573 54	
Preference "	17,358	120,974,864 39	6,969 40	
Bonded debt	17,358	362,053,494 55	20,858 02	
Aid from Dominion Government	17,358	155,646,419 39	8,966 84	
" Ontario "	6,798	7,281,129 63	1,071 07	Equal to an average of $1,766.14 per mile on the total mileage.
" Quebec "	3,345	15,646,789 10	4,677 66	
" New Brunswick "	1,434	4,506,040 71	3,142 29	
" Nova Scotia "	909	1,583,108 53	1,741 60	
" Prince Edward Island Government	210	.....	.....	
" Manitoba "	1,603	1,602,157 60	999 47	
" British Columbia "	1,129	37,500 00	33 22	
" North-west Territories	1,930	.....	.....	
" Municipalities in Ontario	6,798	11,995,164 37	1,764 51	Equal to an average of $806.83 per mile on the total mileage.
" " Quebec	3,345	2,569,218 62	768 08	
" " New Brunswick	1,434	336,500 00	234 66	
" " Nova Scotia	909	181,685 00	199 87	
" " Prince Edward Island	210	.....	.....	
" " Manitoba	1,603	595,600 60	371 55	
" " British Columbia	1,129	37,500 00	33 22	
" " North-west Territories	1,930	25,000 00	12 95	
Capital from other sources	17,358	9,302,116 93	535 90	
Total capital paid	17,358	964,699,784 49	55,576 67	

Government and Municipal Loans, Bonuses, &c., promised to Railways completed and under construction up to June 30, 1899.

Dominion Government	$ 161,708,395 06
Ontario "	7,499,180 63
Quebec "	17,170,780 42
New Brunswick "	4,530,540 71
Nova Scotia "	2,280,116 53
Manitoba "	1,771,177 50
British Columbia Government	37,500 00
Municipalities in Ontario	12,613,156 37
" Quebec	4,340,574 00
" New Brunswick	361,500 00
" Nova Scotia	291,685 00
" Manitoba	595,600 00
" British Columbia	37,500 00
North-west Territories	25,000 00
Total	$ 213,262,706 22

TOTAL Accidents for year ended June 30, 1899.

	Passengers killed.	Employees killed.	Others killed.	Total killed.
Falling from cars or engines	2	17	6	25
Getting on or off trains in motion	2	9	13	24
At work making up trains		13		13
Putting heads or arms out of windows				
Coupling cars		10		10
Collisions and derailments	12	18	1	31
Striking bridges		1		1
Walking or being on track		25	88	113
Explosions		2		2
Other causes	4	24	37	65
Total killed	20	119	145	284

LAND GRANTS made by Governments to Railways, completed or under construction, up to June 30, 1899.

Act Authorizing Subsidy.	Name of Railway Company.	Government	Mileage Subsidized.	Acres Granted per Mile.	Total Acres Granted.	Acres sold by Railway Companies.	Amount Realized.
							$ cts.
48-49 Vic. c. 60.. 50-51 Vic. c. 22.. 52 Vic. c. 2	Alberta Railway and Coal Company (Main Line), Dunmore to Lethbridge	Dominion	109·50	6,400	700,800	834,048	1,101,732 83
52 Vic. c. 4. 52 Vic. c. 3	Alberta Railway and Coal Company, from Lethbridge to International Boundary	"	64·62	6,400	413,568		
53 Vic. c. 4	Calgary and Edmonton	"	340·00	6,400	2,176,000	1,481,046	*
58 Vic. c. 4	‡Canadian Northern, comprising— Lake Manitoba Railway and Canal Company	"	125·00	6,400	800,000		
47 Vic. c. 25	and Winnipeg Great Northern	"	900·00	Div. A. 6,400 " B. 12,800 " C. 6,400	8,480,000		
44 Vic. c. 1	Canadian Pacific (Main Line)	"			25,000,000	†6,793,014	10,189,521 00
53 Vic. c. 4	Can. Pac. Ry., Deloraine and Napinka Branch	"	18·01	6,400	115,264		
53 Vic. c. 4	" Glenboro' and Souris Branch	"	45·24	6,400	289,536	3,972,800·04	12,918,804 49
53 Vic. c. 4 54 Vic. c. 10	" Kemnay and Estevan Branch	"	156·86	6,400	1,003,904		
57-58 Vic. c. 6	" Pipestone Branch	"	31·30	6,400	200,320		
49 Vic. c. 11	Great North-West Central	"	50·00	6,400	320,000		
48-49 Vic. c. 60	Manitoba and North-western (Main Line)	"	430·00	6,400	2,918,400	1,187,487	1,951,062 78
49 Vic. c 11	" " Branch from Binscarth	"	26·00	6,400			
57-58 Vic. c. 6	Saskatchewan and Western	"	15·47	6,400	99,008		
53 Vic. c. 4	Manitoba and South-Eastern	"	98·00	6,400	627,200		
48-49 Vic. c. 10 54-55 Vic. c. 10..	Manitoba and South-Western Colonization	"	218·25	6,400	1,396,800	355,052·63 Town sites	1,565,150 27 152,881 92
48-49 Vic. c. 60.. 50-51 Vic. c. 23..	Qu'Appelle, Long Lake and Saskatchewan	"	253·96	6,400	1,625,344	128,000 998,230	121,600 00 *
52 Vic. c. 4. 54 Vic. c. 9.	Red Deer Valley	"	55·00	6,400	352,000		
	Yarmouth and Annapolis	Nova Scotia			150,000		
	Columbia and Kootenay	British Columbia			190,000	Town sites 1,888	156,275 15 5,081 79
	Columbia and Western	"			2,110,000		
	Esquimalt and Nanaimo	"			1,900,000	262,728·77	811,977 30
	Kaslo and Slocan	"			198,240	Town sites 45	5,109 00 225 00
	Nelson and Fort Sheppard	"			608,256	1,493·38 Town lots	11,061 35 181,161 81

† Sold to the Dominion Government at $1.50 per acre. * Again, after efforts to obtain a statement of the amounts realized from the sale of these lands, the companies have failed to give the information, the return, therefore, in this respect is incomplete. ‡ By 62-63 Vic., Session 1899, Cap. 57, The Lake Manitoba Railway and Canal Company and the Winnipeg Great Northern Railway were amalgamated under the title of the Canadian Northern Railway, all the rights of the two companies being vested in the new company.

TABLE showing Location of the Railways of the Dominion of Canada, June 30, 1899.

Name of Railway.	Description.	Distance. Miles.	Total.
Alberta Railway and Coal Co....	From Lethbridge in District of Alberta, N.W.T., to Coutts, on International boundary, 3 ft. gauge.....	.....	64·62
	The portion from Dunmore to Lethbridge, 107 miles, was changed to 4 ft. 8½-in. gauge and sold to Can. Pac. Ry., 29th Nov., 1893.		
Alberta Southern.....	Harvey Branch Junction to Alma, N.B.....	16·00	
	" Albert to Harvey Branch, N.B.....	3·00	
			19·00
Baie des Chaleurs in Atlantic and Lake Superior System	Metapedia Station on C.P.R. to Paspediac.....	.....	100·00
Bay of Quinté Railway and Navigation Coy.....	Deseronto, on Bay of Quinté, Lake Ontario, to Deseronto Junction, Grand Trunk Railway.....	.....	4·00
Berlin and Waterloo (Electric)...	Berlin to Waterloo	.....	3·00
Buctouche and Moncton	Moncton, on Intercolonial Railway, to Buctouche, N.B.	.....	32·00
Brockville, Westport and Sault Ste. Marie.....	Brockville to Westport, Ont.....	.....	45·00
Calgary and Edmonton.....	Calgary to Edmonton	190·97	
	" McLeod, District of Alberta.....	104·10	
			295·07
Canada Atlantic.....	City of Ottawa to Junction with Grand Trunk at Lacolle and U.S. boundary. Crosses the St. Lawrence at Couteau by bridge. Connects with Grand Trunk Railway at Coteau and Lacolle	.....	135·00
Central Counties.... ..... Leased to Canada Atlantic	From Glen Robertson, on Canada Atlantic, to Hawkesbury, Ont.....	21·00	
	South Indian, on Canada Atlantic, to Rockland.....	16·00	
			37·00
Canada Southern.....	Main Line—Windsor, Ont., to Suspension Bridge...	226·18	
	Amherstburg Branch—Essex Centre to Amherstburg.	16·83	
	St. Clair Branch—St. Clair Junction to Courtright...	62·63	
	Fort Erie Branch—Fort Erie to Welland Junction...	17·50	
	Erie and Niagara Branch—Old Fort Erie to Niagara.	30·60	
	Oil Springs Branch—Oil Springs to Oil City.....	5·50	
Leased.....	Sarnia, Chatham and Erie—Oil City to Petrolia.....	7·00	
"	Leamington and St. Clair—Comber to Leamington ..	15·95	
			382·19
Canada Eastern.....	Late Northern and Western of New Brunswick .. Gibson, opposite City of Fredericton to Chatham Junction, I.C.R.....	107·00	
	Chatham Junction to Chatham and Logieville via Nelson	20·00	
	Blackville to Indiantown	9·00	
			136·00
Canadian Pacific: Owned.....	Main Line—Callander to Vancouver	2,560·90	
(Canada Central).....	" Ottawa to Callander.....	223·60	
(Que., Mont., Ottawa & Occid.)..	" Montreal to Ottawa.....	120·30	
(" North Shore)	" Quebec to St. Martin's Junction.....	159·80	
Alberta Railway.....	Branches—Dunmore to Lethbridge.....	105·15	
Crow's Nest Pass.....	" Lethbridge to Kootenay Landing.....	288·75	
	" Piles Junction to Grand Piles.....	26·90	
	" Berthier Junction to Berthier.....	2·00	
	" Joliette Junction to St. Félix.....	16·80	
	" Ste. Thérèse Junction to St. Jérome.....	13·60	
	" " to St. Eustache	6·00	
Montreal and Western.....	" St. Jérome to Labelle.....	66·90	
	" St. Lin Junction to St. Lin.....	15·00	
	" Buckingham Stn. to Buckingham Village.	4·20	
Brockville and Ottawa Railway..	" Carleton Junction to Brockville.....	45·00	
	" Sudbury to Sault Ste. Marie.....	180·60	
	" Sudbury to Copper Mines.....	5·60	
	" Winnipeg Junction to Emerson.....	64·50	
	" " to Manitou	101·10	
	" Rosenfeldt to Gretna.....	13·70	
	" Winnipeg to West Selkirk.....	22·50	
	" Air Line Junction to Foxton.....	37·50	

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.		Distance. Miles.	Total.
Canadian Pacific—*Continued.*	Souris Branch. Kenmay to Estevan		156·20	
	Souris Branch. Glenboro' to Souris		45·70	
	Souris Branch. Deloraine to Napinka		18·60	
	Branches—Menteith Junction to Reston		31·30	
	" North Portal to Pasqua		160·30	
	" New Westminster Junction to New Westminster		8·20	
Lake Témiscamingue Colonization	" Mattawa to Kippewa		45·80	
	" Mission Junction to Mission		10·10	
	" Revelstoke to Arrow Head		27·80	
	" Vancouver to Coal Harbour		1·20	
	" Three Forks to Sandon		4·20	
	Total mileage owned			4,589·80
Leased Lines	Atlantic and North-west (in Canada)—			
	South end Lachine Bridge to Maine boundary, Que	182·50		
	Renfrew Jct. to Eganville, Ont	18·90		
			201·40	
	St. Lawrence and Ottawa—			
	Ottawa to Prescott, Ont	51·80		
	Chaudière Junction to Sussex St., Ottawa	6·60		
			58·40	
	Ontario and Quebec—			
	Montreal (Windsor St.,) to Daley's cut	6·70		
	Mile End to Daley's cut	7·40		
	Montreal Jct. to South End Lachine Bridge	3·60		
	" Toronto Junction	334 00		
	St. Luc Junction to Western Junction	1·70		
	Toronto Junction to Strachan Avenue	3·20		
	Leaside Junction to Union St., Toronto	5·30		
	London to Windsor	112·60		
			474·50	
	Credit Valley—			
	Toronto Junction to St. Thomas	116·80		
	Streetsville Junction to Melville Jct	31·60		
	Cataract to Elora	27·30		
			175·70	
	West Ontario Pacific—Woodstock to London		26·60	
	Toronto, Grey and Bruce—			
	Toronto Junction to Owen Sound	116·80		
	Orangeville Junction to Teeswater	69·80		
	Glenanan to Wingham	4·50		
			191·10	
	Guelph Junction—			
	Guelph Junction on Credit Valley Ry. to Guelph		15·25	
	Toronto, Hamilton and Buffalo—			
	Desjardin Junction with Grand Trunk to Hamilton		2·70	
	Montreal and Lake Maskinongé—			
	St. Félix to St. Gabriel de Brandon		12·90	
	Montreal and Ottawa—			
	Vaudreuil to Jct. for the Canada Atlantic	86·20		
	Rigaud to Pt. Fortune	7·00		
			93·20	
	Cap de la Madeleine—			
	From Main Line C.P.R., at Junction with Piles branch to Cap de la Madeleine		2·32	
	New Brunswick—			
	Woodstock to Maine boundary	59·40		
	Newburg Junction to Fredericton	58·40		
	Aroostook Junction to Edmondston	57·20		
			175·00	

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.		Distance. Miles.	Total.
Canadian Pacific—*Continued.*				
Leased lines	St. John and Maine—			
	Vanceboro to McAdam Junction	6·30		
	McAdam Junction to Fairville	81·80		
	Fairville to Carleton	4·00		
			92·10	
	St. John Bridge and Railway Extension—			
	Fairville to St. John		2·00	
	Fredericton—			
	Fredericton Junction to Fredericton		22·10	
	New Brunswick and Canada—			
	McAdam Junction to St. Stephen	33·90		
	Watt Junction to St. Andrews	27·50		
	McAdam Junction to Woodstock	50·80		
	Debec Junction to Maine boundary	5·00		
			117·20	
	St. Stephen and Milltown Ry.—			
	St. Stephen to Milltown		4·64	
	Tobique Valley—			
	Perth Centre to Plaster Rock		28·00	
	Manitoba South-western Colonization—			
	Manitou to Deloraine	100·40		
	Winnipeg to Glenboro'	101·90		
	Elm Creek to Carman	12·10		
			214·40	
	Columbia and Kootenay—			
	Nelson to Robson	27·70		
	Slocan Junction to Slocan City	32·00		
	To Mouth of Kootenay River	0·80		
			60·50	
	Shuswap and Okanagan—			
	From Junction with C.P.R. at Sicamous to Lake Okanagan		51·00	
	Nakusp and Slocan—			
	Naksup on Arrow Lake to Three Forks of Carpenter's Creek, B.C.		36·90	
	Columbia and Western—			
	Robson to Rossland	33·20		
	Trail to Smelter Junction	2·00		
			35·20	
	Total mileage leased			2,093·11
	" owned			4,589·80
	" in Can. Pac. system			6,682·91
Canadian Government Railways.	Intercolonial—			
	Halifax to Point Lévis (*via* Harlaka)	674·87		
	Dartmouth to Windsor Junction	13·00		
	Truro to Sydney	214·17		
	North Sydney Junction to North Sydney	4·50		
	New Glasgow to Pictou Landing	8·00		
	Stellarton to Oxford Junction	79·63		
	Brown's Point to Pictou	1·70		
	Pugwash Junction to Pugwash Station	4·70		
	Painsec Junction to Pt. du Chêne	11·38		
	Moncton to St. John	89·22		
	Derby Junction to Indiantown	13·51		
	Dalhousie Branch	7 00		
	St. Charles Junction to Chaudière Junction (*via* St. Henri)	16·38		
	Hadlow to Chaudière Curve	5 64		
	Freight Branches	23·47		
			1,167·17	
	Windsor Branch (32 miles) of I.C.Ry. is operated by Dominion Atlantic Ry.			

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.	Distance. Miles.	Distance. Total.
Canadian Government Rys.—*Con.*	Prince Edward Island—		
	Main Line—Alberton to Charlottetown.... 105·30		
	Royalty Junction to Georgetown ..... 41·00		
	Branch—Mount Stewart to Souris ..... 38·40		
	" Alberton to Tignish ..... 13·30		
	" Emerald to Cape Traverse..... 12·00		
		210·00	
			1,377·17
Caraquet..	From Gloucester Junction, Intercolonial Railway, 5 miles south of Bathurst Station, easterly along the south shore of Baie des Chaleurs to Shippigan Harbour, N.B..	.....	68·00
Carillon and Grenville.....	Carillon to Grenville, Que., connecting at both termini with Ottawa River Navigation Company's steamers (Gauge, 5 ft. 6 in.).....	.....	13·00
Central (Nova Scotia), formerly Nova Scotia Central.....	From Middleton on the Windsor and Annapolis Railway to town of Lunenburg, on the Atlantic coast, N.S.....	.....	74·00
Central Ontario..... ..	From Pictou, in Prince Edward County, Ont., to Coe Hill Iron Mines, Wallaston, County of Hastings; connects with Grand Trunk at Trenton, Midland Railway, 2 miles west of Stirling, and with Ontario and Quebec, in Township of Rawdon	.....	104·00
Central Railway of New Brunswick	From Norton Station, on the Intercolonial Railway, to Chipman	.....	45·66
Coast Line, Nova Scotia	Yarmouth to Lockeport towards Halifax, 98 miles, of which 30·80 miles are in operation	.....	30·80
Cobourg, Northumberland and Pacific.....	From Cobourg, Ont., to Junction with Central Ontario Railway, 50 miles under construction	.....	
Cumberland Railway and Coal Company (formerly Spring Hill and Parrsboro')	Spring Hill Junction, Intercolonial Railway, to Spring Hill Coal Mines, N.S., and Parrsboro', on the Bay of Fundy.....	.....	32·00
	Spring Hill and Oxford Branch, 14 miles from Spring Hill Mines to Oxford Village on the Oxford and New Glasgow Branch, I.C.R., not in operation.		
Dominion Atlantic, comprising Windsor and Annapolis, Yarmouth and Annapolis and Cornwallis Valley and lease of Windsor Branch of Intercolonial	Windsor to Annapolis, N.S	84·00	
	Annapolis to Yarmouth.....	87·00	
	Branches—		
	Wilmot to Forbrook	3·50	
	From Kentville to Kingsport, on Basin of Minas (formerly Cornwallis Valley Railway).....	14·00	
	Windsor Branch of I.C.R.—Windsor to Windsor Junction, Intercolonial Railway, 14 miles from Halifax.....	32·00	
			220·50
Drummond County	Ste. Rosalie, Que., junction with Grand Trunk Railway, to St. Leonard, thence to Chaudière	115·93	
	St. Leonard to Nicolet and Ball's Wharf, on the St. Lawrence	17·36	
	Mitchell to Burrill's Mill.....	50	
			133·79
East Richelieu Valley.....	Iberville to Noyan, Que..	.....	22·80
Elgin to Havelock.....	From Elgin, County of Albert, N.B., to Petitcodiac Junction with Intercolonial Railway; thence to Havelock in County of King's	27·00	
	Havelock to Keith's Mills	1·00	
			28·00

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.	Distance. Miles.	Total.
Esquimalt and Nanaimo	Victoria to Wellington, Island of Vancouver		78·00
Fredericton and St. Mary's Railway Bridge	Over the St. John River, connecting the Fredericton Railway, at Fredericton, with the New Brunswick Railway, and Canada Eastern Ry., at St. Mary's		1·33
Grand Trunk (owned)—			
Main Line	From Point Edward to Point Levis and Boundary Line, Vermont	719·33	
	From Niagara Falls to Windsor	229·32	
			948·65
Branches	Connections at Toronto with G. W. and N. and N. W.	4·75	
	Montreal to Dorval	10·12	
	Sarnia Extension—Point Edward to Sarnia	3·13	
	Montreal leading to Wharfs	0·83	
	Arthabaska to Doucet's Landing(Three Rivers Branch)	35·34	
	Kingston—Main line to Kingston City	2·25	
	Waterloo and Berlin to Galt	14·85	
	St. Mary's to London	22·00	
	St. Lambert to Boundary Line, N.Y., and St. Isidore to Province Line	65·50	
	Blackwell to St. Clair Tunnel	5·00	
	Port Dover to Wiarton, Durham and Port Rowan	189·75	
	Brosseaus to Dundee and Valleyfield	81·14	
	Jacques Cartier to Canadian Pacific Junction	6·54	
	Waterloo to Elmira	10·17	
	Belleville to Midland	163·96	
	Lindsay to Scarboro' Junction	60·35	
	" Haliburton	54·20	
	Whitby to Manilla	33·73	
	Lakefield Junction to Lakefield	11·66	
	North Hastings Junction to Eldorado	22·21	
	Blackwater to Coboconk	36·35	
	Port Hope to Omemee	33·05	
	Millbrook to Peterboro'	12·85	
	Stouffville to Lake Simcoe	26·46	
	Peterboro' to Chemong Lake	8·22	
	Connection, Merritton	0·17	
	" Stoney Creek	2·08	
	Loop Gages (N. and N. W. Divn.)	0·48	
	Hamilton to Toronto	36·64	
	Loop Junction Cut Branch	0·36	
	Connection, Burlington East	0·13	
	" " West	0·21	
	Harrisburg to Guelph	27·18	
	Connection " (W. G. and B.)	0·11	
	Harrisburg to Brantford	7·76	
	Brantford Branch Junction with G. T.	0·13	
	Komoka to Sarnia	50·85	
	Wyoming to Petrolia	4·71	
	Fort Erie to Glencoe	145·55	
	Connection, Welland Junction, East	0·26	
	" " West	0·50	
	" Canfield Junction	0·19	
	" Simcoe (G. B. & L. E.)	0·24	
	East Y. St. Thomas	0·32	
	Allanburg to Clifton Junction	8·33	
	Port Colborne to Port Dalhousie	25·14	
	Glencoe to Kingscourt Junction	21·04	
	Guelph to Southampton	101·26	
	Palmerston to Kincardine	66·67	
	" connection	0·20	
	Hyde Park to Wingham Junction	68·88	
	Connection, Clinton Junction	0·13	
	Brantford Loop Line	34·78	
	Toronto Belt Line, Swansea to Carleton	4·37	
	" Don to Fairbank Junction	8·33	

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.	Distance. Miles.	Total.
Grand Trunk— Branches—*Con.*	Toronto to Gravenhurst	111·60	
	Allandale to Collingwood	31·76	
	Hamilton to Allandale	93·82	
	" Port Dover	40·25	
	Collingwood to Meaford	20·50	
	Elmvale to Hillsdale	8·28	
	Beeton Junction to Collingwood	39·83	
	Gravenhurst to Nipissing Junction with C.P.R	111·37	
	Colwell to Penetanguishene	33·34	
	Cobourg to Harwood (not in operation)	15·00	
			2,037·16
	Total owned		2,985·81
	Leased and partly owned— Buffalo and Lake Huron, Fort Erie to Goderich	162·00	
	Owen Sound Branch— Park head to Owen Sound	12·42	
	Leased or rented— Wharf Branch, Montreal	1·75	
			176·17
	Total miles in Grand Trunk system		3,161·98
St. Clair Tunnel and approaches	Under the St. Clair River, between Sarnia and Port Huron—connecting the Grand Trunk Railway with railroads in State of Michigan (Length of tunnel between portals 6,000 ft., cylindrical in section with clear inside diameter of 19 ft. 10 inches).		2·23
Great Eastern in Atlantic and Lake Superior system	Constructed from junction with South eastern Railway at Yamaska to River St. Francis	6·00	
	Constructed from Nicolet to Junction with Grand Trunk Railway at St. Grégoire	7·00	
	Yamaska to Sorel	10·00	
			23·00
Great Northern	From St. Jérôme to Moncalm	28·00	
	From junction with Lower Laurentian Railway westward to Shawenegan	20·00	
	Branch Line to Grand'Mère	1·00	
			49·00
Great North-west Central	From Junction with C.P.R. at Chater, westward to Hamiota		50·93
Gulf Shore	Junction with Caraquet Railway at Pokemouche to Tracadie operated by Caraquet Ry		16·78
Hamilton, Grimsby and Beamsville (electric)	Hamilton to Beamsville		23·00
Hamilton and Dundas (electric)	Hamilton to Dundas		7·25
Hamilton Radial (electric)	Hamilton to Burlington and Guelph Line		12·00
Hampton and St. Martin, formerly St. Martin and Upham	From Hampton on Intercolonial Ry. to St. Martin, County of St. John, N.B., on Bay of Fundy		30·00
Hereford	From International Boundary to Dudswell, County Wolfe, connects with Canadian Pacific Railway at Cookshire, Maine Central at International boundary, and with Quebec Central at Dudswell	48·50	
	Dudswell to Lime Quarries (Dominion Lime Company)	4·80	
			53·30
Hull Electric	Hull to Aylmer and Branches		13·63
Interprovincial Railway Bridge and approaches	Across the Ottawa River at City of Ottawa		1·43
Irondale, Bancroft and Ottawa	From Junction with Grand Trunk Railway, near Kinmount Station, to Bancroft Station		50·00
Joggins, now Canada Coals and Railway Co	Maccan Station, I.C.R., to Joggins Coal Mines		12·00

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.	Distance. Miles.	Total.
Kaslo and Slocan	From Kaslo to Sandon, B.C.	28·80	
	From Junction to Cody	3·00	
			31·80
Kent Northern	Richibucto, N.B., to Kent Jct. Intercolonial Railway	27·00	
St. Louis and Richibucto	Richibucto to St. Louis	7·00	
			34·00
Kingston and Pembroke	Main Line—Kingston to Renfrew	103·10	
	Glendower Branch—Bedford to Zanesville Mine	4·00	
	Robertsville Branch—To Robertsville Mines	1·00	
	Branches—To Doran's Mills, Charcoal Works McLaren's Mills, Bethlehem Iron Mines, Lavant Mills, Clyde Forks Mills, Wilson's Mine, Caldwell's Mills, William's Mine, Cameron Bay	4·75	
	(Connects with Grand Trunk at Kingston, Canadian Pacific at Sharbot Lake and at Renfrew.)		
			112·85
Kingston, Napanee and Western	Amalgamated with Bay of Quinté Railway:		
	Napanee to Tamworth	28·50	
	Yarker to Harrowsmith	7·00	
	Tamworth to Tweed	20·95	
	Harrowsmith to Sydenham	4·37	
			60·82
Lotbinière and Mégantic	Lyster Station, Grand Trunk, to St. Jean des Chaillons		30·34
L'Assomption	L'Epiphanie Station, C.P.R., to l'Assomption		2·00
Lake Erie and Detroit River	Walkerville, Ont., to Ridgetown	84·22	
Erie and Huron	Rondeau to Sarnia	71·50	
			155·72
London and Port Stanley	London to Port Stanley on Lake Erie		24·00
Lake Manitoba Railway and Canal Co., now in Canadian Northern	From junction with Manitoba and North-western at Gladstone to Winnipegosis		124 74
Lower Laurentian (formerly St. Lawrence, Lower Laurentian and Saguenay)	From St. Tite, on C.P.R., to Rivière à Pierre, on Quebec and Lake St. John Railway (operated by Quebec and Lake St. John Ry)		39·50
Manitoba and North western	Portage la Prairie to Yorkton	223·05	
	Shell River Branch—Binscarth to Russell	11·45	
	Leased—Saskatchewan and Western—Minnedosa to Rapid City	15·47	
			249·97
Manitoba and South-eastern	From Winnipeg south-easterly to west side of Lake of the Woods; 45·60 miles under construction		
Midland of Nova Scotia (formerly Stewiacke Valley)	From Windsor towards Truro, N.S.—38 miles under construction		
Montford and Gatineau Colonization	From junction with Montreal and Western near St. Sauveur to Arundel		33·00
Massawippi Valley	From Lennoxville to Vermont boundary, there connecting with Connecticut and Passumpsic Rivers Railway; also connects with Grand Trunk and C.P.R., at Lennoxville	31·95	
	Branch—Stanstead Junction to Stanstead	3·51	
			35·46
Montreal and Vermont Junction	From Junction with Stanstead, Shefford and Chambly Railway, 2½ miles east of St. Johns, 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

TABLE showing Location of Railways, &c.—*Continued.*

Name of Railway.	Description.	Distance. Miles.	Total.
Montreal, Portland and Boston, now Montreal and Province Line	Junction with Grand Trunk at St. Lambert to Farnham	32·00	
	Marieville to St. Césaire	8·60	
			40·60
Montreal and Atlantic (formerly South-eastern	Main Line—West Farnham to Richford on International boundary	33·80	
	Northern Division—Sutton Junction to Sorel	95·50	
	Between Newport and Richford—Part of Line in Canada	10·00	
		139·30	
	Leased—Lake Champlain and St. Lawrence Junction—Stanbridge to St. Guillaume	60·70	
			200·00
	(Connects with Connecticut and Passumpsic, Grand Trunk and Stanstead, Shefford and Chambly Rys.).		
Montreal Park and Island electric)	City of Montreal and Suburbs		40·88
Montreal Terminal formerly Montreal Island Belt Line (electric)	Hochelaga to Bout de l'Isle	12·12	
	Along La Salle Avenue, Maisonneuve	·55	
			12·67
Napierville Junction	St. Remi to Village of Napierville, Que., no return of mileage		
Nelson and Fort Sheppard	From West Arm of Kootenay Lake near Nelson, to Fort Sheppard on International boundry, B.C.		59·40
New Glasgow Iron, Coal and Railway Company, now Nova Scotia Steel Co	From Ferrona Junction, I.C.R., to Sunny Brae		12·50
New Brunswick and Prince Edward Island	From Sackville Station, Intercolonial Railway to Cape Tormentine		36·00
Niagara Falls Park and River Electric Railway	Queenston to Chippewa		13·68
Northern Pacific and Manitoba	Winnipeg to International boundary	65·94	
	Portage Junction to Portage la Prairie	52·52	
	Morris to Brandon	145·24	
	Departure to near Hartney	46·50	
	Connection with C.P.R. at Winnipeg	1·24	
	Spurs on Brandon Branch	·17	
			311·61
Nosbonsing and Nipissing	From Lake Nosbonsing to Lake Nipissing		5·50
Nova Scotia Southern	Shelburne to New Germany, 11 miles under construction		
Ontario, Belmont and Northern	From Junction with Central Ontario Ry. to Iron Mines in Township of Belmont		9·60
Orford Mountain	Eastman on C.P.R. to Lawrenceville and Kingsbury, Que		26·50
Oshawa Electric Railway	From Port Oshawa, Lake Ontario to Grand Trunk Ry. Station and through town of Oshawa		8·50
Ottawa and Gatineau	Canadian Pacific Railway Junction at Hull, Que., to Gracefield		56·50
Ottawa, Arnprior and Parry Sound	Ottawa to Depot Harbour, Lake Huron, near Parry Sound		263·80
Ottawa Valley in Atlantic and Lake Superior System	Lachute on C.P.R., to St. Andrews on Ottawa River.		7·00
Ottawa and New York	From Ottawa to International Boundary near Cornwall		56·79
Pembroke Southern	From Pembroke to Golden Lake		20·50
Philipsburg	Stanbridge Station of Canadian Pacific and Central Vermont Railways, to Philipsburg, Missisquoi Co.		7·50
Pontiac and Renfrew	From Wyman's Station, on Pontiac Pacific Junction Railway, to Bristol Iron Mines, County Pontiac, Que.		4·25
Pontiac Pacific Junction	From Aylmer, Que., to Waltham		70 60
Port Arthur, Duluth and Western	Port Arthur to Gunflint Lake on Minnesota boundary (Connects with the C.P.R. at Port Arthur and Fort William.)		85 50
Qu'Appelle, Long Lake and Saskatchewan	From Canadian Pacific Railway at Regina, Northwesterly to Long Lake and Prince Albert		253·96

TABLE showing Location of Railways, &c.—*Concluded.*

Name of Railway.	Description.	Distance. Miles.	Distance. Total.
Quebec and Lake St. John	Quebec to Roberval	192·00	
	Chambord Junction to Chicoutimi	53·85	
			245·85
Quebec Central	Main Line—Sherbrooke to Harlaka Junction, Intercolonial Railway, 5 miles from Lévis, Que.	137·50	
	Chaudière Branch, Beauce Junction to St. Francis	15·00	
	Angus Branch—East Angus to Angus Mills	1·00	
	Tring Mégantic—Tring Junction to Mégantic	60·00	
	(Connects with Grand Trunk, Canadian Pacific and Boston and Maine Rys. at Sherbrooke)		213·50
Quebec, Montmorency and Charlevoix	Hedleyville, Parish of St. Roch, Quebec, to Cap Tourmente		30·00
Red Mountain	From International boundary Line B.C. to Rossland.		9·53
Restigouche and Western	Campbellton, N.B., to St. Leonard's, 10 miles constructed		110·00
Stanstead, Shefford and Chambly	From Junction with Montreal and Vermont Junction Railway, near St. John, Que., easterly to Waterloo		43·00
Shore Line (formerly Grand Southern)	St. John to St. Stephen, N.B.		82·50
St. Catharines and Niagara Central	St. Catharines, Ont., to Niagara Falls.		12·35
St. John Bridge and Railway Extension	From St. John to Fairville, crosses St. John River at the Falls by a cantilever steel bridge, and connects Intercolonial Railway with New Brunswick Railway, C.P.R., included in Canadian Pacific System		2·00
St. John Valley and Rivière du Loup	From Fredericton, N.B., to Woodstock, N.B., 66 miles, of which 6 miles are under construction		
Salisbury and Harvey (formerly Albert Railway)	Salisbury to Albert, N.B.		45·00
St. Lawrence and Adirondack	From Jct. with Canada Atlantic near Valleyfield to International Boundary	19·80	
	Beauharnois to Junction with Canadian Pacific at Adirondack Junction	13·20	
			33·00
South Shore (formerly Montreal and Sorel)	From Junction with Grand Trunk at St. Lambert to Sorel		44·67
Sydney and Louisbourg (Dominion Coal Co)	Sydney Harbour to Louisbourg Harbour	39·15	
	Branches to coal mines	19·94	
			59·09
Thousand Islands	Gananoque on St. Lawrence River to Gananoque Station, G.T.R.		4·33
Témiscouata	Rivière du Loup, Que., on Intercolonial, to Edmundston, N.B., on the New Brunswick Railway	81·00	
	Branch—Edmundston to Connors, on St. John River	32·00	
			113·00
Tilsonburg, Lake Erie and Pacific	From Port Burwell on Lake Erie to junction with Canada Southern Railway, north of Tilsonburg		20·00
Toronto, Hamilton and Buffalo, including Brantford, Waterloo and Lake Erie	Main Line—Waterford Junction on Canada Southern to Welland Junction on Canada Southern, passing through the City of Hamilton	79·87	
	Hamilton to Desjardins Canal	1·77	
	Branch—Chantlers to Fonthill	4·00	
			85·64
United Counties	Iberville Junction with Canadian Pacific Railway to St. Hyacinthe, thence to St. Robert Junction with Montreal and Atlantic, 4½ miles from Sorel		61·00
Victoria and Sydney	City of Victoria to Sydney, Vancouver Island		16·26
Winnipeg and Hudson Bay, now in Canadian Northern	Winnipeg to Port Nelson on Hudson Bay.		
	(Constructed 40 miles, Winnipeg to St. Laurent on Lake Manitoba) not in operation		40·00

SUMMARY STATEMENT OF CAPITAL

FOR THE

FISCAL YEAR ENDED JUNE 30, 1899

A. NOTE.—With regard to Subsidies granted by Dominion Parliament, 60–61 Vic.

By 60–61 Vic., cap. 4, 1897.—A subsidy was authorized on certain mileage of this railway specified in the Act of Parliament, of $3,200 per mile, and a further subsidy, beyond the sum of $3,200 per mile, of fifty per cent on so much of the average cost of the said specified mileage subsidized as is in excess of $15,000 per mile, such subsidy not exceeding in the whole the sum of $6,400 per mile.

The amounts of certain of the subsidies authorized by Parliament, 60–61 Vic., given in this Statement, include the determined portion of the subsidies, viz., the amounts produced by the $3,200 per mile, but the other portion, being now an undetermined amount cannot be shown here.

