SESSIONAL PAPERS.

VOLUME 3.

THIRD SESSION OF THE SIXTH PARLIAMENT

OF THE

PROVINCE OF CANADA.

Session 1860.

VOLUME XVIII

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RETURNS

FROM RAILWAY COMPANIES.

No. 1.—Montreal and Champlain Railroad, for the year 1859.

No. 2.—Grand Trunk Railway, from 1st January, 1854, to 31st December, 1859.

No. 3.—Northern Railway of Canada, for the year 1859.

No. 4.—Northern Railway of Canada, from 1853, to 31st Decr. 1859.

No. 5.—Great Western Railway of Canada, from 1855, to 31st January, 1860.

No. 1.

STATEMENT of the Receipts and Expenditure of the Montreal and Champlain Railroad, and appurtenances, together with the amount of Tonnage and of Passengers conveyed over the Road during the year 1859, as required by the 49th Section of the Act 2nd Wm. IV. cap. 58.

Receipts.	Expenditure.	Tonnage.	Passengers.
$224429 94	$118,814 90	56087	134148

G. IRVING,
Accountant.

Montreal, March 14th, 1860.

I, George Irving, do make oath that the above Statement is correct and true in every particular, to the best of my knowledge and belief.

G. IRVING,
Accountant.

Sworn before me at Montreal,
this 14th day of March, 1860.
T. Bouthillier, *J.P.*

No. 2.

STATEMENT shewing the Annual Receipts and Expenditure of the Grand Trunk Railway Company of Canada, on the Separate Divisions on Traffic Account, from 1st January, 1854 to 31st December, 1859. (Prepared in accordance with the Order of the Honorable the Legislative Assembly.)

For the year ending	EASTERN DIVISION.					CENTRAL DIVISION.				
	Miles opened.	RECEIPTS.		EXPENDITURE.		Miles opened.	RECEIPTS.		EXPENDITURE.	
		Total for Division.	Per Mile opened.	Total for Division.	Per Mile opened.		Total for Division.	Per Mile opened.	Total for Division.	Per Mile opened.
		$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.
31st Dec., 1854.	143	370170 78	2588 60	320221 38	2239 31	......	....	....	....	....
31st Dec., 1855.	239	497962 58	2083 52	525455 70	2198 56	125	*32358 18	258 82	*18466 32	147 73
31st Dec., 1856.	279	472187 64	1692 43	571149 51	2047 16	140	326153 92	2329 67	217436 32	1553 12
31st Dec., 1857.	279	577770 98	2070 86	637103 53	2283 52	333	1043449 04	3133 48	894835 47	2687 19
31st Dec., 1858.	279	494513 83	1772 45	584570 83	2095 25	333	983794 16	2954 34	819840 33	2461 98
31st Dec., 1859.	279	551943 64	1978 32	570961 13	2046 46	333	1029268 83	3090 89	782988 47	2351 32

For the year ending	WESTERN DIVISION.					PORTLAND DIVISION.				
	Miles opened.	RECEIPTS.		EXPENDITURE.		Miles opened.	RECEIPTS.		EXPENDITURE.	
		Total for Division.	Per Mile opened.	Total for Division.	Per Mile opened.		Total for Division.	Per Mile opened.	Total for Division.	Per Mile opened.
		$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.
31st Dec., 1854.	......	....	....	....	....	149	465407 18	3133 54	313009 43	2100 93
31st Dec., 1855.	......	....	....	....	....	149	546908 67	3670 53	421412 07	2828 27
31st Dec., 1856.	88	†31025 20	352 56	8348 45	94 87	149	559778 02	3756 89	461312 52	3096 06
31st Dec., 1857.	88	231519 43	2630 90	218974 48	2488 35	149	571974 84	3838 76	495862 28	3327 93
31st Dec., 1858.	88	250357 12	2844 97	226108 09	2569 41	149	520811 73	3495 38	525591 90	3527 46
31st Dec., 1859.	120	263378 24	2194 81	287471 17	2395 59	149	605147 68	4061 39	465093 46	3121 43

* Opened 37 working days.
† Opened 39 working days.

W. H. A. DAVIES,
Secretary, *pro. tem.*

OFFICE OF THE GRAND TRUNK RAILWAY
COMPANY OF CANADA,
Montreal, 15th March, 1860.

No. 3.

STATEMENT of the Earnings and Expenditure on the Northern Railway of Canada, from 1st January to 31st December, 1859, inclusive.

	$ cts.	$ cts.	$ cts.
Through Freight Traffic	34397 71		
Do Passenger do	4205 35	38603 06	
Local Freight, do	127558 97		
Do Passenger do	65425 48	192979 45	
Mail Service	2820 00		
Storage	1366 19		
Wharfage	2145 51		
Other Sources	2130 65	8462 35	
Total Earnings	....		240044 86
Expenditure.			
Maintaining Roadway :—			
Material on hand	1312 51		
Repairs of Track	31711 76		
Do Buildings	3062 67		
Do Bridges	3826 05		
Do Fences and Gates	838 70		
Do Wharves	219 59		
Do Ditches	260 53		
	41224 81		
Less Material on hand	1167 86	40056 95	
Machinery and Rolling Stock :—			
Material on hand	7537 29		
Repairs of Engines and Tenders	14983 66		
Do Passengers and Baggage Cars	4683 53		
Do Freight and other Cars	13489 61		
Do Tools and Machinery	316 56		
	41010 65		
Less Material on hand	9698 24	31312 41	
Operating Road ;—			
Material on hand	745 00		
Office expenses, (Salaries, Rents, &c)	13520 50		
Station Masters, and Clerk	8639 46		
Freight labour	4497 54		
Conductors, Baggage and Brakesmen	7005 17		
Enginemen, Firemen and Cleaners	9646 19		
Switchmen, Watchmen and Porters	9148 88		
Oil and Waste	5909 58		
Water Supplies	1192 43		
Damages	779 59		
Contingencies	1546 74		
Station expenses	891 98		
Telegraph Operators	1921 92		
Stationery	1765 59		
Clearing Snow	404 54		
Fuel consumed	23664 34		
	91279 45		
Less Material on hand	666 17	90613 28	
Sundries ;—			
Legal expenses	246 58		
Direction do	1052 00		
Engineering do	1001 66		
Inspection. do. (Government)	237 50		
Insurance	501 98		
Taxes on Real Estate	2593 37		
Miscellaneous disbursements	1252 30		
Uncurrent money	413 00	7298 39	

STATEMENT of Northern Railway of Canada.—*Continued.*

	$ cts.	$ cts.	$ cts.
Through Traffic expenses:			
Agents and Clerk's Salaries	9408 63		
Labourer's wages	6933 53		
Rent, Stationery and Commissions	2284 78		
Damages	1291 94		
Advance to Steamers	8000 00		
		27918 88	
Total Expenditure for Operating	....	....	197199 91
Amount of Excess over Expenditure	....	....	$42844 95

THOMAS HAMILTON,
Accountant.

TORONTO, TO WIT: } I, THOMAS HAMILTON, Chief Accountant of the Northern Railway of Canada, hereby make oath and say, that the foregoing Statement, on this and the two preceding pages, is a true and correct return of the monies earned and expended by the said Company during the year one thousand eight hundred and fifty-nine.

THOMAS HAMILTON.
Accountant.

Sworn before me, this 16th day of March, 1860.
WM. WAKEFIELD, *J.P.*, Toronto.

NORTHERN RAILWAY OF CANADA.

Number of Tons (2000 lbs.) of Freight carried in 1859.

MOVING.	1st Class.	2nd Class.	3rd Class.	Flour.	Wheat.	Corn.	Beef and Pork.	Car Loads Various.	Total Tons.
	Tons. lbs.	Tons. lbs.	Tons. lbs.	Tons. lbs.	Tons. lbs.	Tons. lbs.	Tons. lbs.	Tons. lbs.	Tons. lbs.
North—									
Local	1264 1886	3291 1309	2781 900	79 1840	292 1620	....	....	2397 406	10107 1961
Through	....	....	3475 0853	....	....	....	....	....	3475 853
South—									
Local	482 1875	370 1814	1740 1318	5236 1192	6833 920	....	....	38356 1305	53021 434
Through	....	....	1941 1979	14915 1976	3529 520	2604 1848	1905 240	....	24897 563

	Tons. lbs.
Total amount Tons Local Freight	63129 395
do do Through Freight	28372 1416
Total	91501 1811

PASSENGER TRAFFIC.

Number of Passengers Ticketed from Stations	57549
Paying on the Cars	15608
Foreign Through Passengers	2618
Free and for Construction	2297
Total number of Passengers carried	78072

TORONTO. to Wit. } I, Samuel Skelton, Superintendent's Clerk of the Northern Railway of Canada being duly Sworn, do depose and say that the foregoing is a correct return of Freights and Passengers transported over said Railway during the Year, One thousand eight hundred and fifty-nine, according to the best of my knowledge and belief.

SAMUEL SKELTON.

Sworn before me at Toronto, this 19th day of March, 1860. } RICE LEWIS, *J. P.*

RETURN of Receipts and Expenditure of the Northern Railway of Canada, from the Opening of the Road in 1853 to the 31st December 1859, showing the Annual Earnings per Mile and the Annual Cost per Mile of running the trains; in pursuance of an order of the Legislative Assembly of 12th March, instant.

Date.		Miles Open.	Gross Receipts.	Gross Expenditure.	Receipts per mile.	Expenditure per mile.
			$ cts.	$ cts.	$ cts.	$ cts.
1 year	1853–54	42	118387 33	65625 05	2818 74	1562 50
½ "	1854	63	74644 07	57050 91	1184 82	905 57
1 "	1855	94	274758 57	251404 43	2922 96	2674 52
1 "	1856	94	518454 23	484840 71	5515 47	5157 88
1 "	1857	94	313291 83	249695 54	3332 89	2656 33
1 "	1858	94	261701 92	261717 82	2784 06	2784 23
1 "	1859	94	240044 86	197199 91	2553 66	2097 87
			1801282 81	1567534 37		

Certified by

THOMAS HAMILTON,
Accountant.

Toronto, 19th March, 1860.

No. 5.

GREAT WESTERN RAILWAY OF CANADA.

STATEMENT of the Receipts, in gross and per mile, for each year, from the opening of the Road, to 31st January, 1860; also the working expenses.

RECEIPTS.

Years ended 31st January.	Amount.	Average earnings per mile.
	$ cts.	$ cts.
1855	1382566 00	5883 00
1856	2325822 00	9378 00
1857	2998526 00	10595 00
1858	2543156 00	8861 00
1859	2084825 00	6972 00
1860	1908110 00	5530 00

WORKING EXPENSES.

Years ended 31st January.	Amount.	Average cost per mile of Railway.	No. of Train miles run, earning Revenue.	Average cost per Train mile.
	$ cts.	$ cts.		$ cts.
1855..............................	666288 00	2835 00	607879	1 09
1856..............................	1124072 00	4532 00	932613	1 20
1857..............................	1536936 00	5430 00	1221605	1 25
1858..............................	1371030 00	4777 00	1194759	1 14
1859..............................	1165748 00	3818 00	1072200	1 08
1860..............................	1142599 00	3257 00	1127416	1 01

H. STEPHENS,
Secretary.

Hamilton, C.W., 11th April, 1860.

RETURN

To an Address from the Legislative Assembly, dated 28th March, 1860, for information relative to proposed Terminus of Grand Trunk Railway at Montreal.

By Command,

C. ALLEYN,
Secretary.

SECRETARY'S OFFICE,
11th April, 1860.

		1859.	
44,237	No. 1	November 22	The Harbor Commissioners of Montreal write to the Provincial Secretary.
44,237	No. 2	" 25	Letter No. 1 is referred by the Provincial Secretary to a Committee of the Honorable the Executive Council for Report.
44,237	No. 3		Letter No. 1 is referred by Council to the Commissioner of Public Works.
44,317	No. 4	" 24	The Managing Director of the Grand Truuk Railway Company writes to the Provincial Secretary.
44,317	No. 5	December 6	The Managing Director's Letter is referred to the Commissioner of Public Works, by the Provincial Secretary.
44,385	No. 6	" 5	Memorial by Montreal Forwarders.
44,385	No. 7	" 9	Provincial Secretary transmits the Memorial by Montreal Forwarders to Department of Public Works.
44,500	No. 8	" 16	Report by Chief Engineer of Public Works.
		1860,	
44,895	No. 9	January 16	Memorandum by Commissioner of Public Works to Messrs. Shanly and Trembicke.
44,895	No. 10	" 17	Messrs. Shanly and Trembicke write to Commissioner in answer to No. 9.
45,529	No. 11	" 14	Inhabitants of Port Hope, &c., Memorialize.
45,044	No. 12	" 25	Commissioner of Public Works to Deputy Commissioner and Chief Engineer.
45,044	No. 13	" 25	Report of Deputy and Chief Engineer.
45,074	No. 14	" 28	Commissioner of Public Works to Deputy and Chief Engineer.
45,075	No. 15	" 31	Deputy and Chief Engineer Report in answer to No. 14.
46,170	No. 16	March 26	Report to Council.
46,170	No. 17	" 28	Order in Council.

(Copy.)

No. 44,237. HARBOUR OFFICE, MONTREAL, 22*nd*, *Nov.* 1859.

SIR,—I have the honor to transmit herewith a memorandum of an agreement entered into between H.H. Whitney, Esq., Chairman of the Harbour Commissioners of Montreal, and Thomas E. Blackwell, Esq., representing the Grand Trunk Railway Company, on the 19th instant, embodying the terms and conditions, upon which the rails of the latter are to be brought into the City of Montreal and connected with the Harbour, and am directed to request that you will be pleased to submit the same to His Excellency the Governor General in Council, for his consideration and sanction. The document in question which I enclose, is in duplicate, as also a plan of the proposed works alluded to therein, likewise in duplicate. One copy of each belongs to, and is the property of Mr. Blackwell, representing the Grand Trunk Railway Company, the others belonging to the Harbour Commissioners.

The Honorable John Young, one of the Harbour Commissioners is now in Quebec, and will have the honor of communicating with you, and of affording you any information in regard to the subject which the agreement embraces, with the view of obtaining His Excellency's approval at the earliest possible date.

I have the honor to be,
Sir,
Your most obedient servant,
(Signed) ALEX. CLERK,
Secretary.

The Honorable
The Provincial Secretary
Quebec.

Memorandum of an Agreement entered into, between Thomas E. Blackwell, Esquire, representing the Grand Trunk Railway Company, and the Harbour Commissioners of Montreal, on this nineteenth day of November, 1859.

The necessity of extending the Rails of the Grand Trunk Company into the City of Montreal, and of connecting them with the Harbour, and also of having a freight Station in McGill St. for the local business of the City, and a passenger Station at the same place, as well as a Station for General Freight business on the south side of the Canal Basin, having become essential to meet the wants of the growing commerce of this City, the following agreement was entered into, and in which the Grand Trunk Company shall be designated as the party of the first part, and the Harbour Commissioners as the party of the second part.

1st. It is understood and agreed that a passenger and local Freight Station shall be constructed at the foot of McGill Street, on the North side of the Canal, by the party of the first part.

2nd. The above Station shall be connected with the Victoria Bridge, and the western lines of Railway, and as it is necessary, in order to effect this connection, that a space outside of Mill Street within the limits of the Harbour, be obtained for a Railway Track, the party of the second part hereby grants to the party of the first part, the privilege of laying down Rails on the site in question; provided the land taken for that purpose does not exceed Seventy-five feet in breadth upon the level of the Railway adjoining Mill Street, ten feet of which is to be applied to the permanent widening of Mill Street, with such slope as may be required, the Company having no claim to the ownership of the land occupied by the said slope, but the Harbour Commissioners undertaking (in case they find it necessary to remove any portion of it for the purpose of any works) to build a proper and sufficient retaining wall.

3rd. As it is intended to reclaim that portion of the St. Lawrence now covered by water, from the mouth of the Lachine Canal to Windmill Point, as indicated on the plan signed by the contracting parties, to the extent of about ten acres, it is agreed that in order to attain that object, the party of the second part shall construct the Wood or Crib-work of a Wharf between the points above mentioned, and also a sustaining or Revetment Wall, at a distance of not less than Seventy-five feet from the face of the said Wharf, which shall be built to the level of the present wharves, and the said Revetment wall to the level of Commissioner Street, and that the party of the first part shall at their own cost fill up the whole of the space enclosed by such Revetment wall, and make such other constructions and improvements as may be required to bring the whole also to the level of Commissioner Street, and shall deliver one half of the material required to fill up the space between the back of the Crib-work and the front of the Revetment wall, the party of the second part incurring the expense of levelling and grading the same.

4th. The property required by the party of the First Part, from the party of the Second Part, above mentioned, shall be leased to the party of First Part, at a nominal rent; say the sum of Five Shillings currency, yearly, for a term of 999 years.

5th. It is also understood between the parties that all the wharf below the said Revetment wall, shall be under the exclusive control, and for the especial advantage of the party of the Second Part; but the party of the First Part, after the work shall have been concluded, shall have the privilege of commuting for the use of the same for their own benefit and advantage, at such rates, and on such terms as may be agreed upon.

6th. Should the party of the Second Part be able to procure at the Quarries at Point Claire, the stone required for the construction of the said Revetment wall, the party of the First Part will deliver it at the works free of charge for transport.

7th. The present agreement is made subject to the sanction and ratification of the Provincial Government.

(Signed), THOMAS E. BLACKWELL, V. P.,
Managing Director, G. T. R. Co.

(Signed), H. H. WHITNEY,
Chairman Harbor Commissioners

No. 44,237.

SECRETARY'S OFFICE,
25th November, 1859.

Referred to a Committee of the Honorable the Executive Council for Report.

By Command,

(Signed,) C. ALLEYN,
Secretary

No. 44,237.

Referred to the Honorable the Commissioner of Public Works.

JOHN A. MACDONALD,
S. Ex. Council.

No. 44,317. (Copy.)

GRAND TRUNK RAILWAY OF CANADA.
Montreal, November 24, 1859.

SIR,—You are doubtless aware that for a considerable time past I have been engaged with the Corporation of the City of Montreal, the Board of Trade, and the Harbour Commissioners of this city in canvassing and deciding upon the best site for a terminus within the limits of the business portion of Montreal; and that after a protracted investigation with the several public bodies I have referred to, as to the merits of the different proposed sites for this terminus, we have at length determined upon the locality which under all circumstances of the case seems to us best suited for the purpose.

It is proposed to run lines from the present Point St. Charles station branching from its Eastern and Western extremities, to a common point as shown in the accompanying plan, and then taking a parallel course on an embankment along Mill Street, which street it is intended to widen to the extent of ten (10) feet, and thence direct to the proposed general Freight Terminus, situate on the South side of the Canal, and partially to be reclaimed from the river St. Lawrence, as also shewn in the plan referred to.

It having also been determined that a local Freight and Passenger Depot should be established at the West side of the foot of McGill Street, it becomes necessary to cross the canal, which I purpose to accomplish by the erection of swing bridges at an elevation of from 7 to 8 feet above the water level.

In order to carry out these new works for the accommodation of the City of Montreal, it will be seen that the branch lines from the main track at Point St. Charles cross over the property of the Provincial Government, and that they also occupy the vacant lots of ground near the Windmill Point; and as I have before remarked this is the most available route for a branch into the city. I beg that you will submit this, my application, to the honorable the Executive Council, that the lands I have referred to may be placed at the disposal of this Company for the above purposes.

I have deputed Mr. Trembicke to wait upon you with this communication, and the plan attached, so that in case of any further information being required by the Government, he being fully cognizant of all the particulars of the case, may supply you with the same.

I have the honor to be, Sir,
Your most obedient Servant,

(Signed,) THOMAS E. BLACKWELL,
Vice President.

The Honorable
C. ALLEYN,
Provincial Secretary,
&c., &c., &c.,

No. 44,317.

SECRETARY'S OFFICE, 6th December, 1859.

Referred to the Honorable the Commissioner of Public Works, for Report in connection with No. 2,285 of 1859, already before him.

By command,

E. PARENT,
Assistant Secretary.

No. 44,385.

(Copy.)

To His Excellency Sir EDMUND HEAD, *Governor General.*

The Memorial of the undersigned Forwarders, Steamboat owners, and others interested in the Transport business through the Lachine Canal, respectfully sheweth:—

That your Memorialists have learned with alarm of a scheme now under discussion, of bringing the Grand Trunk Railway into the City of Montreal by crossing the Lachine Canal at its lower entrance—a project fraught with insecurity to life and property, disadvantageous to the true interests of the Railway Company in particular, and to the travelling community in general.

That your Memorialists and their predecessors have for many years been engaged in developing the trade of the Province in general and particularly of the City of Montreal, by opening out and forming communications with the West, thereby greatly promoting the prosperity of the community.

That each successive enlargement of the Canals and improvement in the navigation of the inland waters has compelled a corresponding change of Craft employed in Forwarding, to the great damage and loss of those engaged in the business, and that owing to such exaction and outlay the trade with the Western country has been largely developed, and that it must go on increasing annually with the general advance of the Province; its present prosperity is much indebted to those engaged in this branch of business, who have never received the slightest aid from any public funds, although their losses have been heavy, and the difficulties with which they have had to contend have been most serious.

That your Memorialists would most respectfully, but urgently, protest against such proposed crossing of the Lachine Canal, on the ground of the incalculable injury the Trade of the country would suffer from the consequent impediment and delay to vessels using the Canal, which would be a constant and serious obstruction to the navigation thereof, more particularly at its connection with the River St. Lawrence, where such an enormous amount of passing occurs with River Steamers, Quebec and other craft, as at present frequently to occasion great delay, which must be seriously augmented by the construction of an additional Railway Bridge; whereas, on the high authority of Mr. Shanly and Mr. Keefer, it is plainly shown that a better and a safer course for the Grand Trunk Railway is to enter the City on the north side of the Canal.

Your Memorialists therefore pray that permission be not granted to the Grand Trunk Railway, to construct another draw-bridge over the Lachine Canal, at the point complained of, and thereby avoid the additional insecurity, and also save from unnecessary and grievous annoyance and loss, the large and important interests represented by your Memorialists.

And your Memorialists will ever pray.

(Signed,) JAQUES TRACY & CO.,
" HENDERSON, HOLCOMB & CO.,
" ALEXANDER MILLOY,
Representing Royal Mail Steamers.
" JONES, BLACK & CO.,
" GLASSFORD & CO.,
" J. J. JONES,
" P. M. BOCKERS,
" THOMAS S. MAXWELL,
" M. K. DICKINSON,
" JOHN MACPHERSON & CO.

MONTREAL,
December 5th, 1859.
No. 44,385.

Acknowledged and transferred to the Honorable the Commissioner of Public Works, in connexion with No. 2,333.

SECRETARY'S OFFICE,
9th December, 1859,

No. 44,500. (Copy.)

QUEBEC, 16th Dec., 1859.

The Hon. the Commissioner of Public Works.

Sir.—Agreeably to instructions I have carefully examined the accompanying documents relating to the proposed Station at Montreal, of the Grand Trunk Railway and beg respectfully to report:—

That the objects contemplated being the establishment of a passenger and local freight station, within the city, on the North side of the Canal, "and a station for general freight business on the South side of the Canal Basin." It is much to be regretted that the effecting of these highly important objects is looked forward to in the manner implied in the conditional arrangements made and submitted for the approval of the Government.

For, if I mistake not, a railway station should be so situated that the approach to it is not liable to any obstructions, other than such as are completely under the control of the Company; which, it will be quite evident, can never be the case if it crosses the Canal at the place proposed—so long as the preservation of an unbroken connection between the Inland and sea-going route of the St. Lawrence is of so much consequence to the Province generally, and Montreal in particular.

In this view of the case, it appears to me that assenting to the proposition, would, by forcing the whole Western travel, to and from the city, over two draw-bridges, entail upon it a greater evil than either local interests, or that of the railway would justify—while there appears no good reason why the local traffic of the city should be carried round by the way of Point St. Charles; and if the general freight business is to be done on the South side of the Canal, to which there is no objection whatever, it may fairly be asked, why should not vessels go to the railway, instead of the Company undertaking to carry the railway to the vessels?

If these objections hold good at the present time, they certainly will be experienced in a far greater degree, if we are at all successful in attracting the Western trade by the St. Lawrence to the extent we have been aiming at for many years, and the Railway business, at the same time, keep pace with expectations.

Believing the case not to be attended with any such difficulties as render the proposed circuitous line of entering the City unavoidable, but considering any opinion on the different projects mooted, other than that of crossing the Canal, uncalled for, I proceed to remark:—

That by the plan submitted it will be seen, two swing or draw-bridges are proposed to be constructed over the outlet lock,—one above the upper gates, to be raised to the level of Commissioner Street, for Railway traffic; another, below the lower gates, for ordinary travel, of a height to suit the wharf proposed to be formed on the south side.

That between the "slip" recently formed on the north side of the Lock for enlarging the Harbour accommodation and the Basin above, there is barely a space of 160 feet, exclusive of the walls, the whole of which would be occupied by the Railway, its branches and roadway leading towards the lower end, and the principal part of it raised fully 7½ feet over the side walls of the Lock.

Under such an arrangement there appears to me no way by which the Lock could be sufficiently accessible on either side or end, for effecting any necessary repairs or of introducing new gates, while the bridges and elevated works on which they must necessarily rest would greatly interfere with, if not quite prevent the efficient working of the Lock; no matter what precautions were adopted to lessen these evils.

During the season of navigation there is from 15 to 25 lockages daily, and on one occasion there were 29 in one day. The locking through of a steamer generally occupies 15 minutes; small sailing vessels 20 minutes; and large heavy laden vessels 30 minutes and upwards, the sailing vessels being towed in and out of the Lock by hand, causes this difference; a little mismanagement, however, on the part of those in charge of vessels often causes much more delay.

The greater number of vessels pass through the Lock during the day, or within a period of from 16 to 18 hours.

If we suppose that there would be the daily arrival and departure of two western and two eastern trains, this would make eight regular passenger crossings, which with a like number of freight trains, together with lodging the locomotives at Point St. Charles, would make at least *twenty-four* crossings on the bridge, the greater number of which would be within the same time that the passing of vessels takes place.

The first of these statements being correct, and the second believed to be rather under than over estimated, if I mistake not, shews clearly that even in the present state of the traffic, neither the interest of the navigation or of the railway would be consulted in adopting the plan proposed; while there can scarcely be two opinions on the question, which, it is the interest of the Province most zealously to protect.

In short, the whole of the space in the vicinity of the lock being required, and the whole time necessary for the proper working and management of the Canal—any erection on, or occupation of the land for other purposes, or interference with the time of vessels passing, would, in my opinion, not only be detrimental to the navigation at present; but would be an evil increasing in degree as the trade increases in extent and importance.

It therefore appears to me that, however much the Province may be interested in the success of the railway, it would be extremely unwise to allow any scheme whatever to be carried out, even for its apparent advantage, that would have so decided a tendency to diminish the efficiency of the canal; but on the contrary, that all present advantages should be vigilantly guarded, and still greater facilities afforded for the speedy transfer of produce from lake craft to the sea going vessels.

Again, in the event of the navigation being enlarged, which many well qualified by habits of close observation in commercial matters, look forward to as a necessity, while the Government has in some measure turned its attention in a like direction, by calling for an estimate of the probable cost of increasing the draught of water in the canals; and further if it is at any time intended to carry out the plan so long anticipated of forming docks inside of the canal, capable of admitting Atlantic vessels, and for which land was purchased by the Government several years ago—the plan now under consideration would entirely defeat these objects.

As already stated, there is no objection to establishing a station for general freight business on the south side of the Canal, but, on the contrary, so many sound arguments in its favor, that I would recommend the Government to grant the Railway Company the privilege of reclaiming as much land from the river for that purpose between Point St. Charles and the lower entrance of the Canal as might be deemed expedient, with a due regard to the harbour boundaries of the city—provided:

Firstly—That a sufficient space is left between the Northern part of the railway works and the South side of the present Lock, to admit of the future enlargement of the Canal. This reserve I consider should not be less than 175 feet in width, extending southwards from low water mark on the present embankment, thence upwards to the southern line of Mill Street, as represented on the accompanying sketch.

Secondly—That the outlets from the two waste-weirs and the tail-races from the mills situated along the north side of Mill Street be constructed in a satisfactory and durable manner, through and under the trackway and wharf proposed to be formed, and the whole of them made of sufficient dimensions not to impede the free discharge of the water, and further that the rights of the lessees be duly respected by the Company.

Thirdly—That no encroachment shall be made on the property purchased and retained by the Government for the purpose of constructing docks, other than that the Company may have the privilege of laying down a trackway along its south side, which must be secured and protected by a wall or otherwise, as may be approved of by the Government, in the event of such docks being at any future time formed.

These being the views entertained on the question submitted, I beg respectfully to record them, believing that, however much opposition they may meet with from local or other interested sources, they will be fully sustained by those whose only object is that of maintaining an unobstructed connection between the highway of the St. Lawrence and the unrivalled water communication that nature, aided by the Provincial Exchequer, has opened up to us with the vast regions of the West.

I have the honor to be, Sir,

Your most obedient servant,

(Signed,) JOHN PAGE,

Civil Engineer, Public Works.

(Copy.)

No. 44,895. January 16, 1860.

On the communication of the Chief Engineer with reference to the application of the Grand Trunk Railway Company to cross the Lachine Canal, the Honorable the Commissioner requests to be favored with the observations of Mr. Shanley and Mr. Trembicke on the following points, which would seem to embody the objections urged.

First. With reference to the permanent enlargement of the Canal, and the construction of additional works,—

1st. Will filling up on the south side, as proposed by the Company, interfere with this, or render it impracticable?

2nd. If so, what plan would you propose by which the enlargement might be affected? And in what way would the line cross it?

3rd. What would be the additional expense of construction to the Government—keepng in mind the Tail Race from the mills, and the necessity of providing for the discharge from them.

Second. In regard to the working of the present Canal, and the actual impossibility of working, or inconvenience the crossing will occasion,

1st. Can the gates be worked, with the bridges erected as proposed?

2nd. Can access for the purpose of placing new gates be obtained?

3rd. Will the necessary service-ground be diminished to an extent that will be permanently injurious to the navigation, keeping in view the object of descending to the level of the Harbor Wharves?

4th. What impediment will it offer to the passing vessels in the way of delay?

The Commissioner also requests to be favored with the views of Mr. Shanley and Mr. Trembicke, as to whether there is any other way by which a city terminus, and access to the wharves can be obtained conveniently, and at what probable cost, of the plan proposed.

JOHN ROSE.

To Messrs. Shanley & Trembicke.

(Copy.)

No. 44,895.

MONTREAL CITY TERMINUS.

Answers to Questions by the Honorable the Commissioner of Public Works.

First, " With reference to the permanent enlargement of the Canal, &c."

1st. The proposed mode of constructing the Station Ground on the south side of the Canal, interferes with the position proposed by Mr. Page, for the enlarged Locks; so much so as to render it impracticable to place the Locks where laid down by Mr. Page, if the plans of the Station Ground be carried out.

2nd. To obviate the above difficulty, we propose to place the enlarged entrance Lock to the south of the Station Ground, and to carry the enlarged Canal wholly distinct from the existing one, outside of the Railway tracks, up to a point opposite the head of the Upper Basin, there to connect with the present Canal. The Railway would then have to cross the new Canal once, near the upper end of Mill Street, and also to cross the existing Canal, at the entrance Lock, as at present designed.

3rd. The additional cost to the Government, of constructing the new Canal and its Locks, wholly south of the Railway, would be mainly in the necessity of providing a Culvert or Tunnel, to carry the waste water from the mills and factories along Mill Street.

We have not sufficient data at hand for arriving at a correct estimate of the cost of such a tunnel, but it would probably involve an outlay not exceeding $60,000. We submit that such a mode of constructing the Canal, would give great facilities for enlarged Basin accommodation, by enclosing sufficient space for such purposes from the St. Lawrence, instead of excavating for them on shore. Much of the inconvenience of crossing the Canal for the ordinary purposes of traffic, would also be done away with, and in fact be confined to the crossings of the existing Canal.

2nd. " With reference to the working of the present Canal, &c."

1st. We do not see that the proposed draw-bridge for Railway purposes, at the head of the entrance Lock of the present Canal, need occasion much, if any inconvenience to the navigation. Mr. Page gives the time occupied by the lockage of vessels, at from 15 minutes to half an hour, and the maximum number of lockages, in any one day, 29; the locking taking place within from 16 to 18 hours. Taking then the minimum time for locking at 15 minutes, there must, under the most unfavorable circumstance of a succession of vessels, be two periods of 15 minutes in each of the 18 hours that the Canal is in fullest use, during which the gates would have to remain immoveable; and within such space of time the Bridge could be easily swung to, and a Train of Cars be taken over.

This allows for 36 Trains, or 36 passages of an engine in the 18 hours.

It is not anticipated that the Railway business, in connection with the City Terminus, will call fore more than 20 passages in the 24 hours at the outside.

The railway bridge would, as a rule, be always open, except when a train approached, and would then only be closed to admit of the train crossing, upon the Canal watchman signalling that the closing might take place. The other two bridges proposed would be more inconvenient than the single one designed for the passage of trains; that is, more inconvenient to the *public*. We do not see that they need interfere with the navigation in any way, if subject, as they must be, in their working, to the rules and regulations established by the Canal authorities.

We do not see either, that any of the proposed Bridges will prevent the convenient working of the Lock-gates. The two designed to be placed on the entrance Lock must necessarily be at such an elevation above its coping as will admit of the lockmen walking erect underneath them, and the supports on which they are to rest, can be established sufficiently far back from the edge of the lockwalls, as practically to leave all the room there now is for the working of the machinery of the gates.

The bridge on the upper lock would be situated, with reference to the lower gates, nearly as the present public bridge is to the upper ones, and would impede the navigation or the working of the gates to no greater extent.

2nd. The position laid down for all the bridges, is so far clear of the "hollow quoins" of the Locks, as to leave ample room for the placing of new gates, without creating any great amount of inconvenience to the workmen.

3rd. The "service ground" attached to the Canal, on the North side of the entrance lock, will undoubtedly be diminished in extent by the construction of the proposed railway track, leading to the wharves, but in carrying out the reclaiming of land on the South side for station purposes, a large space [200 feet by 80], may easily be be made available for the convenience of the navigation.

4th. The impediment to the *navigation* by the construction of the bridges will be trifling, the Canal authorities possessing the undoubted right of regulating the mode of working them, and the vessels using the Canal having, of course, the precedence, as well of the railway trains, as of foot passengers and carriages. We admit that *inconvenience* of some description or other, is inseparable from draw-bridges; but in the case before us, the interests opposing their construction have the power in their own hands to throw the whole inconvenience on the railway company, and the general public.

Finally, we believe that there is no other mode of combining the project of a Railway Terminus within the City of Montreal, and convenient connection with the wharves, that can be pronounced practicable; not from any extraordinary difficulty of constructing a line *viâ* the Lachine Railway station, for instance, that would accomplish the double object in view, but from the necessity that any other line would involve, of crossing numerous and much frequented streets, or of purchasing private property of such value as would render the undertaking financially impracticable.

[Signed,] W. SHANLY,
Quebec, 17th Jan. 1860. (") A. L. TREMBICKE.

To His Excellency the Right Honorable SIR EDMUND W. HEAD, *Baronet, Governor General of British North America, &c., &c., in Council.*

The Memorial of the undersigned, Citizens of Port Hope, respectfully Sheweth —

That the St. Lawrence, being the natural outlet from the great North-Western Lakes of this continent, for the conveyance to the Eastward, of the productions of the fertile regions which border upon them, the Legislature of Canada wisely resolved to remove the obstacles that interrupted, in certain places, the navigation of this great river, by constructing a chain of Canals of unequalled magnitude, the completion of which, has rendered the St. Lawrence route, the shortest and most economical line of transport, from the West to the sea-board.

That, in effecting this important object, the Province has expended large sums of money, and necessarily entailed a heavy debt and burden of taxation; but your Memorialists feel sanguine, that under a fostering and judicious management, the capital invested in these great public works, will ere long, become productive, and the St. Lawrence Canals prove self-supporting, and remunerative to the Province.

That, entertaining these opinions, at this present juncture, when Railroad competition with the Canals is assuming increased activity, your Memorialists deem it their duty to call the attention of the Government and Legislature, to the necessity for maintaining unimpaired, and in full force, all such regulations and arrangements, as tend to insure the easy and efficient working of Canal Navigation, and to the importance of so controlling the location and manner of constructing all Railroad works, in the vicinity of our Canals, that no hindrance or impediment shall be created to the free transit of vessels, or to such extensions and enlargements of the Canal Locks and Basins, especially at Montreal, as the increasing traffic through both the St. Lawrence and Ottawa will soon render essential. Wherefore your Memorialists humbly pray, that before any further right of crossing, or permission to construct Railroad works in the vicinity of Canals be granted, full examination into the consequences may be made, and that nothing may be decided until after full discussion be had, full enquiries be instituted, and a favorable report be received from competent and responsible Engineers having these public works in charge. And your Memorialists, as in duty bound, will ever pray.

PORT HOPE, *Feby.* 14*th*, 1860.

Petitions similar to the above have been received from the Inhabitants of—

Gananoque,	Oshawa,
Toronto,	Sarnia,
Goderich,	Prescott,
Montreal,	Ryerse,
St. Catharines,	Kingston,
Wellington Square,	Ottawa,
Montreal.	

DEPARTMENT OF PUBLIC WORKS,

No. 45,044. QUEBEC, 25th January, 1860.

ON THE APPLICATION OF THE GRAND TRUNK RAILWAY COMPANY TO CONSTRUCT A BRIDGE ACROSS THE CANAL AT MONTREAL,—

The Deputy Commissioner and Chief Engineer are requested to consider and report whether, in the event of the enlargement of the Lock communicating between the Basin and the Harbour taking place,—it would, or would not be practicable to take down and rebuild the present one between the 1st November and 1st May, and if so, what the probable cost would be in excess of the construction of a new Lock on the present ground,—the building of which occupied the usual time.

(Signed,) JOHN ROSE,
Commissioner.

No. 45,044 (Copy.)

DEPARTMENT OF PUBLIC WORKS,
Quebec, 23rd January, 1860.

SIR,—On the application of the Grand Trunk Railway Company to construct a bridge across the first lock of the Lachine Canal at Montreal;—

We have, as you desired, given our best consideration to the engineering question: "Whether it is practicable to take down and rebuild this lock, in one Winter, between the "first of November and the first of May; and if so, what the probable cost would be in "excess of the construction of a new lock outside, during the Summer season."

We are clearly of opinion that any attempt to take down and rebuild the present lock, *in situ*, in one Winter, would be attended with insurmountable difficulties, and must end in certain failure. A failure which would put a stop to the navigation of the Canal for a whole season.

The bed of the river at this place is covered with drift to a great depth, composed of a mixture of sand, clay, gravel, and boulder stones. The veins of sand are charged with water, and being in connection with the river outside of any coffer dam that may be built, may burst up at any time and put a stop to all operations.

We have a distinct recollection of the nature of this foundation, and of the difficulties, interruptions and delays experienced from this cause during the first construction of this lock, which occupied three seasons, and it must be observed, that if such serious drawbacks were encountered in Summer, and under the most favorable circumstances for the works, during the period of low water, they must without doubt, be increased to an overwhelming extent in Winter, when the water is twenty feet higher, and when the frost will preclude making effectual repairs to the dams.

Even in the small basin recently constructed at great cost alongside this lock, the contractors met with great difficulties and delays from the bursting in of water, and, although they had Summer weather and low water to do it in, their operations were extended over nearly a year.

With reference, therefore, to the proposition to rebuild this lock in its present position, in one Winter, we cannot hesitate to pronounce it impracticable.

(Signed) SAMUEL KEEFER, C.E.,
Deputy Com. Public Works.

(Signed) JOHN PAGE,
C. E. Public Works.

To the Commissioner of Public Works.

No. 45,074. (Copy.)

ON FURTHER REFERENCE TO THE APPLICATION OF THE GRAND TRUNK RAILWAY COMPANY TO CROSS THE LACHINE CANAL,—

The Deputy Commissioner and Chief Engineer are requested further to report whether new and enlarged locks connecting the Harbour with the Upper Basins, might not be constructed on the North side of the existing ones,—using, if necessary, the present steamship basin,—and whether the cost of the locks in that position would exceed the cost of locks placed on the South side of the existing ones.

(Signed,) J. ROSE.

DEPARTMENT OF PUBLIC WORKS,
Quebec, 28th Jan., 1860.

No. 44,237. (Copy.)

THE PROPOSED TERMINUS OF THE GRAND TRUNK RAILWAY IN McGILL STREET, MONTREAL.

No. 44,237.—Agreement between Harbour Commissioners of Montreal and Grand Trunk Railway Company, for extending a track into the city crossing Lachine Canal at the first lock.

No. 44,317.—Vice-President of Grand Trunk Railway submits plan of Montreal Terminus.

No. 44,385.—The Forwarders of Montreal memorialize against construction of another Railway bridge over the Lachine Canal.