Of the Railways shown in this Statement the following is the mileage subsidized under the said Act :—

Central Railway of New Brunswick	15	miles.
Coast Railway of Nova Scotia	61	do
Cobourg, Northumberland and Pacific	50	do
Drummond County	42½	do
East Richelieu Valley	24	do
Great Northern	44	do
Gulf Shore	5½	do
Kingston, Smith's Falls and Ottawa	101	do
Ottawa, Arnprior and Parry Sound	56	do
Ottawa and Gatineau	20	do
Ottawa and New York	53·87	do
Pembroke Southern	20	do
Philipsburg Railway and Quarry Co.	0 66/100	do
Pontiac Pacific Junction	7½	do
Restigouche and Western	20	do
St. Lawrence and Adirondack	13½	do
St. Stephen and Milltown	1 14/100	do
Tilsonburg, Lake Erie and Pacific	3½	do
United Counties	1	do

No. 1.—Summary Statement of Capital for the Year ended June

Number.	Name of Railway.	Length of Line. Completed. (Rails Laid).	Length of Line. Under Construction.	Ordinary Share Capital. Authorized.	Ordinary Share Capital. Subscribed.	Ordinary Share Capital. Paid up.	Preference Share Capital. Authorized.	Preference Share Capital. Subscribed.	Preference Share Capital. Paid up.	Bonded Debt. Authorized.	Bonded Debt. Issued.	Bonded Debt. Sold.	Bonded Debt. Rate of Interest.	Number.	Dominion Government Aid. Loan.	Dominion Government Aid. Bonus.	Dominion Government Aid. Subscription to Shares or Bonds.	Dominion Government Aid. Paid up.	Province.	Provincial Government Aid. Loan.	Provincial Government Aid. Bonus.	Provincial Government Aid. Subscription to Shares or Bonds.	Provincial Government Aid. Paid up.	Municipal Aid. Loan.	Municipal Aid. Bonus.	Municipal Aid. Subscription to Shares or Bonds.	P
		Miles.	Miles.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	p. c.		$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	
1	Alberta Railway and Coal Co.	†169·73		100,000 00	100,000 00	100,000 00	1,500,000 00	1,000,000 00	1,000,000 00	5,475,000 00	4,915,824 87	4,915,824 87	4 & 5	1													
2	Albert Southern	16·00		150,000 00	150,000 00	125,920 00				159,586 93	159,586 93		6	2		50,460 00		50,460 00	New Brunswick		48,680 00		48,680 00				
3	* Atlantic and North-west	201·40		1,000,000 00	180,000 00	176,000 00	1,795,500 00	1,795,500 00	1,795,500 00	3,885,066 00	3,885,066 00	3,885,066 00	4 & 5	3		*1,422,000 00 156,800 00		*711,000 00 156,800 00	Quebec		711,122 02		699,192 08			325,000 00	32
	Atlantic and Lake Superior, comprising—																										
4	Baie de Chaleurs 100·00	130·00	23·00 82·00	10,000,000 00	2,602,500 00	2,602,500 00				20,000,000 00			4	4		620,000 00		620,000 00	Quebec		1,415,000 00		840,000 00		40,500 00		
5	Great Eastern 23·00													5		40,345 00		40,345 00	do		156,000 00		82,699 25		20,000 00		
6	Ottawa Valley 7·00													6		21,600 00		21,600 00	do		25,390 00		24,500 00		10,000 00		
7	Bay of Quinté 4·00 Including Kingston, Napanee and Western 60·82	64·82		1,250,000 00	144,500 00	144,500 00				1,010,500 00	1,010,500 00	752,648 24	4	7		208,732 80		208,732 80	Ontario		90,000 00				192,500 00		19
8	Berlin and Waterloo (Electric)	3·00		40,000 00	29,484 00	29,484 00				30,000 00	6,800 00	6,800 00		8													
9	‡ Beauharnois Junction	19·50												9		62,400 00		62,400 00	Quebec		179,073 00		179,073 00				
10	‡ Brantford, Norfolk and Port Burwell	34·78												10					Ontario		68,000 00		68,000 00				
11	Brockville, Westport and Sault Ste. Marie	45·00		1,125,000 00	1,125,000 00	1,125,000 00				1,125,000 00	1,125,000 00	1,125,000 00		11		105,200 00		105,200 00	do						116,000 00		11
12	Buctouche and Moncton	32·00		250,000 00	250,000 00	250,000 00				310,000 00	310,000 00	310,000 00	6	12		101,600 00		101,600 00	New Brunswick		96,000 00		94,500 00				
13	‡ Buffalo and Lake Huron, leased and partly owned	162·00			*	*	11,972,000 00	2,555,657 00	2,555,657 00	3,716,955 59	3,715,982 20	3,715,982 20	5½	13					Ontario						966,000 00		96
14	Calgary and Edmonton	295·07		1,000,000 00	1,000,000 00	1,000,000 00				5,458,940 00	5,458,940 00	5,458,940 00	6	14													
15	Canada Atlantic	135·00		2,000,000 00	2,000,000 00	2,000,000 00	1,000,000 00	1,000,000 00	1,000,000 00	3,450,000 00	3,450,000 00	3,450,000 00	5	15		282,355 20		282,355 20	Ontario Quebec		270,000 00 192,000 00		270,000 00 192,000 00				
16	* Canada Central 223·60 * Brockville and Ottawa 45·00	268·60									1,823,333 00	1,823,333 00	5 & 6	16		1,525,250 00		1,525,250 00	Ontario		1,479,000 00		1,479,000 00			42,500 00	4
17	Canada Eastern	136·00		1,000,000 00	1,000,000 00	1,000,000 00				1,854,174 60	1,854,174 60			17		366,839 84		366,839 84	New Brunswick		400,000 00		400,000 00	20,000 00			
18	Canada Southern	359·24		15,000,000 00	15,000,000 00	15,000,000 00				20,000,000 00	19,575,000 00	19,575,000 00	5	18					Ontario		147,858 65		147,858 65		322,500 00		32
19	Sarnia, Chatham and Erie	7·00		60,000 00	60,000 00	60,000 00				600,000 00	66,000 00	66,000 00	6	19													
20	Leamington and St. Clair	15·95		50,000 00	50,000 00	50,000 00				163,630 00	130,000 00	130,000 00	4	20		51,200 00		51,200 00	Ontario						33,000 00		3
21	* Canadian Pacific	3,454·20		65,000,000 00	65,000,000 00	65,000,000 00	32,500,000 00	20,951,000 00	20,951,000 00	128,863,887 05	114,866,520 38	107,277,020 38	3½, 4 & 5	21		25,080,000 00		25,080,000 00	Manitoba British Columbia		237,377 50 37,500 00		274,877 50		§572,500 00		§57
22	* Crow's Nest Pass Branch of Canadian Pacific	288·75												22		3,630,000 00		2,776,250 00									
	Canadian Government Railways—																										
23	Intercolonial, including Windsor Branch, 32 miles	1,199·17												23		56,750,843 89		56,750,843 89									
24	Prince Edward Island	210·00												24		3,790,107 26		3,790,107 26									
	* Cost of railway lines built by the Dominion Government and transferred to the Canadian Pacific Railway Co. up to June 30, 1899															31,102,998 47		31,102,998 47									
25	Canadian Northern, comprising the Lake Manitoba Ry. and Canal Co.'s Ry. and Winnipeg Great Northern	124·74	165·00	16,000,000 00	2,347,600 00	2,347,000 00				1,000,000 00	1,000,000 00	1,000,000 00	4	25													
26	* Cap de la Madeleine	2·32		50,000 00	30,000 00	20,000 00								26		7,424 00		7,424 00									
27	Caraquet	68·00		950,000 00	950,000 00	950,000 00				500,000 00	500,000 00	500,000 00	6	27		224,000 00		224,000 00	New Brunswick		180,000 00		180,000 00				
28	Carillon and Grenville	13·00		200,000 00	100,000 00	100,000 00								28													
29	Central Counties (in Canada Atlantic system)	37·00		500,000 00	450,000 00	450,000 00				380,000 00	380,000 00	380,000 00	5	29					Ontario						24,000 00		24
30	Central Ontario	104·00		450,000 00	450,000 00	450,000 00	300,000 00	300,000 00	300,000 00	2,200,000 00	2,200,000 00	2,200,000 00	6	30					do		126,500 00		126,500 00		93,500 00		93
31	Central of New Brunswick	45·66		900,000 00	900,000 00	900,000 00				540,000 00	540,000 00	540,000 00	6	31		A 185,100 00		142,400 00	New Brunswick		139,000 00		139,000 00				
32	Coast Railway, Nova Scotia	30·80	50·00	1,000,000 00	51,000 00	51,000 00				5,000,000 00	450,000 00			32		A 195,200 00		90,400 00	Nova Scotia		288,000 00		96,000 00				
33	Cobourg, Northumberland and Pacific		49·00	200,000 00	50,000 00	5,000 00				735,000 00				33		A 160,000 00			Ontario						93,500 00		
34	‡ Cobourg, Blairton and Marmora	15·00												34					do	26,000 00	18,740 00		44,740 00		113,500 00		113
35	Columbia and Kootenay	60·50		1,000,000 00	250,000 00	25,000 00				$24,333.33 per m.	1,277,500 00	1,277,500 00	4	35		88,800 00		88,800 00									
36	* Columbia and Western	35·20	121·30	1,000,000 00	1,000,000 00	1,000,000 00				5,477,500 00				36													
37	* Credit Valley	175·70			*	*								37					Ontario		531,000 00		531,000 00		1,085,000 00		1,085
38	Cumberland Railway and Coal Co 32·00 Springhill and Oxford Branch (*See note) 14·00	*32·00	14·00	1,000,000 00	[illegible]	1,000,000 00								38		39,850 00		39,850 00	Nova Scotia		173,650 00		173,650 00				
39	Drummond County	133·79		650,000 00	650,000 00	400,000 00				1,000,000 00	1,000,000 00			39		A 433,920 00		423,936 00	Quebec		347,420 54		347,420 54		15,000 00		15
40	East Richelieu Valley	22·80		100,000 00	76,200 00	37,600 00								40		A 76,800 00		69,952 00	do		115,215 00				6,500 00		
41	Elgin and Havelock	28·00		125,000 00	125,000 00	42,000 00								41		82,652 82		82,652 82	New Brunswick		107,500 00		107,500 00		13,000 00		13
42	Esquimalt and Nanaimo	78·00		3,000,000 00	2,500,000 00	2,500,000 00								42		750,000 00		750,000 00									
43	* Fredericton	22·10		500,000 00	500,000 00	319,280 00				200,000 00	100,000 00	100,000 00	6	43					New Brunswick		230,000 00		230,000 00		80,000 00		80
44	Fredericton and St. Mary's Railway Bridge	1·33		400,000 00	200,000 00	20,000 00				300,000 00	50,000 00	50,000 00	6	44	300,000 00	30,000 00		330,000 00									
45	‡ Grand Trunk (in Canada)	884·25		113,482,437 50	109,356,584 39	109,356,584 39	89,245,202 10	89,244,198 19	89,244,198 19	C. 167,[illegible] 75	C. 85,168,384 61	85,168,384 61	4, 5 & 6	45	15,142,633 33			15,142,633 33									
46	‡ Grand Trunk Victoria Bridge at Montreal													46		‡300,000 00		199,599 57									
47	‡ Grand Trunk, Georgian Bay and Lake Erie	172·75									C. 912,500 00	912,500 00	5	47					Ontario		336,000 00		336,000 00		929,000 00		929
48	‡ Owen Sound Branch, Parkhead to Owen Sound	12·42								100,000 00	100,000 00	100,000 00	5	48		39,744 00		39,744 00	do						85,500 00		85
49	‡ Grand Junction and Belleville and North Hastings	85·40												49		21,888 00		21,888 00	do		224,660 00		224,660 00		213,000 00	50,000 00	263
50	Great Northern	49·00	92·50	3,000,000 00	310,000 00	310,000 00				4,520,000 00	570,000 00	570,000 00	5	50		A 495,988 00		153,088 00	Quebec		524,875 00		423,625 00		6,000 00		6
51	Great North-west Central	50·93		2,000,000 00	500,000 00	500,000 00				2,500,000 00	2,500,000 00		5	51													
52	‡ Great Western	561·80									C. 13,256,702 67	13,256,702 67	5	52													
53	* Guelph Junction	15·25		30,000 00	10,000 00	10,000 00				232,500 00				53		46,000 00		46,000 00	Ontario							193,000 00	193,
54	Gulf Shore	16·78		300,000 00	6,250 00	6,250 00				250,000 00				54		A 56,000 00		53,699 20	New Brunswick		41,950 00		41,950 00				
55	‡ Hamilton and North-western	173·90									C. 2,920 00	2,920 00		55					Ontario		565,020 00		565,020 00		599,805 00		599,
56	Hamilton, Grimsby and Beamsville (Electric)	23·00		200,000 00	113,300 00	113,300 00				$10,000 per mile.	85,000 00	85,000 00	5	56					do						28,000 00		28,
57	Hamilton and Dundas (Electric)	7·25		100,000 00	100,000 00	100,000 00				100,000 00	100,000 00	100,000 00	5	57													
58	Hamilton Radial (Electric)	12·00		1,000,000 00	75,000 00	75,000 00								58													
59	Hampton and St. Martin's, formerly St. Martin's and Upham	30·00		100,000 00	100,000 00	100,000 00				360,000 00	145,000 00	145,000 00		59		83,612 54		83,612 54	New Brunswick		145,600 00		145,600 00				
60	Hull (Electric)	13·63		300,000 00	292,700 00	286,400 00								60													
61	Harvey Branch, New Brunswick	3·00		60,000 00	49,500 00	32,500 00								61		5,553 57		5,553 57	New Brunswick		9,000 00		9,000 00				
62	Hereford, including Dominion Lime Co.'s Line (4·80 miles)	53·30		800,000 00	800,000 00	800,000 00				800,000 00	800,000 00	800,000 00	4	62		170,560 00		170,560 00	Quebec		103,000 00		60,500 00				
63	Interprovincial Bridge and approaches, Ottawa		1·43	*	*	*				1,000,000 00			5	63		112,500 00			Ontario		50,000 00				150,000 00		
64	Irondale, Bancroft and Ottawa	50·00		9,000,000 00	53,500 00	53,500 00				4,500,000 00	450,000 00	450,000 00	5	64		160,000 00		144,000 00	do		165,000 00		105,000 00				
65	‡ Jacques Cartier Union	6·50												65													
66	Joggins, now Canada Coals and Railway Co	12·00			350,000 00	350,000 00	100,000 00	67,100 00	67,100 00					66		37,500 00		37,500 00	Nova Scotia		35,200 00		35,200 00				
67	Kaslo and Slocan	31·80		1,000,000 00	1,000,000 00	1,000,000 00				954,000 00	750,000 00	750,000 00	6	67													
68	Kent Northern 27·00	34·		100,000 00	80,000 00	50,000 00								68	58,334 27			58,334 27	New Brunswick		135,000 00		135,000 00				
69	St. Louis and Richibucto 7·00			75,000 00	57,000 00	20,000 00								69		22,400 00		22,400 00	do		21,000 00		21,000 00				
70	Kingston and Pembroke	112·85		2,500,000 00	2,242,500 00	2,204,000 00	1,150,000 00	1,150,000 00	1,150,000 00	1,128,500 00	572,000 00	572,000 00	3	70		48,000 00		48,000 00	Ontario		456,493 00		456,493 00		491,000 00		491,
71	Kingston, Smith's Falls and Ottawa			1,000,000 00	122,000 00	22,000 00				$30,000 per mile.				71		A 323,200 00			do						315,500 00		
72	L'Assomption	3·00		19,000 00	19,000 00	10,000 00								72		11,200 00		11,200 00	Quebec		7,350 00		5,512 50		1,500 00		1,5
73	Lake Champlain and St. Lawrence Junction	60·70		600,000 00	600,000 00	600,000 00				600,000 00	378,000 00	378,000 00	5	73					do		250,280 00		250,280 00		51,000 00		36,0
74	Lake Erie and Detroit River, including Erie and Huron	155·72		1,400,000 00	400,000 00	134,000 00				1,640,000 00	1,640,000 00	1,640,000 00	5	74		338,731 00 96,000 00		338,231 00 96,000 00	Ontario		83,000 00		83,000 00		87,500 00 257,500 00		87,5 257,5
75	* Lake Temiscamingue Colonization	45·84		100,000 00	50,000 00	12,500 00								75		310,335 95		310,335 95	Quebec		350,076 82		350,076 82				
76	‡ London, Huron and Bruce	69·01												76					Ontario		178,630 00		178,630 00		311,500 00		311,5
77	London and Port Stanley	24·00		730,000 00	441,500 00	28,340 00				756,378 00				77					do					680,311 00		414,000 00	1,094,3
78	Lotbinière and Mégantic	30·34		500,000 00	500,000 00	50,000 00								78		96,000 00		96,000 00	Quebec		126,994 00		126,994 00				
79	Lower Laurentian	39·50		1,500,000 00	500,000 00	500,000 00				780,000 00				79		217,600 00		217,600 00	do		252,000 00		252,000 00			25,000 00	
80	Manitoba and North-western	234·50		12,000,000 00	5,837,500 00	5,837,500 00		415,000 00	415,000 00	4,700,000 00	3,409,100 00	3,409,100 00	5 & 6	80					Manitoba						215,600 00		215,6
81	* Manitoba South-western Colonization	214·40		1,000,000 00	700,000 00	700,000 00				3,744,000 00	2,616,000 00	2,616,000 00	5	81					do	900,000 00			755,030 10				
82	Manitoba and South-eastern		†45·60	†750,000 00	226,300 00	†34,510 75								82													
83	Massawippi Valley	35·46		800,000 00	735,000 00	735,000 00								83					Quebec							65,000 00	65,0
84	‡ Midland, Ontario	166·78									C. 7,449,406 66	7,449,406 66	5	84					Ontario		168,350 00		168,350 00		144,870 85		144,8
85	Midland, Nova Scotia		38·00	1,000,000 00	104,300 00	104,300 00				1,200,000 00				85		*219,350 00			Nova Scotia		192,000 00				30,000 00		
86	Montfort and Gatineau Colonization	33·00		500,000 00	40,880 00	17,239 75				495,000 00	231,000 00			86		167,440 00		167,440 00	Quebec		158,395 80		158,395 80				
87	Montreal and Atlantic, formerly South-eastern	139·30		3,200,000 00	3,200,000 00	3,200,000 00				1,065,000 00	1,065,000 00	†	5	87					do		444,000 00		315,891 89			528,000 00	528,0
88	‡ Montreal and Champlain Junction	61·75									C. 492,020 00	492,020 00	5	88		103,600 00		103,600 00	do		150,060 00		150,000 00		21,774 00		21,7
89	* Montreal and Lake Maskinongé	12·90		100,000 00	25,000 00	25,000 00				100,000 00	100,000 00	100,000 00	5	89		41,280 00		41,280 00	do		87,750 00		87,750 00				
90	* Montreal and Ottawa	93·20		1,000,000 00	227,200 00	22,500 00				$17,500 per mile.	1,636,250 00	1,636,250 00	4	90		192,000 00		192,000 00	Ontario Quebec		100,000 00 182,210 00		100,000 00 182,210 00		Que. 5,300 00		5,3
91	Montreal Province Line, formerly Montreal, Portland and Boston	40·60		1,000,000 00	1,000,000 00	1,000,000 00								91					Quebec		231,122 00		231,122 00		25,000 00		25,0
92	Montreal and Vermont Junction	23·60		1,000,000 00	1,000,000 00	1,000,000 00				200,000 00	200,000 00	200,000 00		92													
93	Montreal Park and Island (Electric)	40·88		1,000,000 00	720,900 00	720,900 00	408,800 00	315,000 00	315,000 00	1,025,000 00	833,000 00	833,000 00	6	93													
94	Montreal Terminal, formerly Montreal Isl'nd Belt Line (Electric)	12·67		5,000,000 00	500,000 00	500,000 00				380,100 00	330,000 00	300,000 00	5	94													
95	* Montreal and Western	†66·90		10,000,000 00	300,000 00	5,000 00								95		361,270 00		361,270 00	Quebec		472,500 00		472,500 00				
96	* Nakusp and Slocan	36·90		300,000 00	300,000 00	300,000 00				925,000 00	647,074 00	647,074 00	4	96		121,600 00		117,760 00									
97	Napierville Junction (return states nil)			250,000 00						250,000 00				97													
98	Nelson and Fort Sheppard	59·40		1,500,000 00	1,500,000 00	1,500,000 00				1,500,000 00	1,408,000 00	1,408,000 00	6	98													
99	* New Brunswick	175·00		3,500,000 00	3,000,000 00	3,000,000 00				7,177,060 00	7,090,743 50	*7,090,743 50		99					New Brunswick		76,000 00		76,000 00		23,000 00		23,0
100	* New Brunswick and Canada	117·20		1,780,800 00	1,780,800 00	1,780,800 00				569,067 00	569,067 00	* 569,067 00	3½ & 6	100					do		575,600 00		575,000 00		47,500 00		47,5
101	New Brunswick and Prince Edward Island	36·00		500,000 00	212,850 00	212,850 00				400,000 00	100,000 00	100,000 00	6	101		113,440 00		113,440 00	do		99,708 90		99,708 90				
102	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Railway Co	12·50		*	*	*								102		39,840 00		39,840 00	Nova Scotia		40,000 00		40,000 00		4,000 00		4,0
103	Niagara Falls Park and River Electric Railway	13·68		1,000,000 00	600,000 00	600,000 00				690,000 00	600,000 00	600,000 00	5	103													
104	‡ Northern	172·10									C. 4,749,817 99	4,749,817 99	0, 4, 5 & 6	104					Ontario		196,188 00		196,188 00		241,980 00	390,000 00	631,98
105	‡ North Simcoe	33·34												105					do		83,300 00		83,300 00				
106	‡ Northern and Pacific Junction	111·37												106		1,320,000 00		1,320,000 00									
107	Northern Pacific and Manitoba	311·61		1,000,000 00	1,000,000 00	1,000,000 00				6,010,000 00	6,010,000 00	6,010,000 00	5	107					Manitoba		633,800 00		609,750 00				
108	* North Shore (Montreal to Quebec)	205·50		1,000,000 00	1,000,000 00	500,000 00				5,225,000 00	616,120 00	616,120 00	5	108		*954,000 00 1,500,000 00		1,500,000 00	Quebec	2,546,000 00			2,546,000 00				
109	Nosbonsing and Nipissing	5·50		250,000 00	250,000 00	250,000 00								109													
110	Nova Scotia Central, now Central Nova Scotia	74·00			500,000 00	500,000 00								110		235,200 00		235,200 00	Nova Scotia		432,261 08		432,261 08				
111	Nova Scotia Southern		11·00	1,920,000 00	80,000 00	80,000 00				960,000 00	400,000 00	400,000 00	4	111		240,000 00			do		307,200 00				80,000 00		
112	* Ontario and Quebec	474·50		2,000,000 00	2,000,000 00	2,000,000 00				19,502,591 33	19,502,591 33	19,502,591 33	5	112		196,000 00		196,000 00	Ontario						52,500 00		52,5
113	Ontario, Belmont and Northern	9·60		250,000 00	130,000 00	115,421 25				100,000 00	100,000 00	100,000 00	6	113		30,720 00		30,720 00	do		19,149 39		19,149 39				
114	Orford Mountain	26·50		1,000,000 00	50,000 00	5,000 00				500,000 00				114		84,800 00		84,800 00	Quebec		154,000 00		98,884 92				
115	Oshawa (Electric)	8·50		200,000 00	40,000 00	40,000 00				88,452 16	88,452 16	88,452 16	6	115		22,400 00		22,400 00	Ontario						5,000 00		5,0
116	Ottawa, Arnprior and Parry Sound, including Parry Sound Colonization	263·80		4,200,000 00	4,197,500 00	3,856,800 00				$25,000 per mile.	1,000,000 00	1,000,000 00	5	116		A 932,512 00		932,512 00	do		579,500 00		566,878 00		154,392 00	32,000 00	184,9
117	Ottawa and Gatineau	56·50		1,000,000 00	1,000,000 00	504,000 00				12,000,000 00	1,136,000 00		5	117		A 384,000 00		284,128 00	Quebec		796,520 00		634,410 53				
118	Ottawa and New York	56·79		1,000,000 00	1,000,000 00	1,000,000 00				1,600,000 00	1,100,000 00	1,100,000 00	4 & 6	118		A 172,384 00		172,384 00	Ontario						10,000 00		10,0
119	Pembroke Southern	20·50		250,000 00	178,000 00	107,800 00								119		A 64,000 00			do		55,500 00		55,500 00		20,000 00		20,0
120	Philipsburg Railway and Quarry Co	7·50		125,000 00	75,000 00	75,000 00								120		A 23,712 00		21,600 00	Quebec		25,667 00		25,667 00				
121	Pontiac and Renfrew	4·25		250,000 00	100,000 00	20,000 00								121		13,600 00		13,600 00	do		17,433 60		17,433 60				
122	Pontiac Pacific Junction	70·60		3,000,000 00	300,000 00	300,000 00				10,200,000 00				122		A 307,850 00		193,578 00	do		536,000 00		445,882 65		101,000 00		100,0
123	Port Arthur, Duluth and Western	85·50		1,200,000 00	1,200,000 00	1,200,000 00				1,392,000 00	1,392,000 00	1,392,000 00	5	123		271,200 00		271,200 00	Ontario		261,000 00		255,571 00		40,000 00		40,0
124	Qu'Appelle, Long Lake and Saskatchewan	253·96		2,000,000 00	201,000 00	201,000 00				3,809,140 00	3,809,140 00	3,809,140 00	6	124													
125	Quebec Central	213·50		3,381,603 33	3,381,603 33	3,381,603 33				4,993,200 00	4,993,200 00	4,993,200 00	5	125		348,342 00		348,342 00	Quebec		1,076,123 14		1,076,123 14		103,000 00		103,0
126	Quebec and Lake St. John	245·85		6,000,000 00	4,074,000 00	4,074,000 00				6,000,000 00	4,691,000 00	4,691,000 00	5	126		1,006,743 50		1,006,743 50	do		2,533,000 00		2,368,816 88		12,000 00	450,000 00	462,0
127	Quebec, Montmorency and Charlevoix	30·00		1,000,000 00	1,000,000 00	1,000,000 00				1 000,000 00	1,000 000 00	1,000,000 00	5	127		96,000 00		96,000 00	do		306,945 50		306,945 50				
128	* Quebec, Montreal, Ottawa and Occidental (Montreal to Ottawa) including Branches	154·90												128		*1,440,000 00			do	1,176,956 00	727,000 00		1,903,956 00	2,434,000 00	25,000 00		796,64
129	Red Mountain	9·53		190,600 00	190,600 00	190,600 00				238,250 00	217,000 00	217,000 00	6	129													
130	Restigouche and Western	10·00	100·00	500,000 00	500,000 00	500,000 00				$15,000 per mile.	300,000 00	300,000 00	5	130		A 150,400 00		32,000 00	New Brunswick		23,000 00				5,000 00		
131	Salisbury and Harvey, formerly Albert Railway	45·00		150,000 00	150,000 00	150,000 00				250,000 00	250,000 00			131	29,665 45			29,391 01	do		455,000 00		455,000 00		70,000 00		70,00
132	Saskatchewan and Western	15·47		1,000,000 00	232,500 00	232,500 00	155,000 00	77,500 00	77,500 00	310,000 00	181,040 00	181,040 00	5	132					Manitoba						10,000 00		10,00
133	Shore Line, formerly Grand Southern, N.B.	82·50		500,000 00	500,000 00	101,000 00				800,000 00	*800,000 00			133					New Brunswick		413,000 00		413,000 00	3,000 00			3,00
134	* Shuswap and Okanagan	51·00		750,000 00	750,000 00	750,000 00				1,250,000 00	1,250,000 00	1,139,523 00	4	134		163,200 00		163,200 00									
135	South Shore, formerly Montreal and Sorel	44·67		1,000,000 00	300,000 00	300,000 00				893,400 00				135		93,757 57		†93,757 57	Quebec		276,645 00		†276,645 00		25,000 00		25,00
136	Stanstead, Shefford and Chambly	43·00		500,000 00	500,000 00	500,000 00				696,632 20	696,632 20	696,632 20		136													
137	St. Catharines and Niagara Central	12·35		300,000 00	121,150 00	121,150 00				360,000 00	240,000 00	240,000 00	6	137		38,400 00		38,400 00	Ontario					40,000 00		100,000 00	140,00
138	St. Clair Tunnel	2·23		700,000 00	700,000 00	350,000 00				2,500,000 00	2,500,000 00	2,500,000 00	5	138		375,000 00		375,000 00									
139	* St. John Bridge and Railway Extension	2·00		200,000 00	200,000 00	55,040 43				125,000 00	125,000 00	125,000 00	5	139	433,900 00			433,900 00	New Brunswick		5,181 81		5,181 81				
140	* St. John and Maine	92·10		2,676,666 66	2,654,153 44	2,654,153 44				243,333 33	216,664 00	216,664 00	5	140					do		880,000 00	300,000 00	1,180,000 00			60,000 00	60,00
141	St. John Valley and Rivière du Loup		6·00	400,000 00	133,600 00	31,932 00								141													
142	St. Lawrence and Adirondack	33·00		1,010,413 33	1,010,413 33	1,010,413 33				827,777 77	827,777 77	827,777 77	5 & 6	142		A 149,481 60		149,481 60	Quebec		65,216 00		65,216 00				
143	* St. Lawrence and Ottawa	58·40		2,710,090 80			789,909 20	789,909 20	789,909 20	973,334 00	973,334 00	973,334 00	4	143					Ontario					300,000 00		90,000 00	390,00
144	* St. Stephen and Milltown	4·64		50,000 00	50,000 00	50,000 00				50,000 00				144		A 14,848 00		14,848 00	New Brunswick		13,920 00		13,920 00				
145	Sydney and Louisburg, Dominion Coal Co.	59·09		*	*	*								145		87,808 00		87,808 00	Nova Scotia		87,808 00		82,000 00				
146	‡ South Norfolk	17·00												146		54,400 00		54,400 00	Ontario								
147	Temiscouata	113·00		1,000,000 00	1,000,000 00	991,000 00				2,258,133 30	2,258,133 30	2,258,133 30	5	147		645,950 00		645,950 00	Quebec New Brunswick		241,500 00 66,000 00		241,500 00 66,000 00		65,000 00 Que. 25,000 00		65,00 25,00
148	Thousand Islands	4·33		250,000 00	60,000 00	60,000 00				58,000 00	58,000 00	58,000 00	6	148		24,400 00		24,400 00	Ontario						10,000 00		10,00
149	Tilsonburg, Lake Erie and Pacific	20·00		400,000 00	400,000 00	50,000 00				400,000 00	200,000 00			149		A 62,400 00		62,112 00	do		38,564 00		38,564 00		55,000 00		
150	* Tobique Valley	28·00		40,000 00	40,000 00	29,900 00				280,000 00	273,000 00	273,000 00	5	150		134,016 00		134,016 00	New Brunswick		70,000 00		70,000 00				
151	‡ Toronto Belt Line	12·70		250,000 00	50,000 00	50,000 00				650,000 00	462,500 00	462,500 00		151													
152	* Toronto Grey and Bruce	191·10		1,000,000 00	813,800 00	785,490 00				3,500,000 00	3,500,000 00	3,500,000 00	4	152		14,656 00		14,656 00	Ontario		375,282 00		375,282 00		988,000 00		988,00
153	‡ Toronto and Nipissing	85·00												153					do		105,212 00		105,212 00		376,702 59		376,70
154	‡ Lake Simcoe Junction	26·50												154					do		53,000 00		53,000 00		100,000 00		100,00
155	Toronto, Hamilton and Buffalo, including Brantford, Waterloo and Lake Erie	85·64		2,500,000 00	2,500,000 00	2,500,000 00				3,280,000 00	3,280,000 00	3,280,000 00	4	155		57,600 00		57,600 00	do						268,000 00		265,50
156	United Counties	61·00		1,000,000 00	100,000 00	100,000 00				1,000,000 00	200,000 00			156		A 208,000 00		188,816 00	Quebec		210,000 00		207,565 00				
157	Victoria and Sydney, B.C.	16·26		500,000 00	223,000 00	110,500 00				300,000 00	300,000 00	300,000 00	5	157													
158	‡ Victoria	53·25												158					Ontario		312,000 00		312,000 00		186,000 00		186,00
159	‡ Waterloo Junction	10·25												159		32 800 00		32,800 00	do						47,000 00		47,00
160	‡ Wellington, Grey and Bruce	168·13									C. 482,286 67	482,286 67	As earned.	160					do		241,276 00		241,276 00		682,000 00		682,00
161	‡ Whitby, Port Perry and Lindsay	46·50												161					do		94,957 59		94,957 59		222,094 93		222,09
162	* West Ontario Pacific	26·60		500,000 00	210,000 00	21,000 00								162		60,000 00		60,000 00	do						25,000 00		25,00
	Dominion Atlantic, comprising—																										
163	Windsor and Annapolis 87·50	†188·50		†1,119,333 00	†1,119,333 00	†1,119,333 00	†1,314,000 00	†1,314,000 00	†1,314,000 00	† 4,574,666 00	† 4,136,666 00	† 3,649,999 00	4	163		1,193,369 00		1,193,369 00									
164	Cornwallis Valley 14·00													164		44,800 00		44,800 00	Nova Scotia		44,800 00		44,800 00		27,685 00		27,68
165	Yarmouth and Annapolis (Western Counties) 87·00													165		500,000 00		500,000 00	do		679,197 45		679,197 45		150,000 00		150,00
		17,358·60	798·83		276,726,501 49	270,325,495 67		120,974,864 39	120,974,864 39		380,373,751 84	362,053,494 55			15,964,533 05	145,743,862 01		155,646,419 39		4,648,956 00	28,340,339 79	300,000 00	30,656,725 57	3,477,311 00	12,023,204 37	2,764,500 00	15,740,66

Year ended June 30, 1899.

Government Aid.		Municipal Aid.				No.	Capital from other Sources.		Total Capital.		Floating Debt.		Total Cost of Railway and Rolling Stock.	No.	Remarks.
Subscription to Shares or Bonds.	Paid up.	Loan.	Bonus.	Subscription to Shares or Bonds.	Paid up.		Subscribed.	Paid up.	Subscribed.	Paid up.	Amount.	Rate of Interest.			
$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	p. c.	$ cts.		
						1			6,015,824 87	6,015,824 87	88,966 43		4,862,933 40	1	†Alberta Railway, 107 miles from Dunmore to Lethbridge, has been sold to Can. Pac. Ry. Co., of which 1·89 miles has been abandoned by moving Lethbridge Junction westward. Dominion Land Grant.
	48,680 00					2			408,726 93	225,060 00	57,514 90	6	193,000 00	2	
	699,192 08			325,000 00	325,000 00	3			8,475,488 02	7,748,558 08	Nil.		†7,426,003 66	3	*Payable on 100 miles in Canada, between St. Lawrence River and Lennoxville, in half yearly instalments of $35,550 each for 20 years, commencing July 1, 1889.
	840,000 00		40,500 00			4								4	†Of which amount $1,357,973.14 included in cost of Can. Pac. Ry.
	82,699 25		20,000 00			5			4,951,335 00	4,240,644 25	870,955 66	Various..	2,516,282 00	5	
	24,500 00		10,000 00		9,000 00	6								6	
			192,500 00		192,500 00	7			1,646,232 80	1,298,381 04	62,556 53	6	1,372,629 43	7	
						8	19,000 00	19,000 00	55,284 00	55,284 00	19,000 00		54,199 92	8	
	179,073 00					9			241,473 00	241,473 00	Nil.			9	Amalgamated with Grand Trunk Railway (Beauharnois Junction).
	68,000 00					10			68,000 00	68,000 00	Nil.			10	do do (Brantford, Norfolk and Port Burwell).
			116,000 00		116,000 00	11			2,471,200 00	2,471,200 00	108,738 51	0 & 6	*2,472,962 35	11	*Contractor paid by shares and bonds at par and the bonuses.
	94,500 00					12			757,600 00	756,100 00	4,000 00		291,998 59	12	
			966,000 00		966,000 00	13			7,237,639 20	7,237,639 20	Nil.		7,237,639 20	13	*Share capital converted into Grand Trunk shares. Leased and partly owned by Grand Trunk Ry. Co.
						14			6,458,940 00	6,458,940 00	Nil.		*3,717,882 00	14	*Exclusive of rolling stock. Dominion Land Grant.
	270,000 00					15			7,194,355 20	7,194,355 20	Nil.		7,000,000 00	15	
	192,000 00														
	1,479,000 00			42,500 00	42,500 00	16			4,870,083 00	4,870,083 00	Nil.		*	16	*Included in Canadian Pacific Railway.
	400,000 00	20,000 00				17	331,571 69	331,571 69	3,972,586 13	2,098,411 53	Nil.		2,098,411 53	17	
	147,858 65		322,500 00		322,500 00	18			35,045,358 65	35,045,358 65	Nil.		28,575,568 16	18	
						19			126,000 00	126,000 00	Nil.		*	19	*Cost of railway cannot now be obtained.
			33,000 00		33,000 00	20			264,200 00	264,200 00	Nil.		269,200 00	20	
	274,877 50		§572,500 00		§572,500 00	21			226,744,897 88	219,155,397 88	Nil.		‡180,092,731 07	21	‡Includes acquired lines, viz.: Canada Central, Quebec Montreal Ottawa and Occ., North Shore, St. Lawrence and Ottawa, Montreal and Western, $14,282,615.05. Dominion Land Grant.
						22			3,630,000 00	2,776,250 00	Nil.		*	22	*In cost of Canadian Pacific Railway.
						23			56,750,843 89	56,750,843 89	Nil.		56,750,843 89	23	I.C.R. leased lines, from Grand Trunk, Chaudiere Curve to Chaudiere. 1·19; do do Point Lévis to Hadlow . . . . . 1·47 } 40·26; do do St. Rosalie Jct. to Montreal . . 37·62; do from Drummond County, Chaudiere to St. Rosalie. 115·93; do do St. Leonard to Nicolet Stn. 14·76 } 130·69; Windsor Branch, 32 miles, is operated by Dominion Atlantic Railway Co.
						24			3,790,107 26	3,790,107 26	Nil.		3,790,107 26	24	
									31,102,998 47	31,102,998 47	Nil.		*31,102,998 47		*Cost of railway built by the Dominion and transferred to the Can. Pac. Ry. Co.
						25			3,347,600 00	3,347,600 00	Nil.		†	25	†Cost is returned as $18,600 per mile. Dominion Land Grant.
						26			37,424 00	37,424 00	Nil.		*27,000 00	26	*Exclusive of rolling stock.
	180,000 00					27			1,854,000 00	1,854,000 00	28,416 32		1,013,500 00	27	
						28			100,000 00	100,000 00	Nil.		*100,000 00	28	*Road purchased *en bloc* second hand from sheriff's sale.
			24,000 00		24,000 00	29			854,000 00	854,000 00	74,000 00	0 & 6	*461,000 00	29	*Exclusive of rolling stock. Leased and operated by Canada Atlantic Ry.
	126,500 00		93,500 00		93,500 00	30			3,170,000 00	3,170,000 00	Nil.		1,517,012 58	30	
	139,000 00					31	92,350 36	92,350 36	1,856,450 36	1,813,750 36	92,350 36		1,721,400 00	31	
	96,000 00					32			984,200 00	237,400 00	Nil.		719,190 22	32	
			93,500 00			33			303,500 00	5,000 00	Nil.		*	33	*Under construction.
	44,740 00		113,500 00		113,500 00	34			158,240 00	158,240 00	Nil.			34	Amalgamated with Grand Trunk (Cobourg, Blairton and Marmora).
						35			1,616,300 00	1,391,300 00	Nil.		1,402,670 85	35	British Columbia Land Grant.
						36	*3,601,399 37	3,601,399 37	4,601,399 37	4,601,399 37	*3,601,399 37		4,201,399 37	36	*Amount advanced by Can. Pac. Ry. for construction. British Columbia Land Grant
	531,000 00		1,085,000 00		1,085,000 00	37			1,616,000 00	1,616,000 00	Nil.		*	37	*Share capital and cost of railway included in Ontario and Quebec Railway.
	173,650 00					38			1,213,500 00	1,213,500 00	Nil.		885,010 44	38	*The steel rails originally laid on the Springhill and Oxford Branch have been removed and placed on the main line.
	347,420 54		15,000 00		15,000 00	39	216,592 75	216,592 75	2,662,933 29	1,402,949 29			1,908,261 33	39	Under lease to Intercolonial since March 1, 1898. From Return of 1898, except as to Dominion bonus paid.
			6,500 00			40			274,715 00	107,552 00	Nil.		286,000 00	40	
	107,500 00		13,000 00		13,000 00	41			328,152 82	245,152 82	1,292 53		586,994 19	41	
						42	193,791 92	193,791 92	3,443,791 92	3,443,791 92	193,791 92	6	3,201,415 67	42	British Columbia Land Grant.
	230,000 00		80,000 00		80,000 00	43			910,000 00	729,280 00	Nil.		729,280 00	43	
						44	19,060 95	19,060 95	599,060 95	419,060 95	19,060 95	6	419,586 75	44	
						45			298,911,800 52	298,911,800 52	* Nil.		†329,238,009 23	45	*No floating debt on capital account. †Including the railways amalgamated with Grand Trunk.
						46			‡300,000 00	199,599 57				46	‡Subsidy voted by 60-61 Vic., cap. 4, of 15 p. c. of cost of rebuilding Grand Trunk Victoria Bridge at Montreal
	336,000 00		929,000 00		929,000 00	47			2,177,500 00	2,177,500 00	Nil.			47	Amalgamated with Grand Trunk. (Grand Trunk, Georgian Bay and Lake Erie).
			85,500 00		85,500 00	48			225,244 00	225,244 00	Nil.		225,244 00	48	do do In Grand Trunk system. (Owen Sound Branch).
	224,660 00		213,000 00	50,000 00	263,000 00	49			509,548 00	509,548 00	Nil.			49	do do (Grand Junction).
	423,625 00		6,000 00		6,000 00	50			1,906,863 00	1,462,713 00	Nil.		1,463,225 00	50	See also Ottawa Valley Ry., 6·75 miles, which was originally included in Great Northern, but now forms part of Atlantic and Lake Superior Railway.
						51			3,000,000 00	500,000 00				51	Dominion Land Grant.
						52			13,256,702 67	13,256,702 67	Nil.			52	Amalgamated with Grand Trunk Railway (Great Western).
				193,000 00	193,000 00	53			249,000 00	249,000 00	52,363 38		*244,969 11	53	*Exclusive of rolling stock. †C. P. R. Return, 15 miles operated.
	41,950 00					54			104,200 00	101,899 20	Nil.		*101,899 20	54	* do do Operated by Caraquet Railway.
	565,020 00		599,805 00		599,805 00	55			1,167,745 00	1,167,745 00	Nil.			55	Amalgamated with Grand Trunk Railway (Hamilton and North-western).
			28,000 00		28,000 00	56			226,300 00	226,300 00	30,000 00	5	266,012 10	56	
						57			200,000 00	200,000 00	9,024 76	5	207,770 54	57	
						58			75,000 00	75,000 00	163,695 25		81,402 14	58	
	145,600 00					59	379 46	379 46	474,592 00	474,592 00	379 46		245,000 00	59	
						60			292,700 00	286,400 00	500,000 00	5	695,175 81	60	
	9,000 00					61			64,053 57	47,053 57	Nil.		30,410 97	61	
	60,500 00					62			1,873,560 00	1,831,060 00	Nil.		1,831,060 00	62	
			150,000 00			63			312,500 00		295,498 88	7	293,893 52	63	*Jointly owned by Pontiac Pac. Jct. Ry. and Ottawa and Gatineau Ry. Companies.
	105,000 00					64	894,500 00	894,500 00	1,723,000 00	1,647,000 00	894,500 00		1,598,995 00	64	
						65					Nil.			65	Amalgamated with Grand Trunk (Jacques Cartier Union).
	35,200 00					66			489,800 00	489,800 00	226 96		168,061 25	66	
	135,000 00					67	12,408 00	12,408 00	1,762,408 00	1,762,408 00	12,408 74	0	942,971 63	67	British Columbia Land Grant.
	21,000 00					68			273,334 27	243,334 27	Nil.		246,000 00	68	
	456,493 00		491,000 00		491,000 00	69			100,400 00	63,400 00	Nil.		67,000 00	69	
			315,500 00			70	18,320 00	18,320 00	4,978,313 00	4,939,813 00	Nil.		4,065,856 00	70	
						71			760,700 00	22,000 00				71	No Return; last year's Return inserted. Not returned as under construction.
	5,512 50		1,500 00		1,500 00	72			39,050 00	28,212 50	3,750 00	8	29,999 31	72	
	250,280 00		51,000 00		36,000 00	73			1,279,280 00	1,264,280 00	*		†	73	*In Montreal and Atlantic Ry. system. †No information as to actual cost of railway,
	83,000 00		87,500 00		87,500 00	74	271,880 00	271,880 00	3,174,611 00	2,908,611 00	271,880 00	5	2,980,504 44	74	The Lake Erie and Detroit River Ry. has amalgamated the Erie and Huron Ry.
			257,500 00		257,500 00										
	350,076 82					75			710,412 77	672,912 77	Nil.		*	75	*Cost included in cost of Can. Pac. Ry.
	178,630 00		311,500 00		311,500 00	76			490,130 00	490,130 00	Nil.			76	Amalgamated with Grand Trunk Railway (London, Huron and Bruce).
		680,311 00		414,000 00	1,094,311 00	77	85,000 00	85,000 00	1,620,811 00	1,207,651 00	1,001,157 32	3½ & 6	1,046,636 78	77	Leased by Lake Erie and Detroit River Railway Co.
	126,994 00					78			722,994 00	272,994 00	Nil.		219,017 43	78	
	252,000 00			25,000 00		79	220,000 00	220,000 00	1,214,600 00	1,189,600 00	220,000 00		1,189,600 00	79	35 miles leased by Quebec and Lake St. John Ry.; 4½ miles not under traffic.
			215,600 00		215,600 00	80			9,877,200 00	9,877,200 00	1,466,465 38		*3,764,117 16	80	*Including Saskatchewan and Western. Dominion Land Grant.
	755,030 10					81			4,216,000 00	4,071,030 10	Nil.		*3,656,040 73	81	*Also $108,587.40 included in cost of Can. Pac. Ry. Dominion Land Grant.
						82			226,300 00	†34,510 75			*	82	*Under construction. †From last year's Return, as this year's Return is incomplete.
				65,000 00	65,000 00	83			800,000 00	800,000 00	Nil.		800,000 00	83	[Dominion Land Grant.
	168,350 00		144,870 85		144,870 85	84			7,762,627 51	7,762,627 51	Nil.			84	Amalgamated with Grand Trunk (Midland).
			30,000 00			85			545,650 00	104,300 00	Nil.		700,000 00	85	*This Dom. subsidy includes 15 p. c. of cost of Shubenacadie Bridge up to $33,750.
	158,395 80					86			597,715 80	343,075 55	248,916 76	7	526,373 70	86	Formerly Montfort Colonization Railway.
	315,891 89			528,000 00	528,000 00	87	607,701 65	607,701 65	5,844,701 65	4,651,593 54	607,701 65	5	*4,829,294 43	87	*Cost to Montreal and Atlantic Ry. Co. and amounts shown by South-eastern Ry. Co. for subscription to shares and bonuses. †These bonds remain in the treasury of the Montreal and Atlantic Ry. Co.
	150,000 00		21,774 00		21,774 00	88			767,394 00	767,394 00	Nil.			88	Amalgamated with Grand Trunk Railway (Montreal and Champlain Junction).
	87,750 00					89			254,030 00	254,030 00	34,000 00	6	254,335 00	89	1·9 miles not under operation.
	100,000 00					90			2,342,960 00	2,138,260 00	Nil.		1,887,709 68	90	
	182,210 00		Que. 5,300 00		5,300 00										
	231,122 00		25,000 00		25,000 00	91			1,256,122 00	1,256,122 00	Nil.		1,000,000 00	91	Operated by Central Vermont Ry.
						92			1,200,000 00	1,200,000 00	Nil.			92	do do No reliable return of capital can be obtained as the
						93			1,868,900 00	1,868,900 00	324,118 26	6	1,075,011 43	93	[original books of the Company have been lost or destroyed.
						94			830,000 00	800,000 00	36,966 22	0 & 6	869,298 83	94	
	472,500 00					95	408,358 58	408,358 58	1,542,128 58	1,247,128 58	408,358 58		*1,215,312 34	95	*Also $6,264.32, which amount is included in cost of Can. Pac. Ry. †3·1 miles from Labelle eastward is not used.
						96			1,068,674 00	1,064,834 00	Nil.		*665,250 00	96	*Exclusive of rolling stock.
						97					Nil.			97	Dominion and Quebec Government subsidies originally granted have lapsed.
						98			2,908,000 00	2,908,000 00	Nil.		2,743,650 00	98	British Columbia Land Grant.
	76,000 00		23,000 00		23,000 00	99			10,189,743 50	10,189,743 50			††6,744,576 39	99	*Including $4,177,060 4 p. c. Debenture Stock. †Including securities of leased lines acquired, $1,759,333.13. ‡Also $448,826.51 included in cost of C.P.R.
	575,000 00		47,500 00		47,500 00	100			2,972,367 00	2,972,367 00	Nil.		†3,546,000 00	100	*Including $399,067 3½ p. c. guaranteed Debenrure Stock. †From return of 1880.
	99,708 90					101			525,998 90	525,998 90	Nil.		301,567 68	101	[Books of company destroyed in fire at St. John in 1877.
	40,000 00		4,000 00		4,000 00	102	*123,344 83	*123,344 83	207,184 83	207,184 83	Nil.		207,344 83	102	*From general capital of company which could not be divided.
						103	23,618 52	23,618 52	1,223,618 52	1,223,618 52	23,618 52	0 & 5	912,363 42	103	
	196,188 00		241,980 00	390,000 00	631,980 00	104			5,577,985 99	5,577,985 99	Nil.			104	Amalgamated with Grand Trunk (Northern).
	83,300 00					105			83,300 00	83,300 00	Nil.			105	do do (North Simcoe).
						106			1,320,000 00	1,320,000 00	Nil.			106	do do (Northern and Pacific Junction).
	609,756 00					107			7,643,800 00	7,619,750 00	Nil.		4,554,232 42	107	
	2,546,000 00					108			6,616,120 00	5,162,120 00			†	108	*Dominion Govt. pay to Quebec Govt. 5 p. c. per annum on this amount. †Included in cost of C. P. Ry.
						109			250,000 00	250,000 00	Nil.		237,800 00	109	
	432,261 08					110			1,167,461 08	1,167,461 08	Nil.		*1,452,656 32	110	Railway was sold by sheriff and original shares, capital and bonds wiped out. New company have not returned the Dominion and Provincial Bonuses paid to original company. *From Return of 1895.
			80,000 00			111			1,107,200 00	480,000 00	*5,150 00	6		111	*Also open accounts about $25,000 for construction and not due.
			52,500 00		52,500 00	112			21,751,091 33	21,751,091 33	Nil.		*21,395,333 22	112	*Also $4,256,422.28 included in cost of Can. Pac. Ry. Includes Credit Valley and West
	19,149 39					113			279,869 39	265,290 64	2,444 90	0 & 6	265,290 64	113	[Ontario Pacific Railways.
	98,884 92					114	196,278 08	196,278 08	485,078 08	384,963 00	45,000 00	6½	384,963 00	114	
			5,000 00		5,000 00	115			155,852 16	155,852 16	26,422 41	6	178,343 28	115	
	566,878 00		154,392 00	32,000 00	184,900 00	116			6,895,904 00	6,541,090 00	Nil.		7,819,768 17	116	
	634,410 53					117			3,316,520 00	1,422,538 53	397,453 95	7	1,748,714 65	117	
			10,000 00		10,000 00	118			2,282,384 00	2,282,384 00	Nil.		922,545 60	118	Exclusive of rolling stock.
	55,500 00		20,000 00		20,000 00	119			317,500 00	183,300 00	Nil.		264,500 00	119	
	25,667 00					120			124,379 00	122,267 00	4,500 00	6	65,198 79	120	
	17,433 60					121			131,033 60	51,033 60	Nil.		46,856 84	121	
	445,882 65		101,000 00		100,000 00	122			1,244,850 00	1,039,460 65	496,661 94	7	1,471,485 47	122	
	255,571 00		40,000 00		40,000 00	123			3,164,200 00	3,158,771 00	4,636 03		2,911,448 90	123	
						124			4,010,140 00	4,010,140 00	Nil.		*2,539,600 00	124	*Exclusive of rolling stock. Operated by Can. Pac. Ry. Dominion Land Grant.
	1,076,123 14		103,000 00		103,000 00	125			9,902,268 47	9,902,268 47	Nil.		8,375,496 67	125	
	2,368,816 88		12,000 00	450,000 00	462,000 00	126			12,766,743 50	12,602,560 38	74,085 00	6 & 7	12,598,816 00	126	
	306,945 50					127			2,402,945 50	2,402,945 50	Nil.		2,038,149 40	127	
	1,903,956 00	2,434,000 00	25,000 00		796,644 62	128			5,802,956 00	2,700,600 62	Nil.			128	*Dominion Government pay to Quebec Government 5 p.c. per annum on this amount.
						129			407,600 00	407,600 00	Nil.		407,600 00	129	
			5,000 00			130			978,400 00	832,000 00	Nil.		223,339 00	130	
	455,000 00		70,000 00		70,000 00	131			954,665 45	704,391 01	Nil.		1,798,364 70	131	This railway has been purchased by a new company.
			10,000 00		10,000 00	132			501,040 00	501,040 00	*		*	132	Leased by Manitoba and North-western Ry. Co. *Included in Manitoba and North-western. Dominion Land Grant.
	413,000 00	3,000 00			3,000 00	133			1,716,000 00	517,000 00	13,728 62		1,817,757 63	133	*Bonds held in trust pending decision of outstanding law suits.
						134			2,163,200 00	2,052,723 00	Nil.		*1,250,000 00	134	*Exclusive of rolling stock.
	†276,645 00		25,000 00		25,000 00	135			695,402 57	695,402 57	518,133 09	6	*877,014 37	135	*As returned by South Shore Ry. Co. †South Shore Co. have not included in their Return the Dominion bonus and $226,645 of the Quebec bonus, as these bonuses were paid to the Montreal and Sorel Ry. Co.
						136			1,196,632 20	1,196,632 20	Nil.		*	136	*No reliable return of capital or cost of road can be obtained, as the original books of the company were lost or destroyed. Operated by the Central Vermont Ry.
		40,000 00		100,000 00	140,000 00	137	216,000 00	216,000 00	755,550 00	755,550 00	Nil.		463,702 00	137	Road sold April 15, 1899, by order of court. New company, not fully organized, to be
						138	13,577 38	13,577 38	3,588,577 38	3,238,577 38	Nil.		3,238,577 38	138	[known as Niagara, St. Catherines and Toronto Ry.
	5,181 81					139			764,081 81	619,122 24	Nil.		640,029 52	139	
300,000 00	1,180,000 00			60,000 00	60,000 00	140			4,110,817 44	4,110,817 44			*2,698,589 00	140	*Cash to bondholders at foreclosure.
	65,216 00					141			133,600 00	31,932 00	Nil.		23,461 77	141	
						142			2,052,888 70	2,052,888 70	53,850 39	6	1,497,251 05	142	
		300,000 00		90,000 00	390,000 00	143			2,153,243 20	2,153,243 20			1,903,488 99	143	
	13,920 00					144			78,768 00	78,768 00	Nil.		59,399 17	144	
	82,000 00					145	*1,253,717 00	*1,253,717 00	1,429,333 00	1,423,525 00	Nil.		1,945,499 00	145	*From the general capital of the Dominion Coal Co.
			65,000 00		65,000 00	146			119,400 00	119,400 00	Nil.			146	Amalgamated with Grand Trunk (South Norfolk).
	241,500 00														
	66,000 00		Que. 25,000 00		25,000 00	147			4,236,583 30	4,227,583 30	Nil.		2,022,000 80	147	
			10,000 00		10,000 00	148			152,400 00	152,400 00	Nil.		119,018 89	148	
	38,564 00		55,000 00			149			755,964 00	150,676 00	105,000 00	6	302,500 00	149	
	70,000 00					150			517,016 00	506,916 00	1,874 00		*326,200 00	150	*Exclusive of rolling stock.
						151			512,500 00	512,500 00	Nil.		512,500 00	151	In Grand Trunk system (Toronto Belt Line).
	375,282 00		988,000 00		988,000 00	152	322,583 30	322,583 30	6,014,321 30	5,986,011 30	Nil.		*5,547,338 12	152	*Paid in stock, bonds and Government debentures.
	105,212 00		376,702 59		376,702 59	153			481,914 59	481,914 59	Nil.			153	Amalgamated with Grand Trunk (Toronto and Nipissing).
	53,000 00		100,000 00		100,000 00	154			153,000 00	153,000 00	Nil.			154	do do (Lake Simcoe Junction).
			268,000 00		265,500 00	155			6,105,600 00	6,103,100 00	211,555 31		6,254,386 75	155	2·06 miles leased to Can. Pac. Ry., and ·64 miles running powers granted to C. P. Ry.
	207,565 00					156			718,000 00	496,381 00	550,000 00	6 & 7	1,010,000 00	156	
						157			523,000 00	410,500 00	25,085 11	6	435,585 11	157	
	312,000 00		186,000 00		186,000 00	158			498,000 00	498,000 00	Nil.			158	Amalgamated with Grand Trunk (Victoria).
			47,000 00		47,000 00	159			79,800 00	79,800 00	Nil.			159	do do (Waterloo Junction).
	241,276 00		682,000 00		682,000 00	160			1,405,562 67	1,405,562 67	Nil.			160	do do (Wellington, Grey and Bruce).
	94,957 59		222,094 93		222,094 93	161			317,052 52	317,052 52	Nil.			161	do do (Whitby, Port Perry and Lindsay).
			25,000 00		25,000 00	162			295,000 00	106,000 00	Nil.		*	162	*Cost included in cost of Ontario and Quebec Railway.
						163								163	†As returned by the Dominion Atlantic Company, which Company have not included in their Return the aid paid by the Dominion and Nova Scotia Governments and municipalities to the several railways now comprised in the Dominion Atlantic Railway, which aid however is shown in this statement.
	44,800 00		27,685 00		27,685 00	164			9,370,533 54	8,883,866 54	†206,833 30	†4	†6,236,361 00	164	
	679,197 45		150,000 00		150,000 00	165	*160,683 09	*160,683 09						165	*Due the Dominion Government, being the amount expended by that government in the construction of the Annapolis and Digby Railway over the grant of $500,000, which railway is included in Yarmouth and Annapolis or Western Counties Railway. Nova Scotia Land Grant.

Dominion Government Aid.				Province.	Provincial Government Aid.				Municipal Aid.				Numbrr.	Capital from other Sources.		Total Capital.		Floating Debt.		Total Cost of Railway and Rolling Stock.	Number.	Remarks.
an.	Bonus.	Subscription to Shares or Bonds.	Paid up.		Loan.	Bonus.	Subscription to Shares or Bonds.	Paid up.	Loan.	Bonus.	Subscription to Shares or Bonds.	Paid up.		Subscribed.	Paid up.	Subscribed.	Paid up.	Amount.	Rate of Interest.			
cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	p. c.	$ cts.		
													1			6,015,824 87	6,015,824 87	88,966 43		4,862,933 40	1	† Alberta Railway, 107 miles from Dunmore to Lethbridge, has been sold to Can. Pac. Ry. Co., of which 1·89 miles has been abandoned by moving Lethbridge Junction westward. Dominion Land Grant.
	50,460 00		50,460 00	New Brunswick		48,680 00		48,680 00					2			408,726 93	225,060 00	57,514 90	6	193,000 00	2	
	*1,422,000 00 156,800 00		*711,000 00 156,800 00	Quebec		711,122 02		699,192 08			325,000 00	325,000 00	3			8,475,488 02	7,748,558 08	Nil.		†7,426,003 66	3	* Payable on 100 miles in Canada, between St. Lawrence River and Lennoxville, in half yearly instalments of $35,550 each for 20 years, commencing July 1, 1889. † Of which amount $1,357,973.14 included in cost of Can. Pac. Ry.
	620,000 00		620,000 00	Quebec		1,415,000 00		840,000 00		40,500 00			4								4	
	40,345 00		40,345 00	do		156,000 00		82,699 25		20,000 00			5			4,951,335 00	4,240,644 25	870,955 66	Various	2,516,282 00	5	
	21,600 00		21,600 00	do		25,390 00		24,500 00		10,000 00		9,000 00	6								6	
	208,732 80		208,732 80	Ontario		90,000 00				192,500 00		192,500 00	7			1,646,232 80	1,298,381 04	62,556 53	6	1,372,629 43	7	
													8	19,000 00	19,000 00	55,284 00	55,284 00	19,000 00		54,199 92	8	
	62,400 00		62,400 00	Quebec		179,073 00		179,073 00					9			241,473 00	241,473 00	Nil.			9	Amalgamated with Grand Trunk Railway (Beauharnois Junction).
				Ontario		68,000 00		68,000 00					10			68,000 00	68,000 00	Nil.			10	do do (Brantford, Norfolk and Port Burwell).
	105,200 00		105,200 00	do						116,000 00		116,000 00	11			2,471,200 00	2,471,200 00	108,738 51	0 & 6	*2,472,962 35	11	* Contractor paid by shares and bonds at par and the bonuses.
	101,600 00		101,600 00	New Brunswick		96,000 00		94,500 00					12			757,600 00	756,100 00	4,000 00		291,998 59	12	
				Ontario						966,000 00		966,000 00	13			7,237,639 20	7,237,639 20	Nil.		7,237,639 20	13	*Share capital converted into Grand Trunk shares. Leased and partly owned by Grand Trunk Ry. Co.
													14			6,458,940 00	6,458,940 00	Nil.		*3,717,882 00	14	* Exclusive of rolling stock. Dominion Land Grant.
	282,355 20		282,355 20	Ontario Quebec		270,000 00 192,000 00		270,000 00 192,000 00					15			7,194,355 20	7,194,355 20	Nil.		7,000,000 00	15	
	1,525,250 00		1,525,250 00	Ontario		1,479,000 00		1,479,000 00			42,500 00	42,500 00	16			4,870,083 00	4,870,083 00	Nil.		*	16	* Included in Canadian Pacific Railway.
	366,839 84		366,839 84	New Brunswick		400,000 00		400,000 00	20,000 00				17	331,571 69	331,571 69	3,972,586 13	2,098,411 53	Nil.		2,098,411 53	17	
				Ontario		147,858 65		147,858 65		322,500 00		322,500 00	18			35,045,358 65	35,045,358 65	Nil.		28,575,568 16	18	
													19			126,000 00	126,000 00	Nil.		*	19	* Cost of railway cannot now be obtained.
	51,200 00		51,200 00	Ontario						33,000 00		33,000 00	20			264,200 00	264,200 00	Nil.		269,200 00	20	
	25,080,000 00		25,080,000 00	Manitoba British Columbia		237,377 50 37,500 00		274,877 50		§572,500 00		§572,500 00	21			226,744,897 88	219,155,397 88	Nil.		‡180,092,731 07	21	‡ Includes acquired lines, viz.: Canada Central, Quebec Montreal Ottawa and Occ., North Shore, St. Lawrence and Ottawa, Montreal and Western, $14,282,615.05. Dominion Land Grant.
	3,630,000 00		2,776,250 00										22			3,630,000 00	2,776,250 00	Nil.		*	22	* In cost of Canadian Pacific Railway.
	56,750,843 89		56,750,843 89										23			56,750,843 89	56,750,843 89	Nil.		56,750,843 89	23	I.C.R. leased lines, from Grand Trunk, Chaudiere Curve to Chaudiere. 1·19 do do Point Lévis to Hadlow 1·47 do do St. Rosalie Jct. to Montreal 37·62 } 40·28 do from Drummond County, Chaudiere to St. Rosalie 115·93 do do St. Leonard to Nicolet Stn. 14·76 } 130·69 Windsor Branch, 32 miles, is operated by Dominion Atlantic Railway Co.
	3,790,107 26		3,790,107 26										24			3,790,107 26	3,790,107 26	Nil.		3,790,107 26	24	
	31,102,998 47		31,102,998 47													31,102,998 47	31,102,998 47	Nil.		*31,102,998 47		* Cost of railway built by the Dominion and transferred to the Can. Pac. Ry. Co.
													25			3,347,600 00	3,347,600 00	Nil.		†	25	† Cost is returned as $18,600 per mile. Dominion Land Grant.
	7,424 00		7,424 00										26			37,424 00	27,424 00	Nil.		*27,000 00	26	*Exclusive of rolling stock.
	224,000 00		224,000 00	New Brunswick		180,000 00		180,000 00					27			1,854,000 00	1,854,000 00	28,416 32		1,013,500 00	27	
													28			100,000 00	100,000 00	Nil.		*100,000 00	28	* Road purchased *en bloc* second hand from sheriff's sale.
				Ontario						24,000 00		24,000 00	29			854,000 00	854,000 00	74,000 00	0 & 6	*461,000 00	29	* Exclusive of rolling stock. Leased and operated by Canada Atlantic Ry.
				do		126,500 00		126,500 00		93,500 00		93,500 00	30			3,170,000 00	3,170,000 00	Nil.		1,517,012 58	30	
	A 185,100 00		142,400 00	New Brunswick		139,000 00		139,000 00					31	92,350 36	92,350 36	1,856,450 36	1,813,750 36	92,350 36		1,721,400 00	31	
	A 195,200 00		90,400 00	Nova Scotia		288,000 00		96,000 00					32			984,200 00	237,400 00	Nil.		719,190 22	32	
	A 160,000 00			Ontario						93,500 00			33			303,500 00	5,000 00	Nil.		*	33	* Under construction.
				do	26,000 00	18,740 00		44,740 00		113,500 00		113,500 00	34			158,240 00	158,240 00	Nil.			34	Amalgamated with Grand Trunk (Cobourg, Blairton and Marmora).
	88,800 00		88,800 00										35			1,616,300 00	1,391,300 00	Nil.		1,402,670 85	35	British Columbia Land Grant.
													36	*3,601,399 37	3,601,399 37	4,601,399 37	4,601,399 37	*3,601,399 37		4,201,399 37	36	* Amount advanced by Can. Pac. Ry. for construction. British Columbia Land Grant
				Ontario		531,000 00		531,000 00		1,085,000 00		1,085,000 00	37			1,616,000 00	1,616,000 00	Nil.		*	37	* Share capital and cost of railway included in Ontario and Quebec Railway.
	39,850 00		39,850 00	Nova Scotia		173,650 00		173,650 00					38			1,213,500 00	1,213,500 00	Nil.		885,010 44	38	* The steel rails originally laid on the Springhill and Oxford Branch have been removed and placed on the main line.
	A 433,920 00		423,936 00	Quebec		347,420 54		347,420 54		15,000 00		15,000 00	39	216,592 75	216,592 75	2,662,933 29	1,402,949 29			1,908,261 33	39	Under lease to Intercolonial since March 1, 1898. From Return of 1898, except as to Dominion bonus paid.
	A 76,800 00		69,952 00	do		115,215 00				6,500 00			40			274,715 00	107,552 00	Nil.		286,000 00	40	
	82,652 82		82,652 82	New Brunswick		107,500 00		107,500 00		13,000 00		13,000 00	41			328,152 82	245,152 82	1,292 53		586,994 19	41	
	750,000 00		750,000 00										42	193,791 92	193,791 92	3,443,791 92	3,443,791 92	193,791 92	6	3,201,415 67	42	British Columbia Land Grant.
				New Brunswick		230,000 00		230,000 00		80,000 00		80,000 00	43			910,000 00	729,280 00	Nil.		729,280 00	43	
00	30,000 00		330,000 00										44	19,060 95	19,060 95	599,060 95	419,060 95	19,060 95	6	419,586 75	44	
33			15,142,633 33										45			298,911,800 52	298,911,800 52	* Nil.		†329,238,009 23	45	* No floating debt on capital account. † Including the railways amalgamated with Grand Trunk.
	‡300,000 00		199,599 57										46			‡300,000 00	199,599 57				46	‡ Subsidy voted by 60-61 Vic., cap. 4, of 15 p. c. of cost of rebuilding Grand Trunk Victoria Bridge at Montreal
				Ontario		336,000 00		336,000 00		929,000 00		929,000 00	47			2,177,500 00	2,177,500 00	Nil.			47	Amalgamated with Grand Trunk. (Grand Trunk, Georgian Bay and Lake Erie).
	39,744 00		39,744 00	do						85,500 00		85,500 00	48			225,244 00	225,244 00	Nil.		225,244 00	48	do do In Grand Trunk system. (Owen Sound Branch).
	21,888 00		21,888 00	do		224,660 00		224,660 00		213,000 00	50,000 00	263,000 00	49			509,548 00	509,548 00	Nil.			49	do do (Grand Junction).
	A 495,988 00		153,088 00	Quebec		524,875 00		423,625 00		6,000 00		6,000 00	50			1,906,863 00	1,462,713 00	Nil.		1,463,225 00	50	See also Ottawa Valley Ry., 6·75 miles, which was originally included in Great Northern, but now forms part of Atlantic and Lake Superior Railway.
													51			3,000,000 00	500,000 00				51	Dominion Land Grant.
													52			13,256,702 67	13,256,702 67	Nil.			52	Amalgamated with Grand Trunk Railway (Great Western).
	46,000 00		46,000 00	Ontario							193,000 00	193,000 00	53			249,000 00	249,000 00	52,363 38		*244,969 11	53	* Exclusive of rolling stock. † C. P. R. Return, 15 miles operated.
	A 56,000 00		53,699 20	New Brunswick		41,950 00		41,950 00					54			104,200 00	101,899 20	Nil.		*101,899 20	54	* do do Operated by Caraquet Railway.
				Ontario		565,020 00		565,020 00		599,805 00		599,805 00	55			1,167,745 00	1,167,745 00	Nil.			55	Amalgamated with Grand Trunk Railway (Hamilton and North-western).
				do						28,000 00		28,000 00	56			226,300 00	226,300 00	30,000 00	5	266,012 10	56	
													57			200,000 00	200,000 00	9,024 76	5	207,770 54	57	
													58			75,000 00	75,000 00	163,695 25		81,402 14	58	
	83,612 54		83,612 54	New Brunswick		145,600 00		145,600 00					59	379 46	379 46	474,592 00	474,592 00	379 46		245,000 00	59	
													60			292,700 00	286,400 00	500,000 00	5	695,175 81	60	
	5,553 57		5,553 57	New Brunswick		9,000 00		9,000 00					61			64,053 57	47,053 57	Nil.		30,410 97	61	
	170,560 00		170,560 00	Quebec		103,000 00		60,500 00					62			1,873,560 00	1,831,060 00	Nil.		1,831,060 00	62	
	112,500 00			Ontario		50,000 00				150,000 00			63			312,500 00		295,498 88	7	293,893 52	63	* Jointly owned by Pontiac Pac. Jct. Ry. and Ottawa and Gatineau Ry. Companies.
	160,000 00		144,000 00	do		165,000 00		105,000 00					64	894,500 00	894,500 00	1,723,000 00	1,647,000 00	894,500 00		1,598,995 00	64	
													65					Nil.			65	Amalgamated with Grand Trunk (Jacques Cartier Union).
	37,500 00		37,500 00	Nova Scotia		35,200 00		35,200 00					66			489,800 00	489,800 00	226 96		168,061 25	66	
													67	12,408 00	12,408 00	1,762,408 00	1,762,408 00	12,408 74	0	942,971 63	67	British Columbia Land Grant.
27			58,334 27	New Brunswick		135,000 00		135,000 00					68			273,334 27	243,334 27	Nil.		246,000 00	68	
	22,400 00		22,400 00	do		21,000 00		21,000 00					69			100,400 00	63,400 00	Nil.		67,000 00	69	
	48,000 00		48,000 00	Ontario		456,493 00		456,493 00		491,000 00		491,000 00	70	18,320 00	18,320 00	4,978,313 00	4,939,813 00	Nil.		4,065,856 00	70	
	A 323,200 00			do						315,500 00			71			760,700 00	22,000 00				71	No Return; last year's Return inserted. Not returned as under construction.
	11,200 00		11,200 00	Quebec		7,350 00		5,512 50		1,500 00		1,500 00	72			39,050 00	28,212 50	3,750 00	8	29,999 31	72	
				do		250,280 00		250,280 00		51,000 00		36,000 00	73			1,279,280 00	1,264,280 00	*		†	73	* In Montreal and Atlantic Ry. system. † No information as to actual cost of railway,
	338,731 00 96,000 00		338,231 00 96,000 00	Ontario		83,000 00		83,000 00		87,500 00 257,500 00		87,500 00 257,500 00	74	271,880 00	271,880 00	3,174,611 00	2,908,611 00	271,880 00	5	2,980,504 44	74	The Lake Erie and Detroit River Ry. has amalgamated the Erie and Huron Ry.
	310,335 95		310,335 95	Quebec		350,076 82		350,076 82					75			710,412 77	672,912 77	Nil.		*	75	* Cost included in cost of Can. Pac. Ry.
				Ontario		178,630 00		178,630 00		311,500 00		311,500 00	76			490,130 00	490,130 00	Nil.			76	Amalgamated with Grand Trunk Railway (London, Huron and Bruce).
				do					680,311 00		414,000 00	1,094,311 00	77	85,000 00	85,000 00	1,620,811 00	1,207,651 00	1,001,157 32	3½ & 6	1,046,636 78	77	Leased by Lake Erie and Detroit River Railway Co.
	96,000 00		96,000 00	Quebec		126,994 00		126,994 00					78			722,994 00	272,994 00	Nil.		219,017 43	78	
	217,600 00		217,600 00	do		252,000 00		252,000 00			25,000 00		79	220,000 00	220,000 00	1,214,600 00	1,189,600 00	220,000 00		1,189,600 00	79	35 miles leased by Quebec and Lake St. John Ry.; 4½ miles not under traffic.
				Manitoba						215,600 00		215,600 00	80			9,877,200 00	9,877,200 00	1,466,465 38		*3,764,117 16	80	* Including Saskatchewan and Western. Dominion Land Grant.
				do	900,000 00			755,030 10					81			4,216,000 00	4,071,030 10	Nil.		*3,656,040 73	81	* Also $108,587.40 included in cost of Can. Pac. Ry. Dominion Land Grant.
													82			226,300 00	†34,510 75			*	82	* Under construction. † From last year's Return, as this year's Return is incomplete. [Dominion Land Grant.
				Quebec							65,000 00	65,000 00	83			800,000 00	800,000 00	Nil.		800,000 00	83	
				Ontario		168,350 00		168,350 00		144,870 85		144,870 85	84			7,762,627 51	7,762,627 51	Nil.			84	Amalgamated with Grand Trunk (Midland).
	*219,350 00			Nova Scotia		192,000 00				30,000 00			85			545,650 00	104,300 00	Nil.		700,000 00	85	* This Dom. subsidy includes 15 p. c. of cost of Shubenacadie Bridge up to $33,750.
	167,440 00		167,440 00	Quebec		158,395 80		158,395 80					86			597,715 80	343,075 55	248,916 76	7	526,373 70	86	Formerly Montfort Colonization Railway.
				do		444,000 00		315,891 89			528,000 00	528,000 00	87	607,701 65	607,701 65	5,844,701 65	4,651,593 54	607,701 65	5	*4,829,294 43	87	* Cost to Montreal and Atlantic Ry. Co. and amounts shown by South-eastern Ry. Co. for subscription to shares and bonuses. † These bonds remain in the treasury of the Montreal and Atlantic Ry. Co.
	103,600 00		103,600 00	do		150,000 00		150,000 00		21,774 00		21,774 00	88			767,394 00	767,394 00	Nil.			88	Amalgamated with Grand Trunk Railway (Montreal and Champlain Junction).
	41,280 00		41,280 00	do		87,750 00		87,750 00					89			254,030 00	254,030 00	34,000 00	6	254,335 00	89	1·9 miles not under operation.
	192,000 00		192,000 00	Ontario Quebec		100,000 00 182,210 00		100,000 00 182,210 00		Que. 5,300 00		5,300 00	90			2,342,960 00	2,138,260 00	Nil.		1,887,709 68	90	
				Quebec		231,122 00		231,122 00		25,000 00		25,000 00	91			1,256,122 00	1,256,122 00	Nil.		1,000,000 00	91	Operated by Central Vermont Ry.
													92			1,200,000 00	1,200,000 00	Nil.			92	do do No reliable return of capital can be obtained as the [original books of the Company have been lost or destroyed.
													93			1,868,900 00	1,868,900 00	324,118 26	6	1,075,011 43	93	
													94			830,000 00	800,000 00	36,966 22	0 & 6	869,298 83	94	
	361,270 00		361,270 00	Quebec		472,500 00		472,500 00					95	408,358 58	408,358 58	1,542,128 58	1,247,128 58	408,358 58		*1,215,312 34	95	* Also $6,264.32, which amount is included in cost of Can. Pac. Ry. † 3·1 miles from Labelle eastward is not used.
	121,600 00		117,760 00										96			1,068,674 00	1,064,834 00	Nil.		*665,250 00	96	* Exclusive of rolling stock.
													97					Nil.			97	Dominion and Quebec Government subsidies originally granted have lapsed.
													98			2,908,000 00	2,908,000 00	Nil.		2,743,650 00	98	British Columbia Land Grant.
				New Brunswick		76,000 00		76,000 00		23,000 00		23,000 00	99			10,189,743 50	10,189,743 50			†‡6,744,576 39	99	* Including $4,177,060 4 p. c. Debenture Stock. † Including securities of leased lines acquired, $1,759,333.13. ‡ Also $448,826.51 included in cost of C.P.R.
				do		575,000 00		575,000 00		47,500 00		47,500 00	100			2,972,367 00	2,972,367 00	Nil.		†3,546,000 00	100	* Including $399,067 3½ p. c. guaranteed Debenrure Stock. † From return of 1880. [Books of company destroyed in fire at St. John in 1877.
	113,440 00		113,440 00	do		99,708 90		99,708 90					101			525,998 90	525,998 90	Nil.		301,567 68	101	
	39,840 00		39,840 00	Nova Scotia		40,000 00		40,000 00		4,000 00		4,000 00	102	*123,344 83	*123,344 83	207,184 83	207,184 83	Nil.		207,344 83	102	* From general capital of company which could not be divided.
													103	23,618 52	23,618 52	1,223,618 52	1,223,618 52	23,618 52	0 & 5	912,363 42	103	
				Ontario		196,188 00		196,188 00		241,980 00	390,000 00	631,980 00	104			5,577,985 99	5,577,985 99	Nil.			104	Amalgamated with Grand Trunk (Northern).
				do		83,300 00		83,300 00					105			83,300 00	83,300 00	Nil.			105	do do (North Simcoe).
	1,320,000 00		1,320,000 00										106			1,320,000 00	1,320,000 00	Nil.			106	do do (Northern and Pacific Junction).
				Manitoba		633,800 00		609,750 00					107			7,643,800 00	7,619,750 00	Nil.		4,554,232 42	107	
	*954,000 00 1,500,000 00		1,500,000 00	Quebec	2,546,000 00			2,546,000 00					108			6,616,120 00	5,162,120 00			†	108	* Dominion Govt. pay to Quebec Govt. 5 p. c. per annum on this amount. † Included in cost of C. P. Ry.
													109			250,000 00	250,000 00	Nil.		237,800 00	109	
	235,200 00		235,200 00	Nova Scotia		432,261 08		432,261 08					110			1,167,461 08	1,167,461 08	Nil.		*1,452,656 32	110	Railway was sold by sheriff and original shares, capital and bonds wiped out. New company have not returned the Dominion and Provincial Bonuses paid to original company. * From Return of 1895.
	240,000 00			do		307,200 00				80,000 00			111			1,107,200 00	480,000 00	*5,150 00	6		111	* Also open accounts about $25,000 for construction and not due.
	196,000 00		196,000 00	Ontario						52,500 00		52,500 00	112			21,751,091 33	21,751,091 33	Nil.		*21,395,333 22	112	* Also $4,256,422.28 included in cost of Can. Pac. Ry. Includes Credit Valley and West [Ontario Pacific Railways.
	30,720 00		30,720 00	do		19,149 39		19,149 39					113			279,869 39	265,290 64	2,444 90	0 & 6	265,290 64	113	
	84,800 00		84,800 00	Quebec		154,000 00		98,884 92					114	196,278 08	196,278 08	485,078 08	384,963 00	45,000 00	6½	384,963 00	114	
	22,400 00		22,400 00	Ontario						5,000 00		5,000 00	115			155,852 16	155,852 16	26,422 41	6	178,343 28	115	
	A 932,512 00		932,512 00	do		579,500 00		566,878 00		154,392 00	32,000 00	184,900 00	116			6,895,904 00	6,541,090 00	Nil.		7,819,768 17	116	
	A 384,000 00		284,128 00	Quebec		796,520 00		634,410 53					117			3,316,520 00	1,422,538 53	397,453 95	7	1,748,714 65	117	
	A 172,384 00		172,384 00	Ontario						10,000 00		10,000 00	118			2,282,384 00	2,282,384 00	Nil.		922,545 60	118	Exclusive of rolling stock.
	A 64,000 00			do		55,500 00		55,500 00		20,000 00		20,000 00	119			317,500 00	183,300 00	Nil.		264,500 00	119	
	A 23,712 00		21,600 00	Quebec		25,667 00		25,667 00					120			124,379 00	122,267 00	4,500 00	6	65,198 79	120	
	13,600 00		13,600 00	do		17,433 60		17,433 60					121			131,033 60	51,033 60	Nil.		46,856 84	121	
	A 307,850 00		193,578 00	do		536,000 00		445,882 65		101,000 00		100,000 00	122			1,244,850 00	1,039,460 65	496,661 94	7	1,471,485 47	122	
	271,200 00		271,200 00	Ontario		261,000 00		255,571 00		40,000 00		40,000 00	123			3,164,200 00	3,158,771 00	4,636 03		2,911,448 90	123	
													124			4,010,140 00	4,010,140 00	Nil.		*2,539,600 00	124	* Exclusive of rolling stock. Operated by Can. Pac. Ry. Dominion Land Grant.
	348,342 00		348,312 00	Quebec		1,076,123 14		1,076,123 14		103,000 00		103,000 00	125			9,902,268 47	9,902,268 47	Nil.		8,375,496 67	125	
	1,006,743 50		1,006,743 50	do		2,533,000 00		2,368,816 88		12,000 00	450,000 00	462,000 00	126			12,766,743 50	12,602,560 38	74,085 00	6 & 7	12,598,816 00	126	
	96,000 00		96,000 00	do		306,945 50		306,945 50					127			2,402,945 50	2,402,945 50	Nil.		2,038,149 40	127	
	*1,440,000 00			do	1,176,956 00	727,000 00		1,903,956 00	2,434,000 00	25,000 00		796,644 62	128			5,802,956 00	2,700,600 62	Nil.			128	* Dominion Government pay to Quebec Government 5 p.c. per annum on this amount.
													129			407,600 00	407,600 00	Nil.		407,600 00	129	
	A 150,400 00		32,000 00	New Brunswick		23,000 00				5,000 00			130			978,400 00	832,000 00	Nil.		223,339 00	130	
65 45			29,391 01	do		455,000 00		455,000 00		70,000 00		70,000 00	131			954,665 45	704,391 01	Nil.		1,798,364 70	131	This railway has been purchased by a new company.
				Manitoba						10,000 00		10,000 00	132			501,040 00	501,040 00	*		*	132	Leased by Manitoba and North-western Ry. Co. * Included in Manitoba and North-western. Dominion Land Grant.
				New Brunswick		413,000 00		413,000 00	3,000 00			3,000 00	133			1,716,000 00	517,000 00	13,728 62		1,817,757 63	133	* Bonds held in trust pending decision of outstanding law suits.
	163,200 00		163,200 00										134			2,163,200 00	2,052,723 00	Nil.		*1,250,000 00	134	* Exclusive of rolling stock.
	93,757 57		†93,757 57	Quebec		276,645 00		†276,645 00		25,000 00		25,000 00	135			695,402 57	695,402 57	518,133 09	6	*877,014 37	135	* As returned by South Shore Ry. Co. † South Shore Co. have not included in their Return the Dominion bonus and $226,645 of the Quebec bonus, as these bonuses were paid to the Montreal and Sorel Ry. Co.
													136			1,196,632 20	1,196,632 20	Nil.		*	136	* No reliable return of capital or cost of road can be obtained, as the original books of the company were lost or destroyed. Operated by the Central Vermont Ry.
	38,400 00		38,400 00	Ontario					40,000 00		100,000 00	140,000 00	137	216,000 00	216,000 00	755,550 00	755,550 00	Nil.		463,702 00	137	Road sold April 15, 1899, by order of court. New company, not fully organized, to be [known as Niagara, St. Catherines and Toronto Ry.
	375,000 00		375,000 00										138	13,577 38	13,577 38	3,588,577 38	3,238,577 38	Nil.		3,238,577 38	138	
00 00			433,900 00	New Brunswick		5,181 81		5,181 81					139			764,081 81	619,122 24	Nil.		640,029 52	139	
				do		880,000 00	300,000 00	1,180,000 00			60,000 00	60,000 00	140			4,110,817 44	4,110,817 44			*2,698,589 00	140	* Cash to bondholders at foreclosure.
													141			133,600 00	31,932 00	Nil.		23,461 77	141	
	A 149,481 60		149,481 60	Quebec		65,216 00		65,216 00					142			2,052,888 70	2,052,888 70	53,850 39	6	1,497,251 05	142	
				Ontario					300,000 00		90,000 00	390,000 00	143			2,153,243 20	2,153,243 20			1,903,488 99	143	
	A 14,848 00		14,848 00	New Brunswick		13,920 00		13,920 00					144			78,768 00	78,768 00	Nil.		59,399 17	144	
	87,808 00		87,808 00	Nova Scotia		87,808 00		82,000 00					145	*1,253,717 00	*1,253,717 00	1,429,333 00	1,423,525 00	Nil.		1,945,499 00	145	* From the general capital of the Dominion Coal Co.
	54,400 00		54,400 00	Ontario						65,000 00		65,000 00	146			119,400 00	119,400 00	Nil.			146	Amalgamated with Grand Trunk (South Norfolk).
	645,950 00		645,950 00	Quebec New Brunswick		241,500 00 66,000 00		241,500 00 66,000 00		Que. 25,000 00		25,000 00	147			4,236,583 30	4,227,583 30	Nil.		2,022,000 80	147	
	24,400 00		24,400 00	Ontario						10,000 00		10,000 00	148			152,400 00	152,400 00	Nil.		119,018 89	148	
	A 62,400 00		62,112 00	do		38,564 00		38,564 00		55,000 00			149			755,964 00	150,676 00	105,000 00	6	302,500 00	149	
	134,016 00		134,016 00	New Brunswick		70,000 00		70,000 00					150			517,016 00	506,916 00	1,874 00		*326,200 00	150	* Exclusive of rolling stock.
													151			512,500 00	512,500 00	Nil.		512,500 00	151	In Grand Trunk system (Toronto Belt Line).
	14,656 00		14,656 00	Ontario		375,282 00		375,282 00		988,000 00		988,000 00	152	322,583 30	322,583 30	6,014,321 30	5,986,011 30	Nil.		*5,547,338 12	152	* Paid in stock, bonds and Government debentures.
				do		105,212 00		105,212 00		376,702 59		376,702 59	153			481,914 59	481,914 59	Nil.			153	Amalgamated with Grand Trunk (Toronto and Nipissing).
				do		53,000 00		53,000 00		100,000 00		100,000 00	154			153,000 00	153,000 00	Nil.			154	do do (Lake Simcoe Junction).
	57,600 00		57,600 00	do						268,000 00		265,500 00	155			6,105,600 00	6,103,100 00	211,555 31		6,254,386 75	155	2·06 miles leased to Can. Pac. Ry., and ·64 miles running powers granted to C. P. Ry.
	A 208,000 00		188,816 00	Quebec		210,000 00		207,565 00					156			718,000 00	496,381 00	550,000 00	6 & 7	1,010,000 00	156	
													157			523,000 00	410,500 00	25,085 11	6	435,585 11	157	
				Ontario		312,000 00		312,000 00		186,000 00		186,000 00	158			498,000 00	498,000 00	Nil.			158	Amalgamated with Grand Trunk (Victoria).
	32,800 00		32,800 00	do						47,000 00		47,000 00	159			79,800 00	79,800 00	Nil.			159	do do (Waterloo Junction).
				do		241,276 00		241,276 00		682,000 00		682,000 00	160			1,405,562 67	1,405,562 67	Nil.			160	do do (Wellington, Grey and Bruce).
				do		94,957 59		94,957 59		222,094 93		222,094 93	161			317,052 52	317,052 52	Nil.			161	do do (Whitby, Port Perry and Lindsay).
	60,000 00		60,000 00	do						25,000 00		25,000 00	162			295,000 00	106,000 00	Nil.		*	162	* Cost included in cost of Ontario and Quebec Railway.
	1,193,369 00		1,193,369 00										163								163	† As returned by the Dominion Atlantic Company, which Company have not included in their Return the aid paid by the Dominion and Nova Scotia Governments and municipalities to the several railways now comprised in the Dominion Atlantic Railway, which aid however is shown in this statement.
	44,800 00		44,800 00	Nova Scotia		44,800 00		44,800 00		27,685 00		27,685 00	164			9,370,533 54	8,883,866 54	†206,833 30	†4	†6,236,361 00	164	
	500,000 00		500,000 00	do		679,197 45		679,197 45		150,000 00		150,000 00	165	*160,683 09	*160,683 09						165	* Due the Dominion Government, being the amount expended by that government in the construction of the Annapolis and Digby Railway over the grant of $500,000, which railway is included in Yarmouth and Annapolis or Western Counties Railway. Nova Scotia Land Grant.
533 05	145,743,862 01		155,646,419 39		4,648,956 00	28,340,339 79	300,000 00	30,656,725 57	3,477,311 00	12,023,204 37	2,764,500 00	15,740,667 99		9,302,116 93	9,302,116 93	1,000,639,940 87	964,699,784 49					