No. 45,500.—John Page, Chief Engineer Public Works,—Report on the agreement between Harbor Commissioners and Grand Trunk Railway Company for City Terminus.

No. 45,895.—W. Shanly, and A. L. Trembicke,—Replies to questions proposed by the Commissioner in reference to their plan of City Terminus.

No. 54,044.—Deputy Commissioner and Chief Engineer report on impracticability of rebuilding Lock No. 1, *in situ*.

Printed Report of W. Shanly on City Terminus of Grand Trunk Railway Company made to Harbor Commissioner.

Official memorandum of the Commissioner on building enlarged lock on North side of the existing one.

28th January, 1860.

SIR,—The Grand Trunk Railway Company at present enjoys the privilege of one crossing of the Lachine Canal at a distance of one mile and a half from its Station at Point St. Charles It now seeks another across the entrance lock of this Canal. The question arises, is it possible to avoid another draw-bridge? Must all trains arriving at Montreal from the West cross the canal twice before reaching it, and make no less than four stoppages in doing so? Two at the canal, one at the Lachine Railway and one at Point St. Charles Station? Is there really no other way of reaching a city terminus on the North side of the Canal than the one proposed by this Company.

There is no doubt that this is the cheapest and shortest line from Point St. Charles that Company can devise to reach the point aimed at; but we are not prepared to admit that it is the best for all the interests concerned. Mr. Shanly in his report to the Harbor Commissioners expresses his fears of want of room at the foot of McGill street and suggests that the increase of business be provided for by reclaiming land from the river on the south side of the canal. If the efforts made by the Provincial Government for securing to the St. Lawrence route its fair share of Western traffic, shall yet be crowned by success, the business on this canal must be greatly augmented. But even the fractional portion of it which now seeks this route together with that from the lower ports, demand from 15 to 20 lockages a day, and on some days as many as 29 lockages have been made.

Looking then to the increase of traffic which may reasonably be expected both by water and rail, the greatest caution should be observed in the consideration of any plan which shall have the effect of crowding both together in a limited space where it is foreseen to be impossible to provide for their future growth and development.

We are so thoroughly convinced that the concession of another crossing of the Lachine Canal, at this point, would operate injuriously to the navigation by crowding all the traffic together in a small compass, and making a thoroughfare of the two lowest locks, that we feel it our duty to lay before you, as plainly and concisely as we can, the reason which have induced this conviction, with the earnest hope, that upon further consideration some other method of accommodating the City may yet be adopted without inflicting unnecessary injury upon one of the greatest interests committed to this Department.

It may be assumed that the privilege of a second Canal crossing should not be sought or conceded, if the granting of it would in any way impair the efficiency of the existing Canal, or place obstructious in the way of its future contemplated enlargement. We are of opinion it will do both.

1. The lockages as before stated, vary during the season of navigation, from 15 to 25 per day, and on one occasion there were 29 in one day. These Lockages occupy according to the class of vessel that may be passing, from 15 to 30 minutes each. Now the Railway Company, through Messrs. Shanly and Trembicke (No. 44895) proposed to take that time *only* during which the gates are closed for passing vessels as their time for crossing trains. They do not ask that vessels shall wait for trains, but proposed that trains shall wait for vessels. Then as business at the Canal increases, and the locks come to be used continually, their trains must occasionally wait. They can never be certain of their departure or arrival. The Time table cannot be observed. Their crossings with other trains on the line must be deranged, and irregularity, one fruitful source of accident on railways, must ensue. There will after a time, be a public outcry against Canal management, and a general demand for making the rules of the Canal subordinate to those of the Railway, and reasonably so, for in the one case human life is jeopardized, while in the other there is only the question of a few minutes delay. It follows then, that if the Company is allowed to cross the Canal again at this point, that the interest of the Canal will be subordinated to its convenience. The Company proposed two other draw-bridges across the lower locks, to accommodate the common travel, and if these two be given, the Canal becomes a perfect throughfare for Railway accommodation and its efficiency must be seriously impaired.

2. On the question of enlargement Mr. Shanly and Mr. Trembicke admitted that the carrying out of their plan interferes with the proposed position of the Locks, so much so as to render it impracticable to place them where they have been laid down on the plan. To obviate this difficulty they proposed that the entrance Lock shall be placed south of the Station ground, outside their Railway tracks, and the second one connected with the upper basin, by cutting through the mill lots and property. We do not think this suggestion can

be carried out, short of on increase of £100,000 over the plan which we recommend as the best. In point of fact we consider it a virtual admission, that if the Company obtains what it is seeking for, the Government will be forced into an expenditure on Point St. Charles Shoal, (wherever it shall decide upon the future enlargement of the Canal) which is unnecessary and difficult of estimation.

We apprehend that our Report (No. 45,044) proves the impracticability of reconstructing the lower Lock *in situ* and disposes of that question.

Upon your memorandum of the 28th instant, we have to state that the Locks, if built on the north side of the existing ones, would render useless the steamship wharf within the Harbor of Montreal as well as the wharf between the Locks themselves, and fully two-thirds of that upon the upper basin, and that the upper Lock would encroach on Commissioner Street, and render the construction of the dock wall for fully one-half of its length indispensable.

The principal difference in expense of constructing Locks on the north side, compared with that on the south side of the present Locks, would be as follows:

LOCKS ON SOUTH SIDE,

Forming an embankment 1,000 feet long	$16,000
Crib-work outside of it	14,000
Protection of slope wall above water line	6,000
Constructing dock wall inside between locks	20,000
	$56,000

LOCKS ON NORTH SIDE.

Reconstruction of dock wall above Lock 2	$20,000
Purchase of property for and widening out of Commissioners street	10,000
Amount that would be paid to the Harbor Trust for steamer slip over benefit it would be to the work	26,000
Damage for rendering useless, 400 feet of wharf in the Harbor, not less than	80,000
	$136,000
Difference	$80,000

Thus shewing that it would cause an expenditure of $80,000 more to make the enlargement on the North than on the South side of the present Locks, besides which the adoption of the North line would render useless 1,300 feet of the present wharfage in the first and second basins, which if any value can be placed on it at all, cannot be less than $200 per lineal foot, or $260,000, while by placing the Locks on the South side, about 600 feet of wharfage would be added to that which we have at present.

It is no part of our duty to suggest a plan for connecting the Grand Trunk with the Harbor and City Terminus on the North side of the Canal, as desired by the Corporation and Board of Trade, but we think it right to take this occasion of expressing our mature opinion, that for these objects in which the City is so deeply interested, a line can be obtained, which will be free from the objections urged against the one under consideration, and better for the interests of the City, both present and future, and although it may cost more in the purchase of property at the beginning, it will be attended with this advantage: that it can be brought into operation in the course of *two months*, while the proposed plan will occupy *two years* in its construction. The City might then enjoy the advantage of connection with the Railway during this summer, instead of waiting for it until the close of next year.

We have the honor to be, Sir,

Your obedient Servants,

(Signed) SAMUEL KEEFER,

Deputy Commissioner,

" JOHN PAGE,

C. E., P. Works.

(Copy.)

January 31, 1860.
No. 46,170.

To His Excellency the Right Honorable Sir EDMUND WALKER HEAD, *Baronet, Governor General of the Province of Canada, &c., &c., &c.*

On the application of the Grand Trunk Railway Company, for leave to cross Lock No. 1 of the Lachine Canal; and on the reference touching the arrangement between that Company and the Montreal Harbour Commissioners, the undersigned has the honor to report for your Excellency's information that he has given due consideration to the important questions involved in the foregoing applications and reference.

He is fully sensible, on the one hand, of the duty of guarding the public water communications of the Province, at this important point of junction with the ocean navigation, against obstructions which might either interfere with the present working of the Canal, or interpose serious difficulties in the way of its future enlargement; while, on the other, he equally recognizes it to be important to the general commerce of the country, (especially in view of the efforts now being made to attract the Western Trade through Canada,) that a connection between the Grand Trunk Railway and the Harbour of Montreal should be formed, thereby avoiding a serious item in the cost of transport.

He accordingly caused the several applications to be referred to the Deputy Commissioner and Chief Engineer, and instructed them to report on the various engineering questions which might affect your Excellency's decision.

The Reports made by them, together with certain suggestions of the undersigned, which are considered to embody the objections presented in the Chief Engineer's Report, were afterwards submitted to Mr. Walter Shanly and Mr. Trembicke, acting for the Grand Trunk Railway Company; and the several Engineers were requested from time to time to consult together, with the view of devising, if possible, some course by which the public convenience in regard to the Terminus, might be met without injury to the Canal navigation.

These several Reports are submitted for the information of your Excellency, and the objections to the application may be considered as three-fold.

1st. That the project will interfere with, or prevent the enlargement hereafter, of the Lock connecting the Canal basins with the Harbour, except by the construction of a new entrance, at a very heavy cost, through the River St. Lawrence, outside of Mill street; and that it will necessitate the building of an arched tail race from the various mills on the South side of the Canal.

2nd. That the proposed works on Point St. Charles will come so near the Canal, as to encroach on, and diminish the service ground necessary for the Canal operations at the Lock.

3rd. That the Bridge across the Lock will interfere with, and offer so much obstruction to vessels passing, as to be a serious delay and injury to the present trade.

Before considering these several objections, the undersigned would premise, that he considers his duty to be very much limited by the action which the Legislature has already taken on this question; for it would seem that the legal right to cross the Canal has already been granted by several Acts of the Legislature, viz., the 18 Vic., c. 33, sec. 24, and the 16 Vic., c. 37, sec. 20. Power is thereby given to the Company to construct a branch railway from the Victoria Bridge to the River St. Lawrence, at or below the Current St. Mary; and such branch may be made either along the wharves, or by Craig street.

As this right, then, has been already legislatively conferred, the duty of the undersigned is restricted to guarding, as far as possible, the public interests, by imposing proper conditions on its proposed exercise by the Railway Company, and seeing that the plans and position of the structures shall be such as to offer the least injury to the existing works.

It is to be regretted that some place could not have been devised by the Railway Company for entering the city and connecting with the Harbour, which would not have presented so many objectionable features as the one proposed. But the undersigned cannot ignore the fact that this plan is the result of prolonged negotiations between the Railway Company, the Harbor Commissioners, and the City of Montreal, and that the public discussions which have attended it have failed in producing any other project, on which the parties interested are agreed, or which they are prepared to carry out.

The undersigned has, therefore, to deal with the application before him; and he has now only to consider whether the public objections are of such a nature as must lead him to report adversely to it in its present form, or whether such modifications may not be made, and conditions attached, as will guard the public interests to an extent which may permit the accomplishment of the work.

The first objection, "that the work will interfere with the enlargement of the Canal," is one of a grave character, and, if insurmountable, ought to lead to a rejection of the plan proposed. Whatever facilities it might give either to the general trade, to the city, or to the Railway Company, ought not to be purchased at the price of interposing a permanent obstruction to the future improvements of the water communications of the Province at this important point. It may, however, be fairly assumed, that the existing Lock will, for many years to come, meet the requirements of the trade. Its present size is adequate for the passage of vessels of from 700 to 800 tons,—it being 200 feet in length by 45 in breadth, with 16 feet of water over the sill.

An enlargement of all the St. Lawrence Canals to such an extent as to exceed a depth of 16 feet can hardly be contemplated, seeing that the intermediate reaches, and the Harbours on the Lakes must be deepened to a like extent before those improvements take place.

The enlargement of the Lock in question can, therefore, only be called for in order to enable sea-going vessels drawing more than 16 feet of water, and which cannot proceed higher than, nor come from any port west of Montreal, to get from the present Harbour into the lower basins of the Lachine Canal, for they cannot pass into the upper basin until it shall have been deepened to 16 feet.

Sea-going vessels, whether drawing 16 feet or upwards, will rarely proceed to those basins, except when there may be a want of Harbour accommodation below and outside the Lock.

It is believed that crafts from the Lower Ports have entered this basin, with a view of relieving themselves from the Harbour dues, and that after the regulations which are now under consideration shall be enforced, the number of lockages will be diminished. When the trade shall demand an enlargement of the Harbour, if sufficient facilities to that end do not exist below, and it should become necessary to provide them by means of enlarging the Canal Basins above the Lock, the question then arises, whether the proposed works of the Railway Company will either so entirely prevent that enlargement, or offer such serious obstructions as to call on Your Excellency to withhold the permission the Company ask.

Three plans for the construction of an enlarged Lock present themselves.

1st. That referred to by Mr. Shanly, outside of Mill Street.

2nd. The proposal of taking down the present Lock, and rebuilding it in one year without interrupting the navigation.

3rd. To build a new Lock by extending the basin lately constructed by the Harbour Commissioners for the Ocean Steamships, on the North side of the present one.

It is unnecessary that the expediency of the first plan, or the practicability of the second, should engage the attention of Your Excellency, since the third suggestion would seem to be accompanied with no engineering difficulties, nor to entail much additional expense beyond what the construction under the present circumstances would involve.

And, though by rendering that portion of the basin a passage only, which is now used as a place for vessels to lie and discharge at, the accommodation might be somewhat diminished, yet the same necessity which will have demanded, in future, the construction of an enlarged or additional Lock, will have secured extra Harbour accommodation either below or by making new basins above it. It does not, therefore, appear that the proposed work would interfere so seriously with the enlargement of the Lock, whether needed for the increased Harbour accommodation, or as a part of a general enlargement of the whole inland navigation, as need call on Your Excellency to withhold your sancion from them—provided it be coupled with the condition that the Railway Company shall make good and pay any damages or additional expense which may arise in consequence of the Province adopting either the plan now adverted to or any other, instead of making the new entrance on the South side of the existing Lock, as would be done, were the intended works of the Railway Company not gone on with.

On the second objection, viz., "As to diminishing the necessary service ground."

The undersigned has to remark, that, though the service ground is diminished, especially on the North side, yet it would seem that arrangements may be made by the Engineer of the Department in regulating the position of the works, so that they shall not interfere seriously with the requirements of the Canal; and he would recommend that it be exacted as a condition, that the Railway Company shall make and appropriate so much on the South side as may be necessary,—in lieu of what is encroached on on the North side —the number of feet and the arrangement of all details to be settled by the Engineer of the Department.

On the third objection, viz., "The delay and obstruction to vessels passing."

It is considered as an indispensible condition, that the plans and position of the proposed work, and of every detail in connection with it, as well as that the opening and shutting of the Bridge when finished, and all running arrangements in connection therewith, should be subject to the absolute order and direction of the Department of Public Works; and on these conditions it is presumed that the crossing may be so arranged as not materially to interfere with, or occasion serious delay to the trade of the Canal, whatever inconvenience or irregularity may be occasioned to the Railway Company in the running of its trains.

The observations of the Deputy Commissioner and Chief Engineer on this head are entitled to great weight, and should receive serious consideration on the part of the Railway Company; for the undersigned cannot recommend to Your Excellency that the rules of the Canal shall, under any circumstances, become subordinate to those of the Railway, and the consequences resulting from delay and irregularities, should be fully weighed beforehand by the Railway Company. The serious character of the objections urged may, however, be somewhat modified by the consideration that the point of crossing can hardly be considered as on the main line of Inland Navigation; and it is believed that only a small proportion of vessels will require to use the Lock, whose movements, in passing from the one basin to the other, may not be so timed as to produce less inconvenience or delay than would arise from a bridge at a point where they might be under full headway, and at which they might have to bring up when the bridge was closed.

The Lock is at a point between the termination of the Ocean voyage, and the beginning of the Inland voyage, and comparatively few vessels pass this point in direct continuance of their journey.

The conditions which the undersigned would recommend should be imposed upon the Company, are then the following:—

1st. That the permission to construct a track on, and pass over the property of the Province from Point St. Charles to, and thence along Mill Street, or on the land between that street and the River to the point of crossing the Canal, shall not be implied to convey any right whatever to the land, and that the Company shall be at the entire expense of all proper works of construction, connected with the Tail-races now existing or hereafter to be made; and of all other works whatever, and be responsible for all damages of every description.

2nd. That the plan and position of the proposed Bridge, and of all works and machinery connected with it, shall be subject to the approval of the Engineers of this Department, and that the future working thereof shall be subject to the rules and regulations which may, from time to time, be approved by His Excellency in Council for the management of the Canals.

3rd. That so much space for service ground, or for other purposes, as the Engineer of the Department may consider necessary, shall be reserved and provided by the Railway Company.

4th. That, if at any time hereafter, the proposed Bridge shall be found to interfere with the working of the Canal to an extent which may be seriously detrimental to the Public Works of the Province, the Company shall be bound to remove the same.

5th. That, in the event of a new Lock being constructed between the Harbour and the Upper Basins, the Railway Company shall pay and make good all damages and additional expenses which the Province may be put to in consequence of the adoption hereafter of any plan different from that which could now be followed, and which may be rendered necessary by the proposed works of the Railway Company.

6th. That the whole of the foregoing works shall be carried out as one plan, and the requisite grounds and Station be provided forthwith, and the works to proceed to the satisfaction of the Department of Public Works, and the whole completed on or before the first day of April, 1861, and be subject to the approval of this Department.

The whole is respectfully submitted.

(Signed,) JOHN ROSE,
Commissioner Public Works

QUEBEC, March 26, 1860.

No. 46,170. (Copy.)

COPY *of a Report of a Committee of the Executive Council, approved by His Excellency the Governor General*, 28*th March*, 1860.

The Committee have had under consideration the annexed Report, dated 26th March, 1860, from the Hon. the Commissioner of Public Works, on the application of the Grand Trunk Railway Company for leave to cross Lock No. 1 of the Lachine Canal, and the arrangement between that Company and the Montreal Harbor Commissioners in re.erence thereto—and they respectfully submit their concurrence in that Report, and recommend that the permission requested be granted on the terms and conditions therein set forth.

Certified.

(Signed,) WM. H. LEE,
C. E. C

RETURN

To an Address of the Honorable the Legislative Assembly, dated 12th March, 1860; for the Annual Report of the Chief Emigrant Agent at Quebec, for the past year; and also, the Reports of the German and Norwegian Assistants.

By Command,

C. ALLEYN,
Secretary.

SECRETARY'S OFFICE,
Quebec, 15th March, 1860.

CONTENTS.

OFFICE OF HER MAJESTY'S CHIEF AGENT FOR THE
SUPERINTENDENCE OF EMIGRATION TO CANADA,
Quebec, 31st December, 1859.

MAY IT PLEASE YOUR EXCELLENCY,

I have the honor to submit to Your Excellency, for the information of Her Majesty's Government, my Annual Report on the Immigration to the Province during the year 1859, accompanied by the usual Statistical Tables.

Table No. 1 furnishes a return of the season's Emigration, showing the number embarked, the births and deaths on the passage and in Quarantine, with the total number landed, distinguishing males from females, and adults from children, with the number from each country; also, the number of vessels, tonnage, and seamen employed, with the average length of passage. On reference to this Return, it will be seen that the number embarked for this Port during the season was as follows :—

	CABIN.	STEERAGE.
Male Adults	965	3082
Female do.	515	2072
Children under 12 years,	204	1593
Infants,	36	314
	1,720	7,061
Total,		8,781
Births on the Passage,		12
		8,793
Deaths on the Passage,		15
Making the total number landed,		8,778

Of the whole number of vessels engaged in the conveyance of the Emigration of the year, 85 were Sailing Ships, and 35 Steamers. The former class had an average passage of 44 days, and brought 4471 persons. The Steamers, with an average passage from Liverpool of 11 days, from Glasgow of 16 days, carried altogether 4307 persons. Distinguishing the Cabin from Steerage passengers, the following is the comparison :—

	CABIN.	STEERAGE.
35 Steamships,	1,583	2,724
85 Sailing Vessels,	137	4,334
	1,720	7,058

The Emigration has been very healthy. The mortality among the Steerage Emigrants, which has been confined altogether to the Sailing Vessels, was only 15. The deaths among those from the United Kingdom were but 2. Those among the Germans were 8, the Norwegians 5, making 13, and of these 11 were infants. No deaths occurred at the Quarantine Station during the Season—a circumstance which had not occurred since the establishment of the Station in 1832, a period of 27 years.

The sanitary condition of the Emigration of 1859, as compared with that of the arrivals in 1858, will appear on a comparison of the admissions into hospital at Grosse Isle.

In 1858 they were 227; 1859, they were 92, which, in relation to the amount of Emigration of the respective years, shows a proportionate decrease of 40 per cent

The following is a comparative statement of the arrivals from Europe in 1858 and 1859:—

	1858.		1859.	
	Cabin.	Steerage.	Cabin.	Steerage.
England	1,436	5,005	1,493	3,353
Ireland	106	1,047	4	413
Scotland	38	1,386	158	635
Germany	......	922	8	963
Norway	......	2,656	57	1,694
	1,580	11,016	1,720	7,058
Total	......	12,596	......	8,778

Shewing a decrease in the Emigration of 1859 of 3818 on the whole, and on the Steerage passengers of 3958,—equal to 35 per cent.

Distinguishing the origin of the Immigrants of the past season, they will appear as follows:—

English,	2610
Irish,	1248
Scotch,	1787
Germans and Poles,	1100
Norwegians,	1751
Belgians,	5
Canadians,	277
	8778

Table No. 2 presents a Return of the passengers from each country and port during the seasons of 1858 and 1859.

Those from England were brought in 28 Steamers and 37 Sailing Vessels; and of the whole number 4522 came from the port of Liverpool, 170 from Plymouth, and the remaining 154 from 14 other ports. The decrease on the year was 1595 passengers, equal to near 25 per cent.

From Ireland, the Emigration numbered but 417; a large proportion of which consisted in females and children. The whole were brought out in 12 ships. The largest number from any one port was from New Ross, being 194. The decrease, when compared with 1858, is 733 passengers, equal to 64 per cent.

From Scotland, the number was 793, brought out in 7 steamers and 12 ships. Of the total number 612 sailed from the Port of Glasgow. The decrease from this country is 631 souls, equal to 44 per cent.

The foreign emigration numbered 2722—966 from Germany in 7, and 1756 from Norway in 16 ships. The Germans, when compared with the arrivals in 1858, showed an increase of 41 souls; but the Norwegians showed a decrease of 905 souls, equal to 34 per cent.

But 16 vessels sailing from the United Kingdom came under the regulations of the Passenger Act. These brought 1329 passengers. 45 vessels, with 421 passengers, were exempt from its operations. The following table shows a return of the numbers from the United Kingdom:—

	Under the Act.		Exempt.	
	Vessels.	Passengers.	Vessels.	Passengers.
England	5	657	32	331
Ireland	6	382	6	35
Scotland	5	299	7	55
Total	16	1329	45	421

Table No. 3 furnishes a return of the adult (steerage) male emigration, distinguishing their trades, callings, and origin. The number embarked was 3081, who were classed as as follows :—

	Total.	British.	Foreign.
Farmers	1051	550	501
Labourers	866	602	264
Mechanics	388	328	60
Professional Men	13	11	2
Clerks, Agents, and Traders	331	331	0
Servants	40	39	1
Miscellaneous and Unenumerated	392	266	126
Total	3081	2127	954

The incomplete form in which many of the ships' lists are made in regard to the classification of tradesmen and mechanics will account for the appearance of so large a proportion under the head of Miscellaneous.

Table No. 4 presents a return of the number of persons who have been aided in their emigration to this country by private individuals, charitable institutions, or who have emigrated under the sanction of the Poor Law Commissioners. The total number assisted was 142—38 males, 76 females, and 28 children; and the amount paid among them on their arrival here was £108 sterling. The number from England was 46, viz., 25 from the Chatham Union, consisting of 8 men, 9 women, and 8 children; and 21 youths, from fifteen to eighteen years of age, from the London Ragged Schools.

The youths were readily supplied with situations, some in this City, but the chief part in the country settlements, where their services were eagerly sought for, as they are generally stout, active lads, willing and anxious to make themselves useful.

Those from the Chatham Union were not of so desirable a class, consisting of middle-aged men and widows with children. The latter find great difficulty in procuring situations, and the charge they are subject to for the support of their children absorbs three-fourths of the wages they are able to earn.

From Ireland the number was 95, viz.: 8 males, 53 single females, and 14 widows accompanied by 20 children. Of this party there were 13 widows with 18 children, sent out by the Guardians of the Gorey Union. The remainder consisted of single females and lads from the Wexford, Mullingar, and Youghal Unions; all of whom readily found employment.

I had occasion in my Report to Your Excellency, of last year, to point out the hardships and sufferings to which a party of widows with children, similarly situated to them of this year, and sent out by the same Union, were exposed from the difficulty which was experienced in procuring them any suitable employment. In consequence of the reception of a larger party this year from the same Union, I have felt called upon to make further and more direct representations to the Guardians, pointing out the cruelty of transferring this class of helpless poor to a country in which no provision whatever exists for them; and subsequently receiving very discouraging reports concerning them and their prospects from the Agents of this Department, where the party was distributed, I forward similar representations to the Emigration Commissioners of London, with the view of more effectually bringing the matter under the notice of the Poor Law Commissioners.

Table No. 5 presents a comparative statement of the number of emigrants landed at this Port from the year 1829 to the present time, a period of 31 years, numbering in the aggregate 922,593 souls.

There was but one complaint of infringement of the Passenger Act in the course of the past season. This was by the Passengers of the Brig William and Joseph, from Limerick. It did not, however, result in a prosecution, as the complainants refused to remain to prosecute. The case appeared to be one of disagreement between the Master and his Passengers rather than a direct breach of any provisions of the Act. A statement of the complaint was forwarded to the Government Emigration Office at Limerick, in order that it might be brought under the notice of the owners.

The amended Provincial Law relating to Emigrants came into operation on the 1st January last, and will doubtless prove efficient in the protection of Immigrants. The 6th clause, requiring the Agents of Railway and Steamboat Companies to be licensed, has been strictly enforced, and has been found to have a beneficial effect. Certificates were granted to seven applicants, and these persons only have been authorized to approach Emigrants with offer of inland transport.

The total expenditure of the Emigration Department, including a portion of the expenditure of the Quarantine Establishment at Grosse Isle, during the season of 1859, amounted to $27,914.50.

For the Quarantine Establishment,		$9,440 89
Emigration,	$5,656 43	
Salaries and Agency Expenses,	12,817 18	
		$18,473 61
		$27,914 50

The several heads of Expenditure on account of the Quarantine Establishment were as follows:—

Pay of wintering Party in 1858-9,	$ 916 30
" Officers and Staff during season,	7639 22
Hospital Supplies.	224 16
Milk,	36 02
Straw,	48 00
Washing,	30 67
Cartage,	184 00
Drugs, &c.,	58 65
Boards,	33 50
Sundries,	172 00
Printing, Stationery, &c.,	150 61
	$9493 14

Cr.

By cash received from Shipmasters for carriage of their passengers to Quebec,	$52 25
	$9,440 89

This shows a decrease, when compared with the Expenditure of 1858, of $463.09, which has chiefly been effected in the items of Hospital Supplies and Cartage.

This abstract, however, does not include the charge for Steamboat service for the use of the Station, which was defrayed by the Board of Works, and cost for the season $1,677.50. The greatly reduced Immigration has permitted a considerable saving under this head, when compared with the Expenditure of 1858, in which year a steamer was engaged for the exclusive use of the Station at a cost of $5,000. During the present season the contract was made for a certain sum per trip, and but one regular trip per week was engaged. The whole amount saved in the cost of the Quarantine establishment at Grosse Isle, when compared with that of 1858, was $3,785.59.

The Expenditure incurred on account of the Immigration at the several Agencies throughout the Province, for the year ending 31st December, has been as follows:—

Quebec	Transport	2,609 14	
	Provisions	116 21	
	Agency Charges	1,175 00	
	Salaries	1,979 97	
			$5,880 32
Ottawa	Transport	328 14	
	Provisions	31 98	
	Agency Charges	279 07	
	Salaries	1,500 00	
			$2,139 19
Montreal	Transport	472 00	
	Provisions	23 34	
	Agency Charges	345 45	
	Salaries	1043 33	
			$1,884 12
Toronto and Kingston	Transport	660 50	
	Provisions	138 25	
	Agency Charges	738 54	
	Salaries	3,642 00	
			$5,179 29
Hamilton	Transport	990 72	
	Provisions	286 15	
	Agency Charges	313 82	
	Salaries	1,800 00	3,390 69
			$18,473 61

From this Statement it will be seen that the total direct relief extended to destitute Immigrants throughout the Province has been:—

For Transport, - - - - - - - - $5,060 50
Provisions, - - - - - - - - - - 595 93—$5,656 43

The total expenditure, when compared with that of 1858, appears as follows:—

	1858.	1859.
Transport and Provisions, - - -	$11,486 57	$ 5,656 43
Agency Charges, - - - -	13,130 61	12,817 18
	$24,617 18	$18,473 61

The decrease in the expenditure incurred in the direct relief of Immigrants during the past year was $5,830.14, equal to upwards of 50 per cent. The cost of Agencies shows a decrease, when compared with that of last year, of $313.43.

The number of persons assisted at the Quebec Agency was equal to 897 adults, at an average cost for transpor of $2.90 each. There were forwarded to—

Places in Canada East, - -	451
Ottawa District - - - -	108
Places in Canada West - -	130
United States, - - - -	208—897 adults.

Of the above there were:

English, - - - - - - -	154
Irish, - - - - - - -	340
Scotch, - - - - - -	7
Germans, - - - - - -	249
Norwegians, - - - - -	147—897 adults.

At Montreal there were assisted 189 adults, at an average cost of $2.50. They were forwarded to—

Western Canada and Ottawa, - - - - - - -	185
United States, - - - - - - - - - -	3
Eastern Townships, - - - - - - - - - -	1—189.

At Ottawa there were relieved 202 souls, equal to 153 adults, at an average cost of $2.15. They were chiefly forwarded to places on the Upper Ottawa.

At Toronto the number of persons who received assistance was 812, at an average cost of 98 cts. each. They were chiefly forwarded into the interior, and were mostly persons proceeding to join their friends.

At Hamilton the number assisted was 949, at an average cost of $1.35 each. 913 were forwarded to places in Western Canada, 21 to Montreal, and 15 to the Suspension Bridge at Niagara. A large amount of this expenditure is stated by Mr. Dixon to have been incurred on account of the immigrants who reached the Province by the route of the United States, and who are generally in very destitute circumstances, owing to the unreasonable detention they are exposed to from the practices of designing persons on the route.

The emigrant duty realized in the course of the season was as follows:—

At Quebec, 8438 at $1 each, - - - -	$8,438
Montreal, 7 at do. - - - -	7
Total amonnt of tax collected, - - - - - -	$8,445

I here submit a *résumé* from the reports of the Sub-Agents, as the results of the season's immigration to the several Sections of the Province under their more immediate charge, viz.: Mr. McKay, the acting Agent at Toronto, Mr. Dixon at Hamilton, Mr. Clemow at Ottawa, and Mr. Daly at Montreal. The reports in full have been transmitted to the Secretary of the Bureau of Agriculture.

Mr. McKay, the acting Agent at Toronto, reports that 4131 Emigrants arrived at the Agency, during the Season, *viâ* Quebec, Rochester and Oswego; 2276 of whom proceeded to the Western States, and 1855 remained in Canada. The condition of the immigrants generally was very good, and a great many of them had means to enable them to settle down comfortably and become valuable settlers, while others proceeded to join their friends. A number of families were in destitute circumstances, chiefly those who came out to friends, but more particularly those who reached the country by the route of the United States. The demand for labour has continued limited throughout the season, but the prospects and condition of the farmers were improving, and all who came out have found employment, although at reduced wages.

Mr. Dixon, the Agent at Hamilton, reports the arrivals during the year as 14,236; 1696 of whom came *viâ* Quebec, and 12,540 *viâ* the United States and Suspension Bridge; 10,095 proceeded to the Western States, and 3141 settled in Canada. 949 persons were assisted to enable them to reach their friends in different sections of the country; more than half of whom reached the Province *viâ* the United States, and were generally very destitute, owing to the detention and imposition they were exposed to on the route. With reference to employment Mr. Dixon states that it is still very scarce, but he anticipates that matters will improve before Spring, and that Agriculturists will find remunerative employment; but, for mechanics, and more especially persons seeking situations in mercantile life, he fears they will be doomed to disappointment and want.

Mr. Clemow, the Agent at Ottawa, reports that 489 immigrants reached his Agency, against 1829 during the season of 1858. They arrived *viâ* Quebec, and a few by the route of the United States. They were remarkably healthy, and in appearance respectable; but generally of the laboring class, a number of whom came out to join their friends. 202 persons received assistance to proceed to their destination, chiefly on the Upper Ottawa. Of the immigrants arrived 212 were foreigners, Germans and Poles. A number of Germans also had removed from Berlin, Canada West, and settled on the Government Lands, in the Townships of Alice and Wilberforce. They are doing well and appear satisfied with their prospects, and will, from their industrious habits, prove a valuable addition to the population of that district. The demand for labour, owing to the limited immigration, has been steady, and every man able and willing to work was at once engaged. Some disappointment was felt by the farmers at not being able to secure the number of laborers they required, more particulary during the harvest. But 23 mechanics reached the Agency during the season, who obtained employment with little difficulty. The district has been supplied with all the mechanical labor it requires by the influx of old residents from other parts of the country, and the prospects at present are not encouraging, unless to those who might possess sufficient means to establish themselves in the small towns and villages, which generally offer a good opening, and where they are more likely to succeed than by depending on the uncertain employment in large cities. To persons desirous of settling upon land, the Ottawa Country offers every encouragement. The large extent of Crown Lands, as also those held by private individuals, the greater portion of which are suited for agricultural purposes, presents favourable opportunities for settlement; lands partially improved, or unimproved, being easily obtainable at prices and upon terms according to situation.

Mr. Daly, the Agent at Montreal, reports that 274 indigent persons, equal to 189½ adults, were assisted at his Agency; 185 of whom were forwarded to Western Canada and Ottawa; 3½ to the United States, and 1 to the Eastern Townships.

He affords particular information as to the systematic imposition practised on Immigrants who come to Canada by the route of New York, stating that some 20 families, to his knowledge, had been ticketed to that port, and thence sent to their destination in Canada, by very circuitous routes, *via* Suspension Bridge, Rochester, Oswego and Cape Vincent. One family in particular, whose destination was Rawdon, near Montreal, were ticketed at Liverpool, for New York, being told that the port of Quebec was closed until the end of June; from New York they were sent round by Suspension Bridge (which they were told was within a few miles of their destination), their inland transport costing more than the voyage by sea. Mr. Daly further reports the great healthiness of the Immigrants he saw at his Agency, their respectable appearance, and the purpose of many, with means, to purchase lands in the Western section, while others intended to apply for free grants on the Government lands. Those seeking employment obtained it with difficulty in some cases. Agricultural laborers and female servants were hired at fair wages, but the prospect, generally, for mechanics, was far from encouraging.

The foreign emigrants who have arrived at this port, during the past year, number as before stated, 2856 souls—1756 Norwegians and 1100 Germans. The former came to this country in Norwegian vessels direct; of the latter 901 sailed from Hamburg, 63 from Bremen, and 136 from Liverpool.

The Norwegians show a decrease of 900 when compared with the immigration of 1858. They were generally in good health. They proceeded to the Western States, with the exception of 15 families, 49 persons, who have settled with their countrymen in the Eastern Townships, purchasing their lands from the British American Land Company, in the Township of Bury, where they appeared so well pleased with their situation, that two of them have proposed returning to their native land this winter, in order to make known the advantage Canada offers, and to induce others of their countrymen to join them.

From the report received from Mr. Christoper Closter, Norwegian Interpreter, it appears that the falling-off in the number this season was owing to the difficulty which the intending Emigrants found in realizing money for their property. From the information he has received, he anticipates that we may look for an increase of their number in 1860.

There evidently exists among the Norwegians who emigrate great prejudices against this country, which he considers have been fostered and encouraged by interested parties and Agents connected with the Western States. The Government and people of these States very justly attach a high value to the immigration received from Norway, which, without reference to the large amount of money-capital it introduces in the aggregate, is distinguished by its orderly and industrious character. It may therefore be anticipated that, from the success which has attended the establishment of the Norwegians in the Eastern Section of the Province, more extensive beneficial results will follow by an annual increase of their number, and a more general occupation of our waste lands. In the development of the inexhaustible wealth which this country possesses in her fisheries along the sea-coast and the Bay of Chaleur, the hardy fishermen of Norway might find a large encouragement; and fishing establishments, in connection with settlement, would greatly conduce to the general prosperity of the country.

From the report of the German Interpreter, Mr. Sinn, there appears a small decrease in the immigration from Germany when compared with 1858. A considerable portion of the Immigration was of the poorer class, and some families presented the appearance of great destitution.

The number settled within the Province may be stated at from 300 to 400, a great number of whom went to the Ottawa country. This district has also received a considerable accession from the removal of old residents from the neighbourhood of Berlin, Canada West, who have purchased Government lands in the Township of Alice. These settlements have made very satisfactory progress, and now afford indications of a rapid and beneficial enlargement, the success of which may, in a great measure, be attributed to the exertions of Mr. Sinn, who first directed his countrymen to that district.

Among the immigration from Germany, for several years past, we have annually received a large number of very destitute families, which, it would appear, are sent by this route by the Shipping Agents in Europe, to avoid the difficulty and discouragement which they experience in forwarding them by the United States. During the past season, there arrived by the ship "Main," from Hamburg, a number of families of this class. [See Monthly Report, at page 19 of the Appendix.] They were Prussians from Pomerania, consisting of 19 families, 93 souls—23 men, 21 women, and 49 children. From the information obtained from these people, it would appear that they left home with the intention of proceeding to Brazil; but finding, on their arrival at Hamburg, that their means were insufficient to convey them to that country, they were induced to take passage to Quebec. As no suitable employment offered for them within the Province, owing to the proportion of females and children being so greatly in excess, it appeared advisable, in order to provide for their immediate necessities, and to protect the Province from the burthen of their support, to forward the entire party to the German settlements in the Western States.

In my Annual Report to Your Excellency in 1854, I felt called upon to offer some remarks with reference to the export of foreign paupers to this country, which appeared to call for some legislative enactment. This class of our emigration annually entails a direct charge on the Emigrant Fund, to cover which no special provision has yet been made by law. In the State of Massachusetts, the Emigration Commissioners are empowered to exact from the owners of the vessels conveying any passengers deemed on enquiry to be destitute, or likely to become so, special provisions against the case. The strict enforcement of these regulations deters the promoters of the emigration of this class of people from resorting to the United States ports, and leads them to ship for Quebec all such passengers as may involve them in extra expense on arrival. It may be deemed expedient, in the event of further legislation, to adopt some course which will protect the Province from the indiscriminate introduction of foreign poor. I have reason to believe that the circumstances under which they are sent out correspond with many of those of emigrants from the United Kingdom, who have been aided to emigrate through the means furnished by their parishes, &c. They had been supplied with aid, not because they were fitted to succeed as settlers in America, but because they were burthensome at home; and it was evident on their arrival here, that the same disability which had rendered them valueless to the community in their own country would affect them here in an increased degree.

The following is an approximative statement of the distribution of the steerage immigration arrived in the past year:—

Arrived at Quebec, - - - - - - - -	7,061	
Viâ Portland to 31st December, - - - - -	139	
" Toronto, from United States, - - - - - -	500	
" Hamilton, by route of the Suspension Bridge, - -	12,540	
Carried forward, - - - -		$20,240

Brought forward, - - - - - -		$20,240

DISTRIBUTION.

Proceeded to Western States from Hamilton, as per Mr. Dixon's report,	11,095	
" to ditto from Toronto, as per Mr. M'Kay, - - - -	2,276	
" from Quebec to Boston and New York, as per Railway Returns,	333	
Estimated number returned to Europe by Ocean Line Steamers, - -	236	
		13,940
		6,300
Remaining in Western Canada, - - - - - - - - -	5,000	
" Ottawa District, - - - - - - - -	500	
" Eastern Canada, - - - - - - - - -	800	

The gradual decrease in the number of emigrants received annually direct from Ireland is very remarkable, when compared with the numbers received from other countries. The falling-off was first observable in 1855, when the direct emigration fell from 16,151 in 1854 to 4,106 in the following year.

On referring to the direct emigration from that country which reached this port during the 5 years from 1855 to 1859, and comparing it with the previous 5 years, I find that the number was, during the later period, but 9,380, or an average of 1,876 passengers per annum; while during the 5 years ending with 1854, the number was 86,918, being an average of 17,385 per annum, nearly double the whole number received during the subsequent period.

Although a comparison during the same periods, of the emigration from England and Scotland, presents a considerable falling-off, yet the reduction is by no means so large as in that from Ireland.