to it.

A. See note on page 18.

Canadian Pacific Railway—Municipalities giving bonuses, viz.: British Columbia, $37,500; North-west Territories, $25,000; Manitoba, $370,000; Ontario, $80,000; Quebec, $20,000; New Brunswick, $40,000; Total, $572,500.

48	‡Owen Sound Branch, Parkhead to Owen Sound	12·42											
49	‡Grand Junction and Belleville and North Hastings	85·40											
50	Great Northern	49·00	92·50	3,000,000 00	310,600 00	310,000 00				4,520,000 00	570,000 00	570,000 00	5
51	Great North-west Central	50·93		2,000,000 00	500,000 00	500,000 00				2,500,000 00	2,500,000 00		5
52	‡Great Western	561·80									C. 13,256,702 67	13,256,702 67	5
53	*Guelph Junction	15·25		30,000 00	10,000 00	10,000 00				232,500 00			
54	Gulf Shore	16·78		300,000 00	6,250 00	6,250 00				250,000 00			
55	‡Hamilton and North-western	173·90									C. 2,920 00	2,920 00	
56	Hamilton, Grimsby and Beamsville (Electric)	23·00		200,000 00	113,300 00	113,300 00				$10,000 per mile.	85,000 00	85,000 00	5
57	Hamilton and Dundas (Electric)	7·25		100,000 00	100,000 00	100,000 00				100,000 00	100,000 00	100,000 00	5
58	Hamilton Radial (Electric)	12·00		1,000,000 00	75,000 00	75,000 00							
59	Hampton and St. Martin's, formerly St. Martin's and Upham	30·00		100,000 00	100,000 00	100,000 00				360,000 00	145,000 00	145,000 00	
60	Hull (Electric)	13·63		300,000 00	292,700 00	286,400 00							
61	Harvey Branch, New Brunswick	3·00		60,000 00	49,500 00	32,500 00							
62	Hereford, including Dominion Lime Co.'s Line (4·80 miles)	53·30		800,000 00	800,000 00	800,000 00				800,000 00	800,000 00	800,000 00	4
63	Interprovincial Bridge and approaches, Ottawa		1·43	*	*	*				1,000,000 00			5
64	Irondale, Bancroft and Ottawa	50·00		9,000,000 00	53,500 00	53,500 00				4,500,000 00	450,000 00	450,000 00	5
65	‡Jacques Cartier Union	6·50											
66	Joggins, now Canada Coals and Railway Co.	12·00			350,000 00	350,000 00	100,000 00	67,100 00	67,100 00				
67	Kaslo and Slocan	31·80		1,000,000 00	1,000,000 00	1,000,000 00				954,000 00	750,000 00	750,000 00	6
68	Kent Northern 27·00	34·		100,000 00	80,000 00	50,000 00							
69	St. Louis and Richibucto 7·00			75,000 00	57,000 00	20,000 00							
70	Kingston and Pembroke	112·85		2,500,000 00	2,242,500 00	2,204,000 00	1,150,000 00	1,150,000 00	1,150,000 00	1,128,500 00	572,000 00	572,000 00	3
71	Kingston, Smith's Falls and Ottawa			1,000,000 00	122,000 00	22,000 00				$30,000 per mile.			
72	L'Assomption	3·00		19,000 00	19,000 00	10,000 00							
73	Lake Champlain and St. Lawrence Junction	60·70		600,000 00	600,000 00	600,000 00				600,000 00	378,000 00	378,000 00	5
74	Lake Erie and Detroit River, including Erie and Huron	155·72		1,400,000 00	400,000 00	134,000 00				1,640,000 00	1,640,000 00	1,640,000 00	5
75	* Lake Temiscamingue Colonization	45·84		100,000 00	50,000 00	12,500 00							
76	‡London, Huron and Bruce	69·01											
77	London and Port Stanley	24·00		730,000 00	441,500 00	28,340 00				756,378 00			
78	Lotbinière and Megantic	30·34		500,000 00	500,000 00	50,000 00							
79	Lower Laurentian	39·50		1,500,000 00	500,000 00	500,000 00				780,000 00			
80	Manitoba and North-western	234·50		12,000,000 00	5,837,500 00	5,837,500 00		415,000 00	415,000 00	4,700,000 00	3,409,100 00	3,409,100 00	5 & 6
81	* Manitoba South-western Colonization	214·40		1,000,000 00	700,000 00	700,000 00				3,744,000 00	2,616,000 00	2,616,000 00	5
82	Manitoba and South-eastern		†45·60	†750,000 00	226,300 00	†34,510 75							
83	Massawippi Valley	35·46		800,000 00	735,000 00	735,000 00							
84	‡Midland, Ontario	166·78									C. 7,449,406 66	7,449,406 66	5
85	Midland, Nova Scotia		38·00	1,000,000 00	104,300 00	104,300 00				1,200,000 00			
86	Montfort and Gatineau Colonization	33·00		500,000 00	40,880 00	17,239 75				495,000 00	231,000 00		
87	Montreal and Atlantic, formerly South-eastern	139·30		3,200,000 00	3,200,000 00	3,200,000 00				1,065,000 00	1,065,000 00		5
88	‡Montreal and Champlain Junction	61·75									C. 492,020 00	492,020 00	5
89	* Montreal and Lake Maskinongé	12·90		100,000 00	25,000 00	25,000 00				100,000 00	100,000 00	100,000 00	5
90	* Montreal and Ottawa	93·20		1,000,000 00	227,200 00	22,500 00				$17,500 per mile.	1,636,250 00	1,636,250 00	4
91	Montreal Province Line, formerly Montreal, Portland and Boston	40·60		1,000,000 00	1,000,000 00	1,000,000 00							
92	Montreal and Vermont Junction	23·60		1,000,000 00	1,000,000 00	1,000,000 00				200,000 00	200,000 00	200,000 00	
93	Montreal Park and Island (Electric)	40·88		1,000,000 00	720,900 00	720,900 00	408,800 00	315,000 00	315,000 00	1,025,000 00	833,000 00	833,000 00	6
94	Montreal Terminal, formerly Montreal Isl'nd Belt Line (Electric)	12·67		5,000,000 00	500,000 00	500,000 00				380,100 00	330,000 00	300,000 00	5
95	* Montreal and Western	166·90		10,000,000 00	300,000 00	5,000 00							
96	* Nakusp and Slocan	36·90		300,000 00	300,000 00	300,000 00				925,000 00	647,074 00	647,074 00	4
97	Napierville Junction (return states nil)			250,000 00						250,000 00			
98	Nelson and Fort Sheppard	59·40		1,500,000 00	1,500,000 00	1,500,000 00				1,500,000 00	1,408,000 00	1,408,000 00	6
99	* New Brunswick	175·00		3,500,000 00	3,000,000 00	3,000,000 00				7,177,060 00	7,090,743 50	*7,090,743 50	
100	* New Brunswick and Canada	117·20		1,780,800 00	1,780,800 00	1,780,800 00				569,067 00	569,067 00	* 569,067 00	3½ & 6
101	New Brunswick and Prince Edward Island	36·00		500,000 00	212,850 00	212,850 00				400,000 00	100,000 00	100,000 00	6
102	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Railway Co	12·50		*	*	*							
103	Niagara Falls Park and River Electric Railway	13·68		1,000,000 00	600,000 00	600,000 00				690,000 00	600,000 00	600,000 00	5
104	‡Northern	172·10									C. 4,749,817 99	4,749,817 99	0, 4, 5 & 6
105	‡North Simcoe	33·34											
106	‡Northern and Pacific Junction	111·37											
107	Northern Pacific and Manitoba	311·61		1,000,000 00	1,000,000 00	1,000,000 00				6,010,000 00	6,010,000 00	6,010,000 00	5
108	* North Shore (Montreal to Quebec)	205·50		1,000,000 00	1,000,000 00	500,000 00				5,225,000 00	616,120 00	616,120 00	5
109	Nosbonsing and Nipissing	5·50		250,000 00	250,000 00	250,000 00							
110	Nova Scotia Central, now Central Nova Scotia	74·00			500,000 00	500,000 00							
111	Nova Scotia Southern		11·00	1,920,000 00	80,000 00	80,000 00				960,000 00	400,000 00	400,000 00	4
112	* Ontario and Quebec	474·50		2,000,000 00	2,000,000 00	2,000,000 00				19,502,591 33	19,502,591 33	19,502,591 33	5
113	Ontario, Belmont and Northern	9·60		250,000 00	130,000 00	115,421 25				100,000 00	100,000 00	100,000 00	6
114	Orford Mountain	26·50		1,000,000 00	50,000 00	5,000 00				500,000 00			
115	Oshawa (Electric)	8·50		200,000 00	40,000 00	40,000 00				88,452 16	88,452 16	88,452 16	6
116	Ottawa, Arnprior and Parry Sound, including Parry Sound Colonization	263·80		4,200,000 00	4,197,500 00	3,856,800 00				$25,000 per mile.	1,000,000 00	1,000,000 00	5
117	Ottawa and Gatineau	56·50		1,000,000 00	1,000,000 00	504,000 00				12,000,000 00	1,136,000 00		5
118	Ottawa and New York	56·79		1,000,000 00	1,000,000 00	1,000,000 00				1,600,000 00	1,100,000 00	1,100,000 00	4 & 6
119	Pembroke Southern	20·50		250,000 00	178,000 00	107,800 00							
120	Philipsburg Railway and Quarry Co	7·50		125,000 00	75,000 00	75,000 00							
121	Pontiac and Renfrew	4·25		250,000 00	100,000 00	20,000 00							
122	Pontiac Pacific Junction	70·60		3,000,000 00	300,000 00	300,000 00				10,200,000 00			
123	Port Arthur, Duluth and Western	85·50		1,200,000 00	1,200,000 00	1,200,000 00				1,392,000 00	1,392,000 00	1,392,000 00	5
124	Qu'Appelle, Long Lake and Saskatchewan	253·96		2,000,000 00	201,000 00	201,000 00				3,809,140 00	3,809,140 00	3,809,140 00	6
125	Quebec Central	213·50		3,381,603 33	3,381,603 33	3,381,603 33				4,993,200 00	4,993,200 00	4,993,200 00	5
126	Quebec and Lake St. John	245·85		6,000,000 00	4,074,000 00	4,074,000 00				6,000,000 00	4,691,000 00	4,691,000 00	5
127	Quebec, Montmorency and Charlevoix	30·00		1,000,000 00	1,000,000 00	1,000,000 00				1,000,000 00	1,000,000 00	1,000,000 00	5
128	* Quebec, Montreal, Ottawa and Occidental (Montreal to Ottawa) including Branches	154·90											
129	Red Mountain	9·53		190,600 00	190,600 00	190,600 00				238,250 00	217,000 00	217,000 00	6
130	Restigouche and Western	10·00	100·00	500,000 00	500,000 00	500,000 00				$15,000 per mile.	300,000 00	300,000 00	5
131	Salisbury and Harvey, formerly Albert Railway	45·00		150,000 00	150,000 00	150,000 00				250,000 00	250,000 00		
132	Saskatchewan and Western	15·47		1,000,000 00	232,500 00	232,500 00	155,000 00	77,500 00	77,500 00	310,000 00	181,040 00	181,040 00	5
133	Shore Line, formerly Grand Southern, N.B.	82·50		500,000 00	500,000 00	101,000 00				800,000 00	*800,000 00		
134	* Shuswap and Okanagan	51·00		750,000 00	750,000 00	750,000 00				1,250,000 00	1,250,000 00	1,139,523 00	4
135	South Shore, formerly Montreal and Sorel	44·67		1,090,000 00	300,000 00	300,000 00				893,400 00			
136	Stanstead, Shefford and Chambly	43·00		500,000 00	500,000 00	500,000 00				696,632 20	696,632 20	696,632 20	
137	St. Catharines and Niagara Central	12·35		300,000 00	121,150 00	121,150 00				360,000 00	240,000 00	240,000 00	6
138	St. Clair Tunnel	2·23		700,000 00	700,000 00	350,000 00				2,500,000 00	2,500,000 00	2,500,000 00	5
139	* St. John Bridge and Railway Extension	2·00		200,000 00	200,000 00	55,040 43				125,000 00	125,000 00	125,000 00	5
140	* St. John and Maine	92·10		2,676,666 66	2,654,153 44	2,654,153 44				243,333 33	216,664 00	216,664 00	5
141	St. John Valley and Rivière du Loup		6·00	400,000 00	133,600 00	31,932 00							
142	St. Lawrence and Adirondack	33·00		1,010,413 33	1,010,413 33	1,010,413 33				827,777 77	827,777 77	827,777 77	5 & 6
143	* St. Lawrence and Ottawa	58·40		2,710,090 80			789,909 20	789,909 20	789,909 20	973,334 00	973,334 00	973,334 00	4
144	* St. Stephen and Milltown	4·64		50,000 00	50,000 00	50,000 00				50,000 00			
145	Sydney and Louisburg, Dominion Coal Co.	59·09		*	*	*							
146	‡South Norfolk	17·00											
147	Temiscouata	113·00		1,000,000 00	1,000,000 00	991,000 00				2,258,133 30	2,258,133 30	2,258,133 30	5
148	Thousand Islands	4·33		250,000 00	60,000 00	60,000 00				58,000 00	58,000 00	58,000 00	6
149	Tilsonburg, Lake Erie and Pacific	20·00		400,000 00	400,000 00	50,000 00				400,000 00	200,000 00		
150	* Tobique Valley	28·00		40,000 00	40,000 00	29,900 00				280,000 00	273,000 00	273,000 00	5
151	‡Toronto Belt Line	12·70		250,000 00	50,000 00	50,000 00				650,000 00	462,500 00	462,500 00	
152	* Toronto Grey and Bruce	191·10		1,000,000 00	813,800 00	785,490 00				3,500,000 00	3,500,000 00	3,500,000 00	4
153	‡Toronto and Nipissing	85·00											
154	‡Lake Simcoe Junction	26·50											
155	Toronto, Hamilton and Buffalo, including Brantford, Waterloo and Lake Erie	85·64		2,500,000 00	2,500,000 00	2,500,000 00				3,280,000 00	3,280,000 00	3,280,000 00	4
156	United Counties	61·00		1,000,000 00	100,000 00	100,000 00				1,000,000 00	200,000 00		
157	Victoria and Sydney, B.C.	16·26		500,000 00	223,000 00	110,500 00				300,000 00	300,000 00	300,000 00	5
158	‡Victoria	53·25											
159	‡Waterloo Junction	10·25											
160	‡Wellington, Grey and Bruce	168·13									C. 482,286 67	482,286 67	As earned.
161	‡Whitby, Port Perry and Lindsay	46·50											
162	* West Ontario Pacific	26·60		500,000 00	210,000 00	21,000 00							
	Dominion Atlantic, comprising—												
163	Windsor and Annapolis 87·50	†188·50		†1,119,333 00	†1,119,333 00	†1,119,333 00	†1,314,000 00	†1,314,000 00	†1,314,000 00	† 4,574,666 00	† 4,136,666 00	† 3,649,999 00	4
164	Cornwallis Valley 14·00												
165	Yarmouth and Annapolis (Western Counties) 87·00												
		17,358·60	798·83		276,726,501 49	270,325,495 67		120,974,864 39	120,974,864 39		380,373,751 84	362,053,494 55	

49		21,888 00	21,888 00	do		224,660 00		224,660 00		213,000 00	50,000 00	263,000 00	
50		A 495,988 00	153,088 00	Quebec		524,875 00		423,625 00		6,000 00		6,000 00	
51													
52													
53		16,000 00	16,000 00	Ontario							193,000 00	193,000 00	
54		A 56,000 00	53,699 20	New Brunswick									
55				Ontario		41,950 00		41,950 00		599,805 00		599,805 00	
56				do		565,020 00		565,020 00		28,000 00		28,000 00	
57													
58													
59		83,612 54	83,612 54	New Brunswick		145,600 00		145,600 00					379 46
60													
61		5,553 57	5,553 57	New Brunswick		9,000 00		9,000 00					
62		170,560 00	170,560 00	Quebec		103,000 00		60,500 00					
63		112,500 00		Ontario		50,000 00				150,000 00			
64		160,000 00	144,000 00	do		165,000 00		105,000 00					894,500 00
65													
66		37,500 00	37,500 00	Nova Scotia		35,200 00		35,200 00					
67													12,408 00
68	58,334 27		58,334 27	New Brunswick		135,000 00		135,000 00					
69		22,400 00	22,400 00	do		21,000 00		21,000 00					
70		48,000 00	48,000 00	Ontario		456,493 00		456,493 00		491,000 00		491,000 00	18,320 00
71		A 323,200 00		do						315,500 00			
72		11,200 00	11,200 00	Quebec		7,350 00		5,512 50		1,500 00		1,500 00	
73				do		250,280 00		250,280 00		51,000 00		36,000 00	
74		338,731 00 96,000 00	338,231 00 96,000 00	Ontario		83,000 00		83,000 00		87,500 00 257,500 00		87,500 00 257,500 00	271,880 00
75		310,335 95	310,335 95	Quebec		350,076 82		350,076 82					
76				Ontario		178,630 00		178,630 00		311,500 00		311,500 00	
77				do					680,311 00		414,000 00	1,094,311 00	85,000 00
78		96,000 00	96,000 00	Quebec		126,994 00		126,994 00					
79		217,600 00	217,600 00	do		252,000 00		252,000 00			25,000 00		220,000 00
80				Manitoba						215,600 00		215,600 00	
81				do	900,000 00			755,030 10					
82													
83				Quebec							65,000 00	65,000 00	
84				Ontario		168,350 00		168,350 00		144,870 85		144,870 85	
85		*219,350 00		Nova Scotia		192,000 00				30,000 00			
86		167,440 00	167,440 00	Quebec		158,395 80		158,395 80					
87				do		444,000 00		315,891 89			528,000 00	528,000 00	607,701 65
88		103,600 00	103,600 00	do		150,000 00		150,000 00		21,774 00		21,774 00	
89		41,280 00	41,280 00	do		87,750 00		87,750 00					
90		192,000 00	192,000 00	Ontario Quebec		100,000 00 182,210 00		100,000 00 182,210 00		Que. 5,300 00		5,300 00	
91				Quebec		231,122 00		231,122 00		25,000 00		25,000 00	
92													
93													
94													
95		361,270 00	361,270 00	Quebec		472,500 00		472,500 00					408,358 58
96		121,600 00	117,760 00										
97													
98													
99				New Brunswick		76,000 00		76,000 00		23,000 00		23,000 00	
100				do		575,000 00		575,000 00		47,500 00		47,500 00	
101		113,440 00	113,440 00	do		99,708 90		99,708 90					
102		39,840 00	39,840 00	Nova Scotia		40,000 00		40,000 00		4,000 00		4,000 00	*123,344 83
103													23,618 52
104				Ontario		196,188 00		196,188 00		241,980 00	390,000 00	631,980 00	
105				do		83,300 00		83,300 00					
106		1,320,000 00	1,320,000 00										
107				Manitoba		633,800 00		609,756 00					
108		*954,000 00 1,500,000 00	1,500,000 00	Quebec	2,546,000 00			2,546,000 00					
109													
110		235,200 00	235,200 00	Nova Scotia		432,261 08		432,261 08					
111		240,000 00		do		307,200 00				80,000 00			
112		196,000 00	196,000 00	Ontario						52,500 00		52,500 00	
113		30,720 00	30,720 00	do		19,149 39		19,149 39					
114		84,800 00	84,800 00	Quebec		154,000 00		98,884 92					196,278 08
115		22,400 00	22,400 00	Ontario						5,000 00		5,000 00	
116		A 932,512 00	932,512 00	do		579,500 00		566,878 00		154,392 00	32,000 00	184,900 00	
117		A 384,000 00	284,128 00	Quebec		796,520 00		634,410 53					
118		A 172,384 00	172,384 00	Ontario						10,000 00		10,000 00	
119		A 64,000 00		do		55,500 00		55,500 00		20,000 00		20,000 00	
120		A 23,712 00	21,600 00	Quebec		25,667 00		25,667 00					
121		13,600 00	13,600 00	do		17,433 60		17,433 60					
122		A 307,850 00	193,578 00	do		536,000 00		445,882 65		101,000 00		100,000 00	
123		271,200 00	271,200 00	Ontario		261,000 00		255,571 00		40,000 00		40,000 00	
124													
125		348,312 00	348,312 00	Quebec		1,076,123 14		1,076,123 14		103,000 00		103,000 00	
126		1,006,743 50	1,006,743 50	do		2,533,000 00		2,368,816 88		12,000 00	450,000 00	462,000 00	
127		96,000 00	96,000 00	do		306,945 50		306,945 50					
128		*1,440,000 00		do	1,176,956 00	727,000 00		1,903,956 00	2,434,000 00	25,000 00		796,644 62	
129													
130		A 150,400 00	32,000 00	New Brunswick		23,000 00				5,000 00			
131	29,665 45		29,391 01	do		455,000 00		455,000 00		70,000 00		70,000 00	
132				Manitoba						10,000 00		10,000 00	
133				New Brunswick		413,000 00		413,000 00	3,000 00			3,000 00	
134		163,200 00	163,200 00										
135		93,757 57	493,757 57	Quebec		276,645 00		†276,645 00		25,000 00		25,000 00	
136													
137		38,400 00	38,400 00	Ontario					40,000 00		100,000 00	140,000 00	216,000 00
138		375,000 00	375,000 00										13,577 38
139	433,900 00		433,900 00	New Brunswick		5,181 81		5,181 81					
140				do		880,000 00	300,000 00	1,180,000 00			60,000 00	60,000 00	
141													
142		A 149,481 60	149,481 60	Quebec		65,216 00		65,216 00					
143				Ontario					300,000 00		90,000 00	390,000 00	
144		A 14,848 00	14,848 00	New Brunswick		13,920 00		13,920 00					
145		87,808 00	87,808 00	Nova Scotia		87,808 00		82,000 00					*1,253,717 00 *
146		54,400 00	54,400 00	Ontario						65,000 00		65,000 00	
147		645,950 00	645,950 00	Quebec New Brunswick		241,500 00 66,000 00		241,500 00 66,000 00		Que. 25,000 00		25,000 00	
148		24,400 00	24,400 00	Ontario						10,000 00		10,000 00	
149		A 62,400 00	62,112 00	do		38,564 00		38,564 00		55,000 00			
150		134,016 00	134,016 00	New Brunswick		70,000 00		70,000 00					
151													
152		14,656 00	14,656 00	Ontario		375,282 00		375,282 00		988,000 00		988,000 00	322,583 30
153				do		105,212 00		105,212 00		376,702 59		376,702 59	
154				do		53,000 00		53,000 00		100,000 00		100,000 00	
155		57,600 00	57,600 00	do						268,000 00		265,500 00	
156		A 208,000 00	188,816 00	Quebec		210,000 00		207,565 00					
157													
158				Ontario		312,000 00		312,000 00		186,000 00		186,000 00	
159		32,800 00	32,800 00	do						47,000 00		47,000 00	
160				do		241,276 00		241,276 00		682,000 00		682,000 00	
161				do		94,957 59		94,957 59		222,094 93		222,094 93	
162		60,000 00	60,000 00	do						25,000 00		25,000 00	
163		1,193,369 00	1,193,369 00										
164		44,800 00	44,800 00	Nova Scotia		44,800 00		44,800 00		27,685 00		27,685 00	
165		500,000 00	500,000 00	do		679,197 45		679,197 45		150,000 00		150,000 00	*160,683 09
	15,964,533 05	145,743,862 01	155,646,419 39		4,648,956 00	28,340,339 79	300,000 00	30,656,725 57	3,477,311 00	12,023,204 37	2,764,500 00	15,740,667 99	9,302,116 93

C. Grand Trunk—The $167,253,996.75—4 p, c. Debenture Stock authorized includes all securities marked C. of amalgamated lines; they are being gradually absorbed into it.

A. See note on page 18.

Canadian Pacific Railway—Municipalities giving bonuses, viz.: British Columbia, $37,500; North-west Territories, $25,000; Manitoba, $370,00

#21

No. 2—SUMMARY STATEMENT of the different descriptions of Rolling Stock, for the Year ended June 30, 1899.