The annexed table exhibits the numbers from the respective countries during these periods :—

	1850 to 1854.	1855 to 1859.
England, - - - - - -	56,600	40,865
Scotland, - - - - - -	26,589	13,093
Ireland, - - - - - -	86,918	17,388

The severe destitution constantly prevailing in Ireland in former years stimulated emigration to an extent perhaps never before paralelled in any country. The Emigration Commissioners, in their Nineteenth General Report, while referring to this circumstance, rightly remark: "It is impossible to doubt that a result, continued with such regularity "through a succession of years, implies an equally constant cause. That cause is to be "found in the increased prosperity of the working classes in Ireland and the consequent "absence of any inducement to emigrate." This improved condition of the labouring classes extends, although in a less degree, to the other portions of the United Kingdom, and, with the increasing demand and large bounty offered for men for the Queen's service, correspondingly affects the labour market at home. The unfavourable reports which were received from this country, as well as from the United States, may be deemed a further explanation of the decrease in our emigration.

It is not to be desired that emigration from the United Kingdom should be again stimulated by the same causes that were in operation some years since. We may, however, hope that the improved condition of this country, in its abundant harvest of last year, will authorize our agriculturists to extend their operations very largely, and, by thus furnishing an increased field for labour, afford that encouragement to emigration which steady employment at the rate of wages, which a prosperous new country can afford, is certain to produce.

The great mass of our emigration, for several years past, consists of persons emigrating at the invitation of their friends, or of members of families coming out to join those who have preceded them, and, in many cases, have been enabled, by their industry, to acquire the means of paying the passage of remaining relatives. In fact, it is a rare thing to find a party on arrival seeking a settlement: they all have a destination in view, where there are friends before them whom they are anxious to join. There is just reason, however, to hope that, owing to the improved circumstances of the great bulk of the population in the mother country, and the encouragement to settlement now afforded by the Government, we may look for an accession of a different class from that which has hitherto characterized our immigration. I refer principally to the agricultural laborer, or small farmer, who may possess sufficient capital to enable him at once to enter upon the occupation of land, with the view of acquiring a home for his family. It may, therefore, be desirable to consider what other measures can be adopted to encourage the introduction of so desirable a class.

The want of a responsible duly-qualified Agent for the Province in the United Kingdom has long been felt. While the United States have numerous Agents both in the United Kingdom and on the Continent, whose duty it is to encourage and invite emigration to their own ports, Canada remains unrepresented; and an emigrant desirous of acquiring information is left to the mercy of ship agents, or other parties, whose sole interest in the matter is to secure his passage across the Atlantic, without reference to his most advisable route, or to the question of his possessing any of the qualifications necessary to ensure his success. To this cause may be attributed much of the disappointment which annually occurs among our immigrant population, and the injurious influence which such of them as return to their native land exercise by circulating reports unfavourable to the country, and attributing their disappointment to anything but the true cause, which may probably have been more within themselves than in any deficiency on the part of the country to receive and provide for them. I should look forward therefore with a considerable degree of satisfaction to the establishment of a Government Agent at Liverpool, whose duty it should be to afford the fullest information to all persons seeking a home in this Province.

The effect of the establishment of such an office would be to draw public attention, and encourage enquiry among the classes which it is the interest of this country to procure. A record of the Government lands, with terms and conditions of occupation, &c., as also the particulars of private properties for sale, with all such other information as might be of service to the emigrant, which I would have embodied and printed in a monthly sheet for general circulation and for distribution on board all passenger vessels sailing from the United Kingdom, could not fail to prove of great service, and to exercise a most useful and beneficial influence upon the future of this country, by leading the emigrants, who now in such large numbers flock to the Western States, to enquire if Canada does not offer them superior advantages.

The Canadian Ocean Mail Line of Steamships commenced their weekly trips from Liverpool during the past season; and it is gratifying to find that they continue to maintain their high character for speed, safety, and comfort, fully establishing the fact of their equal efficiency with any other line of Atlantic Steamers, which cannot fail to prove of exceeding value to the Province, by bringing her into constant and immediate communication with the continent of Europe, as well as with the mother country, and be the means of attracting a large share of the pleasure as well as business travel to this route.

The six Steamships composing this line made 28 passages, and brought out 3,859 passengers; and returning carried back 3,159—1,254 Cabin, and 1,905 Steerage passengers. Their average passage out was 11 days and 15 hours, and homewards 10 days and 10 hours. In addition to these vessels we have the Anchor Line of Screw Steamships from Glasgow, making regular monthly voyages. The vessels composing this line, two in number, made 7 passages during the season, and brought out 448 passengers, 123 Cabin and 325 Steerage; and on their return trips carried home 102 Cabin and 352 Steerage. Their average passage out was 16½ days, and home 14 days.

It thus appears that these two lines brought out very nearly one-half of the whole immigration of the season, and, if we take only those from the United Kingdom, they carried within 1,740 souls of the entire immigration to this port. On their return passages they carried home 3,613 persons, 2,257 of whom were classed as steerage passengers, including about 250 soldiers.

To the intending emigrant these steamers offer every inducement, whether their destination may be within the Province or to any part of the United States, as by the increased facilities which the Grand Trunk Railway are now enabled to offer, since the opening of the Victoria Bridge, they may, by availing themselves of the express trains, despatched on the arrival of every steamer, proceed through to any part of the west, without changing cars. These facilities, in additon to the regular daily line of first-class Steamers, so long and favorably known on the St. Lawrence, from this port to all the chief places on the River and Lakes, with the full assurance that emigrants may depend on meeting with every protection and advice from the Government Agents, should secure to this route a large share of European travel.

The many instances of imposition which have come to my knowledge, of emigrants who probably have been induced from apparent economy to take their passage to the United States, in preference to Quebec, as referred to by the Agents at Hamilton and Toronto, but more particularly by Mr. Daly at Montreal, at page 8, fully prove that not only a considerable saving in money would be effected, but that a vast amount of trouble, inconvenience and suffering would be avoided by using the Canadian route throughout.

Taking into consideration all the circumstances of the immigration of the past season, I may be permitted to remark that although the numbers have been small, when compared with those of previous years, yet, in most other respects, it has been of a very satisfactory character, and that all of those who have remained in the country are likely to become permanent settlers, and to prove a valuable addition to our population.

At the close of 1858, fears were entertained that, owing to the limited demand for labour that existed throughout the country, and more especially Western Canada, much difficulty might be experienced in providing satisfactorily for any considerable number of emigrants depending upon employment that might arrive in 1859.

As this limited demand has continued to exist in a greater or less degree throughout the season, it may on the whole be considered fortunate, that this class of our immigration have not been more numerous.

Fully four-fifths of those arrived during the past year were persons either in a position to take up land, or were coming out to join friends already established in the country, consequently they were at once placed in a position of being provided for. Those seeking employment have generally obtained it in the country settlements, although at a reduced rate of wages. Provisions, however, have been moderate in price, and it may reasonably be hoped that the working classes generally have occupied as good a position as they did before the reduction in the wages took place.

In the Appendix will be found a Table (No. 6) compiled from the Emigration Returns of the Port of New York, comprising the period between the years 1848 and 1854.

The immigration of 1849 has amounted to 74,598, being a decrease on that of 1858 of 3,991 souls. The Irish has been larger by 20 per cent., while the German shows a decrease nearly in the same proportion. The English and Scotch show a decrease of about 25 per cent. The whole number from the United Kingdom shows an increase of 2,228, while the foreigners present a decrease of 6,228 souls.

The increase is confined to the Irish, and is remarkable only when viewed in relation to the Irish emigration to Canada for the same year, which, in place of an increase of 25 per cent. on the year before, has decreased more than 33 per cent.

A regulation of the Crown Lands' Department, some time since adopted, is directed to save the public lands from monopoly by speculators, and to keep them open for actual settlers only. By communicating directly with the Crown Lands' Department of the Province, lands may be acquired in entire Townships of 40,000 to 70,000 acres, at two shillings sterling per acre, provided only actual settlement be engaged within a stipulated period.

This regulation is more especially adapted to the views and requirements of communities of intending emigrants, and of landed proprietors in the United Kingdom who may desire to settle any of their tenantry under circumstances calculated to improve their social position, and to such it is well deserving of consideration.

I cannot close this Report to your Excellency without adverting to the large facilities now offered in this country for the acquisition, by settlers, of lands, wild or improved. Private proprietors and companies make public lists of their respective lands, with terms of sale, and the Government takes every care to publish, from time to time, Schedules of the Public Lands open for purchase in every district of the Province.

Submitting this Report to Your Excellency's favorable consideration,

I have the honor to be Your Excellency's

Most obedient humble servant,

(Signed,) A. C. BUCHANAN,
Chief Agent.

No. 1.—CANADA.

RETURN of the number of Emigrants embarked, with the number of Births and Deaths during the voyage, and in Quarantine, the total number landed at Quebec, distinguishing Males from Females, and Adults from Children, with the number of souls from each Country; also, the number of Vessels, Tonnage, and Seamen employed, and the average length of Passage, during the season of 1859.

WHENCE.	Number of Vessels.	Average days on Passage.	Tonnage	Number of Seamen.	Number Embarked. Cabin Passengers.	Adults. M.	Adults. F.	Children 1 to 14 years. M.	Children 1 to 14 years. F.	Infants.	Total Steerage.	Births. M.	Births. F.	Total souls on Board.	Deaths on the Passage. Adults. M.	Adults. F.	Children 1 to 14 years. M.	Children 1 to 14 years. F.	Infants.	Total.
England { Steamships	28	11½	36944	2355	1460	1402	589	177	160	71	2399	...	...	3859	...	...	...	...	...	...
England { Sailing Vessels	37	42½	27285	823	33	337	305	137	129	47	955	...	...	988	...	1	...	...	...	1
Ireland	12	39	5118	182	4	127	182	51	34	19	413	...	...	417	...	...	...	...	...	...
Scotland { Steamships	7	16½	7212	377	123	138	118	36	27	7	326	...	...	449	1	...	...	...	...	1
Scotland { Sailing Vessels	12	42½	7019	530	35	124	99	42	38	7	310	...	...	345	...	...	...	...	...	...
Germany	7	50	2731	114	8	324	273	175	124	66	962	2	...	972	...	1	...	...	7	8
Norway	16	47	6762	237	57	628	506	232	231	97	1694	6	4	1761	...	...	...	1	4	5
Belgium	1	46	350	13	...	2	...	...	...	...	2	...	...	2	...	...	...	...	...	...
New Brunswick, Nova Scotia, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	120	...	93421	4631	1720	3082	2072	850	743	314	7061	8	4	8793	1	2	...	1	11	15

WHENCE.	Deaths in Quarantine. Adults. M.	Adults. F.	Children 1 to 14 years. M.	Children 1 to 14 years. F.	Infants.	Total.	Total Deaths.	Total Landed in the Colony. Adults. M.	Adults. F.	Children 1 to 14 years. M.	Children 1 to 14 years. F.	Total. M.	Total. F.	Infants.	Total Steerage.	Cabin Passengers.	Grand Total landed in the Colony.
England { Steamships	...	...	...	...	...	...	...	1402	589	177	160	1579	749	71	2399	1460	3859
England { Sailing Vessels	...	...	...	...	...	...	1	337	304	137	129	474	433	47	954	33	987
Ireland	...	...	...	...	...	...	...	127	182	51	34	178	216	19	413	4	417
Scotland { Steamships	...	...	...	...	...	...	1	137	188	36	27	173	145	7	325	123	448
Scotland { Sailing Vessels	...	...	...	...	...	...	...	124	99	42	38	166	137	7	310	35	345
Germany	...	...	...	...	...	...	8	328	272	175	124	499	396	61	956	8	964
Norway	...	...	...	...	...	...	5	628	506	232	230	860	730	103	1699	57	1756
Belgium	...	...	...	...	...	...	...	2	...	...	...	2	...	...	2	...	2
New Brunswick, Nova Scotia, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	15	3081	2070	850	142	3931	2812	315	7058	1720	8778

EMIGRATION DEPARTMENT, Quebec, 31st December, 1859.

(Signed) A. C. BUCHANAN, Chief Agent.

No. 2.

Abstract Statement of the number of Emigrants landed in the Province, distinguishing the Countries and Ports whence they sailed, during the seasons of 1858 and 1859.

——	1858.	1859.	——	1858.	1859.
ENGLAND.			SCOTLAND.		
Bristol	173	7	Aberdeen	245	117
Cardiff	12	1	Dumfries	7	......
Exeter	9	......	Glasgow	976	612
Fowey	22	......	Greenock	......	2
Hull	142	56	Montrose	196	62
Liverpool	5233	4,522			
London	214	35	Total	1424	793
Maryport	4	5			
Newcastle	5	......			
Newport	14	7			
Penzance	......	6	FOREIGN EMIGRATION.		
Plymouth	540	170			
Poole	......	14	GERMANY.		
Portsmouth	6	6			
Shields	......	1	Bremen	170	63
Southampton	......	2	Hamburg	755	901
Torquay	16	5			
Truro	51	6	Total	925	964
Tynemouth	......	3			
Total	6441	4846			
			NORWAY AND SWEDEN.		
IRELAND.			Bergen	772	356
Belfast	148	13	Christiana	358	448
Cork	42	3	Drammen	431	168
Dublin	57	......	Drontheim	198	110
Dungarvan	8	......	Gothenburg	267	41
Galway	280	......	Grimstadt	17	.....
Limerick	107	110	Krageröe	......	58
Londonderry	142	63	Postgründ	223	404
New Ross	312	194	Stavanger	390	171
Sligo	3	......			
Tralee	......	8	Total	2656	1756
Waterford	44	......			
Wexford	......	22			
Youghal	7	4	BELGIUM.		
Total	1150	417	Antwerp	......	2

Recapitulation.

England	6441	4846
Ireland	1150	417
Scotland	1424	793
Germany	925	964
Norway and Sweden	2656	1756
Belgium	......	2
Total	12,596	8778

Emigration Department,
Quebec, 31st December, 1859.

(Signed,) A. C. BUCHANAN,
Chief Agent.

No. 3.

RETURN of the Trades and Callings of the Immigration of 1859.

——	British.	Foreign.	——	British.	Foreign.
Bakers	11	3	Brought forward	1668	785
Bookbinders and Printers	12	......	Painters and Glaziers	9	......
Bricklayers and Masons	14	3	Professional Men	11	2
Brickmakers	1	1	Saddlers and Harnessmakers	......	2
Butchers	8	......	Sailmakers	1	......
Cabinetmakers	2	......	Sawyers	5	......
Carpenters and Joiners	104	9	Servants	39	1
Clerks, Agents, and Traders	331	......	Shoemakers	18	9
Coopers	3	2	Smiths	37	12
Engineers	11	......	Stonecutters	1	2
Engravers	1	......	Tailors	55	6
Farmers and Agriculturists, generally	550	501	Tinsmiths, &c	4	2
Hatters	1	......	Watch and Clock Makers	2	......
Laborers	602	264	Wool and Flax Dressers	4	......
Millers and Millwrights	4	2	Wheelwrights	3	4
Miners	10	......	Weavers	4	3
Moulders and Foundrymen	3	......	Miscellaneous and Unenumerated	266	126
Carried Forward	1668	785	Grand Total	2127	954

(Signed,) A. C. BUCHANAN,
Chief Agent.

EMIGRATION DEPARTMENT,
Quebec, 31st December, 1859.

No. 4.

RETURN of the Number of Persons who received assistance to emigrate from the United Kingdom, with the Amount paid them, during the Season of 1859.

Date.	Vessel.	Whence.	Number of Paupers.	Class. M.	Class. F.	Class. Ch.	Amount Paid. L.	Amount Paid. S.	Amount Paid. D.	By Whom Sent Out.—Remarks.
May 2	North Briton	Liverpool	3	...	1	2	...	...	...	A soldier's Widow—provided with passage.
" 20	Dunbrody	New Ross	35	...	17	18	35	...	...	Gorey Union—received 20s. each on landing.
" 27	Menapia	Wexford	13	...	13	...	...	...	...	Wexford Union—a free passage and outfit.
" 27	John Bull	London	6	6	...	...	6	...	...	Grotto Passage Ragged School, Marylebone.
June 11	North Briton	Liverpool	8	8	...	...	...	...	...	Mullingar Union—provided with passage only.
" 14	Culloden	"	45	...	36	...	36	...	...	Youghal Union—received 20s. each on landing,
" "	"	"	...	9	...	...	7	...	...	Ragged School in London.
" "	Ocean Bride	"	18	7	7	4	16	...	...	Chatham Union—adults, 20s.; children, 10s.
July 11	Czar	"	6	6	...	...	3	...	...	London Reformatory—10s. each.
Sept. 20	Agnes	London	7	1	2	4	5	...	...	Ware Union, £5, paid by Master of the Ship.
Nov. 7	North Briton	Liverpool	1	1	...	...	...	...	...	Reformatory in London—provided with free passage.
		Total	142	38	76	28	£108	...	...	
	From	England	47	30	9	8	37	...	...	
	"	Ireland	95	8	67	20	71	...	...	
		Total	142	38	76	28	£108	...	...	

(Signed,) A. C. BUCHANAN,
Chief Agent.

EMIGRATION DEPARTMENT,
Quebec, December 31st, 1859.

No. 5.

Comparative Statement of the Number of Emigrants arrived at the Port of Quebec since the year 1829, inclusive.

	1829 to 1833.	1834 to 1838.	1839 to 1843.	1844 to 1848.	1849 to 1853.	1854.	1855.	1856.	1857.	1858.	1859.
England	43,386	28,561	30,791	60,453	47,405	18,175	6,754	10,353	15,471	6,441	4,846
Ireland	10,2666	54,904	74,981	112,192	93,883	16,165	4,106	1,688	2,016	1,153	417
Scotland	20,143	11,061	16,311	12,767	25,127	6,446	4,859	2,794	3,218	1,424	793
Continent of Europe	15	485	....	9,728	16,867	11,537	4,864	7,343	11,368	3,578	2,722
Lower Provinces	1,889	1,346	1,777	1,219	4,455	857	691	261	24	214	....
	167,699	96,357	123,860	196,359	187,737	53,183	21,274	22,439	32,097	12,810	8,787
Grand Total											922,593

Emigration Department,
Quebec, 31st Dec., 1859.

(Signed,) A. C. BUCHANAN,
Chief Agent.

No. 6.

Return of the Number and Nativity of the Alien Passengers arrived at the Port of New York from the year 1848 to 1859, inclusive.

Country.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	To 1st Nov. 1859.
England	23,062	28,321	28,163	28,553	31,515	27,126	30,578	22,938	23,787	28,622	12,324	10,270
Ireland	98,061	112,591	117,038	163,256	118,131	113,164	82,302	43,043	44,216	57,119	25,075	29,999
Scotland	6,415	8,840	6,772	7,302	7,694	6,456	4,909	4,240	7,231	5,170	2,718	2,175
Wales	1,054	1,782	1,520	2,189	2,531	1,182	1,288	1,118	1,376	887	566	467
Total from United Kingdom	128,592	151,534	153,493	201,300	159,907	147,928	119,077	71,339	74,162	91,798	40,683	42,911
Germany	51,973	55,705	45,535	69,883	118,611	119,644	176,986	52,892	56,113	89,974	31,874	26,696
France	2,734	2,683	3,462	6,014	8,868	7,470	7,986	4,174	2,984	3,069	1,786	1,439
Switzerland	1,622	1,405	2,380	4,499	6,471	4,604	8,833	3,273	2,559	2,454	1,315	824
Norway	1,207	3,300	3,150	2,112	1,889	377	81	203	438	62	3	36
Sweden	165	1,007	1,110	872	2,008	1,630	1,859	304	918	619	237	305
Holland	1,560	2,447	1,174	1,798	1,223	1,085	1,466	822	1,666	1,734	348	255
Other Countries	1,322	2,522	2,492	3,073	2,015	2,207	2,885	3,226	3,502	3,063	2,343	2,108
Total	189,175	220,603	212,796	289,601	300,992	284,945	319,223	136,223	142,342	183,773	78,589	74,598

Emigration Department,
Quebec, December, 1859.

(Signed,) A. C. BUCHANAN,
Chief Agent.

No. 7. Extracts from the Notes appended to the Periodical Reports of Arrivals of Passenger Ships at the Ports of Quebec and Montreal in the season of 1859.

No. 1. From the 28th April to 31st May.

NOTE.—2,065 emigrants have arrived at this Port from the opening of the Navigation to the 31st of May. There arrived by Ocean Steamers, including the United Kingdom from Glasgow, 229 Cabin and 436 Steerage, which, compared with the remainder of the emigration, exhibits a satisfactory appreciation of the weekly line of Steamers, commenced this year between Europe and Canada.

The total decrease, as compared with the emigration of the last season, amounts to the number of 353. This decrease is less to be regretted, as at present there is a very general dearth of employment throughout the Province; nor has there been, fortunately, any extensive enquiry for employment on the part of the emigrants hitherto arrived, the majority having come out to join their friends, and a large number had secured through tickets previous to their embarkation, and they proceeded at once to their destination.

On board the "Dunbrody," from New Ross, there were 35 paupers sent out by the Gorey Union,—consisting of 13 widows, accompanied by 18 children, only 4 of whom were of an age to enable them to contribute anything towards their support, and 4 single girls. They were paid £1 sterling each on landing here. The single girls at once found employment; but under the present circumstances of the province, and the limited demand which exists for labour, these poor widows cannot but be exposed to severe distress. It was found necessary last year to point out the hardships and sufferings which a party similarly situated, sent out by the same Union, were exposed to, from the difficulty which was experienced in procuring them any suitable employment, as but few persons can be found who are disposed to engage the service of women encumbered with children; and a further representation has been made to the guardians, pointing out the injustice, not only to the people themselves, but to this country, of this mode of disposing of their useless poor.

Six lads, from 16 to 19 years of age, were sent out from the Grotto Passage Ragged School, Marylebone. They received £1 each on landing here. Two were engaged in this city at £1 per month wages, and the other four have been employed in the neighbourhood of Montreal.

The foreign emigration consisted of 554 Norwegians and 181 Germans. They have proceeded chiefly to the Western States, and 11 Norwegians to their friends in the Eastern Townships.

Among the Germans per the ship "Main," from Hamburg, there were 19 families, consisting of 23 men, 21 women, and 49 children, from Pomerania. These people had left their homes with the intention of proceeding to Brazil. On their arrival at Hamburg, they found that their money was insufficient to pay their passage to that country, and they, consequently, took passage to this Port, where they arrived on the 27th May. On enquiry it was ascertained that but 4 families had any money left, amounting to $61, the remainder were without the means of procuring even a day's food. As the proportion of families and children were so greatly in excess of the male adults, and as there was no demand for their labour in the Province, it appeared advisable to supply them with sufficient provisions for their journey, and forward the entire party to the German settlements in the Western States, as the cheapest and most efficient way of disposing of them. This has necessarily entailed a heavy charge on the very limited resources arising from the Emigrant Tax.

By the Ship "Menapia," there were 10 females and 3 children sent out by the Wexford Union. The master of the Ship stated that they received a fixed sum each on leaving the Union, to fit themselves out and provide their passage. They proceeded to Montreal by Steamer the day of their arrival.

I herewith annex Report of Mr. Sinn, the German Interpreter of this Office, with reference to the passengers per "Main."

30th May, 1859.

SIR:—I have the honor to report the arrival of the Hamburg Ship "Main," Capt. Haack, from Hamburg, on the 27th inst., having on board 179 souls.

My enquiries on board this vessel elicited the fact that, some days previous to her sailing, about 200 persons left their homes in Pomerania, Prussia, for Hamburg, in hopes of taking passage thence for the Brazils, having been encited to that course by favourable representations; but finding themselves on arrival at that port in no condition to proceed thither, it appears they were then persuaded, at least such of them as had funds remaining sufficient to pay for the passage, to embark for this port, and the result is, that of these passengers, four families, consisting of 22 persons, possess about $61; and 15 families, 89 persons, have not among the whole wherewith to buy a loaf of bread.

Although the heads of these families are very robust and able-bodied people, they will hardly be able to earn enough to procure their families the necessary comforts at the present low state of labor throughout this Province; and I fear they will be exposed to suffer greatly, and more on account of their ignorance of the language.

During the last seven years I have observed that certain Ship and Passenger Agents of Bremen and Hamburg have taken advantage of the facilities offered to introduce into this Province large numbers of poor and destitute families, without an equivalent number of the wealthy and more able classes, whom they direct to New York, &c.; and although the German population of Canada is more than 40,000, still there is no chance at present to introduce these parties per "Main" amongst them, with a certainty of obtaining employment, and, therefore, although at greater expenses to this Province, I would beg to suggest to forward them into the wealthy German settlements on Lake Michigan, where this number will be absorbed, and cause no hardships to them nor to the communities who receive them.

All of which is most respectfully submitted.

I have the honor to be, Sir,

Your most obedient servant,

(Signed,) W. SINN.

The expenditure incurred by this office on account of the above party was as follows:—

Transport of 91 souls, equal to 63½ adults, to Lake Michigan - - - -	$401 52½
Provisions - - - - - - - - - - - - - - - - -	26 25
Total - - - - - - -	$427 77½

No. 2. From the 31st of May to the 30th of June.

Note.—2,480 emigrants have arrived at this Port during the month of June.

They were all healthy and generally respectable. They proceeded to join their friends in Upper Canada and the Western States. This characteristic of the present season's emigration leaves no difficulty, considering the circumstances of the country, in finding employment for those who have emigrated hither for that object.

No. 3. From the 30th of June to the 31st of July.

Note.—The total number of Passengers arrived during the period of this Return is 1,310, making a decrease, as compared with the last season, of 3,171. Most of the passengers have come out to join their friends in various parts of Canada and the States.

Several families of the Brodrene, after a special inspection by two of their number of the Norwegian Settlement in the Eastern Townships, have chosen localities in that district, purchasing therefor a block of more than 1,000 acres of the British American Land Company. These parties, as they possess considerable means, will prove a valuable addition to that section of the Province; and, as they are from a part of Norway from which but few emigrants have as yet been received, it may be anticipated that, on the report of these settlers reaching home, others will be induced to follow.

But few of the Emigrants of the past month have been seeking employment. The last reports from the Ottawa district state that agricultural laborers and domestic servants are much required, and that all who may proceed to that quarter will readily find employment.

No. 5. From the 31st of August to the 30th of September.

NOTE.—The emigrants arrived at this port during the month of September number 1,173 souls; namely, 906 by steamers, and 267 by sailing vessels. They were all healthy, notwithstanding the unusually long passages of the latter vessels, the average of which was upwards of 63 days.

They appear generally to have come out to friends. Among those by the steamships were a considerable number of Canadians returning from a visit to the old country. The Ocean Steam-Ship Company's vessels bring each trip a number for New York, Boston, and other parts of the Eastern States, who are chiefly mechanics seeking employment. Through an arrangement made by the Company with the Grand Trunk Railway, which came into operation in July last, these emigrants are enabled to reach their destinations by this route on as favorable terms as they could by proceeding direct from Liverpool, and with greater speed, comfort, and protection.

Employment, in all descriptions of manual labor, continues limited; very few enquiries for men having been received by this Department during the past month, but the demand for female servants considerably exceeds the supply.

The harvest throughout the country has been most beautiful; and it may be fully anticipated, that the returning prosperity will enable our farmers to afford increased employment in the ensuing season.

No. 6. From the 30th of September to the 7th of November.

NOTE.—The total number of emigrants arrived since the 30th of September is 794, which closes the present season. The decrease of embarkations, from the number of last year, is 4,053.

The character of the immigration, of which particulars are given in this return, is very good. The passengers arrived chiefly by steam-ships were partly returned residents, but chiefly parties who came out to join their friends.

The annexed shows a comparative statement of the embarkations for this port during the season of navigation in 1858 and 1859.

From	1858.		1859.	
	Cabin.	Steerage.	Cabin.	Steerage.
England	1436	5012	1493	3354
Ireland	106	1046	4	413
Scotland	38	1397	158	636
Germany	....	923	8	962
Norway, &c	....	2662	57	1694
Belgium	....	....	....	2
Lower Provinces	116	98	....	....
	1696	11138	1720	7061
ADD—Cabin	....	1696	....	1720
Total	....	12834	....	8781

EMIGRATION DEPARTMENT,
Quebec, December, 1859.

(Signed,) A. C. BUCHANAN,
Chief Agent.

REPORT OF GERMAN ASSISTANT.

GOVERNMENT EMIGRATION OFFICE,
Quebec, 31st December, 1859.

To A. C. BUCHANAN, Esq.,
Her Majesty's Chief Agent for Emigration,
Quebec.

SIR,—I have the honor to submit herewith a Report on the Immigration from Germany at the port of Quebec, since its commencement in 1845.

STATEMENT specifying the number of German Emigrants arrived at Quebec, each season since 1845, and from whence :—

Sailed from	1845	1846	1847	1848	1849	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	Total.
Antwerp	......	10	......	......	......	......	......	......	......	394	447	935	794	......	......	2580
Bremen	......	119	5830	564	......	......	......	1468	335	785	1584	441	3	170	63	11362
Hamburg	......	765	1602	831	316	596	645	3522	2084	4569	1585	4204	1221	752	901	26593
Wismar	......	......	......	......	120	......	......	......	......	......	......	......	......	......	......	120
Liverpool	......	......	......	......	......	......	......	......	767	4736	460	88	127	310	136	6624
Hull	......	......	......	......	......	......	......	......	......	295	......	......	......	......	......	295
Dublin	......	......	......	......	......	......	......	......	......	255	......	......	......	......	......	255
	......	894	7432	1395	436	596	645	4990	3186	11034	4076	5668	5142	1232	1100	47829

This statement shows that 47,829 German immigrants have landed at Quebec during the last fifteen years.

With very few exceptions, those who landed from 1845 until 1850 proceeded all through to the United States; but since then many have been induced to remain in Canada. They were either directed to the German settlements in Waterloo County, or else employment was procured them at the different villages along the St. Lawrence and Lake Ontario.

The number so retained in this Province may be estimated at more than 15,000, of which, perhaps, one-fourth have since become landholders in Upper Canada.

About two-thirds of our German immigration might be classed poor, as the most possess very little more than is necessary for their transport to the interior, and even those who have some means seldom possess more than from a couple of hundred dollars up to one thousand. Since 1852 we received at this port, with the exception of about 200 from Bavaria, who had emigrated voluntarily, no other immigration from Wirtemberg, Bavaria, Baden, Saxe Meiningen, and Saxe Altenburg, than their PAUPERS, the number of which was nearly 2000 souls.

Amongst those from Meiningen and Altenburg were a number of incorrigible bad characters, single females with children, and not unfrequently silly persons.

Amongst some 600 from Baden were a great number of men with large families, who were not inclined to work, but went begging about the country for their sustenance.

Those from Wirtemberg and Bavaria were, in general, more robust and willing to work, and with many the appearance of substantial improvement might have been perceived already a few months after their landing in this country.

The assistance rendered by the Immigration Department to those paupers, and to such who emigrated on the savings of many years' service, or the sale of a little property, hardly sufficient to secure their passage across the ocean, but who landed here quite as destitute, has, every year, absorbed the tax collected from the whole of the German immigration at this port; and if no restrictions are adopted against such immigration, this fund will not suffice in future. It has already become necessary, in one instance, last summer, to avoid the heavier burthen of a prolonged support, to forward a number of destitute families who arrived here by the ship "Main," from Hamburg, to the large and wealthy settlements on Lake Michigan.

During the construction of our railways, little difficulty was experienced in procuring employment for them; but as those sources are now closed, and as the country is more than sufficiently supplied with laborers, the Immigration of large numbers of destitute families, ignorant alike of the language and labor of the country, without an equivalent of that class which becomes immediately employers, can be of no good to the Province, nor bring anything else than suffering and want upon the poor Immigrants.

Until 1857, parties possessing some means in quest of land were usually directed to the settlements in Waterloo County and the Huron Tract, but frequent complaints were received, that the price asked for good land there was so high, that they were unable to purchase any lot large enough to yield them their support, and consequently were going to try the Western States.

There were also a great number of families scattered through Canada who had saved some 2 or 300 dollars from the late prosperous times, which they were anxious to invest in the acquisition of a homestead for themselves; but unable to procure, without spending a large amount in travelling about the country, any particular information regarding some localities in this Province, where these savings would be sufficient to realize their wishes, many of them, also, left Canada for the Far West.

The Emigration of such most valuable people from Canada being too great a loss to see continued without making an attempt to retain them, and although the superintendence of colonization seems no duty of the Emigration Department, I commenced to operate without instructions, upon my own responsibility, and started for the Backwoods, in search of a suitable locality for a new settlement, and decided on a tract of Government Land near Pembroke and Egansville, in the County of Renfrew, Ottawa District, which I found to possess all the advantages necessary for the success of energetic and persevering men with small means desirous to create a comfortable home for themselves and their families.

On recommending the same in the German papers of Upper Canada, 122 applications for the purchase of about 13,000 acres were made by parties residing mostly in Waterloo County late in the Fall of 1858; and notwithstanding the most discouraging reports and falsehoods that were circulated by speculators and others, to frustrate the establishment of this settlement, many families entered upon their lots during the winter, besides some 30 more whom I conducted into the Bush during the beginning of May.

I succeeded also to bring a considerable increase to the settlement from this season's Immigration, and when last I visited the same I was astonished to see the progress the people had already made in clearing; they were living in comfortable block-houses, around which patches of potatoes and other vegetables were growing, and their cows with a bell attached to the neck could be heard grazing through the adjoining bushes, and that forest which only a few months before had been so lonesome had then changed into numerous homely spots.

The settlement is as yet mostly composed of people who brought very little means with them, and many will have to endure a few years of great hardship; but their persevering industry, assisted by the habit of extreme frugality, will soon carry them through their difficulties into prosperity and independence.

The total number of Germans, with very few exceptions all from the north of Prussia, directed to the County of Renfrew, since spring in 1858, is not far from 800, of whom about half are occupying land.

As will be seen by the statements on the preceding page our German Immigration has suffered during the last two years a most remarkable large decrease; and, unless Canada will look a little more after this Emigration at the Ports of Hamburg and Bremen, there is, now that these cities have added to their lines of Sailing Packets also two lines of Steamships to New York, very little prospect that the St. Lawrence Route will receive a fair share of the general Emigration from Germany.

The protection of Immigrants at this Port, and the cheapness and total absence of imposition in their Inland Transport, is very well known in Northern Prussia, from which quarter only we can expect at any time any considerable Immigration; and I am fully aware that the greater portion of the Emigration from there is desirous to take the Quebec Route, if they were only left to do so at Hamburg and Bremen.

All of which is most respectfully submitted.

I have the honor to be, Sir,
Your most obedt. servt.

W. SINN.

REPORT OF NORWEGIAN ASSISTANT.

To A. C. Buchanan, Esq.,
Her Majesty's Chief Agent for Emigration,
Quebec.

Sir:—I have the honor to transmit herewith my second Annual Report on the Norwegian Emigration, arrived at this Port during the Season of 1859.

The total number landed this year was 1756 persons, which is a decrease of 900 souls of last year's arrivals. It is, however, estimated that the amount of money brought by the Emigrants this year exceeds that of last year, when compared with the number of persons arrived during the two years. The annexed statement will show details during the Season.

The principal cause of the decrease in the Emigration from Norway, this year as well as last year, appears to be owing to the extraordinary difficulty to dispose of their property for ready cash.

The Emigrants in general assured me that there is every prospect of a continuation of the Emigration from Norway, and they also stated that, should the intending Emigrants be able to convert their property into money during the present winter, the Emigration will be considerably larger the coming year than during the two last years.

Amongst the arrivals during the present Season some 15 families proceeded with considerable sums of money into the Eastern Townships; the remainder proceeded to the Western States. Those who went into the Townships purchased land there from the British American Land Company, and amongst them were also three persons, who, it appears, were sent out by their relations and friends for the purpose of selecting a locality for future settlement. These persons informed me, whilst I went with them into the Townships to examine the land, that the favorable appearance of the country far exceeded their anticipation, as they had been informed both in Norway and on their arrival that Canadian Lands throughout the country were the most unfertile for agricultural purposes in North America.

From a letter recently received from the Settlement in the Townships, I am informed that the three persons above mentioned, as also the others who proceeded there this Season, are well pleased with their selections, and expressed every confidence that it cannot fail to attract attention in Norway, when the people there once become convinced, before they leave their native country, that all the misrepresentations made in Norway, with respect to the agricultural capability of Canada, has been circulated there as well as here on them by parties in the pay of Western States, interests, for the purpose of influencing the Emigrants at once to proceed westward, regardless of the welfare and prosperity of the people, who come here ignorant of the country and the English language.

In my Report of last year I took the liberty to call your attention, by showing an Abstract Statement from Official Returns of the number of Emigrants arrived at this Port from Norway, during a period of nine years, and by adding this year's arrivals it will show, during a period of ten years, a grand total of 28,460 persons, whom it is estimated have brought with them nearly a million dollars, and with but few exceptions, say 400 persons, all have proceeded to the Western States.

I also showed in the same Report that great evils existed, and pointed out the main cause why the Norwegian farmers had not before adopted this country as their future home. It will, therefore, not be necessary now to refer to the same again.

May it not be sufficient, under the present circumstances, on the whole, to glance at the general features of the Norwegian Emigration on the one hand, and at the natural advantages this country offers to the industrious farmers on the other hand, and from thence proceed to the consideration of its importance; and whether the existing policy to secure the Settlement of Norwegians could not in some way be amended to meet the requirements by such means as would be warrantable and consistent with the general interests and prosperity of the country, and to engage more actively in promoting, not only the continuation of Norwegian Emigration to pass through the country, but also to induce them to settle within our territory on such conditions as would not fail to be a lasting benefit both to the Emigrants themselves and the country at large.

We cannot ignore the fact of the settlement of the Great West (U. S.) by American enterprise; for no sooner is one Territory organized than another is taken possession of and provision made for the reception of European Emigrants. We must, therefore, necessarily provide against the many influential efforts that are made and will be made by the Western States, to retain in future the tide of Norwegian Emigration; and the twenty or thirty thousand Norwegians, with their millions of money, who have landed at this Port and proceeded West (besides the large number who have landed at the Ports of Boston and New York,) will be sufficient to warrant them in their efforts to continue to secure the Norwegians to become the Settlers of the West.

Nor can I overlook or ignore the fact, that this Province will receive but a very limited number of emigrants from the *British Islands*, (at least, for some years to come,) to what it has been in former years, of which you are doubtless aware. We must, therefore, in my humble opinion, adopt such policy as will attract the attention of emigrants from the Continent of Europe. Although, at the present time, the Province has no Public Work going on, by which the emigrants for the coming year could be offered as an inducement for them to remain within our own country, it is, however, not so much looked for by the Norwegians, as the majority of them seek to obtain land almost immediately, and which has characterized them in the Western States.

After matured consideration on the subject, I respectfully beg to submit for your favourable consideration, a few suggestions for the encouragement of the future settlement of Norwegians in Canada, and should you approve of the same, you will then be pleased to recommend the adoption to the Government.

SUGGESTIONS.

"1st. The Government to set apart three Townships for the exclusive settlement of "Norwegians, in three different parts of Canada, namely, one on the borders of the Bay of "Chaleurs, one in the Eastern Townships, and one on the Northern Shore of Lake Huron.

"2nd. The Government to make roads through the centre of each Township, and to "employ the settlers to construct the same, in order to assist the new comers during the "first year, either by letting of small contracts, or otherwise to employ them in the con-"struction of the roads.

"3rd. The Government to engage *three* persons, one to reside in each Township, and "to be acquainted with both English and Norwegian languages, for the purpose of advising "and assisting them in procuring or issuing of location tickets to the settlers.

"4th. The Government to allow a period of ten years for the exclusive settlement of "those Townships by Norwegians, and after the expiration of the said period, any lands "then found unoccupied in either of the three Townships, to be then disposed of as Gov-"ernment may direct.

"5th. The Government to offer a free grant of one hundred acres to each head of "family, (to actual and intending settlers,) and, for which, the settlers to comply with "such settlement duties as Government has required in the settlement of the free grant "roads in the Upper Province, (on the Opeongo and Hastings Roads,) or such other duties "as will bring the respective lots as selected by the settlers into a state of cultivation, be-"fore the settler should become entitled to a deed or a patent from the Crown."

My object in proposing that three Townships should be at once set apart, and on the conditions above mentioned, are chiefly because it would give the settler every possible chance of choosing a locality peculiarly adapted to their respective occupations, whether agriculture, lumbering, mining, or fishing pursuits.

My attention has also been drawn to the subject of Fisheries in the Bay of Chaleur, and the lower part of the St. Lawrence River and its tributaries. In my opinion, they are of such importance in themselves as would attract the attention of many amongst the thousand of fishermen in Norway, were they to be made acquainted with the natural facilities this country could offer to the industrious fisherman; and which, if prosecuted here according to the facilities, and in that earnestness as manifested on the fishing-grounds in Norway, this country, I believe, would derive a revenue from export to exceed any other export of Canadian production.

In conclusion, permit me to add my full conviction, that if the foregoing suggestions (or the principles thereof) could be adopted by the Government, it would not fail to arrest the attention of intending emigrants from Norway; and I feel confident that many large families with small capital would avail themselves of such offer, when assured that their friends and relations would be offered the same privileges on joining them in future in the same Townships.

All of which is respectfully submitted.

I have the honor to be, Sir,

Your's respectfully,

CHRISTOPHER O. CLOSTER.

SAINT PETER STREET,
Quebec, Dec., 1859.

ANNUAL RETURN

Of Fees received for the Fee Fund of Upper Canada, and of Salaries paid to County Judges and Recorders during the year 1859.

Counties.	Fees received for Govt.	Net Fees.	Judges' Salaries.	Recorder's & Co. Ct. Clk of York & Peel.	Deficit.	Surplus.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1. Brant	2723 89	2502 94	2800 00	....	297 06	....
2. Carleton	2166 16	1965 62	2200 00	1000 00	1234 38	....
3. Elgin	1767 26	1676 94	2800 00	....	1123 06	....
4. Essex	745 44	710 29	2000 00	....	1289 71	....
5. Frontenac, Lennox and Ad.	3912 49	3548 00	2800 00	1000 00	252 00	....
6. Grey	2227 04	2101 04	2800 00	....	698 96	....
7. Haldimand	1604 34	1400 22	2000 00	....	599 78	....
8. Halton	1539 10	1365 18	2000 00	....	634 82	....
9. Hastings	2318 68	2227 14	2800 00	....	572 86	....
10. Huron and Bruce	3554 08	3414 09	2600 00	....	....	814 09
11. Kent	1159 34	970 98	2400 00	....	1429 02	....
12. Lambton	1415 16	1376 59	2000 00	....	623 41	....
13. Lanark and Renfrew	1433 81	1351 69	2200 00	....	848 31	....
14. Leeds and Grenville	2432 45	2101 14	2800 00	....	698 86	....
15. Lincoln	1745 27	1667 21	2800 00	....	1132 79	....
16. Middlesex	2343 10	2238 86	2800 00	....	561 14	....
17. Norfolk	1730 01	1647 87	2000 00	....	352 13	....
18. Northumberland & Durham	6201 05	5946 47	2800 00 2098 63	....	....	1047 84
19. Ontario	2767 52	2634 82	2800 00	....	165 18	....
20. Oxford	2855 80	2718 28	2800 00	....	81 72	....
21. Perth	2750 26	2606 76	2200 00	....	....	406 76
22. Peterboro' and Victoria	3075 20	2952 96	2400 00	....	....	552 96
23. Prescott and Russell	451 16	405 61	2000 00	....	1594 39	....
24. Prince Edward	1225 14	1030 14	2000 00	....	969 86	....
25. Simcoe	3172 43	2877 55	2800 00	....	....	77 55
26. Stormont, Dundas & Glengary	2804 33	2691 62	2800 00	....	108 38	....
27. Waterloo	3268 16	2970 88	2800 00	....	....	170 88
28. Welland	1629 65	1552 82	2000 00	....	447 18	....
29. Wellington	4361 08	4017 99	2800 00	....	....	1217 99
30. Wentworth	5393 60	5194 26	2800 00	1083 33	....	1310 93
31. York and Peel	13449 33	12626 51	2800 00 JJ 1943 50 JDC 1200 00	2133 33	....	4549 68
Total	88222 33	82492 47	82842 13	5216 66	15715 00	10148 68

WILLIAM DICKINSON,
Acting D. I. G.

Inspector General's Office,
25th January, 1860.

RETURN

To an Address from the Legislative Assembly to His Excellency the Governor General, dated the 12th instant, praying His Excellency to cause to be laid before the House "a copy of the Accounts for "1858, of the Expenditure on Roads and Bridges in Canada West, "made by David Gibson, Esquire, Superintendent of Colonization "Roads."

(By command.)

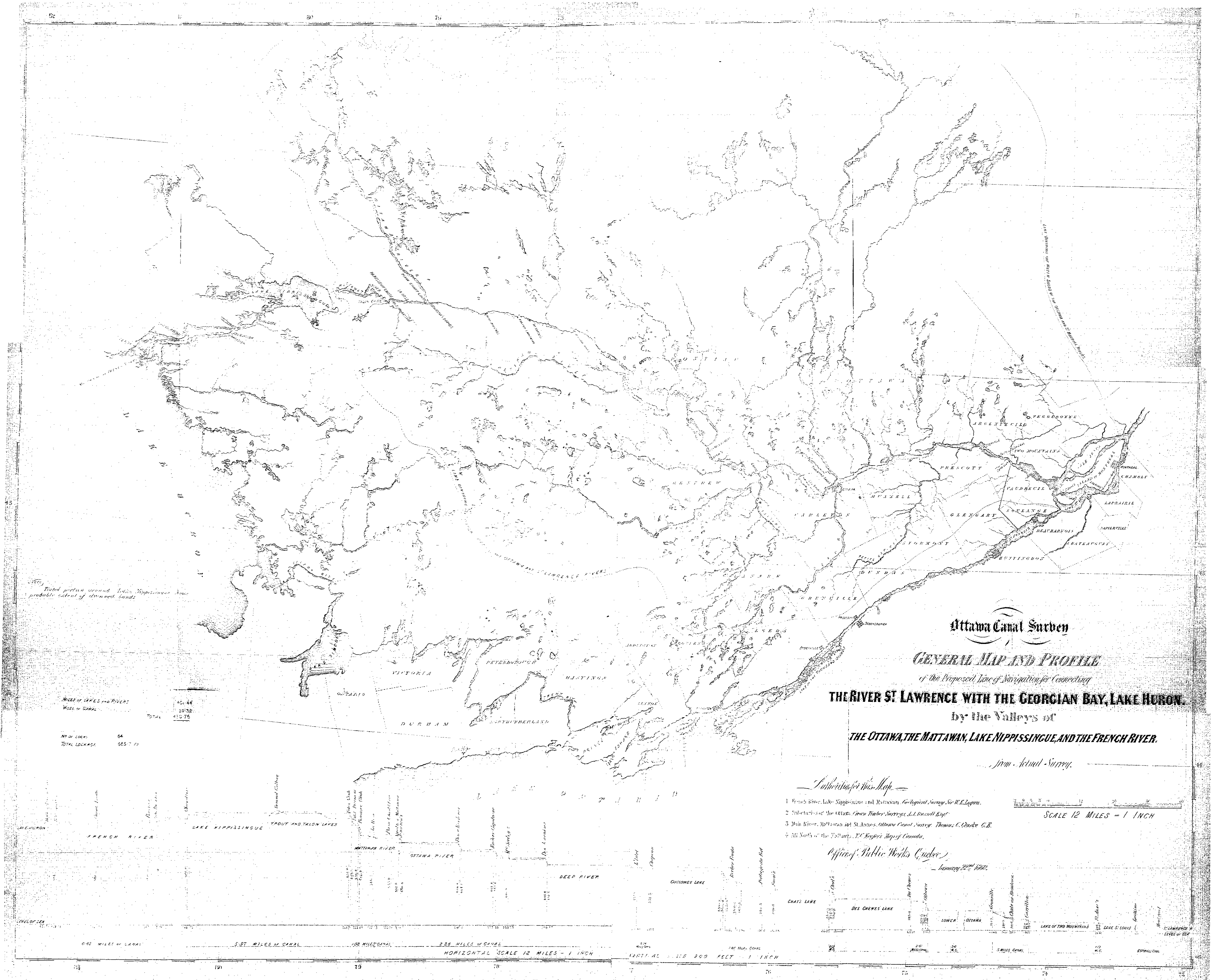
C. ALLEYN,
Secretary.

Secretary's office,
Quebec, 19th March, 1860.

(*In accordance with the recommendation of the Joint Committee on Printing, the following abstract only is printed.*)

ABSTRACT of the whole Accounts to 31st December, 1858.

		Sums Received.	Sums Paid.	Sums at Credit.	Sums at Debit.
		$ cts.	$ cts.	$ cts.	$ cts.
1	County of Bruce	59929 94	65958 55	....	6028 61
2	do Huron	32322 75	46417 61	....	14094 86
3	do Wellington	20759 90	23184 63	....	2424 73
4	do Grey	34980 37	23992 92	10987 45	....
5	do Waterloo	1188 00	2003 26	....	815 26
6	do Perth	7623 10	5973 07	1650 03	....
7	do Peterborough	864 75	864 75	....	....
8	Colonization Roads	133316 00	122081 81	11234 19	....
		290984 81	290476 60	23871 67	23363 46
		290476 60		23363 46	
	$	508 21		508 21	



Ottawa Canal Survey
GENERAL MAP AND PROFILE
of the Proposed Line of Navigation for Connecting
THE RIVER ST. LAWRENCE WITH THE GEORGIAN BAY, LAKE HURON.
by the Valleys of
THE OTTAWA, THE MATTAWAN, LAKE NIPPISSINGUE, AND THE FRENCH RIVER.
from Actual Survey.
Authorities for this Map
3 Main River, Mattawan and St. Annes, Ottawa Canal Survey. Thomas C. Clarke C.E.
Office of Public Works Quebec
SCALE 12 MILES = 1 INCH
ARGENTEUIL
TERREBONNE
TWO MOUNTAINS
PRESCOTT
VAUDREUIL
RUSSELL
CARLETON
GLENGARY
SOULANGE
BEAUHARNOIS
CHATEAUGUAY
HUNTINGDON
STORMONT
DUNDAS
GRENVILLE
LEEDS
ADDINGTON
LENNOX
HASTINGS
PETERBOROUGH
VICTORIA
ONTARIO
DURHAM
NORTHUMBERLAND
RENFREW
PONTIAC
OTTAWA
CHAMBLY
LAPRAIRIE
NAPIERVILLE
OGDENSBURGH
PRESCOTT
BROCKVILLE
MONTREAL
LAKE NIPPISSINGUE
FRENCH RIVER
TROUT AND TALON LAKES
MATTAWAN RIVER
OTTAWA RIVER
DEEP RIVER
COULONGE LAKE
CHATS LAKE
DES CHENES LAKE
LOWER
OTTAWA
LAKE OF TWO MOUNTAINS
LAKE ST. LOUIS
LAKE HURON
LEVEL OF SEA
MILES OF LAKES AND RIVERS
MILES OF CANAL
TOTAL
NO. OF LOCKS 64
TOTAL LOCKAGE
HORIZONTAL SCALE 12 MILES = 1 INCH

RETURN

To an Address from the Legislative Assembly to His Excellency the Governor General, dated the 5th instant, praying His Excellency to be pleased to cause to be laid before the House, a Return of the recent Survey and Report of the Engineers on the Ottawa Ship Canal.

By Command,

SECRETARY'S OFFICE,
Quebec, 19th March, 1860.

C. ALLEYN,
Secretary.

REPORT.

TO THE HONORABLE JOHN ROSE, Commissioner of Public Works.

SIR,—I have the honor to submit herewith my Report upon the Ottawa navigation, in accordance with instructions received from the Department of Public Works, and hereunto appended.

The questions upon which information is sought, and to answer which the survey has been carried on during the past year, are as follows:—

I. To determine the practicability of a navigation for vessels of the larger class, between Montreal and Lake Huron by way of the River Ottawa and its tributary the Matawan, Lake Nipissingue, and the French River.

II. To ascertain what scale is best suited to the nature of the route.

III. To give a reliable estimate of the cost of the improvement.

In the first place I have to report that the distance between Montreal and the mouth of French River on Lake Huron (according to the plans furnished me by the Department) is, following the line of Navigation adopted, 430,76 miles.

That of this distance 351,81 miles are already a good natural navigation, and require no improvement, and that it is perfectly practicable so to improve the remaining 78,95 miles, so as to convert the whole drain of waters into a first-class navigation for steam vessels, and to reduce the length of canalling to 29,32 miles, or, exclusive of the Lachine canal, to 20,82 miles.

Secondly—The scale of navigation attainable, and which I would recommend as best suited to the capabilities of this route, is calculated for vessels of one thousand tons burden, and has Locks 250 feet long by 45 feet wide, by 12 feet depth, on the mitre sills.

Finally—A careful estimate, resulting from a close instrumental survey of all obstructed points, the details of which will be found hereafter, enables me to state that the cost of this improvement, exclusive of interest, legal expenses, and land damages, none of which I have any means of ascertaining, will not exceed the sum of $12,057,680, distributed as follows:—

OTTAWA AND FRENCH RIVER NAVIGATION.

	Distances.		Levels.		Cost.
	Rivers and Lakes.	Canals.	No. of Locks.	Feet Lockage.	
Lachine Canal		8.50	5	43·75	Not estimated.
Lake St. Louis	13·31				do. do·
Saint Annes		1·19	1	1·	469,672
Lake of Two Mountains	24·70				
Carillon to Grenville	7·73	5·	7	58·5	1,649,909
Green Shoals		·10			136,105
Ottawa River	55·97				
Chaudière and des Chênes	3·75	2·61	6	63·00	816,733
Des Chênes Lake	26·69				
Chats	1·70	·60	5	50·	681.932
Chats Lake	19·28				
Snow's to Black Falls	18·32	1·05	11	104·	1,256.840
River and Lake Coulonge	24·93				262,514
Chapeau and l'Islet	4·85	·14	2	18.	243,567
Deep River	33·58				
Joachim's to Mattawan	51·74	2·26	14	148·20	1,757,653
River Mattawan	16·22	1·08	11	144·	1,162,154
Summit level and cut	51·15	5·97			2,160.369
French River	47·52	0·82	7	77·	886,117
Add Engineering and Superintendence					574.175
	401·44	29·32	64	665·70	12,057,680

These are, exclusive of the Lachine Canal, 20.82 miles of Canals, costing $12,058,680, which is equal to $579,134 per mile of Canal. But the cost of the whole navigation, from St. Annes to Lake Huron, 408.76 miles, is but a trifle under $29,500 per mile.

Such are the results of the Survey. The manner in which they have been attained will be described under the following general heads.

I.—Physical characteristics of the Ottawa.
II.—Method of Improvement proposed.
III.—Character of work and material in locks, dams, canals, &c.
IV.—Scale of Navigation.
V.—Special description.
VI.—General Remarks.

I.—PHYSICAL CHARACTERISTICS OF THE OTTAWA.

Before taking up in detail the method of improvement proposed for this chain of waters, I shall sketch briefly the physical geography of the Ottawa Valley, and some of its prominent geological features. Nor is this foreign to an Engineering report, for, in order to clearly understand the matter of the changes proposed, we must first get a correct idea of things as they are.

Rivers have been well defined as the channels by which the water, originally evaporated from the sea, and falling upon the land, is returned to the sea again, and the volume of water discharged is the excess of precipitation over evaporation throughout the valley of any river, varying directly with the area of drainage, the rain-producing character of the atmosphere, and the nature of the soil.

Their position is determined by the laws of gravity, and they always follow, from the interior of continents to the sea, the line of quickest descent,—that is, the line of lowest level, whether resulting from upheaval, denudation, or the combined effects of both.

The characteristics of rivers are much modified by the nature of the geological formations through which they pass, and their different powers of resistance to the transporting and eroding effect of the waters.

In a country based upon sedimentary rocks, which are not hard enough to resist the force of the current, and generally do not appear above the surface at all, the formation of river channels is a process similar to that which we see when a shower falls upon a newly cultivated field. The water follows the line of quickest descent, but meeting materials of different degrees of hardness, it meanders about from right to left and assumes a sinuous course; its constant tendency being to elongate its channel and consequently diminish its slope. These windings are so great in some rivers as to double their length, as in the case of the Mississippi, between the Ohio and the Gulf of Mexico. When the length of the channel has been so much increased as to diminish the slope, and the consequent velocity of the current to such a rate that it will eat into the shores no longer, the regime is said to be established.

But in a formation composed of the harder crystalline rocks which obtrude themselves above the surface, the waters have not the same power to form for themselves channels; and the characteristics of the rivers of such a country are very different from those previously described.

The irregular depressions and clefts in the surface become filled with water, and form Lakes, whose overflow tumbles in cascades and rapids, over the rocky barriers which it cannot destroy, until it finds its way into other Lakes, lying at a lower level, and from these to others, until at last it is received in some such arm of the sea as the Gulf of St. Lawrence, or Hudsons Bay.

A glance at the map of our continent will show at once the distinctive peculiarities of the two systems; north of the St. Lawrence, in the region of chrystaline rocks, the country is dotted with Lakes, and the connecting rivers are generally short. In what may be termed the Mississippi system, there are but few Lakes, and the rivers are long, and marked by a peculiar sinuosity of course.

Owing to the absence of the harder rocks, there are but few cascades and rapids. The currents are strong, but all the tributaries of the Mississippi have at some seasons of the year a natural navigation for boats of light draft of water.

On what we may call the northern river system, the navigation consists of stretches of deep and still water, interrupted by rapids and falls; around which the light canoes of the voyageurs are portaged by hand.

The obstacles to the improvement of these two river systems are of an entirely opposite nature. The problem in the one case is to regulate the natural flow, so as retain sufficient depth for navigation in summer, and to defend the surrounding country from the disastrous inundations caused by Spring floods, which often rise to a height of fifty or sixty feet above the Summer level, and would probably sweep away any artificial works intended for the improvement of navigation. As the country becomes more widely settled, and a larger area of timbered land is cleared away, the evil increases; for swamps diminish evaporation, and act as natural reservoirs to moderate the violence of torrents.

Our river system, fortunately for us, is furnished with a series of reservoirs, which cannot be destroyed, in the Lakes themselves. These Lakes receive the waters from the melting of the snows in the spring, and hold them stored up against the summer heats. Hence the beautiful uniformity of the flow of our rivers. The St. Lawrence unless dammed by ice seldom rises over four or five feet; and the average rise of the Ottawa, where free from obstructions, is about twelve. There are few more beautiful illustrations of that beneficent design, which adapts the physical structure of the earth to the wants of its inhabitants than this; for, from the unretentive nature of the soil, the rain would escape nearly as fast as it fell; and the northern rivers would be torrents at one time, and nearly dry for the rest of the year, were it not for these natural reservoirs in which the surplus waters have been stored up among the hills.

To improve the navigation of such a river system is a comparatively simple matter for the greater part is already done to our hand, and we have only to devise some means of getting from one Lake to another, and our task is accomplished.

This brief sketch of the more prominent peculiarities of the Northern River System of this Continent, will enable us readily to comprehend the physical characteristics of the Ottawa, the largest of the tributaries of the St. Lawrence.

Its total length from its source, near the heads of the Saguenay and St. Maurice, according to Sir William Logan, from whence it describes nearly the half of a circle in its course, until it falls into the St. Lawrence at the Island of Montreal, is over seven hundred miles; and it drains an area of not less than eighty thousand square miles.

From the Table of Rivers (see Appendix B) it will be seen that its size is about equal to that of the Rhine, and its great regularity of flow, particularly as compared with such rivers as the Ohio and Rhine, will be evident.

This is principally owing to its numerous lakes, as before mentioned; but in some degree to the fact, that, from the difference of latitude, the snow has melted and passed on to its Southern tributaries, before its "North Water," as it is called, comes down.

The two great geological divisions of its rocks are Laurentian and Silurian. The Laurentian rocks are supposed by Geologists to have been the surface of the then existing continent and the floor of the sea upon which the sedimentary Silurian rocks were deposited.

The outlines of the shores of this ancient continent followed the North bank of the St. Lawrence, and thence ran up the Ottawa, skirting its North shore at varying distances. The present Ottawa Valley, as far up as Deep River, seems to have been a bay or inlet of the Silurian Sea; bounded on the North and West by the main continent, and on the South by a peninsula which runs into Northern New York, and forms that wild section of country of which the Adirondac Mountains are the Eastern boundary. The River St. Lawrence has broken through the isthmus which connected this peninsula with the main land, in a great number of channels, forming the celebrated group of the Thousand Islands.

The surface of this Laurentian formation is extremely rugged, and the rocks are contorted in a manner that shews the action of some extraordinary force. There is little level land, and the hollows between the rocky hills are filled with innumerable lakes, whose water is clear and deep. The whole region shews the wearing effects of water, and has evidently been much influenced by glacial action, as may be seen from the grooved appearance of the rocks and the hills, and the huge deposits of boulders that choke up portions of the river beds. The rocks consist chiefly of micacious and horblendic gneïss, mica slates, and veins of crystalline limestone.

The silurian rocks, on the other hand, are sandstones and limestones; lying in regular strata, flat and undisturbed as when deposited on the floor of the ocean.

The truth of the observation of Hugh Miller that the physiognomy of the landscape depends upon its geology, is nowhere more evident than upon the Upper and Lower Ottawa.

From Montreal to Deep River the Ottawa runs in a silurian valley; although at some points, as the "Rocher Fendu" and the Chats, the crystalline rocks shew themselves in the channel of the river. The general features of the landscape are those of a level country, like that of all limestone formations. Rocky barriers have penned back the waters into long lakes, like the Des Chênes and Chats, whose shores are low and flat, and generally cultivated to the waters edge with fertile farms. The timber is hardwood, principally beech, maple, ash and elm. The width of these sheets of water is from half a mile up to two miles. Along the Northern shore at varying distances, runs the unbroken outline of the Laurentian hills; which, as has been stated, were probably once cliffs against which beat the waves of a Silurian sea.

Above Deep river the character of the landscape changes. We are now entering upon the oldest part of our continent, whose rugged masses and contorted outlines speak of the convulsions of former ages. The hills that had admitted a strip of level country between their bases and the river, now crowd close upon its edge, and rise precipitous, in some places to the height of seven or eight hundred feet. The groves of hardwood give place to those vast forests of pine of which the wealth of the Ottawa chiefly consists, and the clearings are few and unimportant.

As we advance, the scenery becomes more wild and rugged, and the picturesque beauty of the cliffs and cascades of the Mattawan, and of the lonely isles of French river, is unrivalled in any part of the continent.

Lake Nipissingue is of irregular shape, from forty to fifty miles long and twelve to eighteen wide, and receives the water of seven rivers; two of them, the Sturgeon and Nauwanitigone, of considerable size. The south and west shores are bold, and the depth of water is great. The north and east shores are low and flat, and the water shoals gradually.

The western end of the Lake is filled with Islands, and the shores are cut up with inlets ending in marshes.

The Mattawan and French rivers consist of a series of long and narrow lakes, of a great depth and sluggish current, the waters escaping from each into the next below over natural dams of rock, wherever, from greater softness or a more unfavorable disposition of the strata for resistance,* these rocky dams have been much worn down, the current is stronger, and it may be seen from the rounded and wave-worn appearance of the rock-bound shores, that the lake above has once maintained a higher level than it now holds.

On the Ottawa, from the Mattawan to Deep-river, there are strong currents, and the character of the water is more river than lake-like.

METHOD OF IMPROVEMENT PROPOSED.

From the preceding sketch, the following conclusions may be deduced :—

That there are two great natural divisions of the Ottawa country : on one of which the banks of the river are low, and the rocks generally soft; while on the other the shores are precipitous and rocks hard.

That the Ottawa is a river of very even flow, and not subject to sudden rise or destructive freshets.

That the extent of obstructed water requiring improvement is but a small proportion of the whole, and that the greater part is a chain of inland lakes, affording a good natural navigation.

How to connect these unobstructed parts is the question now to be considered.

When a river is obstructed by falls and rapids there are several methods of making it navigable.

I. We may cut Canals around the rapids, and lock up and down through them, keeping away from the river, and letting it entirely alone

II. We may throw dams across the channel of the river, and convert the rapids into a series of still lakes, and lock directly from one into another.

III. We may combine these methods by canalling around rapids, and using low dams to give the required depth, and to drown out currents between the canals.

Sometimes one of these methods is most applicable to a particular locality, and sometimes another ; and the judgement of the engineer is shown by his choosing that which best suits the circumstances of the case.

On the lower Ottawa, where the Lakes are long and deep, and the shores low and highly cultivated, it would be unwise to attempt to alter the existing levels, for we should drown a large extent of country, thereby destroying arable land, and probably rendering what was left unhealthy. Whatever plan is proposed will carefully avoid disturbing the long levels.

But fortunately for the project, on the greater part of the river, where the water is required to be raised, the shores are bold, and the desired lift would overflow but little land. Here we have only to raise the natural dams or reefs of rocks to the desired height, by artificial structures, thus restoring a condition of things which possibly existed before the ceaseless rush of the waters, or glacial action, had worn the rock dams down to their present state.

Wherever canalling is resorted to, the canal will follow the shore, and be constructed by embankments rather than in excavation, on account of the great saving of expense over thorough cuts in solid rock, of the large dimensions necessary for the navigation.

The whole key to the system of improvement proposed for the Ottawa is comprised in two propositions.

I. Follow the natural bed of the river and avoid cutting into the rocky shores.

II. Gain the depth required for navigation by raising the surface of the water rather than by submarine rock excavation.

We may lay it down as a general principle that, although on the lower part of the river where the shores are flat and lie upon sedimentary rocks, we could dispense with the use of dams; yet, as soon as we enter upon those portions where the river has cut its bed through

* Note.—When the dip of the strata is in the direction of the current, the water has only an erosive force ; but where it is against the current, the strata are undermined, fall from their own weight, and are broken to pieces, and the next flood carries the debris away down stream.

crystalline rocks, (which is more than half the whole distance from Montreal to Lake Huron) the only mode by which a navigation can be made at all is by raising the water by dams.

There is not now depth enough of water; the currents are too strong to be overcome; and as the shores rise almost perpendicular from the water's edge, there is no room to construct canals; moreover, even if there were room, the length of artificial canal required would be so great as to condemn the project; and there can be no doubt of the superiority of a still deep lake from two to three hundred yards wide, for purposes of navigation, over a canal of fifty yards in width.

Fortunately every existing condition favors this mode of construction.

The bed of the river consists of hard crystalline rocks, worn smooth and generally free from boulders; and the shores of the same material rise abruptly on either side, diminishing the length of dam required.

Points can be obtained where the water is shallow, and where there are rocky islands which will act as natural buttresses for the structure. Under these circumstances there is no more danger of a properly constructed flat dam being disturbed than one of the islands themselves.

As has been previously said, the Ottawa is not a river subject to sudden rise or extraordinary floods. It never averages over three inches in twenty-four hours for any number of days in succession; its common rise is one inch per day. Its rise to its high water mark stand, and subsequent fall, occur every year at nearly the same dates, with the utmost regularity. (See appendix for Table "C.")

There is very little shove of ice in the Ottawa, where dams would be required.

So ample is the volume of water, even in the driest time, that notwithstanding leakage and the effect of wind blowing down stream, the dams would be always submerged, with from one to two feet of water running over their crests.

A very important effect of dams upon the Ottawa will be to diminish the variation between high and low water. This is always proved to be the case wherever they are built, for there is a greater area to be filled up by the flood waters before they can rise; and the discharge over the top of a dam is so free that the water can never rise above it to the same extent that it does in a river channel obstructed by islands and sunken rocks.

In designing a system of dams for the Ottawa improvement, we should have the actual volume of water discharged both at the lowest and highest recorded stages. This would require a series of gauges in different parts of the river, taken for a term of years, until the greatest and least flow was ascertained from actual measurement.

As the time of this survey has been limited to one season, I cannot pretend to have attained such accuracy; nor, merely for the purpose of an estimate of cost, is it necessary. It is only requisite, for that purpose, that what is assumed as the greatest and least volume should cover the extreme limits of variation.

The results of several gauges give, for the Summer volume of discharge, at Portage du Fort, 31,000 cubic feet per second, and that of high water, 127,000 cubic feet per second. From any thing on record, it does not appear probable that the least discharge ever falls below 25,000 cubic feet per second, or the greatest over 130,000. These quantities, therefore, have been assumed as a maximum and minimum (see appendix, Table "D.")

Where the dams themselves act as waste weirs, it has been thought preferable to raise the masonry of the upper or guard lock, and allow the water to raise as high as it would upon the crests of the dams, rather than to attempt to control it by guard gates in the body of the dams, as this would be introducing a perishable material, and mode of construction, into the body of the work.

The height at which the water will stand upon the crests of the dams for different volumes of discharge, has been calculated by the formula for weirs, originally due to the investigations of Du Buat.

Let Q be the number of cubic feet per record, and L the length of the overfall of dam be known, and we can obtain.

H.—The height at which the water will stand above the crest of the dam, from the simple equation.

$$=\left(\frac{Q}{3.56\ L.}\right)^{\frac{2}{3}}.$$

By this formula, the Table of dams, (see appendix D.) was calculated, and the height of the coping of guard locks established.

It will be seen that these dams will have from 1. 34 to 3. 51. of water running over them at low water. Yet for purposes of estimating, their crests have been assumed to be as high as the level of water above them, which gives excess of material.

One other point demands notice. We know that by dams we can drain out currents, in these Lakes themselves, strong enough to affect navigation.

The velocity of any current depends directly upon the area of Flowage. When that is large in proportion to the volume, the velocity is slow; and as the area diminishes, the velocity increases, in order that equal volumes may pass in equal times. How great this velocity will be at any point, is strictly a matter of calculation, founded on well known hydraulic laws. Without here giving details, it is sufficient to state in general terms, that the present area of flowage will be so much enlarged by the depth of water thrown on by dams, that no greater velocity of current need be apprehended than three miles an hour, at any point, even during the six or seven weeks of high water; and during the rest of the season, the currents will be entirely imperceptible.*

III. METHOD OF IMPROVEMENT PROPOSED.

In accordance with the instructions of the Department, the quality of the works is proposed to be not inferior to the standard of the St. Lawrence Canals; and every thing has been designed as substantial as possible. It is believed that there will be nothing perishable but the lock gates, on the whole line.

Dams, where carried above water, will be of rough but strong rubble masonry laid in cement; wherever the water runs constantly over them they will be flat timber dams composed of solid timber laid up crib-fashion, without framing, fastened with ¾ inch square bolts, 20 inches long; at each crossing rock bolts ½ inch round, to be filled with loose stone, covered with 4 inch plank, well spiked, and staunched with gravel, similar to those usually constructed by the Department, in connexion with timber slides.

In most places the water can be diverted by a rough coffer dam, and the permanent structure commenced directly upon the flat rock. This operation is much facilitated by the numerous channels into which the river is divided, at the points selected, by large and small islands. The dams can be run from one island to another, and passages left for the discharge of the waters, which can be afterwards closed.

When the water is deep, recourse must be had to the system of sinking cribs. The dams should, where possible, be laid out upon segments of circles arching up stream; a mode of construction in which the greater the pressure the tighter the dam. Every alternate crib should be lowered to its place, sunk, and fastened to the rock with heavy iron bolts.

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* The investigation of the laws that govern the flow of water over weirs, is one of the most important branches of hydraulic engineering, and has received the attention of many eminent savans, among whom may be particulary mentioned, Du Buat, Castel, Poucelet, Lesbios, Dauhuisson, in France, Egleweir, Weisbach, in Germany; The Kennies, Sir John Leslie, and Thomas E. Blackwell, in England; and James B. Francis, of Lowell, in the United States.

All the rules and formulæ derived from their investigations are founded on that natural law governing the velocity of fluids, known as the theorem of Tonicelli, modified by coefficients obtained by comparing the results derived from it, with those furnished by experiment. As these experiments have as yet been made on a comparatively small scale, we cannot apply the rules deduced from them to circumstances widely differing from those under which the experiments were made, without discrepancies more or less great being found in the results.

The case with which we have to deal is fortunately one where we proceed from the greater to the less, so that an error, whatever it is, is diminished instead of being increased. Were we calculating the amount of available waterpower from the height on the crest of our dam, a very small error either in observation, or in the coefficient itself, would give results widely differing from the truth; but where we have already gauged the flow of the stream, and only calculate the height for a given length of dam, we know that the calculated result must at least be as close an approximation to mathematical truth, as is the quantity expressing the number of cubic feet of water passing a given area in a second, as obtained from our gauges.

Nevertheless it would be very desirable to have a series of experiments made with special reference to determining the actual longitudinal section of a large river, dammed entirely across, during different volumes of discharge from extreme high to low water. Such experiments, if properly made, would not only be a very valuable contribution to engineering science, but are almost indispensable to the proper carrying out of a scheme of the magnitude proposed in this Report.

The key cribs should then be floated in to fill up the spaces, and the whole sheet piled on the up-stream side.

Upon this level surface the superstructure of the flat dam is carried up in the usual way. Generally the levels can be so arranged as to receive the spill of the dam into deep water; where this could not be done an apron of solid timber has been provided to protect the rock below.

Timber and stone suitable for dams are found abundantly in all parts of the route, and there are no points where their construction offers greater difficulties, than have been successfully overcome by the enterprise of the lumbermen, on the tributaries of the Ottawa.

The locks are intended to be built of sound and durable stone, laid in hydraulic cement, with fine bouchard face, cut to quarter of inch joints, backing of rectangular stone, with parallel beds laid to one inch joint, and well bonded to face work. The rock is generally assumed to be sound, but a tight timber foundation, laid in concrete, is provided for under the recesses.

The gates are designed of solid timber; in the style now used on the St. Lawrence Canals. Each gate will have two sluices 10″ 6″ x 2″ 6,″ and culverts around the hollow quoins to be used in case of accident to the sluices, or together with them if required. The arrangement for opening and shutting gates should be of the most approved kind; and it is believed that a lockage need not take over ten minutes; the average time on those locks of the St. Lawrence Canals, where the latest improvements in machinery and gates are used.

In arranging the lockage, it has not been found necessary to place more than two locks in combination, except at the Talon-chûte, where three have been combined, the contour of the ground prohibiting any other arrangement.

The cost of the execution of this work will depend, more than anything else, upon the character of the rock, its hardness in excavation, and its suitableness for purposes of construction. As has been before stated, the two great divisions of the Ottawa rocks are Laurentian and Silurian. The former are very hard, difficult to work, and too brittle for the face stone of locks; while, on the other hand, the Silurian lime and Sandstones are easily excavated, and, from the upper beds of the Limestone, known as the Trenton group, we can procure a building material excellent in every respect, both as regards ease of workmanship, strength, and durability. From some of the Argillaceous beds a good hydraulic cement can be obtained, such as is now made at Hull opposite Ottawa City.

We know then, that from Montreal to Deep river, building stone lies all around us, but from that point to Lake Huron, it was much to be feared that the stone of the country, although good enough for backing lock walls, filling lock dams, and rough masonry in general, could not be depended on for face work. Luckily, however, this is not true of the whole of that extent of country. A bed of yellow, weathering, fossiliferous limestone, on the North-east shore of the river, a little above the Deux Rivières Rapids, will afford good stone for the structures in that district, and on the lower Mattawan.

At Talon-Chûte there is a vast mass of crystalline limestone, described in the Geological Report, which is a fine grained and tolerably tough stone, and appears to be good enough for face work. The locks at that point have been estimated to be built of it.

The face work of the remainder of the locks upon the Lower Mattawan, is designed to be built from a quarry of gray granite (probably an intrusive dyke) on the north side, about half a mile from the river, below Paresseux-Chûte.

For the structures on French River, the face stone must come from the beds of Niagara lime, on the Manitoulin Islands of Lake Huron. This will much increase the cost of that portion of the work, and render its construction necessarily gradual.

IV. SCALE OF NAVIGATION.

The first point to consider is, whether we are designing a local or a through Navigation. This would be decided by the general depth of the chain of waters, the difficulties of overcoming the summit, the supply of water, and other points, more or less closely connected with the preceding.

To these my attention was first directed, and after careful personal examination of the whole route, aided by the Graphic Report of Mr. Shanly, and the results of such Surveys as were at the time made, I was able definitely to decide, that, whatever scale was fixed on should be with the view of completing, at some future day, the through line of Navigation.

It must be borne in mind that this is exclusively a Steam Navigation; sails, although useful auxiliaries, would never alone enable vessels to pass through this route, with any saving of time, over that by the Welland Canal.*

The next point is, whether we shall build locks fitted for large vessels; or whether, preserving the dimensions suited to an inland and Local Navigation, we shall cause a transhipment to take place at the mouth of French River, which is about half way between Chicago and Montreal by this route.

This question is determined by the length of Canal (or what is equivalent in delay to an artificial cut) on the route where a large proportion of the distance is canal. I should then recommend transhipment; for I believe the unwieldiness of large vessels, on account of their top hamper being acted on by the wind,—the risk of damage to the vessel and to the works in the narrow Channel of a Canal, and the delay arising from these causes, would more than balance the cost and trouble of transhipment into Steam barges better suited for Canal Navigation.†

As soon as I had ascertained that the length of Canal on the whole route, including Lachine, would not exceed 29. 32 miles, and that the remaining 401. 44 miles could be made a navigation allowing of as rapid a transit as the great Lakes themselves; and indeed more so, so far as freedom from head winds and storms is concerned; I was then prepared to recommend the larger scale, and an unbroken line of Navigation.

It only remains to decide how large. When crops are good, and full freights offer, it is an advantageous axiom, that, the larger the vessels the cheaper the cost of transport. It is a fortunate peculiarity of this route that vessels can always depend upon making up full freights of sawed lumber from the inexhaustible pine forests of the Ottawa, manufactured at every dam on the river.

It requires then, I think, no argument to prove that we cannot err in providing to let down to Montreal the largest class of Propellers, now confined to the Upper Lakes by the limited size of the Welland Canal.

From these data, and after consultation with various persons experienced in the Lake Trade, I have fixed upon the dimensions given, as follows:—

The length proposed by Mr. Shanly, and suggested in the instructions of the Department, 250 feet,—is long enough for vessels of the desired tonnage. It does not, however, seem desirable to exceed the breadth of the St. Lawrence Canals, 45 feet; because this is in itself wide enough; and because it makes the enlargement of the Lachine Canal attainable, without pulling down the present lock walls.

The depth has been fixed at 12 feet, which is absolutely neccessary if we wish to admit vessels of over six hundred tons, as will be seen from the table of large Propellers (given in Appendix E.) for which I am indebted to the kindness of Capt. D. P. Dobbins, Secretary of the Board of Lake Underwriters, Buffalo, N. Y.

Although, through the heavy cuttings, and where the distance is short, I have followed the width recommended by the Department, 100 feet on bottom, I have not hesitated to increase the prism of the Canal generally to 146 feet on bottom; as I believe that it is not more than is required for vessels to pass with speed and safety. The depth has been fixed at

*When the question of the enlargement of the Erie Canal came up several years ago, this point was discussed very thoroughly, and the opinion of forwarders was that, if the Erie Canal were large enough to admit vessels of 1000 tons, they would still prefer to tranship to Buffalo.

†In this I am supported by the opinion of Mr. Shanly, who has in his report so well expressed the character of this route, that I shall make no apology for quoting it here.

"It is a Steam Navigation, and more especially for that denomination of Steamers known as "Propellers," that I believe the Ottawa and French River route is destined to hold a first place as a Channel of Trade. For vessels of that description the character of the waters, and of the region on either side of them, is peculiarly fitted. Land locked for the greater portion of the way, the route will not in that respect be as advantageous for Sailing Craft as that by the great Lakes, but the inexhaustible supplies of wood at all points along it, and the facilities for taking their fuel on board at frequent intervals, will forever render the cost of working Steam Vessels lower on this than on any equal length of Navigation on the continent. Here, too, the Propeller can keep the even tenor of its way heedless of the storms which, sweeping across the Lakes in the Autumn of each year, cause such inmense destruction of life and property.

one foot more than the locks—say 13 feet; and in Lakes and Rivers will be 15 feet, and generally average 20 feet.

V.—SPECIAL DESCRIPTION.

Commencing at the City of Montreal, we have the Lachine Canal common to both the Saint Lawrence and Ottawa routes. It is 8.5 miles long; has five locks, 200 ft. x 45 x 9, with a total lockage of 44.75 feet. The prism of the Canal is 80 feet on bottom, 120 at water surface, and averages 10 feet deep. This would have to be deepened, and the locks lengthened to admit vessels of the same tonnage as could pass the proposed Ottawa Canals.

As neither the time nor means at my disposal have enabled me to make a survey of this, I have not included it in my estimate. The enlargement involves no serious obstacles, and will, probably, be made whether the Ottawa Navigation is opened or not.

A map of Lake St. Louis, made for the Commissioners of the St. Lawrence improvement, in 1842, by A. LaRue, P. L. S., shows a channel depth, somewhat circuitous, of not less than 15 feet from Lachine to Isle Perrôt. For reasons given above, I have not made any survey here, but am informed by pilots that there are 15 feet, and over, along the North Shore of Isle Perrôt, up to the foot of the present St. Anne's Lock. I have, myself, taken soundings for half a mile below the lock, and over that distance can corroborate the truth of their statement; but it is much to be desired that there should be a new survey with soundings carefully made from Saint Anne's Lock to Lachine.

SAINT ANNES.

Length of Canal, 1.19 miles.
1 Lock 1 ft. lift, L. W. 3.5, H. W.
Guard pier below, 1000 ft. long.
Canal above, 125 ft. wide by 5000 feet long.
Estimated cost, \$469.672.

I propose to enlarge the present lock to the requisite dimensions, as it occupies the best point that can be selected. In order to do this it will be necessary to put in a coffer dam and pump it dry, take down the east wall, and get the pit sunk to the proper depth, as early in the spring as the weather will admit of laying stone. Then, by working night and day, it would be possible to complete the new lock without delaying the opening of the navigation more than three or four weeks.

It will be necessary to build a guard pier 1000 feet long below the lock, on the side next the rapid, to cut off the current, which, at high water, is strong enough to incommode vessels very much. This will be an ordinary crib-pier filled with stone.