Number.	Name of Railway.	Length of Line.		Number of Engines.		Number of Sleeping Cars.		Number of Palace or Drawing Room Cars.		Number of First Class Cars.		Number of Second Class and Immigrant Cars.		Number of Baggage, Mail and Express Cars.		Number of Cattle and Box Freight Cars.		Number of Refrigerator Cars.		Number of Platform Cars.		Number of Coal and Dump Cars.		Number of Conductors' Vans.		Number of Tool Cars.		Number of Snow Ploughs.		Number of Flangers.		Number.	Remarks.
		Completed.	Under Construction.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.	Owned.	Hired.		
		Miles.	Miles.																														
1	Alberta Railway and Coal Company	64·62		12				2	1					2		25		*6		8		246		7		1		3		2		1	*There are 6 iron water tank cars.
2	Albert Southern	16·00																															
	Harvey Branch	3·00	19·00	1										1		1				7												2	
3	Atlantic and Lake Superior, comprising—																																
	Baie des Chaleurs	100·00																															
	Great Eastern	23·00	130·00 (23·00, 82·00)	6						1		2		2		8				50				1				2		2		3	
	Ottawa Valley	7·00																															
4	Bay of Quinté Railway	4·00																															
	Kingston, Napanee and Western	60·82	64·82	6						7		3		3		25				100	9			1				1		2		4	
5	Berlin and Waterloo (Electric)	3·00								*12																						5	*Including 4 motor cars.
6	Brockville, Westport and Sault Ste. Marie	45·00		3						1		1		1		20				17	7											6	
7	Buctouche and Moncton	32·00		2						2		1				5				30								1				7	
8	Calgary and Edmonton	295·07																														8	Operated by C. P. Ry and rolling stock owned by that company.
9	Canada Atlantic	135·00																															
	Central Counties	37·00	172·00	33				3		8		8		6		1,300	1,000	2		500		35		14		1		4		6		9	
10	Canada Coals and Railway Co., formerly Joggins		12·00	2						1		1				1						5						1				10	
11	Canada Eastern		136·00	11						5		2		2		12				88				2				5		1		11	
12	Canada Southern		382·19	127	6	*20		2		42		21		30		2,021				209		127		75		†56		1		4		12	*Wagner sleeping and parlor cars passing over from other railways. †35 oil tank cars and 5 boarding cars.
13	Canadian Northern, composing Lake Manitoba Ry. and Canal Co.'s line, and Winnipeg Great Northern Ry.		124·74	165·00	7						4		2		2		150				92				4		*7		1			13	*7 cars are boarding cars.
14	Canadian Government Railways—																																
	Intercolonial, exclusive of Windsor Branch, but including Drummond County, 133·79 miles		1,300·96		227		23	6	12		95	6	101		67		2,387		37		2,319		2,075		99				61		22		14	
	Prince Edward Island		210·00		21				1		17		14		6		181		2		105		18		3				8		7			
15	Canadian Pacific Railway, owned	4,301·05																															
	Crow's Nest Pass Branch	288·75																															
	Leased Lines—																																
	Fredericton	22·10																															
	New Brunswick	175·00																															
	New Brunswick and Canada	117·20																															
	St. John and Maine	92·10																															
	St. John Bridge and Railway extension	2·00																															
	St. Stephen and Milltown	4·64																															
	Tobique Valley	28·00																															
	Cap de la Madeleine	2·32																															
	Montreal and Lake Maskinongé	12·90																															
	Atlantic and North-west	201·40	6,682·91	681	28	94		43		250	3	161		170	7	12,681	1,965	330	122	4,257	260	81		350		93		88		§74		15	*Other cars in passenger service. †Other cars are in freight service. ‡Other cars in company's service. §Flangers and derricks.
	Montreal and Ottawa	93·20										*49				†94	†13									‡634							
	Ontario and Quebec	474·50																															
	St. Lawrence and Ottawa	58 40																															
	Credit Valley	175·70																															
	Guelph Junction	15·25																															
	Toronto, Hamilton and Buffalo	2·70																															
	Toronto, Grey and Bruce	191·10																															
	West Ontario Pacific	26·60																															
	Manitoba South-western Colonization	214·40																															
	Columbia and Kootenay	60·50																															
	Nakusp and Slocan	36·90																															
	Shuswap and Okanagan	51·00																															
	Columbia and Western	35·20	121·30																														
16	Caraquet		68·00	2						1						2				15								1				16	
17	Carillon and Grenville		13·00	3						2		2		1		1				2												17	
18	Coast, N.S		30·80	4						7		2				4				32										1		18	
19	Cobourg, Northumberland and Pacific		49·00																													19	
20	Central Ontario	104·00																															
	Ontario, Belmont and Northern	9·60	113·60	8						2		3		3		34				82				2		1		1		1		20	
21	Central of New Brunswick		45·66	3						2						1				20												21	
22	Cumberland Railway and Coal Co., including Springhill and Oxford Branch		32·00	14·00	8					2				2						28		286						1		1		22	
23	Dominion Atlantic, comprising—																																
	Windsor and Annapolis	87·50																															
	Cornwallis Valley	14·00																															
	Yarmouth and Annapolis	87·00	220·50	21				3		15		10		11		155				190		25		2				2		2		23	
	Windsor Branch (Intercolonial)	32·00																															
24	East Richelieu Valley		22·80																													24	
25	Elgin and Havelock		28·00	2						1				1		1				8												25	
26	Erie and Huron																															26	Amalgamated with Lake Erie & Detroit.
27	Esquimalt and Nanaimo		78·00	9						9				3		11				62		126	30	3								27	
28	Fredericton and St. Mary's Railway Bridge Co		1·33																													28	Operated by Canada Eastern.
29	Grand Trunk	884·25																															
	Great Western	561·80																															
	Brantford, Norfolk and Port Burwell	34·78																															
	Buffalo and Lake Huron	162·00																															
	Grand Trunk, Georgian Bay and Lake Erie	172·75																															
	Owen Sound Branch	12·42																															
	London, Huron and Bruce	69·01																															
	Waterloo Junction	10.25																															
	South Norfolk	17·00																															
	Wellington, Grey and Bruce	168·13																															
	Northern	172·10																															
	North Simcoe	33·34																															
	Hamilton and North-western	173·90	3,161·98	710		10		25		418		122		249		17,240		273		4,856		1,386		354		*102		69		38		29	*66 tool and 36 boarding cars. †268 dump and cinder cars.
	Northern Pacific Junction	111·37																				†268											
	Toronto Belt Line	12·70																															
	Midland	166·78																															
	Grand Junction	85·40																															
	Toronto and Nipissing	85·00																															
	Lake Simcoe Junction	26·50																															
	Victoria	53·25																															
	Whitby, Port Perry and Lindsay	46·50																															
	Cobourg, Blairton and Marmora	15·00																															
	Jacques Cartier Union	6·50																															
	Montreal and Champlain Junction	61·75																															
	Beauharnois Junction	19·50																															
30	Great Northern		49·00	92·50	2								2		2	6																30	
31	Great North-west Central		50·93		1					2		2		2		12				12				1				1				31	
32	Gulf Shore, operated by Caraquet Railway		16·78																													32	
33	Hamilton, Grimsby and Beamsville (Electric)		23·00	*2						8						4				2												33	*Motors.
34	Hamilton and Dundas (Electric)		7·25	4						6				1												1						34	*6 cars—3 motor and 3 trail cars.
35	Hamilton Radial Railway (Electric)		12·00							9										1								1				35	*8 motor and 1 trail car.
36	Hampton and St. Martin		30·00	1						1						1										2						36	
37	Hereford, including Dominion Lime Co. line		53·30		3						1			2																		37	
38	Hull (Electric)		13·63	2						21				1														4				38	
39	Irondale, Bancroft and Ottawa		50·00	3						2						2				31												39	
40	Interprovincial Bridge		1·43																													40	
41	Kaslo and Slocan		31·80	3						4						27				12		5		1				3		1		41	
42	Kent Northern, including St. Louis and Richibucto		34·00	1	1					1				1		1				4								2		1		42	
43	Kingston and Pembroke		112·85	9				1		7		5		5		22				150								2		2		43	
44	L'Assomption		3·00	1						2				1																		44	
45	Lake Erie and Detroit River	155·72																															
	London and Port Stanley	24·00	179·72	17						14		20		8		40				220												45	
46	Lotbinière and Mégantic		30·34	2						1		1				2				15										1		46	
47	Manitoba and North-western	234·50																															
	Saskatchewan and Western	15·47	249·97	4	5			1		2	3	3		2	1	43	109	2		41	20			*12	1	1				1	1	47	*Including 8 boarding cars.
48	Manitoba and South-eastern		45·60																													48	
49	Massawippi Valley		35·46	7						5				4		250																49	Rolling stock owned by the lessees, the Boston & Maine Ry.
50	Midland of Nova Scotia		38·00																													50	
51	Montfort and Gatineau Colonization		33·00	4						2				1		2				18				1				1		1		51	
52	Montreal and Atlantic, formerly South-eastern	139·30																															
	Lake Champlain and St. Lawrence Junction	60·70	200·00	18		2				13		15		2		414		4		345				11				5				52	
53	Montreal Park and Island (Electric)		40·88							*31	8									16						2		3				53	*Motor and passenger.
54	Montreal Island and Belt Line (Electric)		12·67							*13										1								1				54	*Motor and passenger.
55	Montreal, Portland and Boston, now Montreal and Province Line		40·60		2						4				1																55	
56	Montreal and Vermont Junction		23·60			9					12				5																56	Operated by equipment of Cen. Vermont Ry
57	Nelson and Fort Sheppard		59·40		3													3			18		2								57	
58	New Brunswick and Prince Edward Island		36·00	3						1		1				2				33								1				58	
59	Niagara Falls Park and River Electric Railway		13·68							*41				1								2										59	*Motor and passenger.
60	Northern Pacific and Manitoba		311·61	9				1		3		5		3		133				165				6				1				60	
61	Nosbonsing and Nipissing		5·50	1																56					1						61	
62	Nova Scotia Central, now Central Railway of Nova Scotia		74·00	5						4		1		2		13				49								1				62	
63	Nova Scotia Southern				11·00																											63	
64	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Railway Co.		12·50	3						1						2				15		26	1					1				64	
65	Orford Mountain		26·50		2						1									13												65	
66	Oshawa Electric Railway		8·50							*5				1						1								1				66	*Motor and passenger.
67	Ottawa, Arnprior and Parry Sound		263·80	23				1		8		7		3						123		4		26		1		2		4		67	
68	Ottawa and Gatineau		56·50	2	1					2		9		2		8				28				1				1		1		68	
69	Ottawa and New York		56·79		3						4				1		10				40											69	
70	Pembroke Southern		20·50		2						1				1		12				23											70	
71	Philipsburg Railway and Quarry Co		7·50	1	1					1																						71	
72	Pontiac and Renfrew		4·25	1																												72	Not in operation.
73	Pontiac Pacific Junction		70·60	2	1					1		1		1		5				52				1				1		1		73	
74	Port Arthur, Duluth and Western		85·50	4						2				2		10				81				4						1		74	
75	Qu'Appelle, Long Lake and Saskatchewan		253·96																													75	Operated and rolling stock furnished by C. P. Ry.
76	Quebec Central		213·50	15				1	1	8		7		11		253				275				6		1		5		1		76	
77	Quebec and Lake St. John	245·85																															
	Lower Laurentian	39.50	285·35	15	1	4				6		8	1	4		128		2		192		41		5		1		4		1		77	
78	Quebec, Montmorency and Charlevoix		30·00	4						4		18				5				23								1				78	
79	Red Mountain		9·53	1						1						10				10				1								79	
80	Restigouche and Western		10·00	100·00	1					1										10												80	
81	Salisbury and Harvey		45·00		2					1				1		6				23				1				1		1		81	
82	Shore Line, New Brunswick		82·50	3						5				3		7				61								1		1		82	
83	Stanstead, Shefford and Chambly		43·00		2						4				1																83	Operated by the equipment of the Central Vermont Ry.
84	St. Catharines and Niagara Central		12·35		1						1				1																84	Cars of other roads carrying freight were used on a mileage basis.
85	St. Clair Tunnel Yard and Approach		2·23	4																		25	9								85	
86	St. John Valley and Rivière du Loup			6·00																												86	
87	St. Lawrence and Adirondack		33·00		9						1		1		2										3		8					87	
88	Sydney and Louisbourg (Dominion Coal Co)		59·09	17						2		5				1				23		759		4		1		1		1		88	
89	South Shore, formerly Montreal and Sorel		44·67	4						7				2		2				48								1		1		89	
90	Témiscouata		113·00	5				1		3		3		2		40		7		54						2		4		2		90	
91	Tilsonburg, Lake Erie and Pacific		20·00	1	1					1	*20	1	*15	2	*5	2				3												91	*Hired for summer excursion business.
92	Thousand Islands		4·33	1										1						1												92	
93	Toronto, Hamilton and Buffalo		82·94	13				1		6		2		4		60				34				6		2				2		93	
94	United Counties		61·00	6						3				1		6				9						1		1				94	
95	Victoria and Sydney, B.C		16·26	2						1				1		3				15												95	
			17,358·60	798·83	2142	75	133	35	98	2	1170	69	621	19	639	29	38,039	3,112	665	122	15,434	377	5,540	42	1008	5	910	8	302	2	186	1		

SUMMARY STATEMENTS

RELATING TO MILEAGE, ROLLING STOCK, CHARACTERISTICS OF ROADS, OPERATIONS, PASSENGERS AND FREIGHT CARRIED, EARNINGS, OPERATING EXPENSES AND ACCIDENTS

No. 3.—SUMMARY STATEMENT of Characteristics of

Number.	Name of Railway.	Length of Line.				Length of Siding.	Weight per Yard.	
		Completed. (Rails laid.)	Under Construction.	Iron Rails.	Steel Rails.		Iron Rails.	Steel Rails.
		Miles.	Miles.	Miles.	Miles.	Miles.	Lbs.	Lbs.
1	Alberta Railway and Coal Co.	*64·62	.....	.....	64·62	13·21	.....	35
2	Albert Southern. 16·00 Harvey Branch. 3·00	19·00	.....	.....	19·00	·47	.....	56
3	Atlantic & Lake Superior, comprising— Baie des Chaleurs. 100·00 Great Eastern 23·00 Ottawa Valley 7·00	130·00	23·00 82·00	....	130·00	4·00	.....	56
4	Bay of Quinté Railway 4·00 Kingston, Napanee & Western 60·82	64·82	.....	.....	64·82	7·00	.....	56
5	Berlin and Waterloo (Electric)	3·00	.....	.....	3·00	.....	.....	60
6	Brockville, Westport & Sault Ste. Marie.	45·00	.....	.....	45·00	2·00	.....	56
7	Buctouche and Moncton	32·00	.....	.....	32·00	2·50	.....	54 & 56
8	Calgary and Edmonton	295·07	.....	.....	295·07	9·81	.....	56
9	Canada Atlantic. 135·00 Central Counties. 37·00	172·00	.....	....	172·00	33·00	.....	56, 72,
10	Canada Coals and Railway Co., formerly Joggins.	12·00	.....	.....	12·00	2·00	.....	
11	Canada Eastern	136·00	.....	.....	136·00	6·50	.....	56½ & 60
12	†Canada Southern.	382·19	.....	.....	382·19	167·78	.....	€0, 65,
13	Canadian Northern, comprising Lake Manitoba Ry. and Canal Co.'s Line and Winnipeg Great Northern.	124·74	165·00	.....	124·74	3·48	.....	.....
14	Canadian Government Railways— Intercolonial, exclusive of Windsor Branch, but includ'g Drummond Co'y	1,300·96	.....	.....	1,166·39	170·00	.....	56 to
	Prince Edward Island	210·00	.....	58·50	151·50	15·79	38	
15	‡Canadian Pac. Ry. (owned). 4,301·05 Crow's Nest Pass B'nch " 288·75 Leased lines— Fredericton 22·10 New Brunswick 175·00 New Brunswick and Canada 117·20 St. John and Maine 92·10 St. John Bridge and Railway Extension 2·00 St. Stephen and Milltown 4·64 Tobique Valley 28·00 Cap de la Madeleine 2·32 Montreal and Lake Maskinongé 12·90 Atlantic and North-west 201·40 Montreal and Ottawa 93·20 Ontario and Quebec 474·50 St. Lawrence and Ottawa 58·40 Credit Valley 175·70 Guelph Junction 15·25 Toronto, Hamilton & Buffalo 2·70 Toronto, Grey and Bruce 191·10 West Ontario Pacific 26·60 Manitoba South-western Colonization 214·40 Columbia and Kootenay 60·50 Nakusp and Slocan 36·90 Shuswap and Okanagan 51·00 Columbia and Western 35·20	6,682·91	.....	.....	6,682·91	836·00	.....	56 to 80
		.....	121·30					

*Alberta Ry., 107 miles from Dunmore to Lethbridge, sold to C. P. Ry., of which 1·85 miles has been abandoned by C. P. Ry. at Lethbridge Junction, leaving 105·15 miles now owned by C. P. Ry.

SESSIONAL PAPER No. 10

Roads, &c., for the year ended June 30, 1899.

Number of Ties per Mile.	Nature of Rail Fastenings.	Number of Grain Elevators.	Number of Level Crossings.		Number of Overhead Bridges.	Height of Overhead Bridges above rail level.	Number of Level Crossings of other Railways.	Number of Junctions with other Railways.	Number of Junctions with Branch Lines.	Radius of Sharpest Curve.	Number of Feet per Mile of heaviest gradient.	Gauge of Railway.	Number.
			Guarded.	Not guarded.									
						Feet.				Ft.		Ft.	
2640	Plain fishplates	....	....	2	....	.....	....	2	....	573	52	3·0	1
2640	"	....	....	11	....	.....	....	1	....	955	120	4·8½	2
2640	Plain and angle fishplates	....	....	61	4	22	....	4	....	717	67	4·8½	3
3000	" "	....	....	50	....	.....	1	4	....	955	90	4·8½	4
2640	Plain fishplates	....	....	.....	....	.....	2	.....	....	48	211	4·8½	5
2640	Fisher bridge joint	....	....	35	....	.....	....	2	....	717	58	4·8½	6
2640	Plain fishplates	....	....	12	....	.....	1	....	....	816	74	4·8½	7
2640	Angle bars	9	....	167	....	.....	....	3	....	1,146	53	4·8½	8
2816	"	....	7	139	4	22	8	7	2	2,865	40	4·8½	9
3000	Fish plates	....	....	7	....	.....	....	1	1	955	79	4·8½	10
2640	Fish and angle plates	....	1	35	....	.....	1	4	1	955	80	4·8½	11
3000	Joint splice, 4 and 6 bolts	....	8	416	19	21′ 6″	17	16	10	913	75	4·8½	12
2640	Angle bars	7	....	92	....	.....	....	1	....	2,865	35	4·8½	13
2640	Plain and angle fishplates	....	9	494	30	18½–35	11	29	22	694	65	4·8½	14
2640	" bars	....	....	964	2	17½	....	....	..	196	90	3′ 6″	15
2658	Fish plates and and angle bars.	13	35	3,886	75	19 to 24	56	68	62	‖ 214	§253·44	4·8½	15

†95·21 double track. ‡3·1 miles of Montreal and Western Ry. from Labelle to end of track not included. ‖ Rossland Branch. § N. and S. Branch Can. Pac. double track 18·20 miles.

No. 3.—SUMMARY STATEMENT of Characteristics of

Number.	Name of Railway.	Length of Line.				Length of Siding.	Weight per Yard.	
		Completed. (Rails laid.)	Under Construction.	Iron Rails.	Steel Rails.		Iron Rails.	Steel Rails.
		Miles.	Miles.	Miles.	Miles.	Miles.	Lbs.	Lbs.
16	Caraquet	68·00	.....	.....	68·00	3·25	.....	50
17	Carillon and Grenville	13·00	.....	13·00	.....	·25	65	.....
18	Coast, N.S.	30·80	50·00	.....	30·80	2·08	.....	56
19	Cobourg, Northumberland and Pacific	.....	49·00	.....	.....	.....	.....	.....
20	Central Ontario 104·00 Ontario, Belmont & Northern 9·60	113·60	.....	.....	113·60	11·00	.....	56
21	Central of New Brunswick	45·66	.....	.....	45·66	2·00	.....	52 to 56
22	Cumberland Ry. and Coal Co	32·00	14·00	.....	32·00	15·00	.....	56 & 67
23	* Dominion Atlantic, comprising— Windsor and Annapolis 87·50 Cornwallis Valley 14·00 Yarmouth and Annapolis (Western Counties) 87·00 Windsor Branch of Intercolonial 32·00	220·50	.....	.....	220·50	30·00	.....	56 to 72
24	† East Richelieu Valley	22·80	.....	.....	22 80	·60	.....	56
25	Elgin and Havelock	28·00	.....	.....	28·00	2·00	44	56
26	Erie and Huron, now amalgamated with Lake Erie and Detroit River Ry	.....	.....	.....	.....	.....	.....	.....
27	Esquimalt and Nanaimo	78·00	.....	.....	78·00	3·38	.....	54, 60
28	Fredericton and St. Mary's Ry. Bridge	1·33	.....	.....	1·33	·12	.....	56
29	‡ Grand Trunk 884·25 Great Western 561·80 Brantford, Norfolk and Port Burwell 34·78 Buffalo and Lake Huron 162·00 Grand Trunk, Georgian Bay and Lake Erie 172·75 Owen Sound Branch 12·42 London, Huron and Bruce 69·01 Waterloo Junction 10·25 South Norfolk 17·00 Wellington, Grey and Bruce 168·13 Northern 172·10 North Simcoe 33·34 Hamilton & North-western 173·90 Northern Pacific Junction 111·37 Toronto Belt Line 12·70 Midland 166·78 Grand Junction 85·40 Toronto and Nipissing 85·00 Lake Simcoe Junction 26·50 Victoria 53·25 Whitby, Port Perry and Lindsay 46·50 Cobourg, Blairton and Marmora 15·00 Jacques Cartier Union 6·50 Montreal and Champlain Junction 61·75 Beauharnois Junction 19·50	3,161·98	.....	23·49	3,138·49	698·99	56 to 65	56 to 100
30	‖ Great Northern	49·00	92·50	.....	49·00	3·00	.....	56

* Running powers over I.C.R., Windsor Junction, to Halifax, 14 miles. † Operated by United Counties Railway.

SESSIONAL PAPER No. 10

Roads, &c., for the year ended June 30, 1899—*Continued.*

Number of Ties per Mile.	Nature of Rail Fastenings.	Number of Grain Elevators.	Number of Level Crossings. Guarded.	Number of Level Crossings. Not guarded.	Number of Overhead Bridges.	Height of Overhead Bridges above rail level	Number of Level Crossings of other Railways.	Number of Junctions with other Railways.	Number of Junctions with Branch Lines.	Radius of Sharpest Curve.	Number of Feet per Mile of heaviest gradient.	Gauge of Railway.	Number.
						Feet.				Ft.		Ft.	
2600	Plain fishplates			12			1		1	1,000	60	4·8½	16
1760	Chairs		1	8	1	16				1,910	100	5·6	17
2640	Angle bars			21				1		955	79	4·8½	18
													19
2640	Fishplates			94			3	5		955	105	4·8½	20
2640	Plain fishplates			21	2			1		816	74	4·8½	21
2600	Fishplates and angle bars			17			1		1	820	160	4·8½	22
2640	Plain fishplates		1	109	3	22		3	2	637	79	4·8½	23
2640	Angle bars			6			1	2		1,146	53	4·8½	24
2000	Fishplates		24				1	1		717	90	4·8½	25
													26
2992	Angle fishplates			17	1	23	1	1		573	80	4·8½	27
2564	"			6				2		1,433	50	4·8½	28
3200	Angle bars and fishplates	10	85	2,736	238	15″ 10′ to 29″ 10′	45	76	78	1,100	52·80	4·8½	29
							15	Branch lines,		1,600	105·60		
2640	Fishplates			33			1	2		573	66	4·8½	30

‡411·75 double track. ‖21 miles leased to Quebec and Lake St. John Railway.

No. 3.—SUMMARY STATEMENT of Characteristics of

Number.	Name of Railway.	Length of Line.				Length of Siding.	Weight per Yard.	
		Completed. (Rails laid.)	Under Construction.	Iron Rails.	Steel Rails.		Iron Rails.	Steel Rails.
		Miles.	Miles.	Miles.	Miles.	Miles.	Lbs.	Lbs.
31	Great North-west Central	50·93			50·93	3·05		56
32	Gulf Shore, operated by Caraquet Ry.	16·78			16·78	1·01		56
33	Hamilton, Grimsby & Beamsville (Elec.)	23·00			23·00			50, 65
34	Hamilton and Dundas (Electric)	7·25			7·25	1·00		65
35	Hamilton Radial Railway (Electric)	12·00			12·00	·50		65
36	Hampton and St. Martin	30·00			30·00	·50		56
37	Hereford, including Dominion Lime Co. Line	53·30			53·30	5·51		56
38	*Hull (Electric)	13·63			13·63	2·00		56
39	Irondale, Bancroft and Ottawa	50·00			50·00	2·50		56
40	Interprovincial Bridge and Approaches, Ottawa		1·43					
41	Kaslo and Slocan	31·80			31·80	1·23		45
42	Kent Northern, including St. Louis and Richibucto	34·00		3·50	30·50	2·00	67	56
43	Kingston and Pembroke	112·85		9·75	103·10	21·00	50 to 84	56
44	Kingston, Smith's Falls and Ottawa, no return							
45	L'Assomption	3·00			3·00	·25		56
46	Lake Erie and Detroit River, including Erie and Huron. 155·72; London & Port Stanley, leased 24·00	179·72			179·72	31·48		51 to 65
47	Lotbinière and Mégantic	30·34			30·34	6·35		56
48	Manitoba and North-western.. 234·50; Saskatchewan and Western. 15·47	249·97			249·97	23·70		56
49	Manitoba and South-eastern		45·60					
50	Massawippi Valley	35·46			35·46	6·68		50 & 60
51	†Midland of Nova Scotia		38·00		30·00			60
52	Montfort and Gatinaeu Colonization	33·00			33·00	0·71		56
53	‡Montreal & Atlantic, formerly South-eastern 139·30; Lake Champlain & St. Lawrence Junction 60·70	200·00			200·00	26·70		60 to 73
54	Montreal Park and Island (Electric)	40·88			40·88	·98		56
55	Montreal Island Belt Line "	12·67			12·67	·75		56, 65
56	Montreal, Portland and Boston, now Montreal and Province Line	40·60		8·60	32·00	1·00	38	56
57	Montreal and Vermont Junction	23·60			23·60	2·00		60 & 72
58	Nelson and Fort Sheppard	59·40			59·40	3·70		56
59	New Brunswick & Prince Edward Island	36·00			36·00	1·50		56
60	§Niagara Falls Park & River Elec. Ry.	13·68			13·68	·89		56
61	Northern Pacific and Manitoba	311·61			311·61	34·46		56
62	Nosbonsing and Nipissing	5·50			5·50	1·25		56
63	Nova Scotia Central, now Central Ry. of Nova Scotia	74·00			74·00	3·50		56
64	Nova Scotia Southern		11·00					
65	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Railway Co.	12·50			12·50	3·87		56
66	Orford Mountain	26·50			26·50	1·00		56
67	Oshawa Electric Railway	8·50			8·50			64
68	Ottawa, Arnprior and Parry Sound	263·80			263·80	34·40		72
69	Ottawa and Gatineau	56·50			56·50	2·00		56
70	Ottawa and New York	56·79			56·79	3·24		65
71	Pembroke Southern	20·50			20·50	2·00		56

*6·85 double track. †30 miles of steel rails laid. ‡Line from Sorel to Drummondville, 36·6 not

SESSIONAL PAPER No. 10

Roads, &c., for the year ended June 30, 1899—*Continued.*

Number of Ties per Mile.	Nature of Rail Fastenings.	Number of Grain Elevators.	Number of Level Crossings. Guarded.	Number of Level Crossings. Not guarded.	Number of Overhead Bridges.	Height of Overhead Bridges above rail level.	Number of Level Crossings of other Railways.	Number of Junctions with other Railways.	Number of Junctions with Branch Lines.	Radius of Sharpest Curve.	Number of Feet per Mile of heaviest gradient.	Gauge of Railway.	Number.
						Feet.				Ft.		Ft.	
2640	Plain fishplates	16		24				1		955	61	4·8½	31
2600	"			19				1		574	53	4·8½	32
2347	Fishplates			35			2	1		127	237	4·8½	33
2300	"		1		1	14				573	200	4·8½	34
2640	Angle bars			28			5			105	178	4·8½	35
2640	Plain fishplates			18				1		955	90	4·8½	36
2800	"			28			2	3		955	66	4·8½	37
2640	"			3		1	22	2	3	193	264	4·8½	38
2640	"			16				1		1,000	60	4·8½	39
										573	53	4·8½	40
2640	Angle fishplates			13	1	22½			1	193	171	3′ 0″	41
2432	Fishplates			10			1	1		1,000	60	4·8½	42
2640	Angle bars			56	3	16 & 21½	6	6	13	955	79	4·8½	43
													44
2500	Plain fishplates			1				1		955	20	4·8½	45
2800	Angle bars		3	236	5	20	17	11		636	60	4·8½	46
2640	"			10			1	2		717	80	4·8½	47
2700	Plain and angle fishplates	37		188				3	2	955	106	4·8½	48
													49
2800	Plain fishplates		1	20	1	19	1	2	1	478	76	4·8½	50
2640	Angle bars			25			1	2		882	58	4·8½	51
2600	Plain fishplates			13	1	22		1		573	158	4·8½	52
2640	"			164	1	19·6	6	6	2	441	140	4·8½	53
2640	Angle bars		1	23			3			40	318	4·8½	54
2640	"			9			4	1	2	573	53	4·8½	55
3000	Plain fishplates and chairs			21			3	1	2			4·8½	56
3000	" "			51					3		52	4·8½	57
2640	Angle bars							1		573	132	4·8½	58
2400	Plain fishplates			26				1		750	66	4·8½	59
2640	Angle bars		1	16	2	14-22		2	1	115	300	4·8½	60
2640	"	59	6	285			6	2	4	574	63	4·8½	61
3000	Plain fishplates			2			1	1		955	132	4·8½	62
2640	Angle bars			32	1	20		1		819	80	4·8½	63
										717	80	4′8½″	64
2640	Angle bars			5				1	1	955	79	4·8½	65
2640	"			17				1		955	74	4·8½	66
2640	"			28			1			80	211	4·8½	67
2816	"	2	4	54	7	22	3	2		955	66	4·8½	68
2640	Plain fishplates			44				1		573	105	4·8½	69
2750	Angle bars			68	1	22	3	1		2,865	39	4·8½	70
2640	Plain fishplates			16				1		955	79	4·8½	71

in operation. ‖ 14·10 double track. § 11·43 double track.

No. 3.—SUMMARY STATEMENT of Characteristics of

Number.	Name of Railway.	Length of Line.				Length of Siding.	Weight per Yard.	
		Completed. (Rails laid.)	Under Construction.	Iron Rails.	Steel Rails.		Iron Rails.	Steel Rails.
		Miles.	Miles.	Miles.	Miles.	Miles.	Lbs.	Lbs.
72	Philipsburg Railway and Quarry Co	7·50			7·50			56
73	*Pontiac and Renfrew	4·25			4·25	·75		56
74	Pontiac Pacific Junction	70·60			70·60	3·50		56
75	Port Arthur, Duluth and Western	85·50			85·50	4·00		56
76	Qu'Appelle, Long Lake & Saskatchewan	253·96			253·96	7·75		56
77	Quebec Central	213·50			213·50	20·50		56 to 70
78	Quebec and Lake St. John 245·85 †Lower Laurentian 39·50	285·35			245·85 39·50	19·50 2·00		56 & 60 56
79	Quebec, Montmorency and Charlevoix	30·00			30·00	2·00		56
80	Red Mountain	9·53			9·53	·85		56
81	Restigouche and Western	10·00	100·00		10·00	·76		56
82	Salisbury and Harvey	45·00		38·50	6·50	6·00	56	56
83	Shore Line, New Brunswick	82.50			82·50	2·50		50
84	Stanstead, Shefford and Chambly	43·00		12·00	31·00	2·00	60	60
85	St. Catharines and Niagara Central	12·35			12·35	2·18		56
86	‡St. Clair Tunnel, Yard and Approaches	2·23			2·23	11·00		100
87	St. John Valley and Rivière du Loup		6·00					
88	St. Lawrence and Adirondack	33·00			33·00	5·30		72 & 80
89	Sydney & Louisbourg(Dominion Coal Co)	59·09		10·13	48·96	4·00	50	56 & 80
90	South Shore, formerly Montreal & Sorel	44·67			44·67	2·00		56
91	Témiscouata	113·00			113·00	3·00		56
92	Tilsonburg, Lake Erie and Pacific	20·00			20·00	2·50		56 & 65
93	Thousand Islands	4·33			4·33	1·00		56
94	Toronto, Hamilton and Buffalo	82·94			82·94	14·20		65, 70, 80
95	United Counties	61·00			61·00	4·50		56
96	Victoria and Sydney, B.C.	16·26			16·26	1·20		50
	Total	17,358·60	798·83	177·47	17,210·35	2,402·02		

* Not in operation. †4·50 miles not under traffic. ‡6,000 feet in length, 19 feet 10 inches inside miles granted to Can. Pac. Ry.

SESSIONAL PAPER No. 10

Roads, &c., for the year ended June 30, 1899—*Concluded.*

Number of Ties per Mile.	Nature of Rail Fastenings.	Number of Grain Elevators.	Number of Level Crossings.		Number of Overhead Bridges.	Height of Overhead Bridges above rail level.	Number of Level Crossings of other Railways.	Number of Junctions with other Railways.	Number of Junctions with Branch Lines.	Radius of Sharpest Curve.	Number of Feet per Mile of heaviest gradient.	Gauge of Railway.	Number.
			Guarded.	Not guarded.		Feet.				Ft.		Ft.	
2816	Plain fishplates	....	....	7	....	.....	....	1	1	955	52	4·8½	72
2640	"	....	....	.....	....	.....	....	1	....	717	106	4·8½	73
2640	Plain and angle fishplates	...	....	52	....	.....	.....	....	1	114	52	4·8½	74
2640	Plain fishplates	....	....	5	....	.....	3	1	....	573	95	4·8½	75
2640	Plain fishplates and angle bars	6	....	53	....	.....	....	1	1	1,146	65	4·8½	76
2640	Fishplates and angle bars	....	....	115	..	.....	2	7	2	882	76	4·8½	77
2640	Plain fishplates	1	2	56	....	.....	....	3	2	717	105	4·8½	78
2640	"	....	....	29	....	.....	....	2	....	917	105	4′ 8½″	
2640	Fishplates and angle bars	..	1	10	....	.....	....	1	....	1,433	42	4′ 8½″	79
2640	Angle bars	....	....	.....	....	.....	.....	.....	....	288	184	4′ 8½″	80
2600	Plain fishplates	....	....	7	....	.....	....	1	....	573	79	4·8½	81
2600	"	....	....	27	1	15	....	1	....	717	80	4·8½	82
2992	"	....	....	15	5	23	3	3	....	573	85	4·8½	83
2640	Fishplates and chairs	....	....	42	1	18	3	4	....	1,910	60	4·8½	84
2640	Plain fishplates	....	....	20	3	22	2	2	..	717	79	4·8½	85
....	Angle bars	....	....	.....	....	.....	..	....	..	....	105	4·8¼	86
....	....	..	....	.....	....	.....	....	....	....	....	....	....	87
3000	Angle bars	....	....	26	1	22	2	3	....	1,146	57	4·8½	88
2640	Fishplates and angle bars	....	....	26	2	18	1	1	7	1,433	70	4·8½	89
2640	Plain fishplates	....	....	15	...	.....	....	2	....	1,910	28	4·8½	90
2640	"	....	....	38	....	.....	1	2	1	819	79	4·8½	91
2640	Angle bars	3	....	19	1	21	1	2	1	955	52	4·8½	92
3000	"	....	....	8	....	.....	....	1	....	660	84	4·8½	93
3000	"	....	6	122	13	22	1	6	2	955	80	4·8½	94
2640	Plain fishplates	....	....	53	....	.....	5	5	....	717	40	4·8½	95
2464	"	....	....	13	....	.....	....	...	..	637	105	4·8½	96
.....	.....	163	197	11,813	430	.....	276	348	233	....	.....	.....	

diameter. ‖4·82 miles double track, 2·06 miles leased to Can. Pac. Ry. and running powers over ·64

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	Alberta Railway and Coal Co.	*64·62			47,448	47,448
2	Albert Southern 16·00 Harvey Branch 3·00	19·00		5,000		5,000
3	Atlantic and Lake Superior, comprising— Baie des Chaleurs 98·00 Great Eastern, 23 miles not under traffic Ottawa Valley, 7 miles not under traffic	98·00	57,036	3,920	3,000	63,956
4	Bay of Quinté Railway and Navigation Co. 4·00 Kingston, Napanee & Western. 60·82	64·82			127,639	127,639
5	Berlin and Waterloo (Electric)	3·00	72,762			72,762
6	Brockville, Westport & Sault Ste. Marie.	45·00	1,515	3,610	27,720	32,845
7	Buctouche and Moncton	32·00			19,697	19,697
8	Calgary and Edmonton	295·07		35,860	104,523	140,383
9	Canada Atlantic 135·00 Central Counties 37·00	172·00	260,155	360,463	30,815	651,433
10	Canada Eastern	136·00	89,542	94,006	4,137	187,685
11	Canada Southern	382·19	1,095,376	2,205,554	158,314	3,459,244
12	Canadian Northern, comprising Lake Manitoba Railway and Canal Co's line and Winnipeg and Great Northern Railway	124·74			60,763	60,763
13	Canadian Government Railways— Intercolonial	1,300·96	1,588,769	3,292,926		4,881,695
	Prince Edward Island	210·00	102,793		155,482	258,275
14	Canadian Pacific Ry., owned. 4,589·80 Leased Lines— Fredericton 22·10 New Brunswick 175·00 New Brunswick & Canada 117·20 St. John and Maine 92·10 St. John Bridge and Ry. Extension 2·00 St. Stephen and Milltown 4·60 Tobique Valley 28·00 Cap de la Madeleine 2·32 Montreal and Lake Maskinongé 11·00 Atlantic and North-west. 201·40 Montreal and Ottawa 93·20 Ontario and Quebec 474·50 St. Lawrence and Ottawa 58·40 Credit Valley 175·70 Guelph Junction 15·00 Toronto, Hamilton and Buffalo 2·70 Toronto, Grey and Bruce. 191·10 West Ontario Pacific 26·60 Manitoba South-western Colonization 214·40 Columbia and Kootenay. 60·50 Nakusp and Slocan 36·90 Shuswap and Okanagan. 51·00 Columbia and Western 35·20	6,680·72	6,391,213	8,911,984	1,570,574	16,873,771
15	Caraquet	68·00			40,250	40,250
16	Carillon and Grenville	13·00	5,600		600	6,200
17	Central Ontario 104·00 Ontario, Belmont & Northern. 9·60	113·60	14,300	7,360	80,240	101,900
18	Central of New Brunswick	45·66			32,180	32,180

SESSIONAL PAPER No. 10

Year and Mileage, for the Year ended June 30, 1899.