Above the lock, the river bed is Potsdam Sandstone, in strata of from five to eighteen inches thick, somewhat tilted upon one another, and covered with boulders from the Laurentian rocks. The average depth from the head of the lock to a point where the water suddenly deepens to eighteen feet, is eight feet, and the distance five thousand.

I propose to make a double line of timber piers, 15 feet wide and 125 feet apart, for the whole distance. Half of the width of each pier to be filled with earth lining and sheet-piled, and the enclosed area divided into sections by water-tight bulk heads. The rock is seamy and would leak a good deal, but by putting in powerful steam pumps and shortening the length of the section to be laid dry in proportion to the leakage, it would be perfectly practicable to keep down the water until the excavation was made to the required depth of five feet. The stone would be used to fill the outside compartments of the piers, and the excess deposited outside of that. The bulkheads would be removed, and the whole thing would be an artificial canal 125 feet wide, and 13 feet deep, in the bed of the river, while the piers would serve as guides to keep vessels from straying out of the channel. I have been particular to describe this in detail, as a similar method will be proposed for submarine rock excavation wherever it may occur.

The face and backing of locks is estimated to come from the neighbouring quarries of chazy limestone at Point Clair, of which the piers of the Victoria Bridge are built; filling of cribs out of the excavation.

This is unquestionably the best way to make the improvement, for were the proposed canal located on the shores of the Island of Montreal, as has been sometimes proposed, the amount of under water rock excavation required to reach 15 feet of water from the shore, both above and below, would actually exceed that on the line I propose, and we should have, in addition, an enormous amount of excavation on land, and an expensive bridge to build for the Grand Trunk Railway.

LAKE OF TWO MOUNTAINS.

The head of the Saint Anne's Canal would be 23 miles from Montreal. From the 23rd to 24th mile, according to the surveys of W. B. Gallwey, C. E., placed in my hands by the Department, it has a depth of from 20 to 30 feet. From the 24th to the 26½th mile, the low water depth does not exceed 13 to 14 feet, and I am unable to say whether the bottom is rock or some material that could, if required, be dredged. From the 26½th mile to the foot of the Carillon rapids at the 47¾ mile, the channel is 30 feet, and the navigation is straight and unimpeded.

CARILLON.

Length of canal 0.5 miles.
2 locks, 12 and 5 feet lift; passing basin, 2000 ft. long.
Rolling dam, 1700 ft. overfall; lift of water, 6.25 feet.
Estimated cost, $307.742.

At Carillon the River is obstructed for 1.3 miles by a reef of calciferous sandstone with only two or three feet of water running over it, except in the "Sickle" channel, about 150 ft. wide and 9 or 10 deep, and, as its name implies, vary crooked. The fall at the stage of water, when we levelled it, was 8.75 feet.

This has been overcome by the military canal, built by the Imperial Government, 2.09 miles long; locks up, 23 feet, by two locks 128 x 32. 5 x 5.5, and down again, 13 to 15 feet by one lock of the same size, and is fed from the North river. The prism of the canal is very irregular, being from 18 to 40 feet wide on bottom, and 50 to 80 at surface, say 5.5 deep in the centre, gradually shoaling to each side. It runs in from 5 to 16 feet cutting to water surface, principally rock.

The rocks are in a very ruinous state and cannot last many years longer in their present condition.

The great amount of rock excavation necessary to enlarge this canal to the new scale, its twelve to fifteen feet of unnecessary lockage, and the bad location of the lower lock, forbid us attempting to improve the present work.

I have located the new canal on the south shore of the river. The water is 25 to 30 feet deep up to the lower lock, which is at the foot of the current, near the house of the late Judge Macdonald, Point Fortune. The passing basin is defended from the river by a wall of stone laid in cement battening 2″ in 12″, backed by a bank of loose rock out of the excavation, sloping 1½ to 1 towards the river, and the whole paved with stone set on edge. The rolling dam stands on flat rock, free from boulders, and, except in the channel, the depth of water is not over two feet. It will have a slide for timber, and the height of water above its crest will range from 2.57 to 8.11 feet.

By removing some fifty thousand cubic yards of rock between the upper lock and the head of the rapid, this dam across the river could be dispensed with. On referring to the map it will be seen that the proposed canal occupies the place of the side dam just constructed. To gather enough depth of water to run deal and timber cribs; as we are obliged to destroy this channel, we must provide a new one, and there is no way so practicable as to raise the water by a dam, which shall contain a broad and short slide leading directly into deep water below.

The lock stone will come either from the Pointe Claire quarries, or those of Isle Bizard. The loose stone for dam filling, out of the excavations, and the stone for the wall, to be laid in cement, can be got out of the bed of the river in such size and shape as will enable it to be laid up into a wall with scarcely any dressing. On this account I have considered that $3.25 per cubic yard, would be sufficient; which price implies that but little labour is required.

CHUTE A BLONDEAU.

Length of canal, 0·07 miles.
One lock, ten feet lift.
Rolling dam, over fall, 1,750 ft., lift 12 ft.
Light dam, cement masonry, 1,550 ft. long.
Estimated cost, $144.315.

A stretch of five miles of still water, over 30 ft. deep, brings us to this rapid, about 900 ft. long, and falling 4 ft. The Military Canal is here formed by cutting off a point of rock, and has one lock of the same size as at Carillon. The canal is forty feet wide, and cut through rock, about the same depth.

We place the new lock in a channel between the island and the present lock, and follow the line of reef with one dam, the depth, except in channel, not being over two or three feet. This dam has a slide for timber similar to Carrillon.

The object of raising the water 12 ft. by this dam is as follows: the lower end of the present Grenville Canal is through rock cutting. By raising the water at the Chûte à Blondeau, we can follow the river for 1·1 miles above the present lower lock of the Grenville Canal, shortening the new one by so much, and saving a large amount of rock cutting.*

The lock stone is estimated to come from the same point as Carillon Stone for dams can be procured on the spot.

GRENVILLE.

Length of canal, 4·43 miles

One pair of combined locks, 12 ft. lift each.

Passing basin, 400 ft. long.

One lock 6½ ft lift; prism of canal 150 ft, at surface, 146 on bottom, and 13 deep at head for 2,000 ft, 100 ft. wide on bottom.

Guard lock, 1 to 15 ft lift.

Estimated cost, $1,197,862.

The bed of the Ottawa, at the foot of the Long Sault, which is an almost continuous rapid for five miles, with a fall of forty-five feet, consists of *calcarious* sandstone, covered with boulders from the Laurentian crystalline rocks. These are worn smooth and polished by the water, are of all sizes, and in many places entirely conceal the rock in position. This makes so bad a foundation for artificial structures, that we are driven perforce out of the bed of the river, and can do nothing but enlarge the present Grenville Canal, which is generally well located on a strip of flat land lying between the high bank and the margin of the river.

As has been stated, we leave the river 1·1 miles above Grucese Point, and lock up at once to the Grenville level, in order to raise the bottom of the canal out of cutting. The new line joins the old one in about a mile, follows it for abont a mile and a half, and then, to avoid rock cuttings, runs along the river's edge, which forms one bank, while the other is formed by a stone wall laid in cement, backed by a bank of loose rock out of the excavation of the head, and sloped 1½ to 1 toward the river, and paved. The new canal follows the old line, cutting through the neck of land upon which the Village of Grenville stands. Here, for 2,000 feet, the width has been estimated to be 100 feet, with sides nearly vertical. The embankments (not river wall) are formed by dry battered wall, backed with earth filling.

If, instead of using these stone walls, laid dry on land, and in cement in river wall, the embankments were dressed to a slope of 1½ to 1, and paved, the estimated cost of this section could be reduced about three hundred thousand dollars.

The lock-stone can be brought from below by the present canals; all the other stone can be got out of the river, or near by; and, as at Carillon, will require but little labor to lay it into a good wall. All the rock from Carillon to Grenville is soft, lies in thin strata, and can be easily got out. I have considered $1 per cubic yard as an ample allowance, except at Chûte à Blondeau, where the rock is harder and there is less of it, and I have called it $1.25 per yard. The lock-stone is easily dressed and can be carried from the quarries, to where it is wanted, in scows: distance 25 to 35 miles. I have considered that $12 per face and $6 per backing, averaging $8, would be sufficient.

*The Chûte à Blondeau is one of the few points on the Ottawa where the phenomenon of "ice-packing" takes place.

The floating ice which has come down the Long Sault, is arrested by the sheet of still water below this rapid, jammed under it and "packed," until an ice dam is formed, raising the river some 25 to 30 feet above its summer level.

The effect of the proposed dam would be to form a still lake for some three miles above it, which would be frozen over with a thick sheet of ice, and the "packing," if it took place at all, would be removed some three miles up the river, above the point fixed for the lower entrance of the Grenville Canal.

At the head of Long Sault is a great sand-shoal, partly dry at low water; but following close to the north shore we have 24 to 30 feet. From Grenville to Ottawa, the river runs in a level valley, with low shores of blue tertiary clays; a considerable extent is overflowed by high water, and covered with sand deposited by the river.

The width is from one to two thousand feet, and the channel depth 30 feet, until we get to the "Green Shoal," some 8 or 9 miles below Ottawa City. Here a calciferous sandstone reef runs clear across the river, diminishing the depth at low water to eight feet for a length of five hundred feet.

It will be necessary to pursue the same course here, that has been recommended at St. Annes, and remove the stone by a coffer dam, the sides of which should be left for guide piers to indicate the channel. Between this place and Ottawa City, there are some sand shoals that must be dredged, but no more rock.

The sum estimated for the improvement of this section is $136,105.

The plans of this part of the river furnished me by the Department from the surveys of Mr. Gallwey being unfinished, I have obtained the distance from Grenville to Ottawa City through the kindness of Sir William Logan, who calculates it at 55.25 miles in a straight line. Allowing for the bends of the river, I have called it 56.07.

CHAUDIÉRE AND DES CHENES.

Length of Canals: Chaudiere, 2; DesChênes, 61. Total 2.61.

Slides channel; pair of combined locks 11½ feet lift each; passing basin 600 feet long; pair of combined locks 11½ feet lift each; water surface above raised 3.7 feet by prolongation of present dam from head of mill flume, across islands to Spark's Point.

Spark's point; 1 lock; 8½ feet lift; side dam stone, 1700 feet long; rolling dam at head of little Chaudiére 2000 feet over-fall; lift of water four feet, drowns out Remoux.

Remoux; coffer dam and rock excavation.

Des Chênes: 1 lock, 8½ feet lift; canal banks battered wall of stone in cement, backed with stone filling, and paved. Estimated cost $806.733.

At Ottawa City the river is interrupted by rapids and falls for 6.36 miles, having a descent between Ottawa harbor and DesChênes Lake of about 60 feet, * 36 of which are taken up by the Chaudière, a magnificent fall which affords one of the finest water powers on the continent.

Several lines had been previously surveyed for this canal, but I have preferred to follow the river, shortening the length of canal required, and much diminishing the amount of rock-cutting, and consequent expense. But little land is overflowed, and that chiefly swamp. Two mills would be destroyed, (Sparks, and the Britannia,) but the new privileges would be better than those now existing.

Stones for the dams can be got out of the excavation, and excellent lock stone from the Trenton group of limestones, abounds close at hand.

Lake DesChênes, or, as it is sometimes called, Chaudière Lake, is 26.69 miles long, and varies from half a mile to two miles in width; and, according to Mr. Gallwey, its general channel depth is from 20 to 30 feet of water.

Below the river Quio the channel is crooked for a short distance, the depth 14, 16 and 18 feet, and some points might have to be taken off. From there to the foot of the Chats there is 25 to 30.

CHATS.

Length of Canal 0.6 miles

Chats Island: 1 pair combined locks 12 feet lift each; passing basin 400 feet long; clay embankment paved; 1 pair combined locks; 12 and 6 feet lift; rolling dam 3700 feet overfall; tight dam 300 feet; lift of surface 4 feet. Chats Rapids: 1 lock, eight feet lift; rolling dam 2100 feet spill; light dams 1000 feet long; lift of surface eight feet, up to low water level of Chats Lake.

*At the time we took our levels, the fall between Des Chenes Lake and Ottawa harbor was 59:5 feet; but the difference between the recorded levels of low water is 63 feet. If this is correct, of which I have some doubts, it is owing to the greater evaporation on the longer level below. It has been thought prudent to provide for sixty-three feet of lockage.

Below, the river rises more than at any other point, some 20 to 24 feet. This is attributed to the fact that the Gatineau, a very large river, comes in a little below at right angles to the main river, and draws back its waters.

Head of Rapids; coffer dam and rock excavation. Estimated cost $681.932.

This, it will be observed, differs entirely from the old route of the Chats Canal. A considerable proportion of the excavation necessary to finish that work to the scale originally contemplated [60 feet wide and 7 deep,] has been done, but it forms a very insignificant amount of that required for the new scale. The canal ends below in Big Bay, a sheet of water about a mile long, quite shallow, and with bottom of gneiss rock.

The depth at low water per 700 feet is not over 5.5; per 1000 feet not over 8.5; and per 1600 feet, at the entrance, not over 6 or 7 feet, although most of this last is probably clay, and could be dredged.

The only way in which sufficient depth can be got, except at a ruinous expense, is to throw a dam across the mouth of Big Bay, and raise the surface, placing a lock on what is called Hudson Point.

My estimate for the completion of the present Chats Canal on this plan, to a scale uniform with the rest of the river, is $1,465,439. [See appendix J.]

There being some difficulties in ascertaining the amount of work done, I have credited the work with the whole amount expended, as per last Report of Department of Public Works, amounting to $324,000, leaving a balance to be yet expended of $1,141,429.

My estimate for the new work has been stated at $681,932, showing that it would be a saving to the Province of $459,507 to abandon the work already done on the old route, and take the new.

The length of Canal on the old route is three miles, and is quite crooked; on the new route we have only ⅛ of a mile, being the locks and passing basin. The rest of it will be as good navigation as any part of the river. I have no hesitation in recommending the adoption of the new route.

We cross the Chats Island with four locks, as stated above, and run a low dam along the line of reefs at the head of the main fall, raising the surface enough to drown out currents up to our upper lock. The water does not exceed three feet in depth on the line of dam, except in the channels, and there are so many islands to work from, that the difficulty of building a dam here is not so great as at first sight would appear.

The depth of water will be not less than 20 to 25 feet from this point to the upper lock and dam. This brings us to the level of Chats Lake, and we have 18 to 30 feet depth as far as the reef at the present head of the rapids. At what is called the canoe channel, there is now a depth of ten feet, but it is narrow and crooked. It slopes above into 13 feet of water in about 300 feet, and, below, pitches off at once into 18 feet of water. After the dam has been built below, and the water stilled, it will be necessary to put in a coffer dam here, and remove some rock, which is chiefly crystalline limestone, leaving the sides of the dam for guides, as at Green Shoal.

The lock stone for this work should come from the quarries of Black River limestone on DesChênes Lake. Stone for dams can be got in the neighborhood. I have estimated the face stone at $12, and the backing at $6.50 per cubic yard, or an average of $8.25.

Up to this place whatever rock excavation has been necessary, was through Silurian lime and sandstones of a soft texture. But this rocky barrier, over which the river tumbles in some thirty different chutes, is one of the Laurentian series, and consists of gneiss, horneblendic, mica slates, and crystalline limestone. The strata are considerably inclined, dip in the direction of the current, and the "strike" is generally at right angles to the direction of the stream, as may be plainly seen from the course of the reefs.

These rocks are all hard to work. The crystalline limestone is much the easiest, and I have allowed $1.50 per cubic yard for it. The mica slates, and particularly the horneblendic gneiss of a greasy texture, and greenish red colour, such as is found at the lower end of the Canal excavations, are hard to drill, and require much powder to break them up. The price which I have allowed, and which is proportioned to the rock prices over the rest of the river, is $2 50 per cubic yard.

The Chats Lake is a fine sheet of water 18 miles long, and from half a mile to three miles wide, with a channel depth of from 25 to 30 feet.

From the head of this Lake to the head of the Calumet Island, a distance of 31.07 miles by the North or Calumet Channel, and 24.79 miles by the South or "Rocher Fendu," channel, the river has a total fall of 102.48 feet, and is much obstructed by rapids and shoals. On the north channel more than half the fall is concentrated at one point, the Grand Calumet Falls, and there are longer stretches of still water. The south channel is a continuous rapid for much of the distance.

In deciding between these two channels, several things were apparent without further instrumental survey:

I. The Calumet was 6.28 miles longer than the other.

II. From the head of the Calumet falls to La Pape, 17 miles, the bed of the river is cut through sandy alluvial soil, is very crooked, and is filled with shifting sand-bars and shoals, that would have to be dredged, not only once, to open the navigation, but continually to keep it open.

III. The timber slides now occupy the Calumet channel, and as there is not room for both timber and vessels, if we take this channel, new slides must be built on the Rocher Fendu.

IV. The nature of the ground at the Calumet Falls, would require three locks in combination.

The very important question of cost could not be determined without making location of locks and dams on both channels, and estimating on each.

The Lock at the Snows is common to both routes; the lift of the upper one at Portage du Fort, and the height of dam, would have to be increased six feet. Two locks and a dam, and 0.28 miles of canal at the "Mountain" chute, and five locks and a dam at the "Grand Calumet," raising the water to the level of the river at the head of the Island.

Here the only possible location for the canal is on the site of the present slides. A ravine to the left of the fall was surveyed in 1857. But even by combining all the five locks at the lower end, there would be fifty feet cutting for one mile, which, even for a canal of a hundred feet wide, would require the removal of nearly a million yards rock. This is, of course, impracticable.

In comparing the cost of the two routes, the lockage is the same; and the difference of dams is not enough to affect the estimate materially. But the "Calumet" Route would have in excess,

167,500 cubic yards rock cutting, at $1 50, - - - - -	$251,250
1,000,000 " dredging, at 35c - - - - -	350,000
Shewing a difference of cost of - - - - -	$601,250

over the Rocher Fendu Route.

Taking all these things into account, I have no hesitation in recommending the Rocher Fendu for improvement, and shall describe how it can be done.

CHENAUX À "SNOWS."

Total length of Canal, 0.2 miles.
1 lock 6 feet lift.
Dam 1,267 feet.
Estimated cost, $133,356.

The Rapids of the Ottawa are caused by reefs.

These are the remains, more or less worn away, of the rocky barriers which once separated the different lakes. In the limestone formations, the whole bar has generally been washed away, leaving an entirely submerged reef. But among the Laurentian rocks, the river cuts channels through the softer veins, leaving the harder rocks protruding above water in the form of islands. The "Snows" is a place where even the reefs between the islands have been worn away, so that it is now merely a contraction in the channel, forming what hydraulic writers call a "discontinuous weir."

In summer the volume of water is only sufficient to dam itself up some six or eight inches,* forming a slight ripple; but in floods the water above rises from three to four feet, making a rapid too strong for steamboats to ascend.

* The cross section of this point gives an area equal to that of a channel 420 feet wide, by 20 feet deep. The river above averages 1000 feet wide, by 20 feet deep. By the formula for discontinuous weirs, where

b = breadth of channel........................ = 420 feet.
d = depth........................ = 20 " ;

Three methods of improvement have been suggested:—To raise the Chats Lake and drown out the rapid;—To remove the islands which obstruct the channel;—To put a lock in one of the channels.

When a river channel is contracted, the water dams itself up until it has attained a head sufficient to give itself velocity enough to pass through the narrow passage. Raising the water from below will not prevent this from taking place, unless it is raised enough to give it an area of flowage equal to that of the average channel of the river. To do this here, would require a lift of the Chats Lake so great as to be inadvisable.

To enlarge the area from 8,400 to 20,000 square feet, by removing obstructions, would require too much rock excavation.

We are therefore reduced to the third plan, as recommended by T. E. Norman, C. E., in his report to the Department last year, and must put a lock in one of the channels. The Canoe Channel has been selected as the best; and the Steamboat Channel will be left open for the descending trade: but all the others will be closed by low dams. This will raise the water six feet* above its present level. In the Spring the high water will pour over these dams.

I have gone somewhat more into detail in describing this place, than its importance would seem to warrant; because, from its being the line of the present steamboat navigation, it has been much discussed, and many plans suggested for its improvement, both by professional and amateur engineers.

The lock stone should come from the superior quarries at the Lower end of Chats Lake.

PORTAGE DU FORT

Length of Canal, 0.24 miles.
1 Lock 12 feet lift, passing basin 400 feet long.
1 Lock 8 feet lift. Rolling dam 2,664 feet long.
Light Dam, of masonry, 1,360 feet; lift of surface, 10.5.
Estimated cost, $287,396.

Here we have a multitude of islands and channels, but the reefs between are not worn down more than two or three feet below the surface of water, with one exception, a narrow channel called the "Devil's Elbow, which is over twelve feet deep. The locks will be placed at the head of the island to which runs the dam of Usborne's Mills. From the locks to the north shore the dam is a light one, with a flume to admit water and logs to the mills. The remainder is a rolling dam, giving free discharge to the flood waters. The timber slides will not be disturbed, except to lengthen them for the increased fall.

The locks may be built of a crystalline limestone, known as Portage du Fort marble, and the dams of the same.

ROCHER-FENDU.

Length of Canal, 0.61 miles.
8 Locks and 5 dams, as follows:

Rocher-Fendu Chute Canal, 0.07 miles.
1 Lock Ten feet lift; dam 450 feet long.
Lift of surface 13 feet.
Long Rapids Canal, 0.12 miles.

---

h = height to which it is dammed.. = 6-10 of foot.
q = quantity of discharge in cubic feet per second, $= 9b\sqrt{2gh}\,(\quad + d) =$ 32,254 cut feet.
the quantity is guaged at same time, and a mile above was 30,913.

At high water d becomes........ 28
h " 4
q " 127,000,

agreeing very nearly with other observations of H. W. discharge.

* Call $q = 32{,}254$ cubic feet, per record.
$d = 20$ feet
$h =$ 6 feet, height required,
And $b =$ breadth required.
The formula,
$$b = \frac{q}{\cdot 9\,(\frac{2}{3}h + a)\,\sqrt{2gh}} = 105\tfrac{4}{7}\text{ feet.}$$

which is about the breadth of the present steamboat channel, which may be left alone. And by closing the others, the water will be dammed up six feet.

Pair of combined Locks, 14 and 6 feet lift; rolling dam 600 feet; tight dam 500; lift 17 feet.
Lafontaine's Rapids, length 0.23 miles.
1 Lock 12 feet lift; basin 400 feet long; 1 lock 12 feet lift: dam 350 feet long; lift 17 feet.
Norman's Rapids, length 0.12 miles.
Pair combined locks 12 feet each; dam 350 feet flat, 100 feet tight; lift 23 feet.
Black Falls, length 0.7 miles.
Guard lock, 2 to 4 feet lift; tight stone dam 1100 feet long; low water lift 2.4.
Estimated cost, $836,088.

The dam at Portage du Fort will drown out the small rapids known as the "Split Rock and Tables," and give sufficient depth of water as far as the Rocher-Fendu Lake, which, according to the Surveys of T. E. Norman, Esq., is 30 to 60 feet in depth. The distance from Portage du Fort to the head of this Lake, where we have a lock and dam, is 7.35 miles. A distance of 1.61 miles takes us to Long Rapids, where are two locks and a dam. The lift of water, 17 feet, drowns out La Barrière, Muskrat, and Mice Rapids, all of which have channels worn through the reefs, so that there will be no necessity for submarine rock excavation, while the shores are bold and high enough to prevent much land from being overflowed. We are now at the foot of what is called La Fontaine Island, and here the river is divided into three channels. It is proposed to follow the south channel, and by building a tight stone dam above Black's Falls, at the head of the Island, to shut out the flood water and drive it down the other two channels, only admitting enough for navigation. Otherwise, the amount of water discharged in flood is so great in proportion to the contracted size of the channel, that it would be difficult either to build structures, or use them after they were done. By availing ourselves of the existence of these other channels to take off the surplus water, we can lay our work without coffer dams, and regulate force of currents as we please. Five locks and three dams take us to the head.

Some of the crystalline limestone is good enough for locks, some stone will come from the quarries on Allumettes Island above, and perhaps some from Portage du Fort or Chats Lake.

The rock on this part of the river, although of the Laurentian series, will not be so hard as that at the Chats, owing to the greater amount of crystalline limestone, and to the preponderance of felspar in the gneïss, which is easily acted on by the weather, and causes the gneïss to crumble, and become broken up. I have estimated the rock excavations at $1.50 per cubic yard. Stone for dams can be got in the locality.

From the head of the Calumet Island to the foot of the Allumettes Island, the river expands into what is known as Lake Coulonge. At its foot the river is divided into several channels and islands. The main body of water passes on the West side, and has not been sounded until this year. The other channels are quite shallow, but this has 20 feet and over, except at one point, where, for five hundred feet in length, there is not over ten feet at low water.

Through the remainder of Lake Coulonge according to plans made under the direction of Mr. Shanly, and furnished me by the Department, there is 25 to 30 feet in depth of water.

The river is again divided into two channels by the Allumettes Island; the Northern of which, known as the Culbute, is much the better suited for navigation.

This channel is narrow with bold shores, and the fall 18.26 feet, is concentrated into rapids at the head, the Culbute and l'Islet. For nine miles from the foot of the Island, up to a slight rapid of five or six inches fall, known as the Chapeau, and caused by a construction of the channel, we must follow the natural bed of the river, which is somewhat crooked, and will require a considerable amount of dredging, particularly at the mouth of Black River, a turbulent stream which brings down much sand during the Spring freshets.

It is probable that there will be some boulders, and points of reef below water, to be removed. For the improvement of this section there has been estimated the sum of $262,414.

3

Chapeau and L'Islet.

Length of Canal, 0.14 miles.

Chapeau: 1 lock, 12 feet lift, and rolling dam 500 feet long; tight dam, 240 feet; lift of surface, 11.5 feet.

L'Islet: 1 lock, 6 feet lift, L. W., 12 feet: H. W.; tight dam, 700 feet long; lift of surface 9.5 feet. Estimate cost, $253,512.

The lift of 11.5 at the Chapeau, gives good navigation for 5.85 miles to the foot of l'Islet. Here a tight dam of masonry in cement, as at Black's Falls, will keep out the flood waters, and drive them down the broad Pembroke channel, and the lock is located in the channel between the island and the north shore.

This raises the surface of the water above l'Islet to the level of the river at Fort William, and drowns out the Culbute, which rapid darts through a narrow gorge in the rock, not over eighty feet wide, with high perpendicular cliffs on either hand. It will be necessary to take three or four feet off the top of the reef for about fifty feet in length. This can be done by putting in a short temporary dam at the head, after the water is raised and made still by the dam below. Then, on opening the gates of the lower dam, the bed of the river will be laid dry at this point, and the rock can be removed, after which the coffer dam above must be taken out.

The lock stone for these works is estimated to come from the quarries on Allumettes Island, four or five miles from the work. Stone for dams can be got near by.

Although it does not properly fall within the limits of this Report, yet I shall take the liberty of calling the attention of the Commissioners to the fact that the expenditure of the above named sum of $253,512, would extend the present steam boat navigation from Des Joachims to the head of Calumet Falls, a distance of 75 miles. From thence the macadamized road just finished by the Department, would avoid the 8.41 miles of obstructed navigation, between the steamboat landing above the Calumet and Portage du Fort, the present head of navigation on Chats Lake; avoiding the expensive and tedious detour of Muskrat Lake. An additional expenditure of $80,000 would build the lock at the Snows. The dam would not be required at present.

I know of no point above the City of Ottawa where so little expenditure would do so much for the local traffic, as at these places.

From the head of Culbute to Fort William, 5.3 miles, the river is much broken up by rocky islands, but according to the soundings laid down on the plans of Mr. Shanly, there is a deep, although somewhat tortuous channel.

From Fort William to the Rapid des Joachims, we have the fine stretch of water known as Deep River; this is very straight, one to two thousand feet wide, and 27.6 miles long. The depth is very great, and said to be over 100 fathoms in some places; the shores are very bold, and the general character of the scenery resembles that of the Saguenay on a small scale.

Des Joachims

Total length of a Canal 0.57 miles.

Pair combined locks, 13 feet lift each. Passing basin 2000 feet long. Embanked by material taken from the excavation and sides of river. Slopes paved. One single lock, 12 feet lift. Dam, 1,272 feet long; length of overfall, 1,148 feet; lift of surface, 17.8 feet.

Estimated cost, $327,774.

This rapid is 1.64 miles long and falls 26.4 feet. It comes in nearly at right angles to the general course of the river, which, if prolonged, would run through a series of lakes, and strike the river again about three miles above. A line of levels were taken by Mr. G. H Perry, to see whether this chain of lakes might be followed and a Canal cut through the ridge, dividing them from the river. Although the distance is less than a mile, the cutting, even with proposed dam at head of Joachims, would average 20 feet, which would require the removal of over 400,000 cubic yards, principally rock. Hence we prefer to follow the north shore of the river itself. The lock occupies the place of the slides, which will have to be removed to the south side of the island, where there is a very good place for them.

Face stone of locks is estimated to come from Pembroke quarries. All other stone can be obtained in the neighbourhood.

McSORLEY'S

Length of Canal, 0.13 miles; 1 Lock ten feet lift. Length of Dam, 1,383 feet; length of overfall, 1,041 feet; lift of surface, 16.5 feet. Estimated cost, $169,375.

From the Upper Lock at des Joachims, a distance of 13.68 miles, brings us to a series of small rapids of 3 feet fall, where we put in a Lock on the south side of the river, and a Dam. It is necessary to raise the water eleven feet on the foot of the Rocher Capitaine; and to avoid making the Dam at the Joachims so high, this intermediate Dam at McSorley's is designed.

The face stone of the Lock must come from the Pembroke Quarries. Backing, and other stone, adjacent to the works.

ROCHER CAPITAINE.

Total length of Canal, 0.65 miles.

Single Lock, 13 feet lift; passing basin, 1,000 feet long. Material for bank, taken from excavation; slopes paved.

Single Lock six feet lift, L. W., 12 at H.W. Dam, 1,005 feet; lift of surface, 22.4 feet; pool, 0.70 miles long. Pair of combined Locks, 13 and 6 feet lift; Dam, 1,702 feet long; overfall, 1,400 feet; lift of surface, 21.5 feet.

Estimated cost, $533,544.

The Rocher Capitaine, which it is proposed to overcome in the above manner, is one of the largest rapids on the Ottawa, falling 40.9 feet, in a distance of 1.35 miles. The Locks are located on the north side of the river. The bank is composed of an immense mass of boulders of all sizes, worn smooth by the water. It covers a space of about two square miles, and rises some sixty feet above the water. Fortunately, between these boulders and the river there is a strip of solid rock in position, upon which we place the Locks and Canals. The bottom of the river is smooth rock, the depth where the Dams run is not great, and, except that the upper Dam must be long, there is no special difficulty in overcoming this Rapid.

The face stone of Locks is estimated to be got from Pembroke Quarries; but the expense would be less, if the Canal, hereafter described at the Deux Rivières, were built first, as the stone would then come from the Quarries above it, without transhipment. The rest of the materials can be got near the work.

DEUX RIVIÈRES.

Length of Canal, 0.46 miles.

Pair of combined Locks, 12 feet lift each; passing Basin, 500 feet long. Material of bank from excavation; slopes paved; single Lock, 12 feet lift, passing Basin, 500 feet long; Single Lock, 6 feet lift; upper Locks, on timber foundations. Dam, total length 1,292 feet; over fall, 938 feet, lift of surface 33.9 feet.

Estimated cost, $419,942.

The Rapids, known as the Deux Riviéres, Iron and Levielle, occupy 3.15 miles, and fall 31.1 feet. The fall in the river, from their head, to Johnson's Rapids, a distance of 17.85 miles, is 9.7 feet, most of which occurs in the Rapids at the Rocky Farm, which occupy 4.75 miles. It was thought best to put in a high Dam at the Deux Rivières, and then back the waters to Johnson's Rapids, as the facilities were greater for that mode of construction, than for putting in another Dam and Lock between the two, and the amount of land overflowed is quite insignificant.

The Locks are situated on the south side of the river, on a flat piece of land, well suited for their location; the Lock stone will come from beds of a yellow or buff colored fossiliferous limestone, which appears on the north side of the river, about three miles above, and promises to afford a good building stone Other stone can be got near at hand.

JOHNSON'S RAPIDS.

Length of Canal 0.45 miles. Single lock 12 feet lift; passing basin 1900 feet long; raised with earth and stone from cutting; slopes paved; single lock on timber foundation

8.2 feet; lift at L.W. up to 13 feet; at H.W.; Dam 2626 feet long; over fall 2000 feet; lift of surface 21 feet.

The Locks and Canal are on the North side of the River on a strip of flat land. The dam stands in 4½ feet water at L.W.

The Lock stone will come from quarries below, other stone near by.

This dam drains the rapids just below the mouth of the Mattawan, and the currents in that River, and throws 13 feet water upon the foot of the Pleinschants rapids 3.40 miles above.

MATTAWAN RIVER.

At Fort Mattawan 308 miles from Montreal, we leave the Ottawa which turns to the Northward, and still a large river. The amount of water passing in summer being but little less than that running over the Chaudière at Ottawa. This is owing to the fact that, as we descend, the river expands into wide lakes, and loses by evaporation nearly as much as it receives from its tributaries.

From this point to French River, I cannot do better than to quote from the report of my principle Assistant, Mr. E. R. Blackwell:—

" On commencing examinations for a work of the contemplated character and magnitude of the improvement of the Ottawa and French River Waters, the first thing presenting itself as indispensably necessary, was to obtain a reliable section of French River, Lake Nipissingue, and the summit or height of land between Nipissingue and Trout Lakes. The examinations were commenced at the principal mouth of the middle outlets of French River on the 20th November 1858.

This debouchment of French River is entirely land-locked. To the West lie a large group of Islands known as the "Bastard Islands," which completely shelter the mouth of the River from the Westerly and Southwesterly winds of Georgian Bay. The main land affords protection from the Northerly winds.

" The Channel to the entrance of French River lies at the Northerly extremity, and close under these Islands. There appear to be several deep and broad Channels divided by sunken reefs, and I am confident that a spacious entrance can be marked out, free from these treacherous sunken rocks which mark the whole coast of Georgian Bay.*

" From the mouth of French River, for the distance of 2.74 miles, the River is straight, broad, and deep; the banks bold, and the grey chrystalline gneiss rocks rise perpendicular out of the water, and make it resemble more the deep bays of the Lake, than the mouth of a River.

" At this distance from the Bay, the River makes a turn nearly at right angles to the right, and becomes quite narrow; and here "Les Petites Dalles Rapids," form a barrier to Navigation; the fall at this point is six feet. The rapids are about ninety feet in width, and it is about Eleven hundred and sixty feet from deep water below to deep water above. The rock on the North rises nearly perpendicular to the height of ninety feet, and on the South side, with a gentle slope, to the height of twenty feet, in a distance of one hundred and twenty feet, and then rises abruptly into broken cliffs.

" From "Les Petites Dalles" we continue our course nearly East for the distance of one and a quarter miles; here we find two large Channels, one continuing directly on the course we have been traversing, and the other nearly at right angles to the North.

" We pursued our examinations up the latter for the distance of three miles; to "Lac du Bœuf," a body of water about three miles long by one mile in width, thickly studded with Islands; here we enter on our Easterly direction for Lake Nipissingue.

" At the distance of 10.17 miles from "Les Petites Dalles," we find a small rapid of two feet fall, about two hundred feet wide, and the water from six to eight feet deep at a low stage.

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* The mouth of French River is a deep fissure or cleft in the rock, extending from the Lake into the land. Its course is about North-east and South-west, which is that of the "strike" of the strata in that locality, and consequently of the ridges on land and the reefs in the water. Thus, although the navigation is dangerous to those who are coasting and have to pass over the ends of the reefs, there can always be found a direct entrance between them, unobstructed by shoals or sunken rocks. I have myself sounded from the foot of the Petites Dalles, out into the open Lake, and found a gradual increase of 6, 7, 8, 9 and 10 fathoms, where my soundings ceased, about half a mile from the point where the river may be said to end.—T. C. C.

"At a further distance of 3.82 miles, another small rapid of seven-tenths of a foot fall, is encountered. 1.08 miles further, we reach 'Le Grand Récollet Rapids,' with a fall of 6.80 feet. The width of the river at this point is two hundred and fifty feet. The bank on the North side rises nearly perpendicular to the height of one hundred and fifty feet above the water. On the South side there is a table scarcely sufficient in length and breadth for the lock. The rest of the bank rises perpendicularly eighty or ninety feet.

"After leaving 'Le Grand Récollet,' we have a reach of 17.02 miles to the 'Rapide de Parisien,' where there is a fall of 1.20 feet. In the next 4.10 miles, we pass the 'Petite Faucelle Rapid,' fall 4.4 feet, 'Rapide du Buison,' fall 3.3 feet, 'Grand Faucelle Rapid, fall 5.6 feet, and 'Rapide du Pin, fall 2.6 feet. In tracing the distance we change our course from East to North. At the head of the 'Rapide du Pin' the course again becomes easterly, and continues so to the foot of the 'Chaudiére Rapids,' a distance of 7.57 miles.

"The fall between the foot of Lake Nipissingue and the still water in French River below the Rapids, is divided into fine cascades and rapids. The total fall is 26 feet in a distance of 1.61 miles. The banks at the water's edge of the Rapids are mostly low; rising gradually for the distance of sixty to one hundred feet back; then they rise abrupt into high rocky cliffs.

"From the mouth of French River on the Georgian Bay, to its source at the outlet of Lake Nipissingue, the distance is 47.52 miles; the ascent at low water is 60.3 feet, making the elevation of Lake Nipissingue 634.3 feet, above tide water.

"The distance through Lake Nipissingue is 30.44 miles. Between Nipissingue and Trout Lakes two routes were carefully examined.

"The first, by the valley of the 'Rivière des Vases,' 6.69 miles in length.

"The second, by the valley of the 'Ojibwaysippi,' 4.19 miles in length, with an ascent between Nipissingue and Trout Lakes of twenty-four and a-half feet. The water-heads of the Mattawan are 658.8 feet above tide water.

"In comparative cost these two routes have no relative merits. By the 'Vases' route, there are four miles of cutting, any one of which would cost more than the whole line of the 'Ojibwaysippi' route.

"Here we pass the watershed between the waters of the Ottawa and French Rivers.

"After entering 'Trout Lake' our course bore South of East. The length of this Lake is 8.43 miles, and average width one mile. At the foot of this occurs a narrow ridge of rocks which divides it from Turtle Lake. The fall is nine-tenths of a foot. The Rapid is about ten feet wide, and not over eighteen inches in depth. We then pass 3.28 miles through Turtle Lake, nearly on a due East course. This Lake averages about half a mile in width. Passing down the outlet of Turtle Lake, we change our course to the North in the first two miles; thence Eastwardly, and at the distance of 3.74 miles, we enter Lac Talon. The descent between these two last named Lakes is 29.9 feet, giving 'Lac Talon' an elevation of 628 feet above tide water. The outlet has a succession of small rapids with deep still ponds between them.

"The course through Lac Talon lies about South-east, and is 7.63 miles in length, with an average width of one mile. Lac Talon discharges through a flume-like chute of 21 feet in width, with three beautiful cascades before reaching the level below. The total fall is 42.7 feet. Each side of the chute is bounded by high and barren syenite cliffs.

"From the foot of Talon-Chute, the course of the water changes to the North, until they reach the foot of the Paresseux-Chute 2.88 miles; in this distance there is a series of ponds, or basins and rapids, making a descent to the head of the Paresseux-Chute of 21 feet. At the Paresseux Rapids and Chute there is 33.8 feet fall in a beautiful cascade.

"After passing the Paresseux-Chute, the river passes between bold cliffs of syenite, which present the appearance of rough and massive masonry, towering up about one hundred and fifty feet above the surface of water. The river is narrow and deep between these iron bound barriers, in places only one hundred and five feet wide. It soon widens to two hundred and fifty and three hundred feet in width.

"From Lake Talon to the river below Talon-Chute, a route was examined, leaving Talon-Lake about one and a-half miles above its foot. At the distance of fifteen hundred feet from Lake Talon, we encountered a summit of fifty feet in height above the Lake, and about two thousand feet in length; after passing this summit, we dropped down into a chain of small ponds running nearly East, and emptying into the Mattawan about one-half of a mile below 'Paresseux-Chute.' The length of this line is 4.15 miles, and more direct than the channel of the river, and well adapted for the line of improvement, were it not for the heavy cutting at the summit. The examinations, estimates, and plans of this route were made with the same care and attention as marked those of the main route.

"The river route is 1.06 miles longer, but is estimated to cost $564,000 less, and is recommended.