Engine Mileage.	Total Number of Passengers Carried.	Tons of Freight of 2,000 lbs. Handled.	Rate of Speed of Passenger Trains—Miles per Hour. Average	Rate of Speed of Freight Trains—Miles per Hour. Average	Number.	Remarks.
114,624	2,145	59,439	.....	*14	1	From Lethbridge to Coutts on International Boundary, the portion of this railway from Dunmore to Lethbridge, 107 miles, has been purchased by the Can. Pac. Ry. Co.
5,000	.....	4,895	.....	15	2	
63,956	18,420	14,412	18	15	3	
127,639	64,075	201,600	.....	.....	4	
.....	254,218	.....	7	.....	5	
31,945	29,193	13,986	20	.....	6	
20,913	9,078	17,321	.....	16	7	
177,527	20,513	60,688	19	20	8	
783,677	177,325	1,139,543	.....	.....	9	
197,570	42,688	120,537	30	18	10	
4,551,687	537,116	3,952,999	42	24	11	
69,373	20,458	60,216	.....	18	12	
5,974,970	1,603,095	1,750,761	25	15	13	
356,744	129,667	57,968	20	15		
22,977,610	3,483,843	5,971,205	30	18	14	Lines over which Can. Pac. Ry. have running powers— G. T. Ry., Toronto to Hamilton, 36·20 mls. C. A., Ry., Montr'l & Ottawa Jct., to Ottawa..... 1·50 " 37·70 " Toronto, Hamilton and Buffalo Ry. leased to C. P. Ry. from Poulette St., Hamilton, to junction with Grand Trunk Ry., Desjardins Canal, 2·06 miles; and C. P. Ry. has running powers from Poulette St. to Hamilton Station, 0·64 miles.
40,250	4,874	9,684	.....	15	15	
6,300	6,500	310	25	.....	16	
106,499	57,923	124,725	25	20	17	
32,180	6,090	6,410	.....	15	18	

No. 4—SUMMARY STATEMENT of the Operations of the Year

Number.	Name of Railway.	Mileage.	Train Mileage.			
			Passenger Trains.	Freight Trains.	Mixed Trains.	Total Train Mileage.
19	Coast Railway of Nova Scotia	30·80	2,886	253	27,630	30,769
20	Cumberland Railway and Coal Co.	32·00			69,452	69,452
21	Dominion Atlantic, comprising—					
	Windsor and Annapolis 87·50					
	Cornwallis Valley 14·00					
	Yarmouth and Annapolis 87·00	220·50	257,331		296,258	553,589
	Windsor Branch, Intercolonial 32·00					
22	Elgin and Havelock	28·00			17,388	17,388
23	Esquimalt and Nanaimo	78·00	93,986	89,409	20,689	204,084
24	Fredericton & St. Mary's Ry. Bridge	1·33				
25	Grand Trunk 884·25					
	Great Western 561·80					
	Brantford, Norfolk and Port Burwell 34·78					
	Buffalo and Lake Huron 162·00					
	Grand Trunk, Georgian Bay and Lake Erie 172·75					
	Owen Sound Branch 12·42					
	London, Huron and Bruce 69·01					
	Waterloo Junction 10·25					
	South Norfolk 17·00					
	Wellington, Grey and Bruce 168·13					
	Northern 172·10					
	North Simcoe 33·34	3,146 98	6,121,425	9,885,528	1,000,787	17,007,740
	Hamilton and North-western 173·90					
	Northern Pacific Junction 111·37					
	Toronto Belt Line 12·70					
	Midland 166·78					
	Grand Junction 85·40					
	Toronto and Nipissing 85·00					
	Lake Simcoe Junction 26·50					
	Victoria 53·25					
	Whitby, Port Perry & Lindsay 46·50					
	Jacques Cartier Union 6·50					
	Montreal & Champlain Junction 61·75					
	Beauharnois Junction 19·50					
26	Great Northern	28·00	920	18,210		19,130
27	Great North-west Central	50·93	132	2,420	17,899	20,451
28	Gulf Shore	16·78			3,060	3,060
29	Hamilton, Grimsby and Beamsville (Electric)	23·00	231,912			231,912
30	Hamilton and Dundas (Electric)	7·25	58,898			58,898
31	Hamilton Radial (Electric)	12·00	135,460			135,460
32	Hampton and St. Martin's, formerly St. Martin's and Upham	30·00			14,000	14,000
33	Hull (Electric)	13·63	367,012	15,477		382,489
34	Hereford	53·30	22,638	59,948	2,403	84,989
35	Irondale, Bancroft and Ottawa	50·00			29,735	29,735
36	Joggins, now Canada Coal & Railway Co.	12·00			15,024	15,024
37	Kaslo and Slocan	31·80	6,499	5,850	16,610	28,959
38	Kent, Northern, including St. Louis and Richibucto	34·00			18,366	18,366
39	Kingston and Pembroke	112·85	65,104	9,420	61,974	136,498
40	L'Assomption	3·00			5,994	5,994
41	Lake Erie and Detroit River 84·22					
	Erie and Huron 71·50	179·72	254,452		113,210	367,662
	London and Port Stanley 24·00					
42	Lotbinière and Mégantic	30·34			12,563	12,563
43	Manitoba and North-western 234·50					
	Saskatchewan and Western 15·47	249·97	60,118	65,107	30,265	155,490
44	Massawippi Valley	35·46	70,558	67,457	22,682	160,697
45	Montford Colonization	33·00	20,698	26,785		47,483

and Mileage, for the Year ended June 30, 1899—*Continued.*

Engine Mileage.	Total Number of Passengers Carried.	Tons 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.
34,062	31,908	4,425	20	15	19	Operated with rolling stock of Caraquet Ry.
124,499	16,284	405,434	20	.....	20	Spring Hill and Oxford Branch, 14 miles not under traffic.
553,589	215,751	196,977	30	15	21	Running powers over Intercolonial Ry. from Halifax to Windsor Junction, 14 miles.
17,388	4,485	8,661	15	.....	22	
204,084	59,111	88,807	27	20	23	
.....	.....	.....	.....	.....	24	Included in Canada Eastern Ry., which Company runs their trains over this bridge, paying tolls.
21,294,644	6,178,315	8,880,000	30	20	25	Running powers over Chaudière Branch of the Intercolonial, 6 miles. The Cobourg, Blairton and Marmora Ry. not under traffic.
19,130	5,810	5,686	25	25	26	
22,250	5,789	37,344	20	17	27	
3,060	476	2,197	.....	15	28	
.....	242,848	3,213	15	12	29	
.....	162,354	.....	10	.....	30	
.....	338,101	566	25	.....	31	
14,000	4,437	7,851	15	.....	32	
15,477	498,674	76,533	20	.....	33	
84,989	16,566	95,096	26	15	34	
31,300	5,430	15,667	18	.....	35	
26,215	6,171	53,872	20	15	36	
37,355	18,963	23,276	12	12	37	
18,366	5,600	3,841	18	.....	38	
136,498	37,382	84,994	25	18	39	
5,994	3,592	338	15	.....	40	
671,930	408,782	363,469	.....	.....	41	
15,627	5,548	24,207	20	.....	42	
195,140	44,554	108,917	27	15	43	
160,697	83,486	279,693	25	12	44	
47,483	6,393	8,561	15	12	45	

No. 4.—SUMMARY STATEMENT of the Operations of the Year

Number.	Name of Railway.	Mileage.	Train Mileage.			
			Passenger Trains.	Freight Trains.	Mixed Trains.	Total Train Mileage.
46	Montreal and Atlantic, formerly South-eastern ...102·70; Lake Champlain and St. Lawrence Junction ...60·70	163·40	88,977	140,162	104,456	333,595
47	Montreal Island Belt Line (Electric)	12·67	216,717	8,834	9,149	234,700
48	Montreal Park and Island	40·88	699,107			699,107
49	Montreal and Province Line	40·60	27,370	22,232	3,179	52,781
50	Montreal and Vermont Junction	23·60	67,704	79,033	1,373	148,110
51	Nelson and Fort Sheppard	59·40	43,269	15,357		58,626
52	New Brunswick & Prince Edward Island	36·00	3,050	9,136	22,392	34,578
53	Niagara Falls Park and River (Electric)	13·68	261,905			261,905
54	Northern Pacific and Manitoba	311·61	110,730	106,252	51,767	268,749
55	Nosbonsing and Nipissing	5·50		12,220		12,220
56	Nova Scotia Central	74·00			49,629	49,629
57	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Railway Co	12·50			15,600	15,600
58	Orford Mountain	26·50	17,430	5,500	10,296	33,226
59	Oshawa Electric	8·50	41,561	9,420		50,981
60	Ottawa and Gatineau	56·50	19,440	1,258	38,040	58,738
61	Ottawa, Arnprior and Parry Sound	263·80	247,325	660,564	6,131	914,020
62	Ottawa and New York	56·79	35,089	33,764		68,853
63	Pembroke Southern	20·50	3,276	1,200	3,587	8,063
64	Philipsburg Railway and Quarry Co	7·50	712	248		960
65	Pontiac and Pacific Junction	70·60	1,963	4,086	46,272	52,321
66	Port Arthur, Duluth and Western	85·50	758	1,432	13,985	16,175
67	Qu'Appelle, Long Lake & Saskatchewan	253·96			63,607	63,607
68	Quebec and Lake St. John ...242·00; Great Northern ...21·00; Lower Laurentain ...35·00	298·00	107,909	76,201	91,732	275,842
69	Quebec Central	213·50	144,360	265,512	49,236	459,108
70	Quebec, Montmorency and Charlevoix	30·00	55,888	431		56,319
71	Red Mountain	9·53	9,661	7,059		16,720
72	Salisbury and Harvey	45·00			28,080	28,080
73	Shore Line, New Brunswick	82·50	2,860		53,259	56,119
74	Stanstead, Shefford and Chambly	43·00	33,360	29,791	8,566	71,717
75	St. Clair Tunnel	2·23				
76	St. Catharines and Niagara Central	12·35	12,000	2,000	11,232	25,232
77	St. Lawrence and Adirondack	33·00	98,843	7,948	34,169	140,960
78	Sydney and Louisbourg	59·09	38,280	131,787		170,067
79	South Shore, formerly Montreal & Sorel	44·67	32,512		27,270	59,782
80	Témiscouata	113·00	8,650		92,340	100,990
81	Tilsonburg, Lake Erie and Pacific	20·00	13,000	7,000		20,000
82	Thousand Islands	4·33			18,872	18,872
83	Toronto, Hamilton and Buffalo	82·94	157,704	117,374		275,078
84	United Counties ...61·00; East Richelieu Valley ...22·80	83·80	42,378		62,230	104,608
85	Victoria and Sydney	16·26	500		23,661	24,161
		17,250·21	20,093,378	26,922,348	5,199,481	52,215,207

and Mileage, for the Year ended June 30, 1899—*Concluded.*

Engine Mileage.	Total Number of Passengers Carried.	Tons 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.
509,587	161,689	533,766	30	18	46	
.....	352,586	20,136	20	12	47	
.....	1,266,242	.....	9	.....	48	
52,781	68,560	45,501	30	12	49	
148,110	104,688	821,863	40	15	50	
59,108	31,977	36,669	20	10	51	
38,450	13,583	27,966	20	15	52	
.....	462,256	.....	9	.....	53	
447,816	72,758	268,622	27	13	54	
12,220	.....	220,300	.....	20	55	
54,354	36,095	26,468	20	.....	56	
34,680	5,603	155,214	15	.....	57	
33,226	4,964	31,376	25	15	58	
.....	105,004	43,146	.....	.....	59	
59,023	53,230	18,245	30	20	60	
1,251,049	97,260	734,173	.....	.....	61	
68,853	39,541	23,518	35	18	62	
8,063	2,295	3,978	30	25	63	
960	365	1,227	25	20	64	
52,321	24,568	25,639	30	20	65	
16,840	4,727	22,079	25	15	66	
78,481	6,906	23,892	.....	17	67	
385,917	185,851	263,021	.....	.....	68	
492,365	139,377	276,083	25	15	69	
57,075	239,593	15,470	21	21	70	
39,038	28,123	124,811	17	9	71	
30,634	9,014	31,746	18	.....	72	
56,419	11,762	9,172	25	20	73	
.....	122,867	805,147	30	12	74	
52,704	.....	.....	.....	.....	75	
25,892	10,261	64,950	20	.....	76	
218,948	102,665	161,717	30	15	77	
170,067	52,420	1,412,610	27	17	78	
60,322	161,815	13,379	32	20	79	
101,020	14,693	36,320	20	16	80	
20,000	17,000	11,519	30	30	81	
18,872	21,529	19,276	.....	.....	82	
424,732	174,139	490,221	35	20	83	
104,608	33,755	27,125	30	18	84	
24,161	19,573	19,084	25	.....	85	
64,582,807	19,133,365	31,211,753				

No. 5.—SUMMARY STATEMENT of Description of

Number.	Name of Railway.	Mileage.	Flour.		Grain.		Live
			Barrels.	Tons.	Bushels.	Tons.	No.
1	Alberta Railway and Coal Co.	64·62	60	6	4,854	97	144
2	Albert Southern ..... 16·00 Harvey Branch ..... 3·00	19·00	150	15	.....	.....	.....
3	Atlantic & Lake Superior, comprising— Baie des Chaleurs ..... 98·00 Great Eastern, not under traffic ... Ottawa Valley " " ...	98·00	8,970	897	14,167	2,833	472
4	Bay of Quinté Ry. and Navigation Co. ..... 4·00 Kingston, Napanee & Western. 60·82	64·82	31,814	3,181	118,146	3,249	9,167
5	Berlin and Waterloo (Electric)	3·00	.....	.....	.....	.....	.....
6	Brockville, Westport & Sault Ste. Marie	45·00	20,787	2,069	102,183	3,068	11,338
7	Buctouche and Moncton	32·00	.....	.....	.....	.....	.....
8	Calgary and Edmonton	295·07	18,664	1,867	787,072	15,872	26,892
9	Canada Atlantic ..... 135·00 Central Counties ..... 37·00	172·00	624,723	62,472	12,999,342	324,959	24,053
10	Canada Eastern	136·00	67,232	6,723	79,160	1,346	461
11	Canada Southern	382·19	2,294,110	229,411	23,925,030	527,671	747,156
12	Canadian Northern, comprising Lake Manitoba Ry. and Canal Co's line, and Winnipeg Great Northern Ry.	124·74	308,600	3,086	696,130	19,741	3,816
13	Canadian Government Railways— Intercolonial	1,300·96	1,157,250	115,725	2,595,353	52,661	109,821
	Prince Edward Island	210·00	40,787	4,078	374,525	6,982	26,631
14	Canadian Pacific Ry. owned 4,589·80 Leased lines— Fredericton ..... 22·10 New Brunswick ..... 175·00 New Brunswick & Canada 117·20 St. John and Maine ..... 92·10 St. John Bridge and Railway Extension ..... 2·00 St. Stephen and Milltown 4·60 Tobique Valley ..... 28·00 Cap de la Madeleine ..... 2·32 Montreal & L. Maskinongé 11·00 Atlantic and North-west .. 201·40 Montreal and Ottawa ... 93·20 Ontario and Quebec ..... 474·50 St. Lawrence and Ottawa 58·40 Credit Valley ..... 175·70 Guelph Junction ..... 15·00 Toronto, Hamilton and Buffalo ..... 2·70 Toronto, Grey and Bruce. 191·10 West Ontario Pacific ..... 26·60 Manitoba South-western Colonization ..... 214·40 Columbia and Kootenay .. 60·50 Nakusp and Slocan ..... 36·90 Shuswap and Okanagan .. 51·00 Columbia and Western ... 35·20	6,680·72	3,583,455	358,344	36,916,795	964,670	758,048
15	Caraquet	68·00	6,000	600	700	14	50
16	Carillon and Grenville	13·00	.....	.....	.....	.....	105
17	Central Ontario ..... 104·00 Ontario, Belmont & Northern 9·60	113·60	9,735	954	188,320	4,708	4,678
18	Central of New Brunswick	45·66	.....	.....	.....	.....	.....
19	Coast Railway of Nova Scotia	30·80	11,147	1,115	11,473	361	44
20	Cumberland Railway and Coal Co.	32·00	9,332	933	40,764	692	30
21	Dominion Atlantic, comprising— Windsor and Annapolis .... 87·50 Cornwallis Valley ..... 14·00 Yarmouth and Annapolis ... 87·00 Windsor Branch of Intercolonial ..... 32·00	220·50	154,260	15,426	.....	.....	10,624

SESSIONAL PAPER No. 10

Freight carried for the Year ended June 30, 1899.

Stock.	Lumber of all kinds except Firewood.		Firewood.		Manufactured Goods.	All other Articles.	Total Weight Carried.	Number.	Remarks.
Tons.	Feet.	Tons.	Cords.	Tons.	Tons.	Tons.	Tons.		
86	1,144,066	1,716	.....	.....	90	*57,444	59,493	1	*56,919 tons bituminous coal.
.....	4,770,000	4.770	14	42	.....	68	4,895	2	
118	4,791,205	7,185	10	20	1,715	1,644	14,412	3	
3,667	48,509,714	84,892	9,993	14,990	45,637	45,984	201,600	4	
.....	.....	.....	.....	.....	.....	.....	.....	5	
1,418	449,889	721	.....	.....	5,660	1,050	13,986	6	
.....	3,030,000	3,986	5,693	8,539	1,699	3,097	17,321	7	
11,015	6,671,700	8,464	912	1,370	14,988	7,112	60,688	8	
6,018	224,267,000	303,366	33,213	54,801	72,606	315,321	1,139,543	9	
187	22,333,000	33,500	14,997	18,746	29,160	30,875	120,537	10	
186,789	1,422,618	290,214	23,995	37,192	587,397	2,094,325	3,952,999	11	
2,119	3,712,050	4,182	3,858	5,787	7,357	17,944	60,216	12	
18,438	306,554,031	383,193	58,960	88,440	399,527	692,777	1,750,761	13	
2,903	2,701,630	4,457	2,455	4,369	35,179	.....	57,968		
199,657	898,899,423	1,198,488	217,538	373,884	1,601,424	1,274,738	5,971,205	14	
25	4,500,000	6,600	100	130	1,200	1,115	9,684	15	
35	.....	.....	.....	.....	60	215	310	16	
2,339	13,734,000	17,168	27,804	55,609	30,965	*12,982	124,725	17	*9,653 tons iron ore.
.....	1,135,200	1,419	620	1,162	.....	*3,829	6,410	18	*2,759 tons coal.
22	1,251,843	1,878	278	417	506	126	4,425	19	
15	8,172,000	10,205	.....	.....	4,571	*389,018	405,434	20	*389,018 tons of coal.
2,218	32,000,000	48,070	5,000	8,723	40,603	*81,937	196,977	21	*Produce and minerals.

No. 5.—SUMMARY STATEMENT of Description of

Number.	Name of Railway.	Mileage.	Flour.		Grain.		Live
			Barrels.	Tons.	Bushels.	Tons.	No.
22	Elgin and Havelock	28·00	2,470	247	5,432	92	901
23	Esquimalt and Nanaimo	78·00	2,460	246	20,500	291	4,260
24	Fredericton and St. Mary's Railway Bridge	1·33					
25	Grand Trunk 884·25 Great Western 561·80 Brantford, Norfolk and Port Burwell, 34·78 Buffalo and Lake Huron 162·00 Grand Trunk, Georgian Bay and Lake Erie 172·75 Owen Sound Branch 12·42 London, Huron and Bruce 69·01 Waterloo Junction 10·25 South Norfolk 17·00 Wellington, Grey and Bruce 168·13 Northern 172·10 North Simcoe 33·34 Hamilton & North-western 173·90 Northern Pacific Junction 111·37 Toronto Belt Line 12·70 Midland 166·78 Grand Junction 85·40 Toronto and Nipissing 85·00 Lake Simcoe Junction 26·50 Victoria 53·25 Whitby, Port Perry and Lindsay 46·50 Jacques Cartier Union 6·50 Montreal and Champlain Junction 61·75 Beauharnois Junction 19·50	3,146·98	5,176,720	517,672	45,325,680	1,133,142	1,732,460
26	Great Northern	28·00	10,700	1,070		192	
27	Great North-west Central	50·93	740	74		26,809	723
28	Gulf Shore	16·78	3,000	300	1,000	17	10
29	Hamilton, Grimsby and Beamsville	23·00			3,200	96	
30	Hamilton and Dundas (Electric)	7·25					
31	Hamilton Radial	12·00					
32	Hampton and St. Martins, formerly St. Martin's and Upham	30·00					
33	Hull (Electric)	13·63	40,617	3,890	365,650	8,942	6,172
34	Hereford	53·30	9,750	975	31,304	559	400
35	Irondale, Bancroft and Ottawa	50·00	7,334	714	6,894	193	1,770
36	Joggins, now Canada Coals and Ry. Co.	12·00	1,374	105	7,127	118	4
37	Kaslo and Slocan	31·80	859	85	6,255	106	40
38	Kent Northern, including St. Louis and Richibucto	34·00	4,972	531	1,794	39	14
39	Kingston and Pembroke	112·85	10,050	1,005	32,000	960	720
40	L'Assomption	3·00	840	84	750	15	
41	Lake Erie and Detroit River 84·22 Erie and Huron 71·50 London and Port Stanley 24·00	179·72	192,426	20,782	1,556,878	42,747	99,638
42	Lotbinière and Megantic	30·34	790	79	1,000	30	
43	Manitoba and North-western 234·50 Saskatchewan and Western 15·47	249·97	87,462	8,746	2,239,546	60,112	22,682
44	Massawippi Valley	35·46	18,910	1,891	1,120,350	22,407	1,604
45	Montfort and Gatineau Colonization	33·00	4,300	430	8,000	136	
46	Montreal and Atlantic, formerly South-eastern 102·70 Lake Champlain and St. Lawrence Junction 60·70	163·40	266,405	46,640	3,235,820	63,049	15,762
47	Montreal Island Belt Line (Electric)	12·67	750	75			
48	Montreal Park and Island (Electric)	40·88					

SESSIONAL PAPER No. 10

Freight carried for the Year ended June 30, 1899—*Continued.*

Stock.	Lumber of all kinds except Firewood.		Firewood.		Manufactured Goods.	All other Article.	Total Weight Carried.	Number.	Remarks.
Tons.	Feet.	Tons.	Cords.	Tons.	Tons.	Tons.	Tons.		
25	3,570,000	6,250	204	408	1,395	244	8,661	22	
575	10,301,410	17,148	4,933	5,481	5,917	59,149	88,807	23	
.....	....	.....	.....	.....	.....	.. ..	.. ..	24	Freight included in Canada Eastern Railway.
346,492	625,786,000	1,251,572	356,728	237,819	978,138	4,415,165	8,880,000	25	
.....	500,000	322	600	1,057	1,530	1,515	5,686	26	
242	. .....	3,776	825	1,651	4,060	732	37,344	27	
5	400,000	700	120	180	995	.....	2,197	28	
....		.....	.....	....	....	3,117	3,213	29	
....		... .	.....	.....	.....	.. ..	..... .	30	
.. ...	....	.....	.....	.....	.....	566	566	31	
.....	5,651,200	7,064	17	32	578	177	7,851	32	
926	28,341,237	42,972	5,651	8,469	3,779	7,555	76,533	33	
438	32,862,000	54,770	11,686	23,372	8,240	6,742	95,096	34	
708	454,000	680	2,858	4,289	1,934	7,149	15,667	35	
2	345,135	493	.....	.....	672	*52,482	53,872	36	*52,482 tons coal.
36	1,284,308	1,989	27	55	1,332	19,673	23,276	37	
4	40,000	42	260	300	2,925	....	3,841	38	
360	22,880,000	34,320	8,994	16,605	27,709	4,035	84,994	39	
.....	600,000	92	.....	.....	44	103	338	40	
13,745	.. ..	82,535	18,662	9,331	.....	194,329	363,469	41	
.....	4,720,000	7,080	3,480	5,220	200	*11,598	24,207	42	*Pulpwood, bark, hay, &c.
9,326	7,558,000	9,579	758	1,026	15,002	5,126	108,917	43	
802	125,869,080	173,070	.....	.....	22,048	*59,475	279,693	44	*Includes ore and copper.
.....	1.870,000	2,805	1,065	2,130	960	2,100	8,561	45	
5,452	79,149,066	120,906	9,984	14,976	144,385	138,358	533,766	46	
.....	2,300,000	3,718	... .	.....	1,294	15,049	20,136	47	
.....	. .....	.....	.....	... ...	.....	.....	. .....	48	

No. 5.—SUMMARY STATEMENT of Description of

Number.	Name of Railway.	Mileage.	Flour.		Grain.		Live
			Barrels.	Tons.	Bushels.	Tons.	No.
49	Montreal and Province Line	40·60	840	84	36,250	1,015	92
50	Montreal and Vermont Junction	23·60	731,650	73,165	7,790,000	218,118	45,328
51	Nelson and Fort Sheppard	59·40	3,445	344	31,500	866	1,515
52	New Brunswick and Prince Edward Island	36·00	17,206	1,720	23,500	427	1,836
53	Niagara Falls Park and River (Electric)	13·68	.....	.....	.....	.....	.....
54	Northern Pacific and Manitoba	311·61	13,450	1,345	3,009,011	87,108	6,976
55	Nosbonsing and Nipissing	5·50	.....	.....	.....	.....	.....
56	Nova Scotia Central	74·00	13,274	1,327	4,891	84	395
57	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Ry. Co.	12·50	1,284	128	5,181	88	1
58	Orford Mountain	26·50	2,887	289	26,967	529	770
59	Oshawa Railway (Electric)	8·50	1,860	186	73,727	2,110	30
60	Ottawa and Gatineau	56·50	15,235	1,523	58,383	1,039	5,979
61	Ottawa, Arnprior and Parry Sound	263·80	386,751	38,675	10,425,454	260,636	18,672
62	Ottawa and New York	56·79	8,108	811	126,648	3,546	500
63	Pembroke Southern	20·50	300	30	2,000	60	10
64	Philipsburg Railway and Quarry Co.	7·50	.....	.....	.....	.....	.....
65	Pontiac Pacific Junction	70·60	13,851	1,390	360,772	5,286	5,943
66	Port Arthur, Duluth and Western	85·50	525	51	15,843	269	38
67	Qu'Appelle, Long Lake and Saskatchewan	253·96	8,445	845	264,412	7,843	9,721
68	Quebec and Lake St. John 242·00 Great Northern 21·00 Lower Laurentian 35·00	298·00	56,859	5,685	46,438	928	3,254
69	Quebec Central	213·50	136,670	13,667	32,546	976	37,730
70	Quebec, Montmorency and Charlevoix	30·00	6,479	649	13,326	369	48
71	Red Mountain	9·53	1,660	166	5,840	146	1,860
72	Salisbury and Harvey	45·00	4,281	428	25,734	437	303
73	Shore Line	82·50	4,334	433	10,841	180	81
74	Stanstead, Shefford and Chambly	43·00	365,520	36,552	7,698,327	215,553	41,156
75	St. Clair Tunnel	223	.....	.....	.....	.....	.....
76	St. Catharines and Niagara Central	12·35	5,865	575	22,498	840	.....
77	St. Lawrence and Adirondack	33·00	17,250	1,725	184,520	4,613	924
78	Sydney and Louisbourg	59·09	15,000	1,500	.....	.....	59
79	South Shore, formerly Montreal and Sorel	44·67	1,730	173	40,176	683	394
80	Temiscouata	113·00	11,718	1,171	23,632	1,087	154
81	Tilsonburg, Lake Erie and Pacific	20·00	1,643	165	36,836	921	9,862
82	Thousand Islands	4·33	1,460	146	24,146	664	1,066
83	Toronto, Hamilton and Buffalo	82·94	25,100	2,510	443,000	12,411	33,636
84	United Counties 61·00 East Richelieu Valley 22·80	83·80	16,570	1,657	167,850	3,357	757
85	Victoria and Sydney	16·26	679	68	27,505	551	1,302
		17,250·21	16,081,934	1,601,727	163,881,948	4,121,716	3,850,572

SESSIONAL PAPER No. 10

Freight carried for the Year ended June 30, 1899—*Concluded.*

Stock.	Lumber of all kinds except Firewood.		Firewood.		Manufactured Goods.	All other Articles.	Total Weight Carried.	Number.	Remarks.
Tons,	Feet.	Tons.	Cords.	Tons.	Tons.	Tons.	Tons.		
23	7,904,000	11,859	128	189	6,834	*25,497	45,501	49	*11,819 tons hay.
11,332	21,024,000	39,273	11,909	20,489	198,242	*261,244	821,863	50	*39,651 tons hay.
592	1,950,000	2,773	815	1,426	3,464	27,204	36,669	51	
118	6,712,000	11,180	1,188	2,210	2,180	10,131	27,966	52	
.....	.....	.....	.....	.....	.....	.....	.....	53	
3,837	26,735,173	39,872	25,598	44,798	30,856	60,806	268,622	54	
.....	21,480,000	220,300	.....	.....	.....	.....	220,300	55	
78	5,929,395	8,982	3,541	5,308	3,395	7,294	26,468	56	
1	232,000	2,901	.....	.....	545	*151,551	155,214	57	*141,360 tons pig iron, ore, coal, &c.
198	10,000,000	10,623	6,158	10,236	899	*8,602	31,376	58	*Pulp wood, 4,256
12	2,490,856	4,359	1,226	1,839	11,710	22,930	43,146	59	tons; cheese, 390
1,088	2,237,929	3,312	1,142	1,837	5,825	3,621	18,245	60	tons.
4,668	195,703,000	269,092	6,219	10,260	31,496	119,346	734,173	61	
270	4,513,077	5,867	286	500	4,758	7,766	23,518	62	
3	1,200,000	1,500	30	45	2,320	20	3,978	63	
.....	63,000	61	64	32	25	*1,109	1,227	64	*Marble and lime.
925	2,037,610	3,091	5,038	*7,599	5,563	1,785	25,639	65	*5,009 tons of pulp
36	1,809,252	5,711	4,536	6,912	425	8,675	22,079	66	wood.
4,938	2,472,807	3,141	1,219	1,829	4,618	678	23,892	67	
1,020	.....	93,638	31,100	*55,980	14,821	90,949	263,021	68	*14,260 tons pulp wood.
2,845	85,799,956	128,700	2,038	3,824	7,982	*118,089	276,083	69	*Ore brick, pulp
36	928,767	1,394	2,473	2,149	3,124	7,749	15,470	70	wood, lime, &c.
279	3,655,330	5,483	103,800	17,304	5,245	96,188	124,811	71	
151	9,246,000	11,557	2,502	4,691	224	*14,258	31,746	72	*12,804 tons plaster,
81	376,000	752	265	530	5,174	2,022	9,172	73	ore and hay.
10,289	21,728,000	40,748	10,680	16,028	193,024	*292,953	805,147	74	*34,960 tons of hay.
.....	.....	.....	.....	.....	.....	.....	.....	75	
.....	563,435	4,431	594	1,129	41,666	16,309	64,950	76	
462	26,036,000	39,054	1,937	1,291	9,001	105,571	161,717	77	
15	1,500,000	3,000	.....	.....	210	*1,407,885	1,412,610	78	*1,406,025 tons of coal.
55	7,360,000	1,103	41	82	1,283	10,000	13,379	79	
81	18,223,420	22,779	2,537	2,537	2,190	6,475	36,320	80	
986	132,400	266	423	866	1,568	6,747	11,519	81	
426	1,458,286	2,552	.....	.....	6,244	9,244	19,276	82	
8,409	62,330,000	12,466	2,013	2,919	29,058	422,448	490,221	83	
378	4,913,000	7,334	973	1,738	2,386	10,275	27,125	84	
108	250.170	437	7,231	14,462	679	2,779	19,084	85	
869,947	3,105,525,768	5,255,948	1,069,986	1,247,661	4,740,515	13,374,240	31,211,753		

No. 6.—SUMMARY STATEMENT of Earnings

Number.	Name of Railway.	Mileage.	Passenger Traffic.	Freight Traffic.	Mails and Express Freight.
			$ cts.	$ cts.	$ cts.
1	Alberta Railway and Coal Co.	64·62	5,677 36	47,811 27	1,884 57
2	Albert Southern 16·0	19·00	.....	2,109 50	.....
	Harvey Branch 3·0				
3	Atlantic and Lake Superior, comprising—				
	Baie des Chaleurs 98·00	98·00	10,629 64	17,774 36	5,172 53
	Great Eastern, 23 miles not under traffic..				
	Ottawa Valley, 7 " " ..				
4	Bay of Quinte Ry. and Navigation Co. 4·00	64·82	21,495 69	109,504 61	8,071 65
	Kingston, Napanee and Western 60·82				
5	Berlin and Waterloo (Electric)	3·00	11,876 96	.....	181 33
6	Brockville, Westport and Sault Ste. Marie	45·00	13,126 02	15,892 74	2,674 27
7	Buctouche and Moncton	32·00	3,934 28	9,683 91	.....
8	Calgary and Edmonton	295·07	71,731 33	175,341 33	8,901 21
9	Canada Atlantic 135·00	172·00	142,448 02	582,222 90	16,492 49
	Central Counties. 37·00				
10	Canada Eastern	136·00	28,162 96	93,344 66	3,985 60
11	Canada Southern	382·19	806,691 99	3,067,486 41	229,781 78
12	Canadian Northern, comprising Lake Manitoba Ry. and Canal Co.'s line, and Winnipeg Great Northern Ry.	124·74	41,620 22	97,268 28	2,251 45
13	Canadian Government Railways—				
	Intercolonial	1,300·96	1,167,453 16	2,348,096 58	222,781 70
	Prince Edward Island	210·00	65,383 11	79,888 52	19,396 90
14	Canadian Pacific Railway owned 4,589·80				
	Leased Lines—				
	Fredericton 22·10				
	New Brunswick 175·00				
	New Brunswick and Canada 117·20				
	St. John and Maine 92·10				
	St. John Bridge and Ry. Extension 2·00				
	St. Stephen and Milltown 1·60				
	Tobique Valley 28·00				
	Cap de la Madeleine 2·32				
	Montreal and Lake Maskinonge 11·00				
	Atlantic and North-west 201·40				
	Montreal and Ottawa 93·20	6,680·72	6,398,587 61	17,020,942 02	1,207,854 59
	Ontario and Quebec 474·50				
	St. Lawrence and Ottawa 58·40				
	Credit Valley 175·70				
	Guelph Junction 15·00				
	Toronto, Hamilton and Buffalo 2·70				
	Toronto, Grey and Bruce 191·10				
	West Ontario Pacific 26·60				
	Manitoba South-western Colonization 214·40				
	Columbia and Kootenay 60·50				
	Nakusp and Slocan 36·90				
	Shuswap and Okanagan 51·00				
	Columbia and Western 35·20				
15	Caraquet	68·00	3,513 91	11,034 52	1,983 40
16	Carillon and Grenville	13·00	1,775 81	254 26	.....
17	Central Ontario 104·00	113·60	26,806 68	71,491 51	9,234 25
	Ontario, Belmont and Northern.. 9·60				
18	Central of New Brunswick	45·66	3,239 83	3,785 03	1,194 50
19	Coast Ry. of Nova Scotia	30·80	12,788 53	4,844 66	.....
20	Cumberland Railway and Coal Co.	32·00	7,647 70	12,004 74	2,248 00
21	Dominion Atlantic, comprising—				
	Windsor and Annapolis 87·50				
	Cornwallis Valley 14·00	220·50	368,166 62	257,751 30	45,946 03
	Yarmouth and Annapolis 87·00				
	Windsor Branch, Intercolonial 32·00				
22	Elgin and Havelock	28·00	1,319 45	5,821 46	707 78
23	Esquimalt and Nanaimo	78·00	71,852 40	78,154 78	2,929 68

SESSIONAL PAPER No. 10

for the Year ended June 30, 1899.