"From the foot of the 'Paresseux-Chute' to the mouth of the Mattawan, the course is direct and nearly due East. At 2.64 miles we reach the 'Rapide des Aiguilles,' with a fall of four-tenths of a foot; 0.71 miles further East is the 'Rapide des Rochers' with a descent of 4.8 feet. At this Rapid the land on each side is low and swampy for the distance of six to eight hundred feet back. Passing down with a strong current for 1.20 miles, we reach the 'Rapide de la Rose,' fall 5.6 feet. At the further distance of seven-tenths of a mile is the 'Rapide des Epines,' fall 5.6 feet.

"From the foot of the 'Rapide des Epines,' we find a broad and deep stretch of river for five and a half miles in length, with the same rugged syenite cliff-like banks; at the foot of this fine stretch of water, we reach the 'Lac Plein Chants Rapids and Chute,' with a fall of 16.9 feet, in the distance of four-tenths of a mile. At the further distance of 2.40 miles, the Mattawan enters the Ottawa waters. In this distance we find three small rapids with a fall of 5.4 feet; making the total descent of the Mattawan 169.8 feet in the distance of 39.79 miles, and the low water surface at the mouth 489 feet above tide.

"A tabular statement of the low water section of these rivers, &c., is hereunto annexed.

"The characteristics of the French River and Mattawan waters are similar, each being a succession of pools of wide, deep and still water, separated by short falls and rapids; in many of these pools there is no perceptible difference of level.

"The shores are principally lined with the ever-prevailing syenite and gneiss, rising abruptly out of the water into bold precipitous cliffs, covered with a dwarf growth of timber.

"By the mode of improvement proposed, that is by locks and dams, which is the only feasible plan of work to render these rivers navigable for any class of vessels that may navigate the Western Lakes; the characteristics of these rivers will, in a great degree, remain the same as now, after the completion of the improvement."

My early attention was called to the question of supply of water, "upon which the success of the whole project depends," and more particularly directed to the practicability of the plan of elevating Lake Nipissingue to the summit level, as proposed by Mr. Shanly, both by the general instructions of the Board of Public Works, and by your letter of instructions.

Mr. Shanly in his Report on the "Ottawa Survey," says "It may at once be stated that the summit does not furnish water sufficient to meet the demands of even a far inferior scale of navigation to that which the general character of the route would warrant us in looking forward to."

To this opinion of Mr. Shanly's, respecting the supply of water from the summit, that is from Trout and Turtle Lakes, I agree; and after a careful examination of the whole subject, I would recommend the following plan for

SUPPLY.

"For the supply of water it is proposed to raise Lake Nipissingue 9.46 feet above high water, and lower Trout Lake 7.85 feet, and Turtle Lake 6.95 feet, and Turtle Lake outlet to the same level, and to raise Lac Talon 20.95 feet, which brings it up to the same height, making a summit level for navigation of 57.12 miles in length, with an area of watershed of 31.65 square miles, and a reception basin of eighty miles in length, and varying from one half of a mile to 12 miles in width, giving a surface of about three hundred and thirty square miles. By this arrangement it does not become necessary to make any provision for a storage reservoir. The waters of Lake Nipissingue are sufficient for any scale of navigation, and for all time to come.

"Although the quantity of water required to maintain a steady flow of any given depth through open sluices of regular width, may be calculated with a considerable degree of accuracy; yet, in the case of an open river of uneven bottom and irregular width and declivity, like that of the French river, it cannot be expected that any thing more than a rough approximation can be obtained; uncertainty must attend the measurements, and consequently the results founded thereon.

"Fortunately for us in this case, the quantity of water discharged from Lake Nipissingue through the French River is so large, that any error of this kind could not affect the question of supply for any scale of navigation that may be adopted.

"The quantity of water found, by careful guaging, to be flowing in French River at a low stage, was nine thousand five hundred (9,500) cubic feet per second, or (820,800,000) eight hundred and twenty millions eight hundred thousand cubic feet, in twenty-four hours. Assuming the locks to be 250 x 50 x 12, and that fifty lockages are made each way in twenty-four hours, it would require fifteen million cubic feet of water, or less than one fiftieth part of the supply. The whole amount of water flowing is equivalent to 5,472 lockages each twenty-four hours. This, at once, sets at rest any idea of the necessity of a storage reservoir.

"There are but few objectionable features to this mode of supplying the necessary water for navigation, and of raising Lake Nipissingue to the height above stated. The first and almost the only one is the overflowing of the lands bordering on the Lakes.

"The entire Southern shore of Lake Nipissingue, East of the Chaudière Portage, is bounded by high barren rocky cliffs, with a scanty growth of evergreens covering the whole, except a strip on the East end of the Lake, about eight miles long, and varying from one-tenth to one-fourth of a mile in width, one-half of which is annually inundated by the Spring freshets. The shore of the East Bay and the East end of the Lake, for the distance of ten miles will be overflowed; a large portion of this tract is annually submerged by the freshets, and nearly the whole is one extended Tamarac swamp, or an Alder marsh. The North shore, for two-thirds of its length, is high, and out of the reach of this height of water.

"In the vicinity of the Hudson's Bay Post, at the mouth of the Sturgeon River, the largest tract on the borders of the Lake will be submerged, say from ten to twelve miles in length, and from two to three miles in width; one third of the tract is low open marsh, about one third swamp annually overflowed, and the remaining third tolerably fair land for agricultural purposes.

In the Western Bay, there is an occasional narrow strip that will be drowned out. Taking the whole land that will be drowned by the rising of Lake Nipissingue, it will be inconsiderable when compared with the length of Shore, and that but of small value for agricultural purposes."

"Raising Lake Nipissingue to the height of Trout Lake, would lessen the cost of construction about one million dollars, and reduce the length of Canal on the summit to less than one and three quarter miles, would increase the lockage 15.6 feet, and overflow three times as much land as the plan proposed.

"The land, being in a district uninhabited except by a few Indians, and the servants of the Hudson's Bay Company cannot be looked upon as claiming much consideration, in deciding upon such an important question. The objectionable features in elevating the water of Lake Nipissingue to the level of Trout Lake, are:—

"First, the low banks along the southerly shore, west of the Chaudière Portage, and also for two miles to the East of the Portage; Second, the large fissures and crevises in the rocks, affording an opportunity for the escape of water, scarcely to be estimated: in fact this might prove so large as to cause any attempt to meet such an emergency entirely abortive, and without a more careful and minute instrumental examination of the entire southern shore west of the Portage, than my limited time would permit me. I should be unwilling to recommend the raising of Lake Nipissingue higher than contemplated in the plan proposed.

"The raising of Lake Talon can be accomplished without overflowing the adjacent lands to any considerable extent.

LOCKAGE.

"The arrangement of Locks and Dams connected, will be as follows:—

"At Les Petites Dalles," one lock, fourteen feet lift, on the south side of the river.

" To establish the level above the Petites Dalles, it would be necessary to construct seven Dams across the several outlets of French River.

Total length of Dams, 1,535 feet,
Aggregate Spill, 1,595 feet,
Crest of Dams, 850 feet, above low water.

" These Dams throw the water up to " Le Grand Recollet Rapids," fifteen and one tenth miles, drowning out two small rapids, so that no excavation will be necessary to give the requisite depth of water.

" At Le Grand Recollet," one lock of thirteen feet lift on the south side of the river.

" Two Dams will be necessary, one across each channel of the river.

Total length of Dams, 566 feet,
Aggregate Spill, 406 feet,
Crest of Dam, 1,130 feet above low water.

" The length of the next reach is 1,695 miles, extending to the " Rapide de Parisien," where we have one lock of seven feet lift, on the north side of the river.

Total length of Dam, 599 feet,
Length of Spill, 445 feet,
Crest of Dam 21 feet above low water.

" The next reach is only 2.23 miles to the " Rapide du Buisson," drowning out the " Petite Faucelle Rapid," so that no excavation will be necessary for the requisite depth of the water. At this point there is one lock of ten feet lift on the north side of the river. Here the river is divided by a large Island into two channels ; it will be neccessary to dam each of them, and also to dam the north channel of the east, in making these Dams.

Total length of Dams, 1,070 feet,
Aggregate Spill, 1,055 feet,
Crest of Dam on Main Channel, 19½ feet above low water; Crest of Dam in the North Channel of the East, 10.8 feet above low water.

" From the head of the Lock at the " Rapide du Buisson," the level extends to the foot of the Chaudière Portage, ten and one half miles, drowning the " Grande Faucelle," and " Rapide du Pin ;" a small Island one hundred feet long by twenty-five feet wide, will have to be excavated to the depth of five feet from its present surface.

" At the Chaudière Portage there will be three Locks of two feet lift each, the first single, and the second and third combined ; located on the south side of the river. By combining all these Locks, a saving of about $80,000 could be made.

" Four Dams across the outlets of Lake Nipissingue will be necessary.

Total length of Dams, 1,134 feet.
Aggregate Spill, 1,310 feet,
Crest of Dams, 16.7 above low water.

" The next or summit level extends to the foot of Lac Talon, a distance of 57.12 miles, with a grand Lock in the Canal between Nipissingue and Trout Lakes, to control the waters in times of high wind.

" At the foot of " Talon Lake," there is one lock of eleven and a half feet on the north side of the outlet.

Total length of Dam, 500 feet.
Length of Spill, 472 feet,
Crest of Dam, 23.7 feet above the low water mark.

" The next three locks occur 0.43 miles below the last mentioned Lock, and on the south side of the river at Talon Chute, all in combination, each fourteen and a half feet lift.

Total length of Dam, 382 feet,
Length of Spill, 332 feet,
Crest of Dam, 12.3 feet above low water.

" Two combined locks of eleven feet lift each next occur at the " Petit Paresseux Rapid," length of level 2.13 miles. The locks are located on the north side of the river. This level drowns out several small rapids, so that but trifling excavation will be required to make the necessary depth of water."

Total length of Dam, - - - - - - - - - - - 1128 feet.
Length of spill, - - - - - - - - - - - - 1128 feet.
Crest of Dam, 22.8 feet above low water.

"At "Paresseux Chute," 0.35 miles below are two locks in combination, each fourteen feet lift, located on the south side of the river."

Total length of Dams, - - - - - - - - - - - -	872 feet.
Length of spill, - - - - - - - - - - - - -	872 feet.

Crest of Dam 10.4 above low water.

"A level of 4.62 miles extends to the "Rapide de la Rose. There we have one lock thirteen feet lift on the south side of the river. This level completely drowns out the "Rapide des Aiguilles," and "des Rochers."

Total length of Dam, - - - - - - - - - - - -	812 feet.
Length of spill, - - - - - - - - - - - - -	812 feet.

Crest of Dam, 21.2 feet above low water.

The next level of 6.29 miles reaches the last locks on this division at "Lac Plein Chants Rapide and Chute." Where there are two locks in combination, of thirteen feet lift each, on the north side of the river.

Total length of Dam, - - - - - - - - - - - -	664 feet.
Length of spill, - - - - - - - - - - - - -	388 feet.

Crest of Dam, 18.8 feet above low water.

"A short reach of 2.40 miles carries us to the mouth of the Mattawan, the eastern end of the western or Nipissingue division."

"The question of cost will be greatly enhanced by the difficulties to be encountered in procuring the materials necessary for the construction."

"The face coping and culvert stone for all the Locks west of the Summit, will have to be procured from the great Manitoulin Island, in Lake Huron, which lies to the westward about fifty miles, directly facing the mouth of French River. The stone for the lock at Les Petites Dalles can be landed at the work, and that for the Rapide de Parisien will be attended with the additional cost of two short portages. For the lock at "Du Buisson," three short portages will be necessary, and for the locks at the Chaudière Portage, two short portages, and two miles of land carriage will have to be encountered. All foreign materials for these locks will be subject to similar expense of transit."

"The stone for the backing and interior of all the Locks of this division, will be obtained from the excavation for locks, and from the banks adjacent to the works."

"Large quantities of rectangular blocks are found upon the banks of the river, often with parallel beds and joints more perfect than it would be possible to quarry them from limestone quarries, and in size well adapted to the character of the work. The stone for rubble masonry will be procured in the same manner as the backing. Loose stone, for filling the Dams, will be obtained from the excavation, and picked up from the River banks.

"The timber for the Locks and Dams is in all cases convenient; in no instance do I think it will be necessary to haul over two miles. In some instances it will be found cheaper to cut the timber on the banks above the work, and float it down rather than haul it.

"The work west of the summit requires no special description; there are no difficulties to be encountered in the construction, of an unusual character.

"The two first miles of Canal, on the summit, between Nipissingue and Trout Lakes, are wholly of earth, cutting through an open marsh, easily drained. This work has been estimated at thirty-five cents per cubic yard.

"For the remainder of the Canal, the material has been all estimated as rock. The excavation will all be disposed of with a short handage. In this portion of the Canal there are several deep ponds, which can be easily drained without machinery, as the work progresses. The rock excavation has been estimated at two dollars per cubic yard. Twenty two hundred feet of this cut have been estimated with a width of 100 feet on the bottom.

"For the excavation of the bars in Trout and Turtle Lakes, it is contemplated to commence the work at the foot of the Turtle Lake outlet, carrying it up to Turtle Lake, the water of the Lake will then pass off through the cut, and leave the rocks to be excavated out of water, and easy of access. Then, by cutting through the barrier between Turtle and Trout Lakes, which is only three hundred feet long, the work in Trout Lake will be drained, and will be as easily accomplished as any on the whole length of the improvement, except that in some places boats will have to be used to pass to and from the work; a liberal allowance has been made for such contingencies.

"The greater portion of the work to be done in Trout Lake, is the removal of round boulders, varying in size from one fourth of a cubic yard, to six and eight cubic yards.

"That in Turtle Lake is the excavation of rocks and reefs, mostly in the pinnacle form. As they stand up with bold slopes and deep sounding near them, they can be readily excavated at less than the usual expense of rock excavation. Anticipating that this character of work would be looked upon as a hazardous undertaking and expensive, I have given it a price of two dollars and twenty-five cents per cubic yard; a far larger price than that for which I think it can be safely executed.

"For the Locks at the foot "Lac Talon," and "Talon Chute," an abundance of crystalline limestone is found at those points, and from the examinations made of this material, it is presumed that it will make suitable masonry for Lock walls. The excavation for these Locks is chiefly in this kind of limestone.

"For Locks at 'Petite Parresseux,' and 'Parresseux Chute,' the face stone will have to be hauled about two miles from a fine Quarry of gray granite. A liberal estimate has been made for the expensive dressing of this character of stone.

"The face stone for the Locks at the "Rapide de la Rose," and at 'Plein Chants Chute,' it is proposed to obtain from the same Quarry."

VI. GENERAL REMARKS.

In the preceding pages it has been attempted to show that the Ottawa waters may be improved for vessels of one thousand tons burden, for a sum not exceeding $12,026,351.

The discussion of the important questions of the present or prospective need of such improvement; its effect, if constructed, on the course of Western Trade, and its relative merits to other routes already existing, formed no part of my instructions, and will not be taken up here.

I shall take the liberty, however, to recommend, that whatever new work may be hereafter constructed upon this line of waters, may not be of less dimensions than those which I have stated as necessary for the through line of navigation, as the difference in cost between a Canal on a small scale like those already built, and such a one as has been recommended, would not amount to so much as, in my judgment, would warrant the construction of work which might hereafter have to be enlarged.

I cannot conclude this Report without expressing how much we have been indebted to the labors of the Geological Survey, and its accomplished director, Sir William Logan. Their plans of French River, Lake Nipissingue, and the Mattawan, were so complete, and, after a close test, proved so accurate, that they left nothing farther to be desired towards a general map of that section of the waters. Had they not been in existence, this Report could not have been made without another season's field work.

Had maps of the Ottawa River, of a similar character to those of French River, been accessible, a large part of the expense of the Ottawa Survey might have been saved to the Province. I mention these facts both as an act of justice, and because I wish to record distinctly my appreciation of the Geographical results of the Geological Survey, in regard to which my past years labors have qualified me to speak.

The labors of my predecessors, Messrs. Stewart, Perry, and Gallwey, have been made use of to determine the lengths and depths of the unobstructed, or rather still water portions of the River.

The plans and sections of the "Roches Fendu" Channel, and Chats Rapids, made for the department by Mr. Thomas E. Norman, have been adopted in full.

Mr. Slater's levels and bench marks, from Fort William to the head of the Chats Channel, have been followed; everything else upon which this Report and estimate of cost is based, has been derived from actual survey, carried on under my own supervision, and for the correctness of which I am responsible.

In accordance with the instructions of the Department, the plans and estimates "give in detail the dimensions and quantities of each section of work, and the structures pertaining thereto." This has required a much more careful survey than is usual on a preliminary examination, and has involved a large amount of labor. It has been necessary to make a continuous section of 198.73 miles river, and to make detailed surveys and cross sections of the location of every Lock, Canal and Dam, on the whole line. Plans, on a large scale, have been constructed from these surveys, and the estimates and quantities taken out in detail with great care.

This could not have been accomplished in the limited time allowed, if I had not been so fortunate as to have had very energetic as well as careful assistants.

To Mr. E. R. Blackwell, whose reputation, as an experienced Hydraulic Engineer, stands high in the United States, I owe the labor of conducting the surveys from Des Joachims to Lake Huron, and taking out the quantities upon the whole line. By his judgment I have been much guided in arranging plans and determining prices.

To my other assistants, Messrs. T. E. Norman, C. H. Irvin and Mr. H. Civer, I am much indebted for executing quickly and accurately, whatever fell to their duty to perform.

I have also been assisted by the judgment and experience of Mr. Horace Merrill, Superintendent of Ottawa Timber Slides, to whom is due the plan of Timber Dams. His report upon the effect of the proposed improvements upon the timber navigation, and the arrangements and cost of new Slides, will soon be handed in.

I must also state that all our work on the river has been facilitated by the courtesy of the officers of the Hon. Hudson Bay Company, among whom I may particularly mention George McTavish, Esq., C. T. Fort William.

All of which is respectfully submitted by

(Signed,) THOS. C. CLARKE,
Engineer, Ottawa Survey.

January 2nd., 1860.

APPENDIX.

TABLE OF CONTENTS.

A.

Extract from Instructions to the Engineers intrusted with the Ottawa Survey.

The Survey is to be prosecuted with a view of ascertaining the practicability of opening a ship communication between the St. Lawrence and Lake Huron, through the Ottawa waters; and not for the purpose of making a minute and highly accurate hydrographic chart of the River, except so far as the same may be subservient to the first named purpose.

The Engineer in charge of each section of the Survey is to examine, in that section, the nature of the difficulties, and the quantity of the canalling required to be done, and to state the cost of such canalling; giving in detail the dimensions and quantities of each section of work, and the structures pertaining thereto, and the prices which appear to him sufficient for their execution; in order that the data, upon which his estimates are based, may be open to the inspection of this Department.

The Scale of Navigation upon which his estimates are to be based, will be that proposed by Mr. Shanly, *i. e.*, dimensions of locks 250x50x10 feet.

Canals one hundred feet wide on bottom, depth ten to eleven feet. Should he, however, see any reason which appears to him sufficient for modifying any of these dimensions, he will make a separate estimate upon such portions, giving his reasons for the change.

The quality of the works proposed should not be inferior to the standard of the St. Lawrence Canals.

He will be expected to report generally upon the method proposed for executing the works, and to designate the points from which materials are to be obtained; and should any special difficulties of construction occur on his section, he should show how he proposes to overcome them.

With his Report he will furnish a separate plan and section of each piece of Canal, carefully noting upon the sections, the difference of level between extreme high and low water.

As the question of Supply, upon which the success of the above project depends, is to be determined upon your section, you will give particular attention to that point, and to the practicability of the plan of elevating Lake Nipissingue to the summit level, as proposed by Mr. Shanly. The question also of a terminal harbor on Lake Huron should receive your careful consideration, and the proper site for lighthouses and piers should be pointed out.

(Signed,) L. V. SICOTTE,
Chief Commissioner.

Toronto, 16th Nov., 1858.

B.

TABLE OF RIVERS.

NAMES.	Area of drainage in square miles.	Length in miles.	Discharge in cubic feet per second. Low Water.	Mean.	High water.	Authority.
Amazon	2,400,000	4,000	....	....	1,700,000	Encyclopædia Britannica
Mississippi	1,226,000	4,400	447,200	....	1,270,000	C. Ellet, Junior.
Saint Lawrence	565,000	2,600	....	900,000	....	A. J. Russell, Esq.
Niagara	237,300	......	370,589	389,000	406,000	N. Y. State Reports.
Ganges	432,000	1,680	36,300	207,000	494,200	Sir C. Lyell.
Nile	520,200	2,240	23,100	220,000	....	Encyclopædia Britannica
Ohio, at Wheeling	25,000	......	1,400	....	260,277	C. Ellet, Junior.
Thames	5,000	215	1,330	....	7,900	Encyclopædia Britannica
Rhone	38,000	560	7,000	21 000	204,000	D. Aubuisson.
Rhine	88,000	700	13,400	33,700	164,000	do.
*Ottawa (Grenville)	80,000	700	35,000	85,000	150,000	Ottawa Survey.
French River	4,700	......	9,500	....	....	do.

* See Tables C. and D.

(Signed,) THOS. C. CLARKE,
Engineer, Ottawa Survey.

January 2nd, 1860

C.

TABLE OF HEIGHTS OF WATER.—Upper Lock, Grenville, year 1859.

January.	Height of Water on Sill.	February.	Height of Water on Sill.	March.	Height of Water on Sill.	April.	Height of Water on Sill.	May.	Height of Water on Sill.	June.	Height of Water on Sill.
	′ ″		′ ″		′ ″		′ ″		′ ″		′ ″
1	6 3	1	5 4	1	5 1	1	10 10	1	11 11	1	13 9
2	6 3	2	5 4	2	5 1	2	10 10	2	12 3	2	13 8
3	6 2	3	5 4	3	5 1	3	10 10	3	12 6	3	13 7
4	6 1	4	5 4	4	5 1	4	10 10	4	12 9	4	13 6
5	6 1	5	5 4	5	5 1	5	10 11	5	13 0	5	13 6
6	6 1	6	5 4	6	5 1	6	10 10	6	14 2	6	13 6
7	6 0	7	5 4	7	5 1	7	10 9	7	14 5	7	13 5
8	5 11	8	5 4	8	5 1	8	10 7	8	14 7	8	13 7
9	5 10	9	5 4	9	5 1	9	10 4	9	14 10	9	13 6
10	5 10	10	5 4	10	5 0	10	10 2	10	14 10	10	13 5
11	5 9	11	5 4	11	5 0	11	10 0	11	14 11	11	13 3
12	5 9	12	5 4	12	5 0	12	9 11	12	14 11	12	13 1
13	5 8	13	5 4	13	5 0	13	9 10	13	15 0	13	12 0
14	5 7	14	5 4	14	5 2	14	9 9	14	15 10	14	12 10
15	5 7	15	5 3	15	5 3	15	9 9	15	15 10	15	12 9
16	5 7	16	5 3	16	5 6	16	9 9	16	15 10	16	12 8
17	5 7	17	5 3	17	6 0	17	9 9	17	15 9	17	12 7
18	5 8	18	5 3	18	7 0	18	9 9	18	15 8	18	12 7
19	5 6	19	5 3	19	7 8	19	9 9	19	15 8	19	12 6
20	5 6	20	5 3	20	8 1	20	9 9	20	14 7	20	12 6
21	5 5	21	5 3	21	8 6	21	9 9	21	14 6	21	12 6½
22	5 5	22	5 3	22	9 0	22	9 9	22	14 11	22	12 7
23	5 5	23	5 3	23	9 5	23	9 10	23	14 11	23	12 6½
24	5 5	24	5 2	24	9 7	24	11 2	24	14 10	24	12 6½
25	5 5	25	5 2	25	9 8	25	11 3	25	14 10	25	12 6
26	5 5	26	5 2	26	9 11	26	11 5	26	14 9	26	12 5
27	5 5	27	5 2	27	10 0	27	11 7	27	14 9	27	12 4
28	5 5	28	5 1	28	10 3	28	11 9	28	14 8	28	12 3
29	5 5			29	10 5	29	11 10	29	13 11	29	12 2
30	5 4			30	10 6	30	11 11	30	13 10	30	12 1
31	5 4			31	10 8			31	13 10		

July.	Height of Water on Sill.	August.	Height of Water on Sill.	September.	Height of Water on Sill.	October.	Height of Water on Sill.	November.	Height of Water on Sill.	December.	Height of Water on Sill.
1	12 0	1	8 7	1	6 7	1	8 1	1	7 10	1	10 9
2	11 11	2	8 7	2	6 7	2	8 3	2	7 11	2	10 9
3	11 10	3	8 6	3	6 6	3	8 5	3	7 11	3	10 9
4	11 9	4	8 6	4	6 5	4	8 6	4	7 10	4	10 7
5	11 8	5	8 5½	5	6 5	5	8 7	5	7 9	5	10 7
6	11 7	6	8 5	6	6 5	6	8 8	6	7 9	6	10 8
7	11 6	7	8 5	7	6 4	7	8 9	7	7 9	7	10 8
8	11 5	8	8 4	8	6 4	8	8 9	8	7 9	8	10 8
9	11 3	9	8 3	9	6 4	9	8 9	9	7 10	9	10 7
10	11 2	10	8 2	10	6 3	10	8 8	10	7 10	10	10 6
11	11 0	11	8 1	11	6 6	11	8 7	11	7 10	11	10 5
12	10 10	12	8 0	12	6 10	12	8 6	12	7 10	12	10 4
13	10 8	13	8 0	13	6 10	13	8 6	13	8 0	13	10 3
14	10 6	14	7 11	14	7 2	14	8 5	14	8 6	14	10 1
15	10 5	15	7 10	15	6 10	15	8 5	15	9 3	15	10 0
16	10 3	16	7 9	16	6 8	16	8 4	16	9 4	16	9 11
17	10 1	17	7 9	17	6 7	17	8 2	17	9 5	17	9 10
18	10 0	18	7 8	18	6 7	18	8 0	18	9 6	18	9 9
19	9 10	19	7 6	19	6 7	19	8 1	19	9 6½	19	9 8
20	9 8	20	7 5	20	6 8	20	8 2	20	11 4	20	9 8
21	9 6	21	7 4	21	6 9	21	8 1	21	11 8	21	9 7
22	9 3	22	7 3	22	6 9	22	8 0	22	12 1	22	9 6
23	9 1	23	7 2	23	7 0	23	8 1	23	11 11	23	9 6
24	9 0	24	7 1	24	7 3	24	8 2	24	11 10	24	9 5
25	8 11	25	7 0	25	7 4	25	8 2	25	11 9	25	9 3
26	8 10	26	6 11	26	7 5	26	8 3	26	11 8	26	9 1
27	8 10	27	6 10½	27	7 6	27	8 2	27	10 11	27	8 10
28	8 10	28	6 10	28	7 8	28	8 1	28	10 10	28	8 8
29	8 9	29	6 9	29	7 9	29	8 0	29	10 10	29	8 7
30	8 8	30	6 8	30	7 11	30	8 0	30	10 9	30	8 5
31	8 8	31	6 7			31	7 11			31	8 3

(Signed)

THOMAS C. CLARKE,
Engineer Ottawa Survey.

January 2nd, 1860

D.

TABLE OF DAMS.—Showing the depth of water on their crests at high and low water

NAME.	I. Length of overfall in feet.	Low water.		High water.		Difference between high and low water.	Remarks.
		Q. Cubic feet per second.	H. Height in feet.	Q. Cubic feet per second.	H. Height in feet.		
Carrillon	1700	35000	3 20	150000	8 48	5 28	
Chute à Blondeau	1750	"	3 15	"	8 32	5 17	
Little Chaudière	2000	25000	2 31	130000	6 93	4 62	
Chats	2100	"	2 80	"	8 40	5 60	
Portage du Fort	2400	"	5 08	"	6 08	4 0	
Rocher fendu C	400	15000	4 64	70000	13	8 36	Rocher fendu Channel.
Long Rapids	600	"	3 67	"	10 07	6 40	
Joachims	1150	25000	3 33	125000	9 76	6 43	
McSorley's	1040	"	3 55	"	10 43	6 88	
Rocher Capitaine	1050	"	3 51	"	10 36	6 85	
Do. do.	1400	"	2 92	"	8 54	5 62	
Deux Rivières	938	"	3 82	"	11 20	7 38	
Johnson's Rapids	2000	"	2 29	"	6 73	4 44	
Parresseux Chute	920	5000	1 34	7800	1 63	0 29	Mattawan.*

The heights H and H in columns 4 and 6 were calculated by the formula $H = \left(\frac{Q}{3\ 56.1}\right)^{\frac{2}{3}}$

The quantities Q and Q are assumed to be the least and greatest volumes of water, respectively, which will pass over the Dams.

(Signed,) THOMAS C. CLARKE,

Engineer Ottawa Survey.

January 2nd, 1860

* These quantities include the supply drawn from Lake Nipissingue in addition to the present discharge of the Mattawan.

E.

Table of Large Propellers.

600 *tons and over.*

Year.	NAME.	Port of Hail.	Tonnage.	Over all. Length.	Over all. Beam.	Draft when Loaded.
1856...	Acme	Buffalo	762	190·6	33·3	10·0
do ...	Alleghany	do	583	172·0	28·7	10·9
do ...	Adriatic	Detroit	663	178·0	31·6	10·0
1855...	Chicago	Buffalo	758			
1856...	Cuyhahoga	Cleveland	601	....	....	....
1857...	Comet	Buffalo	622	181·3	29·0	11·6
do ...	Dacotah	Cleveland	698	193·4	30·4	11·0
do ...	Equinox	Buffalo	620	185·0	30·0	10·0
do ...	Eclipse	do	620	185·0	30·0	10·0
do ...	Equator	do	620	185·0	30·0	10·0
1856...	Evergreen City	Sheboygan	624	192·6	27·9	10·6
1857...	Free State	Buffalo	768	196·0	31·6	10·6
do ...	Fountain City	Cleveland	820	210·0	30·3	12·0
do ...	Galena	do	690	193·0	30·4	10·6
do ...	Hunter	Buffalo	680	200·0	30·0	10·6
1856...	Iron City	Cleveland	607	184·2	29·4	9·6
....	Iowa	Buffalo	981	247·0	31·0	11·6
1855...	Jersey City	Dunkirk	633	182·0	29·5	10·6
1856...	Kenosha	Cleveland	645	194·7	27·10	10·0
do ...	Montgomery	Detroit	879	204·0	33·5	11·0
do ...	Mohawk	Buffalo	789	200·6	31·2	11·6
1857...	Mendota	Cleveland	709	193·9	30·7	11·0
....	Milwaukie	....	650	200·0	28·0	10.6
....	May Flower		623	185·0	28·0	11·0
....	Nile	....	700	188·0	28·6	11·0
1856...	Neptune	Buffalo	675	181·0	30·2	10·6
do ...	New York	Dunkirk	665	182·1	32·0	10·6
1858...	Northern Light	Cleveland	716	207·0	30·0	10·6
....	Oriental	....	850	234·0	34·0	10·6
....	Plymouth	Buffalo	846	212·0	32·0	11·0
1856...	Pittsburgh	do	606	185·0	28·0	10.6
1855;	Potomac	do	818	209·0	33·0	11·0
1856...	Racine	do	715	196·0	30·0	10·8
do ...	Rocket	do	611	181·1	29·3	11·6
do ...	Tonawanda	do	922	....	....	....
1857...	Wenona	Cleveland	688	193·0	30·6	11·0

(Signed,) THOMAS C. CLARKE,
Engineer Ottawa Survey.

January 2nd, 1860.

F.

OTTAWA WATERS UNIMPROVED.—Table of Distances and Levels.

Names of Rivers, Lakes, Rapids, &c.	DISTANCES. Miles from Montreal.	DISTANCES. Length of Open Navigation.	DISTANCES. Length of obstructed Navigation.	LEVELS. Rise, Low Water Section.	LEVELS. Elevation above Tide, low water.	LEVELS. Elevation above tide, high water.	LEVELS. Difference.
Tide Three Rivers					0·00		
Montreal Harbour	0·00			12·75	12·75		
Lachine	8·50		8·50	43·75	56·50	62·50	6·00
Lower St. Annes	22·00	13·50		·50	57·00	63·50	6·50
Upper St. Annes	22·10		·10	1.00	58·00	67·00	9·00
Carillon Rapids	47·70	25·60		1·00	59·00	71·00	12·00
Above do	49·00		1·30	8·75	67·75	77·75	10·00
Chute à Blondeau Rapids	53·00	4·00		·05	67·80	79·80	12·00
Above do	53·10		·10	4·00	71·80	87·00	15·20
Foot of Long Sault Rapids	54·50	1·40		·10	71·90	88·30	16·40
Grenville	60·43		5·93	45.80	117·70	132·50	14·80
Ottawa Harbour	116·50	56·07		* 2·30	120·00	140·00	20·00
Above Chaudière Falls				42·30	162·30	170.30	8·00
Above Little do	118·50			8·10	170·40	177.40	7·00
Above Remoux Rapids				2·80	173·20	181·20	8·00
Des Chenes Lakes	122·86		6·36	9·80	183·00	191·80	8·00
Foot of Chats Falls	149·55	26·69		·30	183·30	193·30	10·00
Above Chats	150·05			38·00	221·30	225·30	4·00
Chats Lake	153·16		3·61	11·80	233·10	240·10	7·00
Foot of Snows Rapid	171·13	17·97		·20	233·30	240·30	7·00
Head of do	171·33		·20	·60	233·90	243·90	10·00
Calumet Channel.							
Portage du Fort Rapid	175·73	4·40		1·90	235·80	245·80	10·00
Head of do				13·00	248·80	257·80	9·00
Mountain Rapid	181·33			6·20	255·00	265·00	10·00
Head of do				13·29	268·29	281·29	13·00
Head of Dargies Rapid				1·76	270·05	278·05	8·00
Foot of Calumet				5·65	275·70	285·70	10·00
Head of do	184·14			55.67	331·37	340·37	9·00
La Passe	202·20			4·21	335·58	345·58	10·00
Rocher Fendu Channel.							
Portage du Fort Rapid	175·73				248·80		
Rocher Fendu Falls	183·00			·50	249·30	259·30	10·00
Long Rapids Foot	184·50			6·40	255·70	264·70	9·00
La Barrière Foot	186·00			16·30	272·00	284·00	12·00
Muskrat	187·00			3·30	275·30	284·30	9·00
Mice	188·00			6·80	282·10	291·10	9·00
La Fontaine's Lake	188·50			3·30	285·40	293·40	8·00
Black Rapids	189·50			18·70	304.10	314·10	10·00
Black Falls	190·30			17·80	321·90	331·90	10·00
Flat Rapids	192·00		16·27	12·00	333·90	343·90	10·00
La Passe	195·92			1·68	335·58	345·58	10·00
Foot Allumette Island	206·60			2·58	338·16	349·16	11·00
Foot of Chapeau	215.43	23·43		·76	338·92	349·92	11·00
Head of do	215·50			·60	339·52	350·52	11·00
Foot of L'Islet	220.35			·57	340·09	350·59	10·50
Head of Culbute	221·10		5·69	17·09	357·18	364·18	7·00
Fort William	226·40			·32	357·50	364·20	6·70
Head of Deep River	254·00	32·90		1·30	358·80	368·60	9·80
Head of des Joachims Rapids	255·64		1·64	26·40	385·20	402·20	17·00
Mouth of des Moines River	263·30	7·66		1·00	386·20	403·90	17·70
Foot of McSorley's Rapids	268·25		4.95	3·00	389·20		
Head of do do	269·00		·75	3·00	392·20		
Foot of Rocher Capitaine Rapids	272·50	3·50		2·90	395·10		
Head of do do	273·85		1.35	40·90	436·00	450·00	14·00
Foot of Deux Rivières Rapids	285·55	11·70		4·30	440·30	455·90	15·60
Head of do do	286·01		·46	12·60	452·90		
Foot of Trout Rapids	286·70		·69	·80	453·70		
Head of Trout Rapids (at Mic Macs)	287·15		0·45	7·40	461.10	478·50	17·40
Foot of La Veillée	288·10		0·95	2·80	463·90		
Head of do	288·70		0·60	7·50	471·40		
Foot of Rocky Farm Rapids	296·75	8·05		0·40	471·80		

* Estimated at 2·30.

F.—(*Continued.*)

Names of Rivers, Lakes, Rapids, &c.	Distances. Miles from Montreal.	Distances. Length of open Navigation.	Distances. Length of obstructed Navigation.	Levels. Rise, Low Water Section.	Levels. Elevation above Tide, low water.	Levels. Elevation above Tide, high water.	Levels. Difference.
Head of do do	301·50		4·75	8·50	480·30		
Foot of Johnson's Rapids	306·55	5·05		0· 8	481·10		
Head of do	307·00		0·45	4· 9	486·00		
Foot of Mattawan Rapids	307·60	00·60		0· 1	486·10		
Head of do	308·00		0·40	2· 9	489·00	503·30	14·30
Mouth of Mattawan River	308·00				489·00		
		242·52	65·48				

Mattawan and French River Waters Unimproved.

Names of Rivers, Lakes, Rapids, &c.	Miles from Montreal.	Length of open Navigation.	Length of obstructed Navigation.	Rise, Low Water Section.	Elevation above Tide, low water.	Elevation above Tide, high water.	Difference.
Mouth of the Mattawan	308·00	242·52	65·48		489·00		
Foot of Lac Plein Chants Rapid and Chute	310·40	2·00	0·40	5·40	494·40		
Foot of Lac Plein Chants	310·80		0.40	16·90	511·30		
Foot of Des Epines Rapids	316·25	5·45		0·20	511·50		
Head of do	316·30		0.05	5·60	517·10		
Foot of Rapide de la Rose	316·85	0·55		0·20	517·30		
Head of do	317·00		0·15	5·60	522·90		
Foot of Rapide des Rochers	318·20	1·20		1·40	524·30		
Head of do	318·30		0·10	4·80	529·10		
Foot of Rapide des Aiguilles	319·00	0·70		0·10	529·20		
Head of do	319·01		0·01	0·40	529·60		
Foot of Chutes des Paresseux	321·65	2·64			529·60		
Head of do	321·85		0·20	33·80	563·40		
Foot of Petite Paresseux Rapids	322·20	0·35		0·00	563·40		
Head of do	322·35		0·15	8·20	571·60		
Foot of Lac Pimisi	323·38		1·03	12·80	584·40		
Foot of Talon Chute	324·53	1·15			584·40		
Head of do	324·71		0·18	42·70	627·10		
Rapid below Lac Talon	325·18	0·47			627·10		
Foot of Lake Talon	325·33		0·15	0·90	628·00	633·10	5·10
Head of do	332·34	7·01			628·00		
Foot of Turtle Lake	336·08		3·74	29·90	657·90	659·70	1·80
Foot of Trout Lake	339·36	3·28		0·00	658·80		
Head of do	347·79	8·43			658·80	661·60	2·80
East shore of Lake Nipissingue	351·98		4·19	Fall. 24·50	634·30		
Head of Chaudière Portage	382·42	30·44			634·30	641·60	7·30
Foot of do	382·72		0·30	25·30	609·00		
Foot of Chaudière Rapids	384·03		1·31	0·70	608·30	612·00	3·70
Head of Rapide du Pin	391·60	7·57			608·30	611·90	3·30
Foot of do	391·69		0·09	2·60	605·70		
Head of Grande Faucelle Rapid	392·45	0·76		0·10	605·60	609·00	3·40
Foot of do do	392·53		0·08	5·60	600·00		
Head of Rapide du Buisson	393·22	0·69		0·40	599·60		
Foot of do	393·32		0·10	3·30	596·30		
Head of Petite Faucelle Rapid	393·78	0·46			596·30		
Foot of do	394·00		0·22	4·40	591·90	598·30	6·40
Head of Rapide de Parisien	395·49	1·49		0·80	591·10		
Foot of do	395·70		0·21	1·20	589·90	593·70	3·80
Head of Grand Récollet Rapids	412·72	17·02		0·30	589·60		
Foot of do do	412·74		0·02	6·80	582·80		
Head of Small Rapid	413·74	1·00		0·10	582·70		
Foot of do	413·82		0·08	0·70	582·00		
Head of Small Rapid	417·54	3·72			582·00		
Foot of do	417·64		0·10	2·00	580·00	583·90	3·90
Head of Petites Dalles Rapid	427·81	10·17			580·00		
Foot of do	428·02		0·21	6·00	574·00		
Mouth of French River	430·76	2·74			574·00		
		351·81	78·95				
		430·76					

(Signed,) THOS. C. CLARKE,

January 2nd, 1860. *Engineer, Ottawa Survey.*

"G."

Ottawa Waters Improved.—Table of Distances and Levels.

Names	Distances.			Levels.				
	Miles from Montreal.	Length of Rivers and Lakes.	Length of Canals.	Elevations above tide.	Number of Locks.	Lockage.	Total number of Locks.	Total Lockage.
Montreal	0.00			12.75		43.75		
Lachine	8.50		8.50	56.50				
			8.50					
St. Annes	21.81	13.31		57.1				
Canal	23.00		1.19	58.	1	1.00	1	1.00
		13·31	1·19					
Lake of Two Mountains	47.70	24.70		59.				
Carrillon Canal	48.20		.50	71.	1 1	12.00 5.00		
Chute à Blondeau	53.00	4.80		76.				
Lock and Dam	53.07		.07	86.	1	10.00		
Foot of Grenville Canal	56.00	2.93		116.5	1 1	12.00 12.00		
Head of do.	60.43		4.43	117.5	1 1	6·50 1.00		
		7.73	5.00				7	58.50
Green Shoals			.10					
Ottawa Harbour	116.50	55.97		120.	1 1	11.50 11.50		
Below Sparks' Mill	118.50			166.	1 1	11.50 11.50		
Lock and Dam			2.00	174.50	1	8.50		
Foot du Chêne Rapid	122.25	3.75						
Canal	122.86		.61	183.	1	8.50	6	63.00
		3.75	2.61					
Head of du Chêne Lake	149.55	26.69		183.30				
Chats Canal	150.05		.50	225.30	1 1 1 1	12.00 12.00 12·00 6.00		
Lock and Dam	151.75	1.70			1	8.00		
Chats Lake	151.85		.10	233.30			5	50·00
		1.70	.60					
Foot of Snows	171.13	19.28		233.30				
Lock and Dam	171.33		.20	239.3	1			
Portage du Fort Rapids	175.73	4.40						
Locks and Dam	175.97		.24	259.30	1 1	12.00 8.00		
Rocher Fendu Chute	183.32	7.35						
Locks and Dam	183.39		.07	269·30	1	10.00		
Long Rapids	185.00	1.61						
Lock and Dam	185.12		.12	289.30	1 1	14·00 6.00		
Lafontaine Rapids	188.63	3.51		313.30	1 1	12.00 12·00		
Locks and Dam	188.86		.23					
Norman's Rapids	189.18	.32		337·30				

"G."

Ottawa Waters Improved.—Table of Distances and Levels.—(*Continued.*)

Names.	Distances.			Levels.				
	Miles from Montreal.	Length of Rivers and Lakes.	Length of Canals.	Elevation above tide.	Number of Locks.	Lockage.	Total number of Locks.	Total Lockage.
Locks and Dam	189.30		.12		1 1	12.00 12.00		
Black Falls	190.43	1.13		339.30				
Lock and Dam	190.50		.07		1	2.00		
		18.32	1.05				11	104.00
Lake Coulonge				339.30				
Foot of Chapeau	215.43	24.93		339.30				
Lock and Dam	215·50		.07	351.30	1	12.00		
L'Islet	220.35	4.85						
Lock and Dam	220.42		.07	357.20	1	6.00		
		4.85	.14				2	18.00
							32	294.50
Fort William	226·40			357.50				
Foot des Joachims	254·00	33.58		358.50				
		33.58						
Foot of des Joachims Rapids	254.00			358.80				
Locks and Canal	254.57		0.57	396.80	1 1 1	13.00 13.00 12.00		
Foot of M. Sorley's Rapids	268.25	13.68						
Lock and approaches	268.38		0.13	406.80	1	10.00		
Foot of Rocher Capitaine	272.50	4.12						
Locks and Canal	272.95		0.45	425.80	1 1	13.00 6.00		
River to head of Rocher Capitaine	273.65	0.70						
Locks at do. do.	273.85		0.20	444.80	1 1	13.00 6.00		
Foot of Deux Rivières	288.55	11.70						
Locks and Canal	286.01		0.46	486.80	1 1 1 1	12.00 12.00 12.00 6.00		
Foot of Johnson's Rapids	306.55	20.54						
Locks and Canal	307.00		0.45	507.00	1 1	12.00 8.20		
							14	148.20
Mouth of Mattawan River	308.00	1.00						
		51.74	2.26					

"G."

Ottawa Waters Improved,—Table of Distances and Levels,—(*Concluded.*)

	Names.	Distances.			Levels.				
		Miles from Montreal.	Length of Rivers and Lakes.	Length of Canals.	Elevation above tide.	Number of Locks.	Lockage.	Total number of Locks.	Total Lockage.
Mattawan River.	Mouth of Mattawan River	308.00							
	Foot of La Plein Chants Rapids and Chute	310.40	2.40		507.00				
	Locks and Dam	310.56		0.16	533.00	1 1	13.00 13.00		
	Foot of Rapids de la Rose	316.85	6.29						
	Lock and approaches	317.03		0.18	546.00	1	13.00		
	Foot of Paresseux Chute	321.65	4.62						
	Lock and approaches	321.85		0.20	574.00	1 1	14.00 14.00		
	Foot of Petit Paresseux Rapid	322.20	0.35						
	Lock and approaches	322.40		0,20	596.00	1 1	11.00 11.00		
	Foot of Talon Chute	324.53	2.13						
	Lock and approaches	324.75		0.22	639.50	1 1 1	14.50 14.50 14.50		
	Foot of Lake Talon	325.18	0.43						
	Lock and approaches	325.30		0.12		1	11.50		
			16.22	1.08				11	144.00
Summit Level.	Talon Lake	334.30	9.00		651.00				
	Turtle Lake Outlet	336·08		1.78					
	Trout and Turtle Lakes	347.79	11.71						
	Summit Cut	351.98		4.19					
	Lake Nipissingue	382.42	30.44		651.00				
			51.15	5.97					
French River.	Head of Chaudière Portage, Lake Nipissingue	382.42			651.00				
	Locks and Basin	382.72		0.30	621.00	1 1 1	10.00 10.00 10.00		
	Head of Rapide du Buisson	393.22	10.50						
	Lock and approaches	393.38		0.16	611.00	1	10.00		
	Rapide de Parisien	395.61	2.23						
	Lock and approaches	395.70		0.09	601.00	1	10.00		
	Grand Recollet Rapids	412·65	16.95						
	Lock and approaches	412.74		0.09	588.00	1	13.00		
	Petite Dalles Rapid	427.84	15.10						
	Lock and Canal	428.02		0.18	574.00	1	14.00		
	Mouth of French River, Georgian Bay	430.76	2.74						
			47.52	0.82				7	77.00
	Totals		401.44	29.32				64	663.70
			430.00	76.00					

(Signed,) THOS. C. CLARKE,
Engineer Ottawa Survey.

January, 2nd, 1860.

H.

Abstract of Estimates.

	$	$
Saint Annes		469672
Carrillon	307741 80	
Chute à Blondeau	144315 25	
Grenville	1197852 30	
		1649909
Green Shoals		136105
Chaudière and Des Chênes		816733
Chats		681932
Snows	133356 50	
Portage du Fort	287396 10	
Rocher Fendu	836088 00	
		1256840
Lake Coulonge		262514
Chapeau l'Islet, &c		243507
Des Joachims	327773 62	
McSorley's	169375 15	
Rocher Capitaine	553543 70	
Deux Rivières	419941 40	
Johnson's	287019 20	
		1757653
Plein Chants	215744 35	
De la Rose	123573 20	
Parresseux	242096 20	
Petite Parresseux	212116 45	
Talon Chute	270105 05	
Talon Lake	98518 65	
		1162154
Summit Cutting		2160369
Chaudière of French River	468925 02	
Rapide de Buisson	132612 50	
Parisien Rapid	108358 90	
Grand Recollet	136849 20	
Petites Dalles	139870 90	
		886117
	$	11483505
Add 5 per cent. for Engineering and Superintendence		574175
	$	12057680

(Signed,) THOS. C. CLARKE,
Engineer Ottawa Survey.

January 2nd, 1860.

I.

Items.		Quantities.	Price.	Amount.	Total.
WORK AT SAINT ANNE'S.					
Lock No. 1.			$ cts.	$ cts.	$ cts.
Removing old Lock Walls	Cubic yds.	2900	0 75	2175 00	....
Excavation, including pumping, &c.	do	134800	1 50	202200 00	....
Embankment	do	4060	0 25	1015 00	....
					205390 00
Masonry in Lock Walls, face and coping	do	2055	12 00	24660 00	....
do do do Culverts	do	148	16 00	2368 00	....
do do do Backing	do	4509	8 00	36072 00	....
Rubble Masonry in Cement	do	....	....	....	....
Concrete Masonry	do	68	6 00	408 00	....
Timber in foundations	Linl. feet	2020	0 18	363 60	....
Wrought Iron in foundations	Lbs.	4500	0 15	675 00	....
Cast Iron	do	5780	0 10	578 00	....
Mitre Sills, complete		....	....	625 00	....
Culvert Gates, complete		....	....	5000 00	....
Lock Gates, complete		....	....	650 00	....
					71399 60
Piers.					
Pine Timber	Linl. feet	858400	0 16	137344 00	....
Wrought Iron	Lbs.	147600	0 10	14760 00	....
Battered Wall in Cement	Cubic yds.	494	4 00	1976 00	....
Stone filling	do	78980	0 25	19745 00	....
Lining with earth, &c.	do	36400	0 35	12740 00	....
					186565 00
Coffer Dams to be Removed.					
Pine Timber	Linl. feet	15750	0 22	3465 00	....
Lining with earth, &c	Cubic yds.	680	0 60	408 00	....
Plank	do	94000	26 00	2444 00	....
					6317 00
					$469671 60
WORK AT CARILLON.					
Locks No. 2 and 3.			$ cts.	$ cts.	$ cts.
Excavation of Rock	C. yds.	30000	1 00	30000 00	....
Removal of Crib work.	"	10000	0 50	5000 00	....
Embankment	"	51135	0 25	12783 75	....
					47783 75
Masonry in lock walls, face and coping	"	4082	12 00	48984 00	....
" " Culverts	"	296	16 00	4736 00	....
" " Backing	"	9038	6 00	54228 00	....
Rubble Masonry in Cement	"	3783	4 50	17023 50	....
Concrete Masonry	"	136	6 00	816 00	....
Timber in Foundations	Linl. ft.	4040	0 18	686 80	....
Wrought Iron, in do,	Lbs.	9010	0 15	1351 50	....
Cast Iron	"	11560	0 10	1156 00	....
Mitre sills complete		....	....	1250 00	....
Lock gates complete		....	....	12550 00	....
Culvert Gates complete		....	....	1300 00	....
					442081 80
Dam.					
Pine Timber	Linl. ft.	213000	0 16	34080 00	....
Plank including Spike	F.B.M.	342000	22 00	7524 00	....
Wrought Iron	Lbs.	46000	0 10	4600 00	....
Stone filling	C. yds.	47000	0 50	23500 00	....
Slope or pavement wall	"	4850	1 50	7275 00	....
Battered wall	"	9413	3 25	30592 25	....
					107571 25
Coffer Dams to be removed.					
Pine Timber	Linl. ft.	31500	0 22	6930 00	....
Stone filling	C. yds.	3700	0 75	2775 00	....
Lining with Earth &c.	"	2000	0 30	600 00	....
					10305 00
					$207741 80

I.—(*Continued.*)

ITEMS.	Quantities.	Price.	Amount.	Total.
WORK AT CHUTE À BLONDEAU.				
Lock, No. 4.		$ cts.	$ cts.	$ cts.
Excavation of Rock ....C. yds.	3475	1 25	4343 75	....
Embankment .... do	10585	0 25	2646 25	....
				6990 00
Masonry in Lock-walls, face and coping ...... do	2699	12 00	32388 00	....
do do Culverts....... do	148	16 00	2368 00	....
do do Backing...... do	5685	6 00	34110 00	....
Rubble Masonry in Cement .... do	298	4 50	447 00	....
Concrete Masonry .... do	68	6 00	408 00	....
Timber in foundations ....Linl. ft.	2020	0 18	363 60	....
Wrought Iron in do ....Lbs.	4500	0 15	675 00	....
Cast Iron .... do	5780	0 10	578 00	....
Mitre Sills, complete	....	....	625 00	....
Lock Gates, complete	....	....	5800 00	....
Culvert Gates, complete.	....	....	650 00	....
				78412 60
Dam.				
Pine Timber ....Linl. ft.	88350	0 16	14136 00	....
Plank, including Spike ..............F.B.M.	327000	22 00	7194 00	....
Wrought Iron ....Lbs.	43900	0 10	4390 00	....
Stone filling ....C. yds.	19434	0 60	11660 40	....
Slope or pavement wall .... do	2129	1 50	3193 50	....
Battered wall in Cement.. .... do	3437	3 75	12885 75	....
				53462 65
Coffer Dam to be removed.				
Timber ....Linl. ft.	15200	0 22	3344 00	....
Stone filling ....C. yds.	1800	1 00	1800 00	....
Lining with earth, &c .... do	1020	0 30	306 00	....
				5450 00
				$144315 25
WORK AT GRENVILLE.				
Locks No. 5, 6, 7 *and* 8.				
		$ cts.	$ cts.	$ cts.
Excavation of Earth..............C. yds..........	361000	30	108300 00	....
" Loose Rock.............. "	25200	60	15120 00	....
" Solid " .... "	366300	1 00	366300 00	....
				489720 00
Masonry in Lock Walls, face and coping..... "	7662	12 00	91944 00	....
" " Culverts.............. "	522	16 00	8352 00	....
" " Backing.............. "	16925	6 00	101550 00	....
Rubble Masonry in Cement .... "	410	4 50	1845 00	....
Concrete .... "	844	6 00	5064 00	....
Timber in foundations ....Linl. ft.....	15210	18	2737 80	....
Wrought Iron ....lbs..........	11980	15	1797 00	....
Cast Iron.............."	20230	10	2023 00	....
Mitre Sills Complete	....	....	2190 00	....
Lock Gates Complete	....	....	18230 00	....
Culvert Gates complete	....	....	2275 00	....
				238007 80
Canal Banks.				
Stone Filling made from Cuts ....C. yds......	85730	25	21432 50	....
Plank, including Spike..............F. B. M ...	....	....	....	....
Slope or Pavement Wall..............C. yds......	27197	1 50	40795 50	....
Battered Wall dry .... "	77380	2 75	21 2795 00	....
" " in cement .... "	57566	3 25	187089 50	....
				462112 50
Coffer Dams to be Removed.				
Timber.............. Linl. ft.....	27800	22	6116 00	....
Stone Filling.............. C. yds......	2500	60	1500 00	....
Lining with earth, &c.............. "	1320	30	396 00	....
				8012 00
				$1197852 30

I.—(*Continued.*)

ITEMS.	Quantities.	Price.	Amount.	Total.
WORK AT GREEN SHOALS, and dredging of the River between Green Shoals and Ottawa.		$ cts.	$ cts.	$ cts.
Excavation of rock within coffer dam, C. yds	9402	2 50	23505 00	
Dredging of Channel, "	200000	0 30	60000 00	
				83505 00
PIERS.				
Pine Timber ... Linl. feet.	166510	0 16	26641 60	
Stone Filling ... C. yards.	17210	0 75	12975 00	
Wrought Iron ... lbs.	11756	0 10	1175 60	
Lining with Earth, &c. ... C. yards.	3700	0 30	1110 00	
				41902 20
COFFER DAMS TO BE REMOVED.				
Pine Timber ... Linl. feet.	30030	0 25	7507 50	
Stone Filling ... C. yards.	2470	1 00	2470 00	
Lining with Earth, &c.	1200	0 60	720 00	
				10697 50
				$136104 70
WORK AT OTTAWA CITY, including all to the head of the Du Chêne Rapids.		$ cts.	$ cts.	$ cts.
Locks Nos. 9, 10, 11, 12, 13 and 14.				
Excavation of Rock ... Cubic yds.	243760	0 90	219384 00	
Excavation of Rock at foot of Locks within Coffer Dams, including pumping ... do	8333	1 50	12499 50	
Excavation of Rock at the Remoux within Coffer Dams, including pumping ... do	16000	2 00	32000 00	
Removal of Old Cribs ... do	6166	0 30	1849 80	
Removal of Bridge Piers ... do	107	0 50	53 50	
Embankment ... do	34370	0 25	8592 50	
				274379 30
Masonry in Lock Walls, face and coping ... do	12673	10 00	126730 00	
do do Culverts ... do	748	16 00	11968 00	
do do Backing ... do	32166	5 00	160830 00	
Coursed Rubble Masonry at head of Lock 12 do	3562	6 50	23153 00	
Rubble Masonry in Cement ... do	813	4 50	3658 50	
Concrete ... do	307	6 00	1842 00	
Timber in foundations ... Linl. feet	9110	0 18	1639 80	
Wrought Iron in foundations ... lbs.	31120	0 15	3168 00	
Cast Iron ... lbs.	29120	0 10	2912 00	
Mitre Sills, complete ...	....	....	3125 00	
Lock Gates, complete ...	....	....	29300 00	
Culvert Gates, complete ...	....	....	3250 00	
Swing Bridge ...	....	....	7000 00	
				378576 30
Dams and Canal Banks.				
Pine Timber ... Linl. feet	166200	0 16	26592 00	
Plank, including Spike ... F. B. M.	310400	22 00	6828 80	
Wrought Iron ... lbs.	91690	0 10	9169 00	
Stone filling ... Cubic yds.	14540	0 75	10905 00	
Slope or Pavement Wall ... do	6500	1 50	9750 00	
Battered Wall, laid dry ... do	2830	3 00	8490 00	
Battered Wall in Cement ... do	10224	3 50	35784 00	
Puddle Wall ... do	3560	0 45	1602 00	
Lining with Chip Stone and Gravel ... do	2770	0 30	831 00	
				109951 80
Coffer Dams, ½ to be removed.				
Pine Timber ... Linl. feet	156260	0 20	31852 00	
Stone filling ... Cubic yds.	18799	1 00	18799 00	
Wrought Iron ... lbs.	15249	0 10	1524 90	
Lining with earth, &c. ... Cubic yds.	5500	0 30	1650 00	
				53825 90
				$816733 30

I.—(*Continued.*)

ITEMS.		Quantities.	Prices.	Amount.	Total.
WORK AT THE CHATS RAPIDS.					
Locks Nos. 15, 16, 17, 18, *and* 19.			$ cts.	$ cts.	$ cts.
Excavation of earth	cubic yards.	32500	0 25	8125 00	....
do of rock	do.	77645	2 50	194112 50	....
do of do within coffer dam, including pumping	do.	4444	3 50	15554 00	....
Embankment	do.	74323	0 15	11148 45	....
					228939 95
Masonry, lock walls, face and coping	do.	9187	12 00	110224 00	....
do do culverts	do.	600	16 00	9600 00	....
do do backing	do.	27726	6 50	134719 00	....
Rubble Masonry in cement	do.	433	4 50	1948 50	....
Concrete	do.	1808	6 00	10848 00	....
Timber in foundations	lineal feet.	23300	0 16	3728 00	....
Wrought iron in do	lbs.	10856	0 15	1628 40	....
Cast iron	do.	23340	0 10	2334 00	....
Plank, including spike	F.B.M.	89400	20 00	1788 00	....
Mitre sills complete		....	....	2500 00	....
Lock gates complete		....	....	20750 00	....
Culvert gates complete		....	....	2600 00	....
					302687 90
Dam and Piers.					
Excavation	Cubic yards.	400	2 50	1000 00	....
Pine timber	Lineal feet.	298402	0 15	44760 30	....
Plank including spike	F.B.M.	407500	20 00	9950 00	....
Wrought iron	lbs	87470	0 10	8747 00	....
Stone filling	Cubic yards.	45555	0 80	36444 00	....
Slope or pavement wall	do.	2734	1 50	4101 00	....
Battered wall in cement	do.	2940	4 00	11760 00	....
Lining with chip stone and gravel	do	3310	0 40	1324 00	....
					118086 30
Coffer Dams—one-half to be removed.					
Pine timber	Lineal feet.	95530	0 20	19106 00	....
Stone filling	Cubic yards.	10014	1 20	12016 80	....
Lining with earth, &c	do.	2190	0 50	1095 00	....
					32217 80
WORK AT THE SNOWS, OR CHENAUX RAPIDS.					$ 681931 95
Lock No. 20.			$ cts.	$ cts.	$ cts.
Excavation of Rock	Cubic yds.	16600	1 75	29050 00	....
Embankment	do	17100	0 20	3420 00	....
					32470 00
Masonry in Lock walls, face and coping	do	2248	14 00	31472 00	....
do do Culverts	do	148	18 00	35133 75	....
do do Backing	do	5205	6 75	2664 00	....
Rubble Masonry in cement	do	398	4 50	1791 00	....
Concrete Masonry	do	77	6 00	462 00	....
Timber in foundations	Lin'l. feet	2020	0 17	343 40	....
Wrought iron in do	lbs	4500	0 15	337 50	....
Cast iron in do	lbs	5780	0 10	578 00	....
Mitre sills complete		....	....	625 00	....
Lock Gates complete		....	....	5650 00	....
Culvert Gates complete		....	....	650 00	....
					79706 65
Dams and Piers.					
Excavation	Cubic yds.	160	2 00	320 00	....
Pine Timber	Lin'l. feet	30249	0 15	4537 35	....
Plank, including Spike	F.B.M.	31700	20 00	634 00	....
Wrought Iron	lbs.	8000	0 10	800 00	....
Stone filling	Cubic yds.	3330	1 00	3330 00	....
Battered walls in cement	do	1875	3 50	6562 50	....
Lined with Chip Stone, Gravel, &c	do	450	0 50	225 00	....
					16408 85
Coffer Dam to be removed.					
Pine Timber	Lin'l. feet	14330	0 20	2866 00	....
Stone filling	Cubic yds.	1460	1 25	1825 00	....
Lining with earth, &c	do	160	0 50	80 00	....
					4771 00
					$133356 50

I.—(*Continued.*)

ITEMS.	Quantities.	Price.	Amount.	Total.
WORK AT PORTAGE DU FORT RAPIDS.				
LOCKS NOS. 21 AND 22.		$ cts.	$ cts.	$ cts.
Excavation of Rock .... C. yards.	47200	1.40	66080 00	
Embankment .... do	14056	.20	2811 20	
				68891 20
Masonry in Lock Walls, face and coping... C. yds..	4016	14.	56224 00	
Do. Culvert .... do	296	18.	5328 00	
Do. Backing .... do	8799	6.75	59393 25	
Rubble Masonry in Cement .... do	370	4.50	1665 00	
Concrete do .... do	136	6.	816 00	
Timber in foundations .... Linl. feet.	4040	.17	686 00	
Wrought Iron in foundations .... lbs..	9000	.15	1350 00	
Cast Iron .... lbs.	11560	.10	1156 00	
Mitre Sills complete	....	....	1250 00	
Lock Gates complete	....	....	10700 00	
Culvert Gates complete	....	....	1300,00	
				139868 25
DAM.				
Pine Timber .... Linl. feet.	134150	.15	21342 00	
Plank, including Spike .... F. B. M.	330700	20.	6674 00	
Wrought Iron .... lbs.	44875	.10	4487 50	
Battered Walls in Cement .... C. yards.	8685	3.75	32568 75	
Stone Filling .... do	13784	.60	8270 40	
Lining with Chips, Stone, Gravel, &c... do	2190	.50	1095 00	
				74437 65
COFFER DAM—ONE-THIRD TO BE REMOVED.				
Pine Timber .... Linl. feet.	34110	.20	2682 00	
Stone Filling .... C. yards.	1440	1.	1440 00	
Lining with Earth, &c .... C. yards.	154	.50	77 00	
				4199 00
				$287396 10
WORK AT ROCHER FENDU CHANNEL.				
Locks Nos. 23, 24, 25, 26, 27, 28, 29 and 30.		$ cts.	$ cts.	$ cts.
Excavation of Solid Rock .... Cubic yds.	66020	1 50	99030 00	
Excavation of Loose Rock .... do	3200	0 60	1920 00	
Embankment .... do	41645	0 30	12493 50	
				113443 50
Masonry in Lock-walls, face and coping .... do	15948	14 00	223272 00	
do do Culverts .... do	1044	18 00	18792 00	
do do Backing .... do	36780	6 75	248265 00	
Rubble Masonry in Cement .... do	2174	4 75	10326 50	
Concrete Masonry .... do	444	6 50	2886 00	
Timber in foundations .... Lineal feet	16680	0 17	2835 60	
Wrought Iron in foundations .... lbs.	30120	0 15	4518 00	
Cast Iron .... do	40680	0 10	4068 00	
Mitre Sills, complete	....	....	4575 00	
Lock Gates, complete	....	....	38100 00	
Culvert Gates, complete	....	....	4550 00	
				562188 10
Dams.				
Pine Timber .... Lineal feet	274970	0 15	41245 50	
Plank, including Spike .... F. B. M.	385500	20 00	7710 00	
Wrought Iron .... lbs.	71550	0 10	7155 00	
Stone filling .... Cubic yds.	37948	1 00	37948 00	
Battered wall in Cement .... do	12874	4 00	51496 00	
Lining with Chip Stone Gravel .... do	2222	0 50	1111 00	
				146665 50
Coffer Dams.				
Pine Timber .... Lineal feet	31245	0 20	6249 00	
Stone filling .... Cubic yds.	3450	1 25	4312 50	
Lining with earth, &c .... do	410	0 50	205 00	
				10766 50
Waste Weir.				
Oak Timber .... Cubic feet	540	0 25	135 00	
Oak Planks .... F. B. M.	3920	25 00	98 00	
Wrought Iron .... lbs.	1176	0 15	176 40	
Rubble Masonry .... Cubic yds.	355	5 00	1775 00	
Masonry in Arches .... do	60	14 00	840 00	
				3024 40
				$836088 00

I.—(*Continued.*)

Items.	Quantities.	Prices.	Amount.	Total.
Work at Lake Coulonge and Culbute Channel.				
		$ cts.	$ cts.	$ cts.
Dredging .... Cubic yds.	424500	0 30	127350 00	
Excavation of Rock .... do	43330	2 00	86660 00	
				214010 00
Piers and Coffer Dam.				
Pine Timber	214050	0 16	34248 00	
Stone Filling	18610	0 60	11166 00	
Lining with earth, &c	10300	0 30	3090 00	
				48504 00
				$262514 00
Work at Chapeau, L'Islet, and Culbute Rapids.				
Locks, No. 31 and 32.				
		$ cts.	$ cts.	$ cts.
Excavation of Rock, Chapeau and L'Islet .... C. yds.	22100	1 40	30940 00	
do do Culbute .... do	2000	2 00	4000 00	
Embankment .... do	12190	0 30	3657 00	
				38597 00
Masonry in Lock-walls, face and coping .... do	4312	14 00	60368 00	
do do Culverts .... do	296	18 00	5328 00	
do do Backing .... do	11844	6 75	79947 00	
Rubble Masonry in Cement .... do	186	4 75	883 50	
Concrete Masonry .... do	136	6 50	884 00	
Timber in foundations .... Linl. ft.	4040	0 17	686 80	
Wrought Iron in do .... Lbs.	9000	0 15	1350 00	
Cast Iron .... do	11560	0 10	1156 00	
Mitre Sills complete	....	....	1250 00	
Lock Gates complete	....	....	10400 00	
Culvert Gates complete	....	....	100 00	
				163553 30
Dams.				
Pine Timber .... Linl. ft.	33240	0 15	4986 00	
Plank including Spike .... F. B. M.	60170	20 00	1203 40	
Wrought Iron .... Lbs.	13520	0 10	1352 00	
Battered wall in Cement .... C. yds.	2776	4 00	11104 00	
Stone filling .... do	4283	0 70	2998 10	
Lining with Chip stone gravel, &c .... do	726	0 50	363 00	
				22006 50
Coffer Dam to be removed.				
Pine Timber .... Linl. ft.	51092	0 20	10218 40	
Stone filling .... C. yds.	5710	1 00	5710 00	
Lining with Earth, &c .... do	1740	0 50	870 00	
				16798 40
Waste Weir.				
Oak Timber .... C. feet.	527	0 25	131 75	
Oak Plank .... F. B. M.	3920	25 00	98 00	
Wrought Iron .... Lbs.	1176	0 15	176 40	
Rubble Masonry .... C. yds.	260	4 50	1170 00	
Arch do .... do	61	16 00	976 00	
				2552 15
				$ 243507 35

I.—(*Continued.*)

Items.	Quantities.	Price.	Amount.	Total.
Work at des Joachims Rapids.				
Locks, No. 33, 34 35.		$ cts.	$ cts.	$ cts.
Excavation of Rock .... C. yds.	19700	1 75	34475 00	....
Embankment .... do	51500	0 25	12875 00	....
Removal of Piers, Cribs, &c .... do	4930	0 20	986 00	....
				48336 00
Masonry in Lock-walls, face and coping ..... do	6727	13 00	87451 00	....
do do Culverts .... do	374	17 00	6358 00	....
do do Backing .... do	15191	6 75	102539 25	....
Rubble Masonry in Cement .... do	830	4 75	3942 50	....
Concrete Masonry .... do	154	6 50	1001 00	....
Battered Wall in Cement .... do	1320	4 00	5280 00	....
Timber in foundations .... Linl. ft.	4556	0 17	774 52	....
Wrought Iron, in do. .... lbs.	10559	0 15	1583 85	....
Cast Iron .... do	14560	0 10	1456 00	....
Mitre Sills complete	....	....	1565 00	....
Lock Gates complete	....	....	14375 00	....
Culvert Gates complete	....	....	1625 00	....
				227951 12
Dams, Cribs, and Canal Banks.				
Excavation .... C. yds.	857	1 25	1071 25	....
Pine Timber .... Linl. ft.	113340	0 15	17001 00	....
Plank, including Spike .... F.B.M.	246800	20 00	4936 00	....
Wrought Iron .... lbs.	40200	0 10	4020 00	....
Stone filling .... C. yds.	19280	0 50	9640 00	....
Battered wall in Cement .... do	53	4 00	212 00	....
Slope or Pavement wall .... do	4179	1 75	7313 25	....
Lining with Chip Stone, &c .... do	700	0 50	350 00	....
				44543 50
Coffer Dam, to be removed.				
Pine Timber .... Lin'l feet.	20910	0 20	4182 00	....
Stone filling .... C. yds.	2320	1 00	2320 00	....
Lining, with Earth &c .... do	1260	0 35	441 00	....
				6943 00
				$327773 62
Work at McSorley's Rapids.				
Lock No. 36.		$ cts.	$ cts.	$ cts.
Excavation of Rock .... C. yds.	10420	2 00	20840 00	....
" " Earth .... do	9130	9 25	2282 50	....
Embankment .... do	8640	0 25	2160 00	....
				25282 50
Masonry in Lock-walls, face and coping .... do	2475	15 50	38362 50	....
do do Culverts .... do	148	19 09	2812 00	....
do do Backing .... do	5649	7 25	40962 75	....
Rubble Masonry in Cement .... do	325	4 90	1592 50	....
Concrete Masonry .... do	68	6 75	450 00	....
Timber in foundation .... Linl. ft.	2020	0 17	343 40	....
Wrought Iron in do .... lbs.	4500	0 15	675 00	....
Cast Iron .... do	5780	0 10	578 00	....
Mitre Sills complete	....	....	625 00	....
Lock Gates complete	....	....	6200 00	....
Culverts Gates complete	....	....	550 00	....
				93260 15
Dam and Crib.				
Excavation of Earth .... C. yds.	2000	0 25	500 00	....
Pine Timber .... Linl. ft.	121820	0 15	18273 00	....
Planks, including Spike .... F.B.M.	185200	0 20	3904 00	....
Wrought Iron .... lbs.	39020	0 10	3902 00	....
Stone filling .... C. yds.	19420	0 70	13594 00	....
Battered Wall in Cement .... do	1920	4 30	8256 00	....
Lining with Chip Stone, gravel, &c .... do	617	0 50	308 50	....
				48737 50
Coffer Dam to be removed.				
Pine Timber .... Lin. ft.	7380	0 20	1476 00	....
Stone filling .... C. yds.	520	1 00	520 00	....
Lining with Earth, &c .... do	330	0 30	99 00	....
				2095 00
				$169375 15

I.—(*Continued.*)

Items.		Quantities.	Price.	Amount.	Total.
Work at Rocher Capitaine Rapids.					
Locks No. 37, 38, 39, and 40.			$ cts.	$ cts.	$ cts.
Excavation of Rock	C. yds...	50113	1 75	87697 75	....
" Earth	" ...	54525	25	13631 25	....
Embankment	" ...	32454	10	3245 40	....
					104574 40
Masonry in Lock walls, face and coping..	" ...	8145	16 50	134392 50	....
" Culverts	" ...	522	20 00	10440 00	....
" Backing	" ...	18194	7 00	127358 00	....
Rubble Masonry in Cement	" ...	1551	5 00	7775 00	....
Concrete Masonry	" ...	221	6 90	1524 90	....
Battered Wall in Cement	" ...	1132	4 50	5094 00	....
Timber in Foundations	Linl. ft..	6570	17	1116 90	....
Wrought Iron in do	Lbs.......	15060	15	2259 00	....
Cast Iron	"	20340	10	2034 00	....
Mitre Sills complete		....	....	2190 00	....
Lock Gates complete		....	....	19175 00	....
Culvert Gates complete		....	....	2275 00	....
					315634 30
Dam and Canal Banks.					
Excavation of Earth	C. yds...	2696	25	674 00	....
Embankment	" ...	860	25	215 00	....
Pine Timber	Linl. ft..	312410	15	46861 50	....
Plank, including Spike	F. B. M.	482800	20 00	9656 00	....
Wrought Iron	Lbs	151510	10	15151 00	....
Stone Filling	C. yds...	50310	1 00	50310 00	....
Battered Wall in Cement	" ...	236	4 50	1062 00	....
Slope or Pavement Wall	" ...	4340	2 00	8680 00	....
Lining with Chip Stone, Gravel, &c	" ...	1451	50	725 50	....
					133335 00
Work at Deux Rivières.					$553543 70
Locks Nos. 41, 42, 43, and 44.					
Excavation of Rock	C. yds...	3540	1 90	6726 00	....
" Earth	" ...	50900	25	12725 00	....
Embankment	" ...	20610	15	3091 50	....
					22542 00
Masonry in Lock walls, face and coping..	" ...	7860	13 50	106110 00	....
" Culverts	" ...	522	18 00	9396 00	....
" Backing	" ...	18230	6 75	123052 50	....
Rubble Masonry in Cement	" ...	580	5 00	2900 00	....
Concrete Masonry	" ...	2408	7 00	16856 00	....
Timber in Foundations	Linl. ft..	32900	17	5593 00	....
Plank in do	F. B. M.	146200	20 00	2924 00	....
Wrought Iron in do	Lbs	3100	15	466 50	....
Cast Iron	"	20340	10	2034 00	....
Mitre Sills complete		....	....	2190 00	....
Lock Gates complete		....	....	18650 00	....
Culvert Gates complete		....	....	2275 00	....
					292447 00
Dam and Canal Banks.					
Excavation	C. yds...	720	1 00	720 00	....
Embankment	" ...	22130	15	3319 50	....
Pine Timber	Linl. ft..	176250	15	26437 50	....
Plank, including Spike	F. M. B.	198600	20 00	3972 00	....
Wrought Iron	Lbs......	72630	10	7263 00	....
Stone filling	C. yds...	38538	80	30830 40	....
Battered Wall in Cement	" ...	3272	4 00	13088 00	....
Slope or Pavement Wall	" ...	5969	2 00	11938 00	....
Lining with Chip Stone, Gravel, &c	" ...	555	50	277 50	....
					97845 90
Coffer Dam.					
Pine Timber	Linl. ft..	18430	20	3686 00	....
Stone Filling	C. yds...	3000	1 00	3000 00	....
Lining with Earth, &c,	"	1200	35	420 00	....
					7106 00
					$419941 40

I.—(*Continued.*)

Items.		Quantities.	Price.	Amount.	Total.
Work at Johnson's Rapids.					
Locks Nos. 45 and 46.			$ cts.	$ cts.	$ cts.
Excavation of Rock	Cubic yds.	5605	2 00	11120 00	....
do Earth	"	57150	0 30	17145 00	....
Embankment	"	10964	0 15	1644 60	....
					29909 60
Masonry, Lock walls, face and coping	"	4201	15 00	63150 00	....
do do Culverts	"	296	20 00	5920 00	....
do do Backing	"	9448	7 25	68498 00	....
Rubble Masonry in Cement	"	590	5 25	3097 50	....
Concrete Masonry	"	750	7 20	5300 00	....
Timber in Foundations	Linl. feet..	11530	0 16	1844 80	....
Plank do	F.B.M.	43400	20 00	868 00	....
Wrought Iron do	lbs	4800	0 15	720 00	....
Cast Iron do	lbs	11560	0 10	1156 00	....
Mitre Sills complete		....	....	1250 00	....
Lock Gates complete		....	....	11000 00	....
Culvert Gates complete		....	....	1300 00	....
					164104 30
Dam and Canal Banks.					
Excavation	Cubic yds.	1790	0 75	1342 50	....
Embankment	"	26280	0 15	3942 00	....
Pine Timber	Linl. feet..	175640	0 14	24589 60	....
Plank, including Spike	F.B.M. ...	465600	20 00	9312 00	....
Wrought Iron	lbs	77720	0 11	8549 20	....
Stone Filling	Cubic yds.	28340	0 75	21255 00	....
Battered Wall in Cement	"	190	4 75	902 50	....
Slope or Pavement Wall	"	8282	2 00	16564 00	....
Lining with Chip Stone, &c	"	1185	0 50	592 50	....
					87049 30
Coffer Dam.					
Pine Timber	Linl. feet..	17800	0 20	3560 00	....
Stone filling	Cubic yds.	2000	1 00	2000 00	....
Lining with Earth, &c	"	1320	0 30	396 00	....
					5956 00
					$287019 20
Works at Plein Chant's Chute.					
Locks Nos. 47 and 48.					
Excavation of Rock	Cubic yds.	17614	1 75	30824 50	....
Embankment	"	9200	0 30	2760 00	....
					33584 50
Masonry in Lock Walls, face and coping	"	3995	19 00	75905 00	....
do do Culverts	"	226	23 00	5198 00	....
do do Backing	"	9366	7 30	68371 80	....
Rubble Masonry in Cement	"	135	6 00	810 00	....
Concrete do do	"	85	8 25	701 25	....
Timber in Foundations	Lin'l. feet.	2540	0 17	431 80	....
Wrought Iron in do	lbs	6050	0 15	907 50	....
Cast Iron do	lbs	8780	0 10	878 00	....
Mitre Sills complete		....	....	940 00	....
Lock Gates complete		....	....	8475 00	....
Culvert Gates complete		....	....	975 00	....
					163593 35
Dam.					
Excavation	Cubic yds.	530	0 50	265 00	....
Pine Timber	Lin'l. feet	66250	0 15	9937 50	....
Plank, including Spike	F.B.M. ...	188500	20 00	3770 00	....
Wrought Iron	lbs	31700	0 10	3170 00	....
Stone Filling	Cubic yds.	1590	0 40	636 00	....
Battered Wall in Cement	"	120	4 90	588 00	....
Lining with Chip Stone, Gravel, &c	"	400	0 50	200 00	....
					18566 50
					$215744 35

I.—(*Continued.*)

ITEMS.		Quantities.	Price.	Amount.	Total.
WORK AT RAPIDE DE LA ROSE.					
Lock No. 49.			$ cts.	$ cts.	$ cts.
Excavation of Rock	Cubic yds.	2650	1 75	4637 50	
Embankment	do	8420	0 30	2526 00	
					7163 50
Masonry in Lock-walls, face and coping...	do	2200	18 00	39600 00	
do do Culverts	do	148	22 00	3256 00	
do do Backing	do	5096	7 15	36436 30	
Rubble Masonry in Cement	do	280	5 75	1610 00	
Concrete Masonry in Cement	do	70	8 00	560 00	
Timber in Foundations	Lineal feet	2020	0 17	343 40	
Wrought Iron in Foundations	lbs.	4500	0 15	675 00	
Cast Iron	do	5780	0 10	578 00	
Mitre Sills, complete		....	....	625 00	
Lock Gates, complete		....	....	5650 00	
Culvert Gates, complete		....	....	650 00	
					89983 70
Dam.					
Excavation	Cubic yds.	370	0 50	185 00	
Pine Timber	Lineal feet	61980	0 15	9297 00	
Plank, including Spike	F. B. M.	181000	20 00	3620 00	
Wrought Iron	lbs.	28660	0 10	2866 00	
Stone Filling	Cubic yds.	8370	1 00	8370 00	
Rubble Masonry	do	388	4 75	1843 00	
Lining with Chip Stone, Gravel, &c	do	490	0 50	245 00	
					26426 00
					$123573 20
WORK AT PARESSEUX CHUTE.					
Locks Nos. 50 *and* 51.			$ cts.	$ cts.	$ cts.
Excavation of Rock	Cubic yds.	33128	2 25	74564 00	
Embankment	do	8100	0 25	2025 00	
					76589 00
Masonry in Lock-walls, face and coping...	do	4125	17 00	70125 00	
do do Culverts	do	226	21 00	4746 00	
do do Backing	do	9815	7 00	68705 00	
Rubble Masonry in Cement	do	200	5 50	1100 00	
Concrete Masonry in Cement	do	86	7 90	679 40	
Timber in Foundations	Lineal feet	2540	0 17	431 80	
Wrought Iron in Foundations	lbs.	6050	0 15	907 50	
Cast Iron	do	8780	0 10	878 00	
Mitre Sills, complete		....	....	940 00	
Lock Gates, complete		....	....	8700 00	
Culvert Gates, complete		....	....	975 00	
					158187 70
Dam.					
Excavation	Cubic yds.	330	0 50	165 00	
Pine Timber	Lineal feet	15120	0 15	2268 00	
Plank, including Spike	F. B. M.	96000	20 00	1920 00	
Wrought Iron	lbs.	9140	0 10	914 00	
Stone Filling	Cubic yds.	160	0 50	80 00	
Battered Wall in Cement	do	150	4 75	712 50	
Lining with Chip Stone, Gravel, &c	do	2520	0 50	1260 00	
					7319 50
					$242096 20