Other Sources.	Total Gross Earnings.	Total Net Earnings.	Proportion of Earnings to Working Expenses.	Earnings per Train Mile.	Number.	Remarks.
$ cts.	$ cts.	$ cts.	p. c.	Cts.		
92,295 99	147,669 19	62,073 40	172	311·22	1	
40 00	2,149 50	311 54	111	42·99	2	
2,580 12	36,156 65	6,070 82	120	56·54	3	
3,004 88	142,076 83	50,862 09	156	111·31	4	
24 37	12,082 66	1,343 66	112	16·60	5	
104 10	31,797 13	1,657 72	105	96·80	6	
511 57	14,129 76	- 983 46	93	71·73	7	
1,147 05	257,120 92	86,127 87	150	183·15	8	
108,888 61	850,052 02	241,811 10	139	130·48	9	
1,619 08	127,112 30	36,161 58	139	67·34	10	
3,965 70	4,107,925 88	1,030,834 83	133	118·75	11	
2,030 03	143,169 98	75,078 98	210	235·62	12	
....	3,738,331 44	62,645 23	101	76·58	13	
343 50	165,012 03	- 53,040 98	75	63·89		
2,118,586 39	26,745,970 61	11,291,797 16	173	158·50	14	
577 58	16,909 41	- 4,762 22	78	42·01	15	
....	2,030 07	- 1,341 05	60	32·74	16	
3,993 75	111,526 19	25,388 27	129	109·44	17	
354 07	8,573 43	- 11,167 91	43	26·63	18	
92 64	17,725 83	- 111 31	99	57·60	19	
88,422 55	110,322 99	58,242 21	211	158·83	20	
....	671,863 95	164,375 45	132	121·36	21	
.....	7,848 69	- 1,292 53	85	45·13	22	
3,583 33	156,520 19	5,440 88	103	76·69	23	

No. 6.—SUMMARY STATEMENT of Earnings

Number.	Name of Railway.	Mileage.	Passenger Traffic.	Freight Traffic.	Mails and Express Freight.
			$ cts.	$ cts.	$ cts.
24	Fredericton and St. Mary's Ry. Bridge Co.	1·33	919 90	2,831 89	.....
25	Grand Trunk	884·25			
	Great Western	561·80			
	Brantford, Norfolk and Port Burwell	34·78			
	Buffalo and Lake Huron	162·00			
	Grand Trunk, Georgian Bay and Lake Erie	172·75			
	Owen Sound Branch	12·42			
	London, Huron and Bruce	69·01			
	Waterloo Junction	10·25			
	South Norfolk	17·00			
	Wellington, Grey and Bruce	168·13			
	Northern	172·10			
	North Simcoe	33·34	3,146·98	4,834,583 84	12,113,139 94	877,416 59
	Hamilton and North-western	173·90			
	Northern Pacific Junction	111·37			
	Toronto Belt Line	12·70			
	Midland	166·78			
	Grand Junction	85·40			
	Toronto and Nipissing	85·00			
	Lake Simcoe Junction	26·50			
	Victoria	53·25			
	Whitby, Port Perry and Lindsay	46·50			
	Jacques Cartier Union	6·50			
	Montreal and Champlain Junction	61·75			
	Beauharnois Junction	19·50			
26	Great Northern	28·00	1,943 10	3,029 24	96 00
27	Great North-west Central	50·93	6,419 88	45,960 40	312 83
28	Gulf Shore	16·78	207 88	1,102 23	.....
29	Hamilton, Grimsby and Beamsville (Electric)	23·00	34,035 37	6,658 37	1,948 91
30	Hamilton and Dundas (Electric)	7·25	17,680 35	1,351 31	.....
31	Hamilton Radial (Electric)	12·00	27,450 78	1,113 93	.....
32	Hampton and St. Martins	30·00	2,535 50	3,762 40	.....
33	Hull (Electric)	13·63	36,253 51	15,756 64	600 00
34	Hereford	53·30	10,851 16	30,250 63	1,295 34
35	Irondale, Bancroft and Ottawa	50·00	3,633 90	12,454 84	745 72
36	Joggins, now Canada Coal and Ry. Co.	12·00	1,955 25	22,408 56	751 90
37	Kaslo and Slocan	31·80	20,062 61	46,269 39	1,725 11
38	Kent Northern, including St. Louis and Richibucto	34·00	3,266 15	5,995 15	896 07
39	Kingston and Pembroke	112·85	29,044 64	89,359 41	8,699 37
40	L'Assomption	3·00	745 45	144 47	.....
41	Lake Erie and Detroit River	84·22			
	Erie and Huron	71·56	179·72	127,286 24	210,161 77	15,077 98
	London and Port Stanley	24·00			
42	Lotbinière and Mégantic	30·34	2,333 70	10,302 37	.....
43	Manitoba and North-western	234·50			
	Saskatchewan and Western	15·47	249·97	81,686 51	219,671 72	11,313 98
44	Massawippi Valley	35·46	47,512 43	76,814 94	2,978 16
45	Montfort and Gatineau Colonization	33·00	3,419 61	6,893 35	281 77
46	Montreal and Atlantic, formerly Southerstern	102·70			
	Montreal and St. Lawrence Junct.	60·70	163·40	90,008 28	166,461 19	11,569 90
47	Montreal Island Belt Line (Electric)	12·67	33,480 50	4,014 52	500 00
48	Montreal Park and Island (Electric)	40·88	111,416 10	.....	.....
49	Montreal and Province Line	40·60	22,606 87	27,492 76	2,841 86
50	Montreal and Vermont Junction	23·60	47,225 09	71,283 55	5,040 86
51	Nelson and Fort Sheppard	59·40	58,178 89	57,867 40	4,231 93
52	New Brunswick and Prince Edward Island	36·00	5,147 02	11,917 71	952 56
53	Niagara Falls Park and River Ry. (Electric)	13·68	48,207 22	.....	.....
54	Northern Pacific and Manitoba	311·61	93,790 98	264,318 83	9,095 67

SESSIONAL PAPER No. 10

for the Year ended June 30, 1899.—*Continued.*

Other Sources.	Total Gross Earnings.	Total Net Earnings.	Proportion of Earnings to Working Expenses.	Earnings per Train Mile.	Number.	Remarks.
$ cts.	$ cts.	$ cts.	p. c.	Cts.		
500 00	4,251 79	1,093 76	134	.....	24	Receipts from tolls on trains run by Canada Eastern Railway.
646,018 81	18,471,159 18	6,867,824 00	159	108·60	25	
....	5,068 34	- 2,693 76	65	26·49	26	
1,058 48	53,751 59	7,651 20	116	262·83	27	
... .	1,310 11	118 29	109	42·81	28	
1,194 31	43,836 96	21,717 96	198	18·90	29	
4,334 68	23,366 34	10,535 03	182	39·66	30	
728 06	29,292 77	14,039 38	192	21·62	31	
125 02	6,422 92	- 407 59	94	45·87	32	
11,082 34	63,692 49	29,287 28	185	16·65	33	
... .	42,397 13	- 20,335 84	67	49·88	34	
....	16,834 46	1,208 42	107	56·61	35	
.....	25,115 71	15,186 90	252	167·17	36	
1,019 83	69,076 94	23,799 32	152	238·53	37	
.....	10,157 37	2,287 37	129	55·30	38	
10,892 96	137,996 38	34,530 82	133	101·09	39	
.....	859 92	- 638 38	58	148·48	40	
18,883 39	371,409 38	130,122 42	153	101·02	41	
16 21	12,652 28	1,335 46	111	100·71	42	
9,081 15	321,753 36	78,798 58	132	206·92	43	
.....	127,305 53	36,080 59	139	79·22	44	
....	10,594 73	- 3,230 48	76	22·31	45	
12,129 33	280,168 70	- 31,705 01	89	83·98	46	
479 19	38,474 21	18,857 93	196	16·39	47	
1,238 04	112,654 14	44,522 80	165	16·11	48	
142 00	53,083 49	15,575 96	141	100·57	49	
247 86	123,797 36	30,857 28	133	83·58	50	
351 56	120,629 78	58,364 75	193	205·76	51	
....	18,017 29	3,572 41	124	52·10	52	
11,153 11	59,360 33	20,702 86	153	22·66	53	
11,518 75	378,724 23	- 19,853 36	95	140·92	54	

No. 6.—SUMMARY STATEMENT of Earnings

Number.	Name of Railway.	Mileage.	Passenger Traffic.	Freight Traffic.	Mails and Express Freight.
			$ cts.	$ cts.	$ cts.
55	Nosbonsing and Nipissing	5·50	.....	47,365 00	.....
56	Nova Scotia Central	74·00	23,596 82	22,531 89	2,608 62
57	Nova Scotia Steel Co., formerly New Glasgow Iron Coal and Ry. Co.	12·50	1,239 30	12,869 58	312 00
58	Orford Mountain	26·50	1,889 47	15,212 16	526 24
59	Oshawa (Electric)	8·50	5,620 78	21,348 93	1,394 03
60	Ottawa and Gatineau	56·50	30,161 81	28,208 86	3,290 20
61	Ottawa, Arnprior & Parry Sound	263·80	78,285 32	643,692 67	10,617 77
62	Ottawa and New York	56·79	22,417 56	22,621 29	372 05
63	Pembroke Southern	20·50	1,117 16	2,168 73	34 99
64	Philipsburg Ry. and Quarry Co	7·50	68 55	416 51	.....
65	Pontiac Pacific Junction	70·60	17,089 34	23,549 01	3,233 77
66	Port Arthur, Duluth and Western	85·50	3,965 80	13,073 66	.....
67	Qu'Appelle, Long Lake and Saskatchewan	253·96	23,287 23	61,991 12	2,906 17
68	Quebec and Lake St. John. 242·00 Great Northern 21·00 Lower Laurentian 35·00	298·00	77,129 74	188,546 67	12,736 64
69	Quebec Central	213·50	149,773 84	296,930 19	19,431 68
70	Quebec, Montmorency and Charlevoix	30·00	44,408 25	12,767 74	1,086 48
71	Red Mountain	9·53	17,538 60	68,487 03	919 46
72	Salisbury and Harvey	45·00	5,964 87	13,277 97	2,443 29
73	Shore Line, New Brunswick	82·50	12,621 54	12,185 23	3,190 76
74	Stanstead, Shefford and Chambly	43·00	18,935 09	35,872 70	2,714 00
75	St. Clair Tunnel	2·23	* 50,214 00	† 218,881 50	.....
76	St. Catharines and Niagara Central	12·35	2,477 91	23,436 75	184 27
77	St. Lawrence and Adirondack	33·00	70,368 22	68,976 51	5,608 48
78	Sydney and Louisburg	59·09	16,428 08	283,409 38	.....
79	South Shore, formerly Montreal and Sorel	44·67	27,676 94	9,400 30	2,054 20
80	Témiscouata	113·00	14,350 61	36,800 81	10,815 11
81	Tilsonburg, Lake Erie and Pacific	20·00	3,460 00	5,834 49	230 24
82	Thousand Islands	4·33	4,654 19	12,318 41	2,141 92
83	Toronto, Hamilton and Buffalo	82 94	87,458 75	224,958 93	.....
84	United Counties 61 00 East Richelieu Valley 22·80	83·80	19,202 94	23,454 14	1,373 76
85	Victoria and Sydney	16·26	8,362 50	9,240 20	409 14
	Total	17,250·21	15,929,583 20	40,101,036 62	2,842,681 49

SESSIONAL PAPER No. 10

for the Year ended June 30, 1899.—*Concluded.*

Other Sources.	Total Gross Earnings.	Total Net Earnings.	Proportion of Earnings to Working Expenses.	Earnings per Train Mile.	Number.	Remarks.
$ cts.	$ cts.	$ cts.	p. c.	Cts.		
.....	47,365 00	2,744 60	106	387·60	55	
951 49	49,688 82	8,257 67	119	100·12	56	
5,400 00	19.820 88	3,649 68	122	127·05	57	
1,600 00	19,227 87	1,832 58	110	57·87	58	
1,336 18	29,699 92	13,594 61	184	58·22	59	
387 77	62,048 64	8,145 49	111	105·63	60	
49,455 38	782,051 14	157,313 46	125	85·56	61	
917 86	46,328 76	- 13,159 91	78	67·28	62	
....	3,320 88	- 4,968 77	40	41·19	63	
2,433 16	2,918 22	1,415 16	193	303·98	64	
3,866 85	47,738 97	3,714 15	108	91·24	65	
339 00	17,378 46	- 4,639 70	79	107·44	66	
646 29	88,740 81	- 1,934 24	97	139·51	67	
16,893 95	295,307 00	49,030 75	119	107·05	68	
2,715 80	468,851 51	161,452 43	152	102·12	69	
619 85	58,882 32	24,561 02	171	104·55	70	
245 22	87,190 31	54,913 35	270	521·47	71	
213 68	21,899 81	3,612 48	119	77 99	72	
268 66	28,266 19	- 3,818 78	88	50·36	73	
307 00	57,828 79	9,938 14	120	80·63	74	
† 263 50	269,359 00	169,292 98	269	.....	75	*Tolls on passenger cars. †Tolls on freight cars. ‡Tolls on new locomotives and rentals.
110 43	26,209 36	1,372 57	105	103·87	76	
....	144,953 21	78,412 27	217	102·83	77	
82,009 67	381,847 13	204,938 25	215	224·52	78	
3,881 74	43,013 18	12,429 88	140	71·95	79	
.....	61,966 53	1,139 31	101	61·36	80	
....	9,524 73	732 01	108	47·62	81	
1,289 15	20,403 67	8,002 84	164	108·12	82	
20,149 31	332,566 99	85,933 21	134	120·89	83	
21 05	44,051 89	- 18,417 91	70	42·11	84	
....	18,011 84	1,348 22	108	74·54	85	
3,370,483 38	62,243,784 69	21,537,567 48	.....	.. ..		

No. 7.—SUMMARY STATEMENT of Operating

Number.	Name of Railway.		Mileage.	Maintenance of Line, Buildings, &c.	Working and Repairs of Engines.
				$ cts.	$ cts.
1	Alberta Railway and Coal Co.		64·62	17,962 44	20,934 21
2	Albert Southern	16·00	19·00	325 60	1,500 36
	Harvey Branch	3·00			
3	Atlantic and Lake Superior, comprising—				
	Baie des Chaleurs, 98 miles		98·00	9,492 24	12,321 04
	Great Eastern, 23 miles not under traffic				
	Ottawa Valley, 7 " "				
4	Bay of Quinté Railway and Navigation Co.	4·00	64·82	24,883 07	30,030 03
	Kingston, Napanee and Western	60.82			
5	Berlin and Waterloo (Electric)		3·00	138 17	
6	Brockville, Westport and Sault Ste. Marie		45·00	15,510 04	5,618 84
7	Buctouche and Moncton		32·00	4,582 92	3,849 18
8	Calgary and Edmonton		295·07	78,197 48	44,878 87
9	Canada Atlantic	135·00	172·00	81,436 42	225,779 24
	Central Counties	37·00			
10	Canada Coals and Railway Co., formerly Joggins		12·00	3,222 46	4,142 89
11	Canada Eastern		156·00	25,043 83	37,768 06
12	Canada Southern		382·19	617,411 34	752,733 77
13	Canadian Northern, comprising Lake Manitoba Railway and Canal Co.'s line, and Winnipeg Great Northern Ry.		124·74	26,148 31	18,340 40
14	Canadian Government Railways—				
	Intercolonial, exclusive of Windsor Branch, 32 miles, but including Drummond Co. Ry., 133·79 miles		1,300·96	849,322 51	1,100,190 62
	Prince Edward Island		210.00	80,186 60	58,464 56
15	Canadian Pacific Railway, owned	4,589·80	6,680·72	3,139,863 75	4,833,388 70
	Leased Lines—				
	Fredericton	22·10			
	New Brunswick	175·00			
	New Brunswick and Canada	117·20			
	St. John and Maine	92·10			
	St. John Bridge and Railway Extension	2·00			
	St. Stephen and Milltown	4·60			
	Tobique Valley	28·00			
	Cap de la Madeleine	2·32			
	Montreal and Lake Maskinongé	11·00			
	Atlantic and North-west	201·40			
	Montreal and Ottawa	93·20			
	Ontario and Quebec	474·50			
	St. Lawrence and Ottawa	58·40			
	Credit Valley	175·70			
	Guelph Junction	15·00			
	Toronto, Hamilton and Buffalo	2·70			
	Toronto, Grey and Bruce	191·10			
	West Ontario Pacific	26·60			
	Manitoba South-western Colonization	214·40			
	Columbia and Kootenay	60·50			
	Nakusp and Slocan	36·90			
	Shuswap and Okanagan	51·00			
	Columbia and Western	35·20			
16	Caraquet		68·00	9,249 20	6,090 25
17	Carillon and Grenville		13·00	1,200 00	2,120 00
18	Central Ontario	104·00	113·60	37,922 29	21,501 98
	Ontario, Belmont and Northern	9·60			
19	Central of New Brunswick		45·66	7,764 79	2,818 69
20	Coast Railway of Nova Scotia		30·80	4,370 74	5,505 87
21	Cumberland Railway and Coal Co.		32·00	14,824 44	14,955 52
22	Dominion Atlantic, comprising—				
	Windsor and Annapolis	87·50	220·50	138,505 00	184,052 94
	Cornwallis Valley	14·00			
	Yarmouth and Annapolis	87·00			
	Windsor Branch, Intercolonial	32·00			

SESSIONAL PAPER No. 10

Expenses for the Year ended June 30, 1899.

Working and Repairs of Cars.	General Operating Expenses.	Total.	Cost of operating per train mile.	Number.	Remarks.
$ cts.	$ cts.	$ cts.	Cents.		
3,454 50	43,244 64	85,595 79	180·39	1	
.. ..	12 00	1,837 96	36·75	2	
1,659 14	6,613 41	30,085 83	47·03	3	
9,026 03	27,275 61	91,214 74	71·46	4	
433 12	10,167 71	10,739 00	14·75	5	
453 64	8,556 89	30,139 41	91·76	6	
699 78	5,981 34	15,113 22	76·72	7	
5,922 77	41,993 93	170,993 05	121·09	8	
67,833 69	233,191 57	608,240 92	93·36	9	
469 87	2,093 59	9,928 81	66·08	10	
4,041 13	24,097 70	90,950 72	48·45	11	
266,420 39	1,440,525 55	3,077,091 05	88·95	12	
5,211 75	18,390 54	68,091 C0	112·06	13	
486,168 00	*1,240,005 08	3,675,686 21	75·29	14	Also on following sections of Grand Trunk—Point Lévis to Hadlow, 1·47 miles; Chaudière Curve to Chaudière, 1·19 miles; St. Rosalie Junction to Montreal, 37·62 miles; total, 40·28 miles. *Including $210,000, rental of leased lines.
17,297 33	62,104 52	218,053 01	84·42	....	
1,013,564 48	6,467,356 52	15,454,173 45	91·58	15	
286 76	6,045 42	21,671 63	53·84	16	
30 00	21 12	3,371 12	54·37	17	
6,350 08	20,363 57	86,137 92	84·53	18	
764 72	8,393 14	19,741 34	61·36	19	
180 52	7,780 01	17,837 14	57·97	20	
6,511 25	15,789 57	52,080 78	74·98	21	
15,013 36	169,917 20	507,488 50	91·67	22	

No. 7.—SUMMARY STATEMENT of Operating

Number.	Name of Railway.	Mileage.	Maintenance of Line, Buildings, &c.	Working and Repairs of Engines.
			$ cts.	$ cts.
23	Elgin and Havelock	28·00	2,675 12	3,536 88
24	Esquimalt and Nanaimo	78·00	52,587 56	39,704 75
25	Fredericton to St. Mary's Ry. Bridge	1·33	2,771 03	.....
26	Grand Trunk 884·25			
	Great Western 561·80			
	Brantford, Norfolk and Port Burwell 34·78			
	Buffalo and Lake Huron 162·00			
	Grand Trunk, Georgian Bay and Lake Erie 172·75			
	Owen Sound Branch 12·42			
	London, Huron and Bruce 69·01			
	Waterloo Junction 10·25			
	South Norfolk 17·00			
	Wellington, Grey and Bruce 168·13			
	Northern 172·10			
	North Simcoe 33·34			
	Hamilton and North-western 173·90	3,146·98	2,526,940 96	3,799,637 95
	Northern Pacific Junction 111·37			
	Toronto Belt Line 12·70			
	Midland 166·78			
	Grand Junction 85·40			
	Toronto and Nipissing 85·00			
	Lake Simcoe Junction 26·50			
	Victoria 53 25			
	Whitby, Port Perry and Lindsay 46·50			
	Jacques Cartier Union 6·50			
	Montreal and Champlain Junction 61·75			
	Beauharnois Junction 19·50			
27	Great Northern	28·00	2,120 00	2,575 00
28	Great North-west Central	50·93	18,540 63	9,253 11
29	Gulf Shore, operated by Caraquet Railway	16·78	636 29	257 30
30	Hamilton, Grimsby and Beamsville (Electric)	23·00	4,269 00	4,945 00
31	Hamilton and Dundas (Electric)	7·25	.....	.....
32	Hamilton Radial (Electric)	12·00	1,567 00	4,919 88
33	Hampton and St. Martin's, formerly St. Martin's and Upham	30·00	3,026 51	1,045 68
34	Hull (Electric)	13·63	5,023 14	780 25
35	Hereford	53·30	22,449 16	17,569 29
36	Irondale, Bancroft and Ottawa	50·00	5,888 21	4,758 98
37	Kaslo and Slocan	31·80	15,403 31	10,273 87
38	Kent Northern, including St. Louis and Richibucto	34·00	1,680 00	3,095 00
39	Kingston and Pembroke	112·85	31,244 23	27,445 38
40	L'Assomption	3·00	169 11	734 54
41	Lake Erie and Detroit River 84·22			
	Erie and Huron 71·50			
	London and Port Stanley 24·00	179·72	59,730 08	81,940 60
42	Lotbinière and Mégantic	30·34	3,897 51	3,694 70
43	Manitoba and North-western 234·50			
	Saskatchewan and Western 15·47	249·97	90,971 01	62,563 57
44	Massawippi Valley	35·46	18,441 67	36,539 58
45	Montfort and Gatineau Colonization	33·00	2,830 00	5,651 90
46	Montreal and Atlantic, formerly South-eastern 102·70			
	Lake Champlain and St. Lawrence Junction 60·70	163·40	75,755 98	109,096 65
47	Montreal Island Belt Line (Electric)	12·67	970 64	5,809 45
48	Montreal Park and Island	40·88	6,310 04	26,311 78
49	Montreal, Portland and Boston, now Montreal and Province Line	40·60	14,981 40	10,061 00
50	Montreal and Vermont Junction	23·60	13,342 12	34,039 07
51	Nelson and Fort Sheppard	59·40	23,329 70	18,635 55
52	New Brunswick and Prince Edward Island	36·00	6,993 20	4,701 93
53	Niagara Falls Park and River (Electric)	13·68	7,137 06	.....
54	Northern Pacific and Manitoba	311·61	169,395 05	83,998 99

SESSIONAL PAPER No. 10

Expenses for the Year ended June 30, 1899—*Continued.*

Working and Repairs of Cars.	General Operating Expenses.	Total.	Cost of operating per train mile.	Number.	Remarks.
$ cts.	$ cts.	$ cts.	Cents.		
.....	2,929 22	9,141 22	52·57	23	
10,121 47	48,665 53	151,079 31	74·02	24	
.....	387 00	3,158 03	.....	25	
1,061,844 58	4,214,911 69	11,603,335 18	68·22	26	
205 10	2,862 00	7,762 10	40·57	27	
634 33	17,672 32	46,100 39	225·41	28	
.....	298 23	1,191 82	38·94	29	
2,255 00	10,650 00	22,119 00	9·53	30	
.....	12,831 31	12,831 31	21·78	31	
2,632 81	6,133 70	15,253 39	11·26	32	
196 24	2,562 08	6,830 51	48·79	33	
3,114 76	25,487 06	34,405 21	8 99	34	
9,567 34	13,147 18	62,732 97	73·81	35	
187 80	4,791 05	15,626 04	52·55	36	
1,935 70	17,664 74	45.277 62	156·34	37	
100 00	2,995 00	7,870 00	42·85	38	
2,548 61	42,227 34	103,465 56	75·80	39	
207 38	417 27	1,528 30	25·49	40	
14,126 32	85,489 96	241,286 96	65·62	41	
644 93	3,079 68	11,316 82	90·08	42	
21,722 09	67,698 11	242,954 78	156·25	43	
10,476 92	25,766 77	91,224 94	56·76	44	
1,150 00	4,193 31	13,825 21	29·11	45	
17,743 32	109,277 76	311,873 71	93·48	46	
1,285 93	11,550 26	19,616 28	8·35	47	
3,048 41	32,461 11	68,131 34	9 74	48	
3,896 93	8,568 20	37,507 53	71·06	49	
21,525 35	24,033 54	92,940 08	62·75	50	
2,407 13	17,892 65	62,265 03	106·20	51	
416 76	2,332 99	14,444 88	41·77	52	
5,515 48	26,004 93	38,657 47	14·76	53	
24,731 23	120,452 32	398,577 59	148·31	54	

No. 7.—SUMMARY STATEMENT of Operating

Number.	Name of Railway.	Mileage.	Maintenance of Line, Buildings, &c.	Working and Repairs of Engines.
			$ cts.	$ cts.
55	Nosbonsing and Nipissing	5·50	14,460 00	8,760 00
56	Nova Scotia Central, now Central Railway of Nova Scotia	74·00	19,958 13	8,832 69
57	Nova Scotia Steel Co., formerly New Glasgow Iron, Coal and Railway Co	12·50	5,375 31	7,485 39
58	Orford Mountain	26·50	6,235 23	7,004 16
59	Oshawa Electric Railway	8·50	2,496 03	5,931 88
60	Ottawa and Gatineau	56·50	14,288 18	12,829 20
61	Ottawa, Arnprior and Parry Sound	263 80	99,428 47	246,214 27
62	Ottawa and New York	56 79	10,454 94	12,869 40
63	Pembroke Southern	20·50	2,972 80	3,552 75
64	Philipsburg Railway and Quarry Co	7·50	299 90	244 66
65	Pontiac and Pacific Junction	70·60	17,741 78	10,289 83
66	Port Arthur, Duluth and Western	85·50	10,697 57	4,251 17
67	Qu'Appelle, Long Lake and Saskatchewan	253·96	50,420 15	23,656 79
68	Quebec and Lake St. John 242·00 Great Northern 21·00 Lower Laurentian 35·00	298·00	60,058 64	79,498 96
69	Quebec Central	213·50	83,560 90	79,817 95
70	Quebec, Montmorency and Charlevoix	30·00	7,552 38	10,431 35
71	Red Mountain	9·53	6,012 43	13,364 51
72	Salisbury and Harvey	45·00	7,677 47	5,500 32
73	Shore Line of New Brunswick	82·50	11,340 35	8,531 68
74	Stanstead, Shefford and Chambly	43·00	13,544 70	14,315 05
75	St. Clair Tunnel	2·23	6,396 33	63,680 30
76	St. Catharines and Niagara Central	12·35	4,079 34	6,081 37
77	St. Lawrence and Adirondack	33·00	15,377 70	22,505 08
78	Sydney and Louisbourg	59·09	21,960 89	39,791 65
79	South Shore, formerly Montreal and Sorel	44·67	8,890 13	9,608 36
80	Témiscouata	113·00	23,334 43	17,438 49
81	Tilsonburg, Lake Erie and Pacific	20·00	1,630 00	4,433 72
82	Thousand Islands	4·33	1,993 92	4,421 15
83	Toronto, Hamilton and Buffalo	82·94	46,014 44	60,229 98
84	United Counties 61·00 East Richelieu Valley 22·80	83 80	15,807 54	20,430 22
85	Victoria and Sydney, B.C	16·26	3,692 64	7,351 26
	Total	17,250·21	8,972,393 08	12,620,377 24

SESSIONAL PAPER No. 10

Expenses for the Year ended June 30, 1899—*Concluded.*

Working and Repairs of Cars.	General Operating Expenses.	Total.	Cost of operating per train mile.	Number.	Remarks.
$ cts.	$ cts.	$ cts.	Cents.		
4,670 00	16,730 40	44,620 40	365·14	55	
1,628 23	11,012 10	41,431 15	83·48	56	
380 00	2,930 50	16,171 20	103·66	57	
489 54	3,666 36	17,395 29	52·35	58	
641 97	7,035 43	16,105 31	31·59	59	
4,451 94	22,333 83	53,903 15	91·76	60	
45,798 53	233,296 41	624,737 68	68·35	61	
857 51	35,306 82	59,488 67	86·39	62	
140 80	1,623 30	8,289 65	102·80	63	
23 30	935 20	1,503 06	156·56	64	
1,714 53	14,278 68	44,024 82	84·14	65	
767 46	6,301 96	22,018 16	136·12	66	
2,466 03	14,132 08	90,675 05	142·55	67	
17,442 27	89,276 38	246,276 25	89·28	68	
19,711 79	124,308 44	307,399 08	66·95	69	
3,434 78	12,902 79	34,321 30	60·94	70	
784 58	12,115 44	32,276 96	193·04	71	
966 42	4,143 12	18,287 33	65·12	72	
1,901 13	10,311 81	32,084 97	57·17	73	
4,789 72	14,741 18	47,890 65	66·77	74	
413 18	29,576 21	100,066 02	.....	75	
180 04	14,496 04	24,836 79	98·43	76	
1,112 37	27,545 79	66,540 94	47·20	77	
15,595 89	99,560 45	176,908 88	104·02	78	
1,410 12	10,674 69	30,583 30	51·16	79	
4,702 31	15,351 99	60,827 22	60·23	80	
.....	2,729 00	8,792 72	43·96	81	
289 34	5,696 42	12,400 83	65·71	82	
9,377 79	131,011 57	246,633 78	89·66	83	
2,778 87	23,453 17	62,469 80	59·71	84	Also running powers on Montreal and Atlantic Ry. from Yamaska to Sorel.
179 73	5,439 99	16,663 62	68·97	85	
3,285,134 40	15,828,312 49	40,706,217 21	.....		

No. 8.—SUMMARY OF ACCIDENTS for the

Number.	Name of Railway.	Mileage.	Passengers, Employees or Others.	Fell from Cars or Engines.		Jumping on or off Trains or Engines when in motion.	
				Killed.	Injured.	Killed.	Injured.
1	Alberta Railway and Coal Company	64·62					
2	Albert Southern 16·00 Harvey Branch 3·00	19·00					
3	Atlantic and Lake Superior, comprising— Baie des Chaleurs 98 miles Great Eastern 23 " Ottawa Valley 7 "	98·00					
4	Bay or Quinté Railway and Navigation Company 4·00 Kingston, Napanee and Western 60·82	64·82	Employee				
5	Berlin and Waterloo Electric Railway	3·00					
6	Brockville, Westport and Sault Ste. Marie	45·00					
7	Buctouche and Moncton	32·00	Employee				
8	Calgary and Edmonton	295·07	Passengers				
			Employees				1
9	Canada Atlantic 135·00 Central Counties 37·00	172·00	Employees		1	1	
10	Canada Coals and Railway Company (late Joggins)	12·00					
11	Canada Eastern	136·00	Employee				
12	Canada Southern Sarnia, Chatham and Erie Leamington and St. Clair	382·19	Employees			1	
			Others		1		
13	Canadian Northern	124·74					
14	Canadian Government Railways—						
	Intercolonial	1,300·96	Passengers		1		2
			Employees	2	3		2
			Others	1	2		5
	Prince Edward Island	210·00	Employees				1
15	Canadian Pacific Railway	6,680·72	Passengers	1	4	1	11
			Employees	9	29	4	23
			*Others	3	6	6	10
16	Caraquet Railway	68·00					
17	Carillon and Grenville	13·00					
18	Central Ontario 104·00 Ontario, Belmont and Northern 9·60	113·60	Employees	1			
19	Central of New Brunswick	45·66					
20	Coast Railway of Nova Scotia	30·80					
21	Cumberland Railway and Coal Company	32·00					
22	Dominion Atlantic, comprising— Wiudsor and Annapolis 87·50 Cornwallis Valley 14·00 Yarmouth and Annapolis 87·00 Windsor Branch, Intercolonial 32·00	220·50	Passengers				
			Others			1	
23	Elgin and Havelock	28·00					
24	Esquimalt and Nanaimo	78·00	Employees				
25	Fredericton and St. Mary's Bridge	1·33					
26	Grand Trunk	3,146·98	Passengers		4	1	6
			Employees	3	51	2	19
			Others	2	12	6	13
27	Great Northern	28·00					
28	Great North-west Central	50·93					
29	Gulf Shore	16·78					
30	Hamilton, Grimsby and Beamsville (Electric)	23·00					
31	Hamilton and Dundas (Electric)	7·25					
32	Hamilton Radial (Electric)	12·00	Others				
33	Hampton and St. Martin's	30·00					
34	Hull Electric Railway	13·63	Others				
35	Hereford	53·30	Employees		1		
36	Irondale, Bancroft and Ottawa	50·00					
37	Kalso and Slocan	31·80					
38	Kent Northern, including St. Louis and Richibucto	34·00					

*9 killed and *24 injured at highway crossings.

SESSIONAL PAPER No. 10

Year ended June 30, 1899.

At work on or near Track making up Trains.		Putting Arms or Heads out of Wind'ws		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
																		3
					2										3		5	4
																		5
																		6
					1												1	7
							3								1		3 6	8
					1		2		1									
1					9										9	2	19	9
																		10
							1										1	11
1	1				3		3	2	2						1	4	10	12
								6	4							6	5	
																		13
						2	22		1					1	1	3	27	
1	13				18	4	11	1	4					3	10	11	61	14
								11	6						1	12	14	
	1			1										1		2	2	14
						2	19							3	5	7	39	
			1	4	130	5	30	5	17				3	16	82	43	315	15
							3	29	13					*16	*32	54	64	
																		16
																		17
																1		18
																		19
																		20
																		21
					1												1	
														1	1	2	1	22
																		23
				2	1											2	1	24
																		25
			2			8	28								5	9	45	
8	21			2	153	9	28	11	23			1	7	4	62	40	364	26
						1	10	32	17					17	37	58	89	
																		27
																		28
																		29
																		30
																		31
								1								1		32
																		33
								1	2							1	2	34
					1												2	35
																		36
																		37
																		38

No. 8.—SUMMARY OF ACCIDENTS for the

Number.	Name of Railway.	Mileage.	Passengers, Employees or Others.	Fell from Cars or Engines.		Jumping on or off Trains or Engines when in motion.	
				Killed.	Injured.	Killed.	Injured.
39	Kingston and Pembroke	112·85					
40	L'Assomption	3·00					
41	Lake Erie and Detroit River 84·22 London and Port Stanley 71·50 24·00	179·72	Employees				
42	Lotbinière and Mégantic	30·34	"			1	
43	Manitoba and North-western 234·50 Saskatchewan and Western 15·47	249·97	"	1	1		
44	Massawippi Valley	35·46	Passengers				
45	Montford Colonization	33·00	Employees	1	1		1
46	Montreal and Atlantic, formerly South Eastern 102·70 Lake Champlain and St. Lawrence Junction 60·70	163·40	Employees		2		3
47	Montreal Island Belt Line (Electric)	12·67					
48	Montreal Park and Island (Electric)	40·88	Others				
49	Montreal and Province Line, formerly Montreal, Portland and Boston	40·60	Passengers Employees				1
50	Montreal and Vermont Junction	23·60					
51	Nelson and Fort Sheppard	59·40	Employees				
52	New Brunswick and Prince Edward Island	36·00					
53	Niagara Falls Park and River Railway (Electric)	13·68					
54	Northern Pacific and Manitoba	311·61	Passengers Employees Others				2
55	Nosbonsing and Nipissing	5·50					
56	Nova Scotia Central	74·00					
57	Nova Scotia Steel Company, formerly New Glasgow Iron, Coal and Railway Company	12·50	Others				
58	Orford Mountain	26·50					
59	Oshawa Electric Railway	8·50					
60	Ottawa and Gatineau	56·50					
61	Ottawa, Arnprior and Parry Sound	263·80	Employees Others		5		
62	Ottawa and New York	56·79					
63	Pembroke Southern	20·50	Others				
64	Philipsburgh Railway and Quarry Company	7·50	"				
65	Pontiac Pacific Junction	70·60					
66	Port Arthur, Duluth and Western	85·50	Passengers				
67	Qu'Appelle, Long Lake and Saskatchewan	253·96					
68	Quebec and Lake St. John 242·00 Great Northern 21·00 Lower Laurentian 35·00	298·00	Employees				
69	Quebec Central	213·50	Employees	2			
70	Quebec, Montmorency and Charlevoix	30·00	Others				
71	Red Mountain	9·53					
72	Salisbury and Harvey	45·00					
73	Shore Line	82·50					
74	Stanstead, Shefford and Chambly	43·00					
75	St. Clair Tunnel	2·23	Employees				
76	St. Catharines and Niagara Central	12·35					
77	St. Lawrence and Adirondack	33·00	Employees				
78	Sydney and Louisbourg	59·09	Others				
79	South Shore, formerly Montreal and Sorel	44·67					
80	Témiscouata	113·00					
81	Tilsonburg, Lake Erie and Pacific	20·00					
82	Thousand Islands	4·33					
83	Toronto, Hamilton and Buffalo	82·94	Passengers Employees Others	1	1		3
84	United Counties 61·00 East Richelieu Valley 22·80	83·80					
85	Victoria and Sydney, B.C.	16·26					
		17,250·21		27	125	24	103

SESSIONAL PAPER No. 10

Year ended June 30, 1899—*Concluded.*

At work on or near Track making up Trains.		Putting Arms or Heads out of Wind'ws		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.	
																		39
																		40
2					1											2	1	41
																1		42
					1					2						3	2	43
									1					3		3		44
														1	1	1	4	45
					7									4			16	46
																		47
								1							1			48
																	1	49
														1			1	
																		50
					1												1	51
																		52
																		53
							1										1	54
	4				4		6							5			21	
							2										2	
																		55
																		56
								1								1		57
																		58
																		59
																		60
	1				4			1	2					1	3	2	15	61
								3	1					2	1	5	2	
																		62
					1												1	63
								3	1					2	1	5	2	64
																		65
					1												1	66
																		67
				1	1											1	1	68
																2		69
														1		1		70
																		71
																		72
																		73
																		74
														2			2	75
																		76
	1							1	1					1	1	1	3	77
								2	1					1	2	2	2	78
																		79
																		80
																		81
																		82
																1		
					4		2	2	2					14	2	2	26	83
									1					1			2	
																		84
																		85
13	42		3	10	345	31	171	110	99	2		1	10	66	287	284	1,185	

No. 9.—Lines of Railway owned by Coal and Iron Mines, for the year ended June 30, 1899.

Name.	Length of Railway.	Gauge.	No. of Engines.	No. of Wagons.	Remarks.
Albion Mines	3·0	4·8½	2	20	
Intercolonial Coal Mining Co	8·00	4·8½	2	221	Connecting Drummond Colliery with Intercolonial Railway and Granton wharf, Pictou Harbour, Nova Scotia.
Londonderry Iron Co.	3·50	4·8½	2	17	From Acadia Mines to Londonderry Station, I.C.R.
" "	4·00	4·8½	worked by	I.C.R	From East Mines to East Mines Station, I.C.R.
" "	2·00	4·8½	"		From Lanark Lime Quarry to Graham Siding, I.C.R.
" "	3·00	3·00	2	21	From West Mines to works at Acadia Mines.
	23·50		8	279	
CAPE BRETON.					
General Mining Association, of London, England—					
Sydney Mines	5·15	4·8½	4	209	This railroad is used for Colliery purposes only. It conveys the coal from the old Sydney mines, situated in the Town of Sydney mines, Nova Scotia, to the shipping port of North Sydney, and is connected with the Intercolonial Railway by a short branch line to the North Sydney Station.
Dominion Coal Co—					
Sydney & Louisburg Railway, Main Line	39·15	4·8½	13	759	This forms part of the Sydney and Louisburg Railway, between Sydney and Louisburg Harbours, which is included in the general statistics.
Caledonia Branch	1·11	4·8½	1	100	
Glace Bay	·50	4·8½	....	....	
Reserve	10·13	3·00	3	200	
Old Bridgeport	·50	4·8½	....	.....	
Hub	1·50	4·8½	....	....	
Main Line to Reserve	2·12	4·8½	....	.....	
	60·16		21	1,268	

No. 10.—STATEMENT of Aid granted to Railways—Constructed and under Construction—by Governments, for the year ended June 30, 1899.

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total
DOMINION GOVERNMENT.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts	$ cts.
Albert (now Salisbury and Harvey)	* 29,665 45					
Albert Southern			50,460 00			
Atlantic and North west in Canada			*a* 1,422,000 00			
Baie des Chaleurs (now in Atlantic and Lake Superior)			620,000 00			
Belleville and North Hastings—Grand Junction (now in Grand Trunk)			21,888 00			
Beauharnois Junction			62,400 00			
Brantford, Waterloo and Lake Erie (now Toronto, Hamilton and Buffalo)			57,600 00			
Brockville, Westport and Sault Ste. Marie			165,200 00			
Bouctouche and Moncton			101,600 00			
Canada Atlantic			282,355 20			
Canada Central			1,525,250 00			
Canada Eastern (formerly Northern and Western of New Brunswick.)			*b* 366,839 84			
Canadian Pacific			*c* 56,102,998 47			
" Revelstoke to Arrow Lake			80,000 00			
" Crows Nest Pass Railway			3,630,000 00			
Cap de la Madeleine			7,424 00			
Caraquet			224,000 00			
Central of New Brunswick			*A* 185,100 00			
Hampton and St. Martin (formerly St. Martin and Upham)			‡ 83,612 54			
Coast Railway of Nova Scotia			*A* 195,200 00			
Cobourg, Northumberland and Pacific			*A* 160,000 00			
Columbia and Kootenay			88,800 00			
Cornwallis Valley (now in Dominion Atlantic)			44,800 00			
Cumberland Railway and Coal Company			39,850 00			
Drummond County			*A* 433,920 00			
Dominion Lime Company (now in Hereford Ry.)			15,360 00			
East Richelieu Valley			*A* 76,800 00			
Elgin and Havelock			*d* 82,652 82			
Erie and Huron			96,000 00			
Esquimalt and Nanaimo			750,000 00			
Fredericton and St. Mary's Railway and Bridge Company	300,000 00		30,000 00			
Grand Trunk	15,142,633 33					

* $14,665.45 rails. ‡ Including $83,612.54 rails to St. Martin's and Upham Ry. *a* Payable in half-yearly instalments of $35,550 each for 20 years, commencing 1st July, 1889. *b* Including $24,439.84, rails to Chatham Branch. *c* Including cost of railway lines built by Dominion Government, and transferred to Canadian Pacific Railway Company, $31,102,998.47. *d* Including $44,252.82 rails.

No. 10.—STATEMENT of Aid Granted to Railways by Governments—*Continued.*

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
DOMINION GOVERNMENT—*Continued.*	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Victoria Bridge of Grand Trunk Ry			300,000 00			
Grand Trunk, Georgian Bay and Lake Erie, Owen Sound Branch			39,744 00			
Great Eastern			40,345 00			
Great Northern (exclusive of Ottawa Valley Section)			*A* 495,988 00			
Guelph Junction			46,000 00			
Gulf Shore			*A* 56,000 00			
Harvey Branch			5,553 57			
Hereford			155,200 00			
Intercolonial			56,750,843 89			
International (Atlantic and North-west) C.P.R			156,800 00			
Irondale, Bancroft and Ottawa			160,000 00			
Joggins (Now Canada Coals and Railway Co.)			37,500 00			
Kent Northern	‡ 58,334 27					
Kingston, Napanee and Western, now Bay of Quinté			208,732 80			
Kingston and Pembroke			48,000 00			
Kingston, Smith's Falls and Ottawa			*A* 323,200 00			
L'Assomption			11,200 00			
Lake Erie and Detroit River			338,731 00			
Lake Temiscamingue Colonization			310,335 95			
Leamington and St. Clair (now in Canada Southern)			51,200 00			
Lotbinière and Megantic			96,000 00			
Lower Laurentian (formerly St. Lawrence, Lower Laurentian & Saugenay)			217,600 00			
Midland of Nova Scotia			219,350 00			
Montfort and Gatineau Colonization			167,440 00			
Montreal and Lake Maskinongé			41,280 00			
Montreal and Champlain Junction			103,600 00			
Montreal and Ottawa			192,000 00			
Montreal and Sorel (now South Shore)			93,757 57			
Montreal and Western			361,270 00			
Nakusp and Slocan			121,600 00			
New Brunswick and Prince Edward Island			113,440 00			
New Glasgow Iron and Coal Co. (now Nova Scotia Steel Co.)			39,840 00			
Northern and Pacific Junction			1,320,000 00			
Nova Scotia Central (now Central of Nova Scotia)			235,200 00			
Nova Scotia Southern			240,000 00			
Ontario, Belmont and Northern			30,720 00			

Ontario and Quebec			196,000 00	
Orford Mountain			84,800 00	
Oshawa (Electric)			22,400 00	
Ottawa, Arnprior and Parry Sound & Parry Sound Colonization			A 932,512 00	
Ottawa and Gatineau			A 384,000 00	
Ottawa and New York			A 172,384 00	
Ottawa Valley (formerly part of Great Northern) now in Atlantic and Lake Superior			21,600 00	
Pembroke Southern			A 64,000 00	
Philipsburg Railway and Quarry Co			A 23,712 00	
Pontiac Pacific Junction			A 307,850 00	
Pontiac and Renfrew			13,600 00	
Port Arthur, Duluth and Western			271,200 00	
Prince Edward Island			3,790,107 26	
Quebec and Lake St John			1,006,743 50	
Quebec Central			348,342 00	
Quebec, Montmorency and Charlevoix			96,000 00	
Quebec, Montreal, Ottawa and Occidental, North Shore, Montreal to Quebec			†954,000 00	
" " " "			1,500,000 00	
" " Montreal to Ottawa			†1,440,000 00	
Restigouche and Western			A 150,400 00	
St. Catharines and Niagara Central			38,400 00	
St. Louis and Richibucto			22,400 00	
St. John Bridge and Railway Extension	433,900 00			
St. John Valley and Rivière du Loup (subsidy lapsed)				
St. Lawrence and Adirondack			A 149,481 60	
St. Clair Tunnel			375,000 00	
St. Stephen and Milltown			A 14,848 00	
Shuswap and Okanagan			163,200 00	
South Norfolk			54,400 00	
Sydney and Louisbourg—Dominion Coal Co			87,808 00	
Temiscouata			645,950 00	
Thousand Islands			24,400 00	
Tilsonburg, Lake Erie and Pacific			A 62,400 00	
Tobique Valley			134,016 00	
Toronto, Grey and Bruce			14,656 00	
United Counties			A 208,000 00	
Waterloo Junction			32,800 00	
West Ontario Pacific			60,000 00	
Western Counties (now in Dominion Atlantic)			500,000 00	
Windsor and Annapolis (now in Dominion Atlantic)			1,193,369 00	
Interprovincial Bridge—Ottawa			112,500 00	
		15,964,533 05		145,743,862 01

† Dominion Government pays to Quebec Government 5 per cent interest per annum on these two amonnts
A See note on page No. 18.
‡ Rails, $58,334.27.

No. 10.— STATEMENT of Aid granted to Railways by Governments—*Continued.*

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or bonds.	Total.
ONTARIO GOVERNMENT.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Brantford, Norfolk and Port Burwell, in Grand Trunk			68,000 00			
Canada Atlantic			270,000 00			
Canada Central			1,479,000 00			
Canada Southern			147,858 65			
Central Ontario			126,500 00			
Cobourg, Blairton and Marmora	26,000 00		18,740 00			
Credit Valley			531,000 00			
Erie and Huron			83,000 00			
Grand Junction and Belleville and North Hastings			224,660 00			
Grand Trunk, Georgian Bay and Lake Erie			336,000 00			
Hamilton and North-western			565,020 00			
Irondale, Bancroft and Ottawa			165,000 00			
Kingston and Pembroke			456,493 00			
Kingston, Napanee and Western (now in Bay of Quinté)			90,000 00			
London, Huron and Bruce			178,630 00			
Midland			168,350 00			
Montreal and Ottawa			100,000 00			
Northern			196,188 00			
North Simcoe			83,300 00			
Ontario, Belmont and Northern			19,149 39			
Ottawa, Arnprior and Parry Sound			431,000 00			
Parry Sound Colonization			148,500 00			
Pembroke Southern			55,500 00			
Port Arthur, Duluth and Western			261,000 00			
Tilsonburg, Lake Erie and Pacific			38,564 00			
Toronto and Nipissing			105,212 00			
Lake Simcoe Junction			53,000 00			
Toronto, Grey and Bruce			375,282 00			
Victoria			312,000 00			
Wellington, Grey and Bruce			241.276 00			
Whitby, Port Perry and Lindsay			94,957 59			
Interprovincial Bridge at Ottawa			50,000 00			
		26,000 00		7,473,180 63		
QUEBEC GOVERNMENT.						
Baie des Chaleurs (now in Atlantic and Lake Superior)			1,415,000 00			
Beauharnois Junction			179.073 00			

Canada Atlantic			192,000 00	
Great Eastern (now in Atlantic and Lake Superior)			156,000 00	
Great Northern			524,875 00	
Drummond County			347,420 54	
East Richelieu Valley			115,215 00	
Hereford (including Dominion Lime Co.)			103,000 00	
International (now Atlantic and North-west—C.P.R.)			391,122 02	
Lake Champlain and St. Lawrence Junction			250,280 00	
Lake Témiscamingue Colonization Railway			350,076 82	
L'Assomption			7,350 00	
Lotbinière and Mégantic			126,994 00	
Lower Laurentian			252,000 00	
Missisquoi Valley (now Atlantic and North-west—C.P.R.)			228,000 00	
Montfort and Gatineau Colonization			158,395 80	
Montreal and Champlain Junction			150,000 00	
Montreal and Ottawa			182,210 00	
Montreal, Portland and Boston (now Montreal and Province Line)			231,122 00	
Montreal and Sorel (now South Shore)			276,645 00	
Montreal and Western			472,500 00	
Montreal and Lake Maskinongé			87,750 00	
Orford Mountain			154,000 00	
Ottawa and Gatineau			796,520 00	
Ottawa Valley (now in Atlantic and Lake Superior)			25,390 00	
Philipsburg Ry. and Quarry Co.			25,667 00	
Pontiac Pacific Junction			536,000 00	
Pontiac and Renfrew			17,433 60	
Quebec and Lake St. John			2,533,000 00	
Quebec Central			1,076,123 14	
Quebec, Montreal, Ottawa and Occidental, including North Shore	3,722,956 00		727,000 00	
Quebec, Montmorency and Charlevoix			306,945 50	
South-eastern (now Montreal and Atlantic)			444,000 00	
St. Lawrence and Adirondack			65,216 00	
Temiscouata			241,500 00	
United Counties			210,000 00	
Waterloo and Magog (now in Atlantic and North-west—C.P.R.)			92,000 00	
		3,722,956 00		13,447,824 42
NEW BRUNSWICK GOVERNMENT.				
Albert (now Salisbury and Harvey)			455,000 00	
Albert Southern			48,680 00	
Buctouche and Moncton			96,000 00	
Caraquet			180,000 00	
Central of New Brunswick			139,000 00	
Chatham Branch (now part of Canada Eastern)			56,000 00	
Fredericton			230,000 00	
Grand Southern (now Shore Line)			413,000 00	
Gulf Shore			41,950 00	
Harvey Branch			9,000 00	

No. 10.—STATEMENT of Aid granted to Railways by Governments—*Concluded.*

Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
NEW BRUNSWICK GOVERNMENT—*Continued.*	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Kent Northern			135,000 00			
New Brunswick			76,000 00			
New Brunswick and Canada			575,000 00			
New Brunswick and Prince Edward Island			99,708 90			
Northern and Western (now Canada Eastern)			344,000 00			
Elgin, Petitcodiac and Havelock (now Elgin and Havelock)			107,500 00			
Restigouche and Western			23,000 00			
St. Martin and Upham (now Hampton and St. Martin)			145,600 00			
St. John Bridge and Railway Extension			5,181 81			
St. John and Maine			880,000 00		300,000 00	
St. Louis and Richibuctou			21,000 00			
St. Stephen and Milltown			13,920 00			
Témiscouata			66,000 00			
Tobique Valley			70,000 00			
				4,230,540 71		300,000 00
NOVA SCOTIA GOVERNMENT.						
Coast Line			288,000 00			
Cornwallis Valley (now in Dominion Atlantic)			44,800 00			
Joggins (now Canada Coals and Railway Co)			35,200 00			
Midland Ry. of Nova Scotia (formerly Stewiacke Valley and Lansdowne)			192,000 00			
New Glasgow Iron, Coal and Railway Co. (now Nova Scotia Steel Co.)			40,000 00			
Nova Scotia Central (now Central Ry. of Nova Scotia)			432,261 08			
Nova Scotia Southern			307,200 00			
Springhill and Parrsboro' (Cumberland Railway and Coal Co)			173,650 00			
Sydney and Louisbourg, Dominion Coal Co			87,808 00			
Western Counties, Yarmouth and Annapolis (now in Dominion Atlantic)			679,197 45			
				2,280,116 53		
MANITOBA GOVERNMENT.						
Canadian Pacific			237,377 50			
Manitoba South-western Colonization	900,000 00					
Northern Pacific and Manitoba			633,800 00			
		900,000 00		871,177 50		

BRITISH COLUMBIA GOVERNMENT.					
Canadian Pacific			37,500 00		
				37,500 00	
		20,613,489 05			
Total aid granted by Governments			174,084,201 80		300,000 00

No. 10.—STATEMENT of Aid granted to Railways—Constructed and under Construction—by Municipalities, June 30, 1899.

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription in Shares or Bonds.	Total.
ONTARIO.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Deseronto	Bay of Quinté Ry.				30,000 00		
Town of Napanee	Kingston, Napanee and Western.			30,000 00			
Village of Newburgh	do do			7,500,00			
Township of Camden	do do			30,000 00			
do Sheffield	do do			15,000 00			
do Loughborough	do do			5,000 00			
City of Kingston	do do			75,000 00			
					162,500 00		
Town of Brockville	Brockville, Westport and Sault Ste. Marie			36,000 00			
Elizabethtown	do do			7,000 00			
Rear of Yonge and Escott	do do			15,000 00			
do Leeds and Lansdowne	do do			5,000 00			
Bastard and Burgess	do do			28,000 00			
South Crosby	do do			6,000 00			
Village of Newboro'	do do			4,000 00			
North Crosby	do do			15,000 00			
					116,000 00		
Various municipalities	Buffalo and Lake Huron				966,000 00		
Renfrew	Canada Central, now Can. Pacific					30,000 00	
Horton	do					7,500 00	
Admaston	do					5,000 00	
							42,500 00
County of Elgin	Canada Southern			200,000 00			
Township of Townsend	do			30,000 00			
do Durham	do			15,000 00			
do Anderdon	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			
					322,500 00		
Sault Ste. Marie	Canadian Pacific			20,000 00			
Carleton Place	do			20,000 00			
Owen Sound	do			40,000 00			
					80,000 00		
Northumberland and Durham	Cobourg, Blairton and Marmora				113,500 00		
West Hawkesbury	Central Counties			15,000 00			

Vankleek Hill	do				1,200 00	
Dalkeith	do				800 00	
Rockland	do				6,000 00	
Clarence	do				1,000 00	
						24,000 00
Town of Trenton	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	93,500 00
Town of Cobourg	Cobourg, Northumberland & Pacific				30,000 00	
Village of Campbellford	do	do			15,000 00	
Township of Percy	do	do			25,000 00	
do Haldimand	do	do			14,000 00	
do Brighton	do	do			2,000 00	
do Hamilton	do	do			4,500 00	
do Cramahe	do	do			3,000 00	
						93,500 00
County of 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	
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 & Huron, now in Lake Erie & Detroit				155,000 00	
City of Chatham	do				30,000 00	
Town of Sarnia	do				16,000 00	
Village of Dresden	do				20,500 00	
do Blenheim	do				11,000 00	
do Wallaceburg	do				11,000 00	
Township of Sombra	do				14,000 00	
						257,500 00
do Woodhouse	Grand Trunk, Georgian Bay and Lake Erie				15,000 00	
Town of Simcoe	do	do			10,000 00	
Township of South Norwich	do	do			10,000 00	
do North do	do	do			} 40,000 00	
Town of Woodstock	do	do				
Township of East Oxford	do	do			25,000 00	
do Woodstock	do	do			25,000 00	
Town of Woodstock	do	do			} 60,000 00	
do Stratford	do	do				
County of Perth	do	do			120,000 00	

10—vi—6

No. 10.—STATEMENT of Aid granted to Railways by Municipalities.—*Continued.*

Municipalites.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
ONTARIO—*Continued.*		$ cts.	$ ctt.	$ cts.	$ ts.	$ cts.	$ cts.
Township of Mornington	Grand Trunk, Georgian Bay and Lake Erie			40,000 00			
Township of Elma	do do			10,000 00			
Town of Listowel	do do			15,000 00			
Township of Wallace	do do			10,000 00			
Town of Palmerston	do do			30,000 00			
Township of Minto	do do			25,000 00			
Town of Harriston	do do			20,000 00			
Township of Normanby	do do			80,000 00			
Township of Bentinck	do do			65,000 00			
do Brant	do do			20,000 00			
do Elderslie	do do			45,000 00			
do Arran	do do			45,000 00			
do Amabel	do do			43,000 00			
do Keppel	do do			32,000 00			
do Albemarle	do do			10,000 00			
Town of Mount Forest	do do			22,000 00			
Township of Egremont	do do			60,000 00			
Township of Glenelg	do do			20,000 00			
Town of Durham	do do			32,000 00			
					929,000 00		
Town of Owen Sound	Grand Trunk, Owen Sound Branch			75,000 00			
Township of Sarawak	do do			7,500 00			
do Keppel	do do			3,000 00			
					85,500 00		
City of Belleville	Grand Junction and Belleville			150,000 00			
Village of Sterling	do & N. Hastings Ry.			5,000 00			
Township of Rawdon	do			15,000 00			
do Seymour	do			35,000 00			
do Percy	do			} 8,000 00		50,000 00	
do Asphodel	do						
					213,000 00		50,000 00
City of Guelph	Guelph Junction						193,000 00
County of Frontenac	Kingston and Pembroke			170,000 00			
City of Kingston	do do			318,000 00			
Village of Renfrew	do do			3,000 00			
					491,000 00		
City of Kingston and other municipalites	Kingston, Smith's Falls and Ottawa				315,500 00		

City of Hamilton	Hamilton and North-western				99,733 00	
Village of Georgetown	do	do			11,289 00	
County of Peel	do	do			30,974 00	
do Simcoe	do	do			354,007 00	
Town of Collingwood	do	do			12,084 00	
Township of Innisfil	do	do			22,592 00	
do Woodhouse	do	do			20,740 00	
do Adjala	do	do			2,500 00	
do Essa	do	do			2,500 00	
do Tossoronto	do	do			10,000 00	
do Mulmur	do	do			5,000 00	
Village of Alliston	do	do			8,000 00	
Township of Nottawasaga	do	do			20,386 00	
						599,805 00
City of Hamilton	Hamilton, Grimsby and Beamsville				25,000 00	
Township of Saltfleet	do	do			3,000 00	
						28,000 00
Interprovincial Bridge at Ottawa	City of Ottawa					150,000 00
Township of South Colchester	Lake Erie and Detroit River				20,000 00	
do Garfield	do	do			15,000 00	
Village of Kingsville	do	do			10,000 00	
Township of Romney	do	do			10,000 00	
do East Tilbury	do	do			5,000 00	
do Raleigh	do	do			10,000 00	
Village of Blenheim	do	do			5,000 00	
do Ridgetown	do	do			12,500 00	
						87,500 00
Township of East Gwillimbury	Lake Simcoe Junction				45,000 00	
do North do	do	do			20,000 00	
do Georgina	do	do			20,000 00	
do Whitchurch	do	do			15,000 00	
Village of Leamington	Leamington and St. Clair, in Canada Southern				12,000 00	100,000 00
Township of Mersea	do	do			15,000 00	
Village of Comber	do	do			6,000 00	
						33,000 00
Township of London	London, Huron and Bruce				15,000 00	
do Stephen	do	do			17,500 00	
do Osborne	do	do			25 000 00	
do Hay	do	do			15,000 00	
do Goderich	do	do			15,000 00	
do East Wawanosh	do	do			25,000 00	
do Hallet	do	do			25,000 00	
do Tuckersmith	do	do			10,000 00	
do Turnberry	do	do			5,000 00	
do Morris	do	do			10,000 00	
do Stanley	do	do			10,000 00	
Village of Clinton	do	do			20,000 00	
do Exeter	do	do			10,000 00	

No. 10.—STATEMENT of Aid granted to Railways by Municipalities—*Continued.*

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
ONTARIO—*Continued.*		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Village of Kincardine	London, Huron and Bruce			9,000 00			
do Wigan							
City of London	do do			100,000 00			
					311,500 00		
Municipalities	London and Port Stanley		680,311 00				
County of Elgin						80,000 00	
do Middlesex						100,000 00	
City of London						200,000 00	
do St. Thomas						34,000 00	
							414,000 00
Township of Thorah	Midland			50,000 00			
Town of Port Hope	do			30,000 00			
Townships of Orillia and Matchedash	do			12,500 00			
Town of Orillia	do			12,500 00			
Township of Tay	do			21,370 85			
Village of Omemee	do			2,000 00			
Township of Mara	do			12,500 00			
Town of Peterborough	do			4,000 00			
					144,870 85		
City of Toronto	Northern			100,000 00		190,000 00	
County of Simcoe	do					200,000 00	
Town of Barrie	do			30,000 00			
do Orillia	do			12,500 00			
Townships of Collingwood, Euphrasia and Saint Vincent	do			99,480 00			
					241,980 00		390,000 00
Town of Smith's Falls	Ontario and Quebec			25,000 00			
do Merrickville	do			10,000 00			
Township of West Winchester	do			15,000 00			
do Thamesford	do			2,500 00			
					52,500 00		
Town of Oshawa	Oshawa (electric)				5,000 00		
City of Ottawa	Ottawa, Arnprior and Parry Sound			150,000 00			
Township of Huntley	do do			4,392 00			
do Hagarty	do do					2,000 00	
					154,392 00		
Town of Arnprior	do do					30,000 00	
							32,000 00

Town of Pembroke	Pembroke Southern				20,000 00		
do Port Arthur	Port Arthur, Duluth and Western			25,000 00			
Municipality of Neebing	do do			15,000 00			
					40,000 00		
Township of Russell	Ottawa and New York				10,000 00		
Town of Simcoe	South Norfolk			5,000 00			
Township of Charlotteville	do			20,000 00			
do South Walsingham	do			40,000 00			
					65,000 00		
City of St. Catharines	St. Catharines and Niagara Central		40,000 00			80,000 00	
Town of Thorold	do do					20,000 00	
							100,000 00
City of Ottawa	St. Lawrence and Ottawa	200,000 00				60,000 00	
Town of Prescott	do do	100,000 00				30,000 00	
			300,000 00				90,000 00
do Gananoque	Thousand Islands				10,000 00		
Township of Bayham	Tilsonburg, Lake Erie and Pacific			35,000 00			
do Malahide	do do			4,000 00			
do Houghton	do do			3,000 00			
Town of Tilsonburg	do do			10,000 00			
Village of Vienna	do do			3,000 00			
					55,000 00		
City of Toronto	Toronto and Nipissing			150,000 00			
Township of Scarboro'	do do			10,000 00			
do Markham	do do			30,000 00			
do Uxbridge	do do			50,000 00			
do Scott	do do			10,000 00			
do Brock	do do			50,000 00			
do Eldon	do do			44,000 00			
do Bexley	do do			15,000 00			
do Somerville	do do			15,000 00			
Townships of Luxton, Digby and Langford	do do			12,500 00			
Town of Uxbridge	do do			2,000 00			
					*376,702 59		
Township of Albion	Toronto, Grey and Bruce			40,000 00			
do Caledon	do do			45,000 00			
do Mono	do do			45,000 00			
do Amaranth	do do			30,000 00			
do Arthur	do do			35,000 00			
Town of Orangeville	do do			15,000 00			
do Mount Forest	do do			20,000 00			
City of Toronto	do do			350,000 00			
County of Grey (Group)	do do			300,000 00			
Town of Owen Sound	do do			5,000 00			
Township of Minto	do do			15,000 00			
do Howick	do do			35,000 00			

* Amount returned as realized, balance as lapsed, see return of 1875.

No. 10.—STATEMENT of Aid granted to Railways by Municipalities—*Continued.*

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscriptions to shares or Bonds.	Total.
ONTARIO—*Continued.*		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Township of Gorrie and Wroxeter	Toronto, Grey and Bruce			5,000 00			
Village of Teeswater	do do			5,000 00			
Township of Culross	do do			38,000 00			
do Turnbury	do do			5,000 00	988,000 00		
City of Brantford	Toronto, Hamilton and Buffalo, comprising Brantford, Waterloo and Lake Erie			25,000 00			
Township of Oakland	do do			9,000 00			
do Waterford	do do			5,000 00			
City of Hamilton	do do			225,000 00			
Township of South Grimsby	do do			4,000 00	268,000 00		
Town of Lindsay	Victoria			85,000 00			
Village of Fenelon Falls	do			25,000 00			
Townships of Verulam and Somerville	do			22,000 00			
County of Haliburton	do			54,000 00	186,000 00		
Township of Woolwich	Waterloo Junction			28,000 00			
Section of Peel	do			7,000 00			
Village of Elmira	do			10,000 00			
do St. Jacobs	do			2,000 00	47,000 00		
Fergus	Wellington, Grey and Bruce			10,000 00			
Peel	do do			40,000 00			
Elora	do do			10,000 00			
Maryboro'	do do			40,000 00			
Nichol	do do			10,000 00			
Wallace	do do			35,000 00			
Minto	do do			65,000 00			
Bruce	do do			278,000 00			
Howick	do do			20,000 00			
Listowel	do do			15,000 00			
Grey	do do			35,000 00			
Elma	do do			30,000 00			
Morris	do do			30,000 00			
W. Wawanosh	do do			18,000 00			
Ashfield	do do			10,000 00			
Turnbury	do do			28,000 00			

Kincardine	do	do			8,000 00			
						682,000 00		
City of London	West Ontario Pacific					25,000 00		
Town of Whitby	Whitby, Port Perry and Lindsay				70,000 00			
Township of Whitby	do	do			15,000 00			
do Reach	do	do			30,000 00			
do Scugog	do	do			2,000 00			
County of Victoria	do	do			85,000 00			
Village of Port Perry	do	do			20,000 00			
Manufacturing Co	do	do			94 93			
						222,094 93		
QUEBEC.				1,020,311 00		10,281,345 37		1,311,500 00
Caplin	Baie des Chaleurs				5,000 00			
New Richmond	do				6,000 00			
Maria	do				6,000 00			
Carleton	do				6,000 00			
Nouvelle and Shoolbred	do				6,000 00			
New Carlisle	do				6,000 00			
Paspébiac	do				3,000 00			
Hamilton	do				2,500 00			
						40,500 00		
Farnham	Canadian Pacific					20,000 00		
Town of Nicolet	Drummond County				10,000 00			
Municipality of St. Leonard	do				5,000 00			
						15,000 00		
Sabrevois	East Richelieu Valley				2,000 00			
Henryville	do				4,500 00			
						6,500 00		
Parish of St. Antoine	Great Eastern				10,000 00			
do St. Denis	do				10,000 00			
						20,000 00		
Parish of St. Sophie	Great Northern				4,000 00			
Village of New Glasgow	do				2,000 00			
						6,000 00		
County of Compton	International, now in Atlantic and North-west, C.P.R.							225,000 00
St. Pie	Lake Champlain and St. Lawrence J				20,000 00			
L'Ange Gardien	do	do			10,000 00			
St. Paul	do	do			6,000 00			
Philipsburg	do	do			15,000 00			
						51,000 00		
Town of L'Assomption	L'Assomption					1,500 00		
City of Three Rivers	Lower Laurentian							25,000 00
Ascot	Massawippi Valley						40,000 00	
Hatley	do						25,000 00	
								65,000 00
Township of Melbourne and Brompton Gore	Missisquoi & Black Riv. Valley, now in Atlantic & North-west, C.P.R.						25,000 00	
Township of Ely	do	do					20,000 00	

No. 10.—STATEMENT of Aid granted to Railways by Municipalities—*Continued.*

Municipalities.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscriptions to Shares or Bonds.	Total.
QUEBEC—*Concluded.*		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
do North Stukely	Missisquoi & Black Riv. Valley, now in Atlantic & North-west, C.P.R.					20,000 00	
do Bolton	do do					20,000 00	
							85,000 00
Ormstown	Montreal & Champlain Junction—(Grand Trunk)			10,000 00			
St. Constant	do do			1,800 00			
Ste. Philomène	do do			2,820 00			
Laprairie	do do			1,904 00			
Huntingdon	do do			3,000 00			
St. Isidore	do do			1,500 00			
Dewittsville	do do			750 00			
					21,774 00		
Municipality of Rigaud	Montreal and Ottawa			2,000 00			
Parish of Rigaud	do			800 00			
Point Fortune	do			2,500 00			
					5,300 00		
Chambly Canton	Montreal and Province line, formerly Montreal, Portland and Boston			15,000 00			
do Basin	do do			10,000 00			
					25,000 00		
County of Pontiac	Pontiac Pacific Junction			100,000 00			
Village of Shawville	do do			1,000 00			
					101,000 00		
Village of St. Andrews	Ottawa Valley				10,000 00		
Parish of Sherbrooke	Quebec Central			50,000 00			
do Dudswell	do			25,000 00			
do Weedon	do			25,000 00			
Township of Garthby	do			3,000 00			
					103,000 00		
City of Quebec	Quebec and Lake St. John					450,000 00	
Town of Chicoutimi	do do				12,000 00		450,000 00
City of Montreal	Quebec, Montreal, Ottawa and Occidental	1,000,000 00					
do Quebec	do do	1,000,000 00					
do Three Rivers	do do	100,000 00					
County of Ottawa	do do	200,000 00					
St. Sauveur de Quebec	do do	25,000 00					

Côte St. Louis	do	do	25,000 00					
Village of Ste. Thérèse	do	do	12,000 00					
Parish of do	do	do	12,000 00					
do St. Jérôme	do	do	10,000 00					
Village do	do	do	15,000 00					
Ste. Scholastique	do	do	10,000 00					
St. Andrews	do	do	25,000 00					
St. Jérusalem d'Argenteuil	do	do			25,000 00			
				2,434,000 00		25,000 00		
	South-eastern (now Montreal and Atlantic)							
County of Brome	do	do					50,000 00	
Township of Brome	do	do					50,000 00	
do Sutton	do	do					63,000 00	
do Potton	do	do					25,000 00	
do Farnham	do	do					20,000 00	
Village of West Farnham	do	do					5,000 00	
do East do	do	do					5,000 00	
do Waterloo	do	do					30,000 00	
do Drummondville	do	do					15,000 00	
County of Drummond	do	do					90,000 00	
Township of Wickham	do	do					10,000 00	
do St.-Germain	do	do					15,000 00	
Township of Sorel	do	do					40,000 00	
Village of Actonvale	do	do					15,000 00	
do Roxton Falls	do	do					15,000 00	
Township of Roxton	do	do					20,000 00	
do Shefford	do	do					50,000 00	
do West Wickham	do	do					10,000 00	
								528,000 00
City of Sorel	South Shore, formerly Mont. & Sorel					25,000 00		
Fraserville	Témiscouata					25,000 00		
Municipality of Magog	Waterloo and Magog, now Atlantic and North-west, C.P.R.						15,000 00	
								15,000 00
NEW BRUNSWICK				2,434,000 00		513,574 00		1,393,000 00
Hillsboro', Hopewell and Harvey Parishes	Albert, now Salisbury and Harvey				40,000 00			
Coverdale, Hillsboro', Hopewell and Harvey Parishes	do				30,000 00			
						70,000 00		
City of St. John	Canadian Pacific					40,000 00		
do Fredericton	Fredericton				50,000 00			
County of York	do				30,000 00			
						80,000 00		
Parish of St. George	Grand Southern, now Shore Line		2,000 00					
do Pennfield	do	do	500 00					
Lepreau	do	do	500 00					
				3,000 00				

10—VI—6

No. 10.—Statement of Aid granted to Railways by Municipalites—*Concluded.*

Municipalites.	Name of Railway.	Loan.	Total.	Bonus.	Total.	Subscription to Shares or Bonds.	Total.
New Brunswick—*Concluded.*		$ cts.	$ cts.	$ cts.	$ cts.	$ c.	$ c
Town of Fort Fairfield	New Brunswick			12,000 00			
do Lyndon	do			11,000 00			
					23,000 00		
City of Calais	New Brunswick and Canada			12,500 00			
do Houlton	do do			22,000 00			
do St. Stephen	do do			13,000 00			
					47,500 00		
Town of Chatham	Northern and Western of New Brunswick, now Canada Eastern		20,000 00				
Parish of Elgin	Elgin, Petitcodiac and Havelock				13,000 00		
Town of Campbellton	Restigouche and Western				5,000 00		
City of St. John	St. John and Maine						60,000 00
			23,000 00		278,500 00		60,000 00
Nova Scotia.							
County of King	Cornwallis Valley, now in Dominion Atlantic				27,685 00		
Counties of Yarmouth, Digby and Annapolis	Western Counties, now in Dominion Atlantic				150,000 00		
Town of Truro	Midland of N.S., formerly Stewiacke Valley and Lansdowne				30,000 00		
County of Pictou	New Glasgow Iron, Coal and Railway Co.				4,000 00		
do Shelburne	Nova Scotia Southern			50,000 00			
do Queen's	do			25,000 00			
do Lunenburg	do			5,000 00			
					80,000 00		
					291,685 00		
Manitoba.							
City of Winnipeg	Canadian Pacific			200,000 00			
County of Selkirk	do			35,000 00			
Township of St. Andrews	do			35,000 00			
Town of Morris	do			100,000 00			
					370,000 00		

County of Westborne	Manitoba and North-western				75,000 00		
Town of Portage la Prairie	do	do			50,000 00		
do Minnedosa	do	do			30,000 00		
Municipality of Shoal Lake	do	do			20,000 00		
do Birtle	do	do			40,000 00		
do Strathclair	do	do			600 00		
						215,600 00	
Rapid City	Saskatchewan and Western					10,000 00	
						595,600 00	
BRITISH COLUMBIA.							
City of New Westminster	Canadian Pacific					37,500 00	
NORTH-WEST TERRITORIES.							
Calgary	Canadian Pacific					25,000 00	
Total aid granted by municipalities				3,477,311 00		12,023,204 37	2,764,500 00

No. 10.—SUMMARY STATEMENT of aid granted to Railways constructed and under construction by Governments and Municipalities June 30, 1899.

—	Loan.	Total.	Bonus.	Total.	Subscription to shares or Bonds.	Total.	Grand Total.	
Governments.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Dominion	15,964,533 05		145,743,862 01				161,708,395 06	
Ontario	26,000 00		7,473,180 63				7,499,180 63	
Quebec	3,722,956 00		13,447,824 42				17,170,780 42	
New Brunswick			4,230,540 71		300,000 00		4,530,540 71	
Nova Scotia			2,280,116 53				2,280,116 53	
Manitoba	900,000 00		871,177 50				1,771,177 50	
British Columbia			37,500 00				37,500 00	
		20,613,489 05		174,084,201 80		300,000 00		194,997,690 85
Municipalities.								
Ontario	1,020,311 00		10,281,345 37		1,311,500 00		12,613,156 37	
Quebec	2,434,000 00		513,574 00		1,393,000 00		4,340,574 00	
New Brunswick	23,000 00		278,500 00		60,000 00		361,500 00	
Nova Scotia			291,685 00				291,685 00	
Manitoba			595,600 00				595,600 00	
British Columbia			37,500 00				37,500 00	
North-west Territories			25,000 00				25,000,000	
		3,477,311 00		12,023,204 37		2,764,500 00		18,265,015 37
		24,090,800 05		186,107,406 17		3,064,500 00		213,262,706 22

INDEX.