I.—(*Continued.*)

ITEMS.	Quantities.	Price.	Amount.	Total.
WORK AT PETIT PARESSEUX RAPIDS.				
Locks Nos. 52 and 53.				
		$ cts.	$ cts.	$ cts.
Excavation of Rock .... C. yds.	20675	1 75	36181 25	....
Embankment .... do	8760	0 25	2190 00	....
				38371 25
Masonry in Lock-walls, face and coping .... do	3727	17 00	63359 00	....
do do Culverts .... do	226	21 00	4746 00	....
do do Backing .... do	8464	7 00	59248 00	....
Rubble Masonry in Cement .... do	310	5 50	1705 00	....
Concrete do do .... do	86	7 90	679 40	....
Timber in foundations .... Linl. ft.	2540	0 17	431 80	....
Wrought Iron in do .... Lbs.	6050	0 15	907 50	....
Cast Iron .... do	8780	0 10	878 00	....
Mitre Sills complete	....	....	940 00	....
Lock Gates complete	....	....	8025 00	....
Culvert Gates complete	....	....	975 00	....
				141894 70
Dam.				....
				....
Excavation .... C. yds.	645	0 50	322 50	....
Pine Timber .... Linl. ft.	110900	0 15	16635 00	....
Plank including Spike .... F. B. M.	310700	20 00	6214 00	....
Wrought Iron .... Lbs.	51750	0 10	5175 00	....
Stone filling .... C. yds.	7440	0 40	2976 00	....
Battered wall in Cement .... do	40	4 75	190 00	....
Lining with Chip, Stone, Gravel, &c .... do	676	0 50	338 00	....
				31850 50
				$212116 45
WORK AT TALON CHUTE				
Locks, Nos. 54, 55, and 56.				
Excavation of Rock .... C. yds.	27800	1 75	48650 00	....
Embankment .... do	29100	0 30	8730 00	....
				57380 00
Masonry in Lock-walls, face and coping .... do	6082	13 50	82107 00	....
do do Culverts .... do	304	17 50	5320 00	....
do do Backing .... do	14631	6 75	98759 25	....
Rubble Masonry in Cement .... do	980	5 25	5145 00	....
Concrete do do .... do	86	7 75	666 50	....
Flagging .... do	358	1 75	626 50	....
Timber in foundations .... Linl. ft.	2540	0 17	431 80	....
Wrought Iron in do .... Lbs.	6050	0 15	907 50	....
Cast Iron .... do	11770	o 10	1177 00	....
Mitre Sills complete	....	....	1250 00	....
Lock Gates complete	....	....	11670 00	....
Culvert Gate complete	....	....	1300 00	....
				209360 55
Dam.				
Excavation .... C. yds.	65	1 00	65 00	....
Pine timber .... Linl. ft.	9700	0 15	1455 00	....
Plank including Spike .... F. B. M.	33800	20 00	676 00	....
Wrought Iron .... Lbs.	5400	0 10	540 00	....
Stone filling .... C yds.	760	0 40	304 00	....
Battered wall in Cement .... do	47	4 50	211 50	....
Lining with Chip Stone, Gravel, &c .... do	226	0 50	113 00	....
				3364 50
				$ 270105 05

I.—(*Continued.*)

ITEMS.		Quantities.	Price.	Amount.	Total.
WORK AT FOOT OF TALON LAKE.					
Lock No. 57.					
			$ cts.	$ cts.	$ cts.
Excavation of Rock	C. yds.	9200	2 00	18400 00	
Embankment	do	6600	0 25	1650 00	
					20050 00
Masonry in Lock-walls, face and coping	do	2097	13 50	28209 50	
do do Culverts	do	148	17 50	2590 00	
do Backing	do	4740	6 75	31995 00	
Rubble Masonry in Cement	do	116	5 25	609 00	
Concrete Masonry	do	68	7 75	527 00	
Timber in foundations	Linl. ft	2020	0 17	343 40	
Wrought Iron, in do	lbs.	4500	0 15	675 00	
Cast Iron	do	5780	0 10	578 00	
Mitre Sills complete				625 00	
Lock Gates complete				5500 00	
Culvert Gates complete	do			650 00	
					72301 90
Dam.					
Excavation	C. yds.	215	1 00	215 00	
Pine Timber	Linl. ft	17200	0 15	2580 00	
Plank, including Spike	F.B.M.	72300	20 00	1446 00	
Wrought Iron	lbs.	9030	0 10	903 00	
Stone filling	C. yds.	1880	0 30	564 00	
Battered Wall in Cement	do	65	4 75	308 75	
Lining with Chip Stone, Gravel, &c	do	300	0 50	150 00	
					6166 75
					$98518 65
WORK ON SUMMIT LEVEL.					
Summit cut between Nipissingue and Trout Lakes.					
Excavation of Earth	C. yds.	483470	0 35	169214 50	
do do Rock	do	355260	2 00	710520 00	
					879734 50
Excavation of Rock in Trout Lake	do	175740	2 25	395415 00	
do do Turtle do	do	84840	2 25	190890 00	
do do Turtle outlet	do	321100	1 75	561925 00	
do of Earth in Turtle Cutlet	do	1456	0 25	364 00	
					1148594 00
Guard Lock between Nipissingue and Trout Lakes.					
Excavation of Rock	C. yds.	33830	2 00	67660 00	
Embankment	do	1960	0 30	588 00	
					68248 00
Masonry in Lock-walls, face and coping	do	1665	16 50	27472 50	
do do Backing	do	3004	7 75	23281 00	
Concrete Masonry	do	136	7 50	1020 00	
Timber in foundations	Linl. ft	4040	0 17	686 80	
Wrought Iron, in do	lbs.	9000	0 15	1350 00	
Cast Iron	do	8780	0 10	878 00	
Mitre Sills complete				1250 00	
Lock Gates complete				7855 00	
					63793 30
					$2160369 80

I.—(*Continued.*)

ITEMS.	Quantities.	Price.	Amount.	Total.
WORK AT THE CHAUDIÈRE PORTAGE AND AT THE OUTLETS OF LAKE NIPISSINGUE.				
Locks Nos. 58, 59 and 60.		$ cts.	$ cts.	$ cts
Excavation of Rock .... Cubic yds.	48550	2 25	110237 50	
Embankment .... do	41500	0 30	12450 00	
				122687 50
Masonry in Lock-walls, face and coping... do	5586	17 50	97755 00	
do do Culverts .... do	374	21 50	8041 00	
do do Backing........ do	12392	7 50	92670 00	
Rubble Masonry in Cement .... do	173	6 00	1038 00	
Concrete Masonry........ do	136	7 25	986 00	
Timber in Foundations........ Lineal feet	4556	0 17	774 52	
Wrought Iron in Foundations .... lbs.	10560	0 15	1584 00	
Cast Iron .... do	14450	0 10	1445 00	
Mitre Sills, complete........	....	....	1565 00	
Lock Gates, complete	....	....	13000 00	
Culvert Gates, complete........	....	....	1625 00	
				220483 52
Dams.				
Excavation........ Cubic yds.	400	1 00	400 00	
Pine Timber .... Lineal feet	39600	0 15	5940 00	
Plank, including Spikes........ F. B. M.	115800	20 00	2316 00	
Wrought Iron .... lbs.	23100	0 10	2310 00	
Stone Filling .... Cubic yds.	5140	1 25	6425 00	
Battered Wall in Cement........ do	1568	4 75	7448 00	
Lining with Chip Stone, Gravel, &c........ do	1830	0 50	915 00	
				25754 00
				$368925 02
WORK AT THE RAPIDE DU BUISSON.				
Locks No. 61.			$ cts.	
Excavation of Rock........ C. yds.	10400	2 00	20800 00	
Embankment........ do	2700	0 25	675 00	
				21475 00
Masonry in Lock Walls, face and coping...... do	1995	16 00	31920 00	
do do Culvert........ do	148	20 00	2960 00	
do do Backing........ do	4380	7 25	31755 00	
Rubble Masonry in Cement........ do	96	5 75	552 00	
Concrete Masonry .... do	70	7 00	490 00	
Timber in foundations .... Linl ft.	2020	0 17	343 40	
Wrought Iron, in do .... lbs.	4500	0 15	675 00	
Cast Iron .... do	5780	0 10	578 00	
Mitre Sills, complete........	....	....	625 00	
Lock Gates, complete........	....	....	5200 00	
Culvert Gates, complete........	....	....	650 00	
				75748 40
Dam and Piers.				
Excavation .... C. yds.	1130	1 00	1130 00	
Pine Timber........ Linl. ft.	89410	0 15	13411 50	
Plank, including Spike .... F.B.M.	164400	20 00	3288 00	
Wrought Iron........ lbs.	32410	0 10	3241 00	
Stone filling........ C. yds.	13214	1 00	13214 00	
Battered Walls in Cement........ do	76	4 60	349 60	
Lining with Chip Stone, Gravel, &c........ do	1510	0 50	755 00	
				35389 10
				$132612 50

I.—(*Continued.*)

ITEMS.		Quantities.	Price.	Amount.	Total.
WORK AT RAPIDE DE PARISIEN.					
Lock No. 62.			$ cts.	$ cts.	$ cts.
Excavation of Rock	C. yds.	8050	2 00	16100 00	....
Embankment	do	6700	0 30	2010 00	....
					18110 00
Masonry in Lock-Walls, face and coping	do	1995	15 25	30423 75	....
do do Culverts	do	148	19 25	2849 00	....
do do Backing	do	4382	7 25	31769 50	....
Rubble Masonry in Cement	do	177	5 75	1017 75	....
Concrete Masonry	do	70	6 80	476 00	....
Timber in foundations	Linl. ft.	2020	0 17	343 40	....
Wrought Iron in do	lbs.	4500	0 15	675 00	....
Cast Iron	do	5780	0 10	578 00	....
Mitre Sills complete		....	....	625 00	....
Lock Gates complete		....	....	5200 00	....
Culvert Gates complete		....	....	650 00	....
					74607 40
Dams and Piers.					
Excavation of Rock	C. yds.	270	0 75	202 50	....
Pine Timber	Linl. ft.	43040	0 15	6456 00	....
Plank, including Spike	F.BM.	95000	20 00	1900 00	....
Wrought Iron	lbs.	16160	0 10	1616 00	....
Stone fillings	C. yds.	5990	0 65	3893 50	....
Battered wall in Cement	do	320	4 50	1440 00	....
Lining with Chip Stone, Gravel, &c.	do	267	0 50	133 50	....
					15641 50
					$108358 90
WORK AT LE GRAND RECOLLET AND PETIT RECOLLET.					
Lock No. 63.					
Excavation of Rock	Cubic yds.	16950	2 00	33900 00	....
Embankment	"	5000	0 25	1250 00	....
					35150 00
Masonry in Lock Walls, face and coping	"	2320	14 75	34220 00	....
do do Culverts	"	148	18 75	2775 00	....
do do Backing	"	5095	7 00	35665 00	....
Rubble Masonry in Cement	"	950	5 60	5320 00	....
Concrete Masonry	"	35	6 60	231 00	....
Timber in Foundations	Lin'l. feet	1010	0 17	171 70	....
Wrought Iron in do	lbs	2250	0 15	337 50	....
Cast Iron in do	lbs	5780	0 10	578 00	....
Mitre Sills complete		....	....	625 00	....
Lock Gates complete		....	....	5650 00	....
Culvert Gates complete		....	....	650 00	....
Loose Stone paved	Cubic yds.	150	1 50	225 00	....
					86448 20
Dams and Piers.					
Excavation of Rock	Cubic yds.	60	1 50	90 00	....
Pine Timber	Lin'l. feet	47650	0 15	7147 50	....
Plank including Spike	F.B.M.	84200	20 00	1684 00	....
Wrought Iron	lbs.	13630	0 10	1363 00	....
Stone Filling	Cubic yds.	5815	0 40	2326 00	....
Battered Wall in Cement	"	18	4 25	76 50	....
Lining with Chip Stone, Gravel, &c.	"	240	0 50	120 00	....
					12807 00
Coffer Dam to be removed.					
Pine Timber	Lin'l. feet	6540	0 20	1308 00	....
Stone filling	Cubic yds.	800	0 60	480 00	....
Lining with Earth, &c.	"	260	0 60	156 00	....
					1944 00
					$136349 20

I.—(*Continued.*)

ITEMS.	Quantities.	Price.	Amount.	Total.
Works at Les Petites Dalles, and other outlets.				
Lock, No. 64.				
		$ cts.	$ cts.	$ cts.
Excavation of Rock.................C. yds.	19240	2 00	38480 00	....
Embankment .... do	3000	0 25	750 00	....
				39230 00
Masonry in Lock-walls, face and coping........ do	2268	14 00	31752 00	....
do do Culverts .... do	148	18 00	2664 00	....
do do Backing .... do	5331	7 00	37317 00	....
Rubble Masonry in Cement.......... do	147	5 50	808 50	....
Concrete Masonry.......... do	70	6 50	455 00	....
Timber in Foundations..........Linl. ft.	2020	0 17	343 40	....
Wrought Iron in do ....Lbs.	4500	0 15	675 00	....
Cast Iron.......... do	5780	0 10	578 00	....
Mitre Sills complete..........	....	....	625 00	....
Lock Gates complete	....	....	5800 00	....
Culvert Gates complete	....	....	650 00	....
				81667 90
Dams and Piers.				
Excavation ....C. yds.	100	1 25	125 00	....
Pine Timber..........Linl. ft.	29300	0 15	4395 00	....
Plank including Spike..........F. B. M.	73300	20 00	1466 00	....
Wrought Iron ....Lbs.	11300	0 10	1130 00	....
Stone filling..........C. yds.	2110	0 60	1266 00	....
Battered wall in Cement.......... do	780	4 25	3315 00	....
Lining with Chip Stone, Gravel, &c.......... do	540	0 50	270 00	....
				11967 00
Coffer Dam, to be removed.				
Pine Timber..........Linl. ft.	20910	0 20	4182 00	....
Stone filling ....C. yds.	2320	1 00	2320 00	....
Lining with Chip Stone, Gravel, &c..........	1260	0 40	504 00	....
				7006 00
				$139870 90

J.

Chats Canal, Old Line.

ITEMS.	Quantities.	Price.	Amount.	Total.
Locks Nos. 1, 2, 3, 4, 5 and Guard Lock.		$ cts.	$ cts.	$ cts.
Excavation of Earth ....Cubic yds.	93700	0 25	23425 00	....
do Gneiss Rock.................... do	321270	2 50	803175 00	....
do Limestone Rock .... do	155420	1 50	233130 00	....
Embankment .... do	36810	0 30	11043 00	....
				1070773 00
Masonry in Lock-walls, face and coping... do	10444	12 00	125328 00	....
do do Culverts .... do	748	16 00	11968 00	....
do do Backing .... do	24077	6 50	156500 50	....
Rubble Masonry in Cement .... do	690	4 50	3105 00	....
Concrete Masonry.............................. do	1200	6 00	7200 00	....
Timber in Foundations.........................Lineal feet	24459	0 16	3913 44	....
Wrought Iron in Foundations ....lbs.	16915	0 15	2537 25	....
Cast Iron .... do	29220	0 10	2922 00	....
Plank in Foundations............................F. B. M.	57300	20 00	1146 00	....
Mitre Sills complete..	....	....	3125 00	....
Lock Gates complete	....	....	25435 00	....
Culvert Gates complete	....	....	3250 00	....
				346430 19
Dam and Cribs, Hudson's Point.				
Pine Timber ....Lineal feet	92300	0 15	13845 00	....
Plank, including Spike...........................F. B. M.	191500	20 00	3830 00	....
Wrought Iron ....lbs.	28750	0 10	2875 00	....
Stone Filling.....................................Cubic yds.	14201	0 80	11360 80	....
Battered Wall in Cement....................... do	1515	4 00	6060 00	....
Slope or Pavement Wall .... do	3796	1 50	5694 00	....
Lining with Chip Stone, Gravel, &c......... do	600	0 40	240 00	....
				43904 80
Coffer Dam to be Removed.				
Pine Timber ....Lineal feet	11880	0 26	2376 00	....
Stone Filling.....................................Cubic yds.	1389	1 20	1666 80	....
Lining with Earth, &c.......................... do	576	0 50	288 00	....
				4330 80
				$1465438 79

(Signed,) THOS. C. CLARKE,
Engineer Ottawa Survey.

Jany. 2, 1860.

Comparison of Routes.

Chicago to Montreal viâ St. Lawrence and Ottawa.

NAMES.	Miles. Open Navigation. Lake.	Inland.	Total.	Canals.	Total.	Number of Locks.	Lockage.	Current.	Total Rise and Fall.
				Via St. Lawrence.					
Lachine	....	....	....	8·5	....	5	43·75	....	....
St. Lawrence and Welland	....	....	....	60·5	....	49	490·00	....	....
	1145	134	1279	69·0	1348	54	534·75	26·5	561·25
				Via Ottawa.					
Lachine	....	....	....	8·5	....	5	43·75	....	....
Ottawa	....	....	....	20·52	....	64	665·70	....	....
	575	401·74	976·74	29·02	1005·76	69	709·45	21·4	730·85

REPORT.

Bureau of Agriculture and Statistics,
March 21st, 1860.

Sir,—I have the honor to forward herewith, for presentation to the House of Assembly, the Report of the Honorable the Minister of Agriculture for the year 1859.

I am, Sir,
Yours with respect,
WILLIAM HUTTON,
Secretary.

The Hon. Chas. Alleyn,
Provincial Secretary,
&c., &c., &c.

Bureau of Agriculture and Statistics,
March 2nd, 1860.

To the Hon. Charles Alleyn,
Provincial Secretary,
&c., &c., &c.

Sir,—In compliance with the 6th Section of 22nd Victoria, Cap. xxxi., the Minister of Agriculture has the honor to transmit herewith, for the information of the Houses of the Legislature, his annual Report.

The facilities of collecting correct statistical information in Agricultural matters are not, as yet, very great, but the importance of such information is becoming more generally appreciated and acknowledged, and difficulties are not thrown in the way of procuring it as heretofore, not only in Canada but even in Great Britain, and more especially in England, where all inquiries as to crops, produce, &c., were perseveringly resisted. The taking of the Census in January next will probably lead to more enquiry as to the utility of Agricultural Statistics, and to less resistance on the part of the public to those who may be employed to obtain the required information.

Every means should be taken to convince all classes in the Province that the Census enquiries have no reference to taxation whatever, but are merely to ascertain the true state of the Provincial wealth, so as to record the progress of the Colony, and, at all times, to compare her present with what has been her former and her future position, and also her relative position as compared with other countries.

"People are slow to see that questions relative to themselves and their households "can have any bearing on the general good, and forget that in accounts of large numbers "the individual is wholly lost sight of in the average; but that the average can only be "ascertained by an accurate knowledge of all that pertains to the individual."

Circulars of Agricultural Queries were sent to the Presidents of all Societies in both Provinces, and to many others. One hundred and two replies were received—72 from Upper Canada, and 30 from Lower Canada.

UPPER CANADA RETURNS.

In analizing the seventy-two Returns received from Upper Canada, it appears

There are six Counties out of the 24 from which there is only one Return each; four from which there are only two Returns each; and five from which there are three Returns each: five Counties give four Returns each, and the rest have five or six—none exceeding the latter number. The highest is Carleton. Winter Wheat, 28¼ bushels to the acre; Spring Wheat, 22¾. The next highest is Northumberland;—27½ for Winter, and 19 for Spring Wheat. The next is Simcoe;—26¼ for Winter, 23⅜ for Spring. York gives, Winter Wheat, 27, and Spring Wheat, 20; but there is only one Return. Bruce gives, Winter Wheat, 25, Spring Wheat, 20. Leeds,—Winter Wheat, 25, Spring Wheat, 16½. Peel gives, 24⅜ Winter Wheat, 18⅜ Spring Wheat. Ontario gives, Winter Wheat, 22½, Spring Wheat, 23¼. The total average is 21 bushels for Winter Wheat, and 18⅝ for Spring Wheat; and this appears reliable. There is great reason for rejoicing that the averages are so far beyond those of last year, which were for Winter Wheat, 11¼ bushels, and for Spring wheat 13½; being an improvement on last year's growth of about 76 per cent. on one, and about 46 per cent. on the other, and being about 16 per cent. above the general average of the last twenty years.

As to damage done to the Wheat crop by midge and rust, forty-two report that no mischief was done to Winter Wheat in 1859. Eighteen report that very slight damage was done; eight report serious and extensive injury--say from 10 to 25 per cent.; and three report a loss of 50 per cent,—one from the County of Welland; one from Haldimand; and one from Wentworth. Six Returns further report serious injury by heavy frost on the 5th June.

The remedy for the midge universally given, is to sow early kinds of Winter Wheat, very early, and the Fife Spring Wheat, either very early, or not till after the 20th May. The Souler, White, Flint, and Blue Stem, and also the White Kentucky, are mentioned in very many of the Returns as the earliest and best Winter Wheat, and the Fife as the best Spring Wheat. Good draining and good cultivation are much recommended; and, in fact, good drainage is the grand essential of successful husbandry. Without it there cannot be early and luxuriant crops, except on very peculiar soils. In five or six cases, however, it occurred that the earliest wheat was the most injured by the June frost; but this frost was exceptional, never having occurred in Canada, except once before, since wheat began to be cultivated in Upper Canada, and but for this early frost, this wheat would have been of the very finest.

The Hon. Mr. French, in what is said to be one of the completest essays ever published on the subject of drainage, thus sums up the loss to undrained land which the excessive evaporation from its surface entails upon it:

1st. The drained land comes into condition for working a week or ten days earlier in the Spring than other lands.

2nd. The growth of the crops is quickened all through the summer by an increase of several degrees in the temperature of the soil. And,

3rdly. The injurious effects of frost are kept off several days later in the Fall.

In Lower Canada there is very little progress in this important branch of agriculture. Only seven report that a little drainage is done; all the rest report that none is done. Its value is evidently very little understood. If premiums were offered by Societies for the greatest extent of underdraining, the benefit would soon be manifest, and the present averages of grain crops greatly increased.

As to the proportion which Winter Wheat bears to Spring Wheat, 31 Returns state that the growth of Spring Wheat greatly predominates, being double that of Winter Wheat; the whole crop consisting of two-thirds of Spring to one-third of Winter Wheat. Thirteen state that the growth of both is about equal,—and fifteen state that the growth of Winter Wheat predominates over that of Spring, to the extent of one-third. From comparing the returns it may be estimated that the number of acres under Wheat, is about one-third of Winter Wheat, and two-thirds of Spring. Five years ago there was not one acre of Spring Wheat in Upper Canada for every ten of Winter Wheat. This certainly is an extraordinary change, brought about chiefly by the fearful invasions of the Wheat Midge, but will probably be temporary, and will continue only until draining and high cultivation shall have rendered the insect innocuous here, as it has been already rendered in Great Britain by what is called "high farming." The general average of the Wheat crop in Great Britain is 28 bushels: (three-quarters and a half,) and the average weight 60 lb ℔ bushel. There seems no good reason why the average of Upper Canada should not in a few years equal that of Great Britain, by attention to drainage and high cultivation. Soil and climate are naturally well adapted for the growth of Wheat.

LOWER CANADA RETURNS.

WINTER WHEAT.

Of the 30 Returns received from Lower Canada, there are only 4 which report any grown, and they state the average to be 18, 15, 20, 15,—equal to 17 bushels per acre. The County of Laval gives 18; County of Ottawa 15—and two from Pontiac give 20 and 15.

SPRING WHEAT.

Twenty-three report the growth of some Spring Wheat—one from Terrebonne states the average to be about 20 bushels; one from Pontiac, and one from Megantic give 18; one from Grantham 17; one from Leeds 16½; three from Pontiac and Lotbiniére 15; one from Megantic 14; one from Ottawa 13; three from Bellechasse, Bagot and Lotbiniére give 11; one from Chicoutimi and Montmagne give 11; and six others state the average to be 9 bushels. The total average of Spring Wheat in Lower Canada, is 13 bushels per acre.

Ten of the returns state that very considerable injury has been done to Sping Wheat by the Wheat Midge:—Chicoutimi, Iberville, Bagot, Joliette, and Timiscouata, report from 25 to 50 per cent.; seventeen report that the damage done has been very little, if any, this year. The remedy suggested is, to sow very early or very late, and by one to run a rope steeped with Turpentine over the heads of the Wheat when in blossom. The Black Sea Wheat is the most recommended. The Fife is mentioned only by five parties in Lower Canada, although universally esteemed in Upper Canada.

OATS.

The total average of Oats in *Upper Canada*, is 34½ bushels per acre.

Two Counties	report	50	bushels	per acre.
Three	"	45	"	"
Nineteen "	"	40	"	"
Thirteen "	"	35	"	"
Twenty-two	"	30	"	"
Seven "	"	25	"	"
Two "	"	20	"	"

Simcoe, Ontario, Kent, and Wentworth, give the highest returns, Lanark and Renfew, the lowest; the common Black Oats are the most recommended; the average of 1858 was 32 bushels per acre, so that there is an improvement of about 8 per cent. on the crop of last year.

Considering that the statute bushel of Oats here is only 34 ℔, and that the average of Great Britain is 60 bushels ℔ acre, of 40 ℔ ℔ bushel, there is great room for improvement in the cultivation of this crop. There does not appear anything in the soil or climate of Upper Canada detrimental to the growth of this grain, and it may be inferred that the difficulty arises from inferior cultivation. The importation of new varieties of seed has taken place to a considerable extent, and it is to be hoped that the improvement will continue progressing, till we approximate somewhat nearer to British averages.

In Lower Canada the Returns show an average of 22½ bushels per acre. Megantic returns 30, and Pontiac 25 bushels.

BARLEY.

The average return of this grain in Upper Canada is 27½ bushels per acre; sixteen returns report but little grown—there are 56 returns. In Lower Canada the average is 23 bushels per acre; Chicoutimi, Bellechasse, Megantic, Nicolet, and Pontiac, give 30 bushels. The growth of this species of grain is very much on the increase in Lower Canada; there are only 3 Reports out of the 30 which state that very little is grown. Winter Barley is coming into use, and promises to be a prolific and valuable cereal. Some idea may be formed of the extensive growth of Barley, when it is stated that in the City of Albany, about 600,000 bushels were imported from Lower Canada in the Fall of 1859. Some very fine crops of Winter Barley are reported to the Bureau. A Mr. Haven, near St. Catharines, states that he grew 150 bushels on 3 acres. A Mr. McCarty, near Niagara, reaped a field on the 12th July. He says:—"I sow 3 bushels per acre, and my yield has been in fallow 60 bushels—and on Corn-land 40 bushels per acre. The Corn-land was equally good as the fallow; what made the difference in the yield in my opinion was, that the latter was sown on the 20th September, and the former on the 1st of that month." He adds:—"I believe under any circumstances it will yield double the quantity of Spring Barley; it is ripe on the 1st July before the Midge can strike it—we sell it at $1 per bushel.

This correspondent also remarks:—"It ought to be widely known, that Barley flour used as Buckwheat-flour, is far superior to it; it is delicate in flavor, and most wholesome."

Winter Barley, it is stated, is chiefly grown in mild climates where the Winters are short, and the Spring dry, such as the South of France, Italy and Spain, or in countries where deep snow covers the ground all Winter, and goes off rapidly in Spring, such as Russia, Poland, and parts of North America.

That the introduction of this new species of Grain will be a valuable acquisition to Canada, is further shown by a report of Mr. Charles Chapman, of Ottawa, who has sent a sample to this Department, and states:

"My attention was drawn to a remarkable plant of Barley (a single one) growing in a Cottage Garden in England, in the Autumn of 1851, and I brought it with me to Canada in the Fall of that year. The amount of ears in that plant was 56, and on examination they proved to be 5 rowed, very strong in the straw, and averaged nearly 70 grains each. In the Spring 1852, I sowed a part of it, and although it produced an unprecedented amount of fodder, it never brought an ear. In the Fall of the same year I sowed some more, and was much gratified to find in the Spring a fine healthy crop, and on July 11th it was ripe, and cut, and as good in quality as the parent plant. Since then I have been trying it in all the forms that suggested themselves to me—as to its hardiness—the best time for sowing it—the proper quantity of seed—the soil best adapted to it—and whether it varied in its habit of soil or productiveness—each year sowing being of the previous year's yield. And during all that time it never failed once when sown on land fitting for it, and at the proper time; but when sown late on sand or where water laid on it in the Spring, it has been killed, but when sown on pretty stiff land, well tilled, in fact as it should be for Fall Wheat, any time from the middle of August until about the 10th September, the Winter has never injured it, and it retained all the characteristics of the first plant. It ripens ten days in advance of Fall Wheat, and its vigour of growth is wonderful, for from its manner of stooling, the average of ears from each plant is not less than 50, containing at least 60 grains; a far greater number being produced where the plants had more room. I have until this fall sown it in drills 15 inches apart, and the seeds 3 inches in the drills; but this year I have sown some at 10, 12 and 15 inches, with the seeds 3 inches as before, which will enable me to ascertain if an increase of seed produces an increase of yield. I commenced to sow on the 9th of August and continued at frequent intervals until the 9th September. By adopting the last mentioned distances, the exact amount sown was 6lbs. to the acre, or rather less than a gallon.

I shall here inform you that I am not a Farmer, but a Gardener, and the quantities grown have been merely experimental, and I can therefore only give you the proportionate yield per acre, which I find on ordinary Wheat Land to be a minimum of 60 with a maximum exceeding 80. Grass has never been tried with it, but as it is sown so thin upon the land, it appears to me likely that it would be sufficiently strong to escape being smothered by the luxuriant growth of the other; for on the 6th October the growth of that sown on the 9th of August was as level as a piece of baize, 15 inches thick, of which I sent specimens, taken from the middle of the land, to Professor Buckland, at that date. The straw is fully proportioned to the weight of the ears, and I have never seen it laid. The fodder is of the best description; the sample I send you is not an average one, as there are a few scattering ears, the crop being thrashed in the Fall, but they may serve to guide your judgment of its properties. It is proved to be of first quality for malting, and it has another excellent property to which I beg to draw your attention. It has a most remarkable thin skin and a rice shaped grain, which will greatly increase its value to those who manipulate it into pot and pearl barley. A gentleman largely engaged in that manufacture, pointed out to me the advantage from the improved appearance of the article, by leaving it when manufactured nearly as long as an ordinary grain in its natural state, which would in all probability induce a very extensive business. Since I have grown it I, have not seen a single plant, ear or grain injured by any insect or blight, and so far as my observation goes, it is the safest and the most profitable grain crop that can be grown in Canada, within, of course, certain limits. I mean that every prudent Farmer should grow it where the Wheat Crop is so uncertain. The effect it might have, if grown for one season over a large contiguous area, in arresting the Wheat Fly, every intelligent Farmer will form his opinion upon. Some persons have raised an objection to drilling it, as being costly both in time and money. The method I adopted was this. I took a piece of wood about 6 feet long, 6 inches wide, 2 inches thick, and bored that with an auger at 10, 12 and 15 inches distance, into which I put as may pins as the distances gave me, the narrowest being 7, to this I put a pair of train shafts and a pair of handles, and a couple of pins through the three where they intersected, and the whole affair was done. With a boy to lead the horse and a man to hold the drill, it is surprising how soon and how easily an acre may be marked out. One of the barrow shaped sowing machines may then be used, and a man can go over an acre with ease to himself in 4 hours and deposit the grain with almost mathematical precision. The cost of such a machine is $4, and can be used for all root crops by merely setting the distributor according to circumstances. The increased expense of sowing in drills over broadcast is not so great as it would appear. But there is no reason why it should not be sown broadcast as well as any variety where two bushels are sown. It is only necessary to mix your 6 lbs. of grain with ashes or any other substance like it, and it can be scattered as well as if it was all grain, with the full knowledge that you have saved nearly two bushels of Grain for every acre sown, and that you may get it into your barn, a very heavy crop, before your Wheat calls for your attention; and if you wish, you may get a good crop of White Turnips to follow the same season, to the manifest advantage of your live stock, if it is not sown with grass. It was not my intention to have sold any this season, but all parties who had seen it growing became impatient that it should be let out, or they declared that they would steal it. I therfore exhibited it at Kingston last Fall, and intend to sell it to the general public. For the reason I have given you, that it has only been grown up to this time experimentally, I have no very large supply, and as one gallon is sufficient to sow an acre, I propose to charge $2 for that quantity, which will be a trifle in advance of the commonest articles at two bushels per acre, and would produce sufficient to sow a very large area the next year.

I will deliver it free to the Ottawa and Prescott Railway, and I intend to give ample notice through the Press next summer when it will be ready, so that all who are interested in it may come and see it, and judge for themselves. I beg to apologize for the length of this communication, but I thought it best to tell you the matter in my own way that you might deal with the facts as you please.

I remain, Sir,
Yours &c., respectfully,
CHAS. CHAPMAN.

RYE.

Of Rye the average return in *Upper Canada* is 18 bushels per acre, but 50 of the returns report that there is very little or none grown.

In Lower Canada this grain is represented in 22 returns (out of the 30 received,) to be cultivated for bread. The average is 13 bushels per acre, and cannot be a remunerating crop. Lotbinière and Megantic return the largest averages; the former 20, and the latter 18 bushels per acre. Chicoutimi returns 17.

INDIAN CORN.

Only 37 Returns from Upper Canada have furnished reports of this crop, of which the average is 30 and 20-60 per acre. 28 report very little grown, and 10 report the crop much injured by the early frost of June, which, although very injurious to the crop of 1859, may be esteemed altogether exceptional, as a similar frost has not occurred since the year 1836.

In Lower Canada Indian Corn, Peas and Buckwheat seem to be very little cultivated, and with very partial success.

PEAS.

Sixty-four Returns from Upper Canada have reported on this crop. The average is 23½ bushels per acre—only six report injury by bug, and 58 are unanimous in declaring that no injury has been done by this insect, which, for many years previous to 1858 had been very destructive, but has this year nearly disappeared.

BUCKWHEAT.

The Returns of this crop in Upper Canada are so deficient that little can be said about it. There are only 26 Returns with regard to it, and these show an average of 18 bushels per acre. The extent of land under this crop is very small.

POTATOES.

With regard to this crop there is a very great improvement in Upper Canada. The rot appears to prevail still, but to a very limited extent. The average of last year was 125 bushels per acre—that of this year is 176. 45 of the Returns state positively that there was no rot this year; 14 state that from 25 to 50 per cent., of the crop was lost, and 12 state that the loss was slight, say from 5 to 10 per cent. None can account for it, but many attribute it to an insect, the ravages of which are always the worst in damp soil and situations, and in wet seasons. The "Irish Cup" seems to be the most generally recommended as the freest from rot, although stated by one to be the worst. New land is much recommended as a preventive, and dry situations.

In Lower Canada also the yield of this crop appears to be very much on the increase. The average of 26 returns is 175 bushels per acre, being about 50 per cent. greater than last year. The rot is stated not to be so prevalent as usual. 11 report serious injury, and nineteen report that very little damage was done this year. It may be safely inferred, or at all events reasonably hoped, that the rot is leaving Canada.

HAY.

This crop was exceedingly deficient in Upper Canada; 3 only out of 72 return the produce at 2 tons per acre; 26 return 1 ton and a half per acre; 15 return 1 ton per acre, and 28 return from ¼ to ¾ ton. 48 use Gypsum or Plaster as top-dressing, and 10 use barn-yard manure occasionally.

In Lower Canada this crop was very far superior to that of the Upper Province.

The averages are nearly 2 tons per acre, and there has been a considerable export of it to the Upper Province. In this article of produce Lower Canada generally surpasses Upper Canada.

TURNIPS.

Sixty-nine of the returns from Upper Canada report, that the cultivation of Turnip is on the increase, and that they are grown very successfully; one report 1,000 bushels; one 900; six report 800; 15 report from 500 to 700 bushels, and 18 report from 300 to 500. This shows a great increase on former years, and it is a very favorable sign, as there cannot be successful cultivation of grain crops unless there be also that of green crops. In fact the extensive and proper culture of green crops is the very foundation of good farming. Last year the returns of green crops cultivated were so inconsiderable, that they were not included in the Report of this Department, but it is now becoming an important item in the production of the country.

In Lower Canada nineteen of the returns state that this crop is on the increase; sixteen have reported the growth of from 400 to 1000 bushels; one reports 1000 bushels; one 700 ; six 600; and two 500.

FLAX AND HEMP

Forty Returns from Upper Canada state that neither of these is grown ; 22 state that very little Flax is grown, and that chiefly for the seed; one states that the growth of Flax is on the increase, and one from the County of Lincoln states that hemp has been tried there this year. It may be satisfactory, however, to know that the transactions of the Board of Agriculture for December, report that the Messrs. Perine had 400 acres under this crop in the Township of Woolwich, in the County of Waterloo, this last season, (1859,) and that it proved very remunerative, producing 12 bushels per acre of flax—seed weighing 56 lbs. per bushel, and 325 lbs. of fibre per acre, which Messrs. Perine consider a pretty fair yield, for dew-rotting; they prepare the fibre for cloth thread, and twine, but complain that they have no market in Canada West. This latter evil will soon be remedied, for if farmers will only produce the article of good quality, moveable scutching mills will soon be forthcoming. There is a great demand for flax in Great Britain at remunerating prices. At the present time flax is selling at from 6d. to 8½d., sterling, per lb. in the North of Ireland, and the acre of flax is worth from £12 to £20 sterling.

In Canada the soil and climate are both suited for this crop, and there is abundance of water to allow of it being water-rotted, which is much superior to dew-rotting and produces much better quality of flax. Full particulars of method of cultivation and process of steeping were furnished to the Board of Agriculture in Toronto by this Department, and are to be found in the Canadian Agriculturist of February and March, 1860.

The Returns in Lower Canada all report that the cultivation of this crop is not on the increase. A very little is grown by many, and manufactured entirely by the hand for domestic use. There is no machinery for scutching or dressing; one returns the produce as 200 lbs. of Flax and 600 lbs. of seed per acre; another gives 125 lbs. of prepared Flax and 12 bushels per acre of Seeds; another gives 150 lbs. of Flax and 9 bushels of Seed per acre. This crop would be a very profitable one if machinery was available for scutching and preparing; and it would be well for Agricultural Societies to offer a handsome premium for the introduction of a moveable machine for rendering the crop marketable.

It is stated that 60 tons of Flax were prepared this last season in the County of Waterloo, and about 6,000 bushels of Flax Seed produced there. The value has not yet been fully ascertained, but Flax is now worth, in England, from $300 to $350 per ton. Mr. Hespeler, it is said, is about to erect a mill in this County. A portion of a letter addressed to the "Free Press," by Mr. Godfrey of Deleware, is subjoined. He says:—

"Had I been sure of obtaining a sufficient quantity of Flax for the English market, I as well as other agents in the Colony, could have obtained Orders to some thousands of tons. The price is now from £60 to £70, sterling, per ton in England. I have seen some specimens of growing Flax, unfortunately in but small patches, equal to that grown in Ireland or on the Continent. I intend to forward samples of the Lint to my mercantile friends in England, and would invite growers to send some specimens to me—P. O. Lambeth, late Junction, Westminster, near London, C. W."

SHEEP.

The whole 72 Reports from Upper Canada are unanimous in stating that the numbers of Sheep kept is very must increased, and that both fleeces and carcasses are heavier than in 1851, and, with 10 exceptions, approving of the Cotswolds; 4 are in favor of Southdowns, and 2 in favor of Merinos and Cheviots. All recommend the Leicester Sheep as being very profitable. The actual weight of carcass is given per quarter as 17 lbs., and that of fleece 4 lbs. 8 oz. The number kept on each 100 acres varies from 20 to 40—one only stating the number at 16, and one making it 70. The average (not including these) is 26 for every 100 acres, which must be understood to refer to old and long cultivated farms, and the queries having been sent to the most prominent farmers in each county. According to the census of 1852, there were 10 Sheep to every 100 acres of occupied land in Upper Canada, and the weight of fleece was only 2 lbs. 18 oz.; so that the improvement in the number and quality of Sheep must be very considerable. Taking the number of Sheep to bear the same proportion to the population that they did in 1852, viz: 9 Sheep for every 10 inhabitants, and calculating the average weight of fleece at 3½ lbs. for all Canada, we would have 2,592,000 Sheep, and 9,072,000 lbs. of Wool, as the produce of this last year, a very important item in raw material for Canadian manufacturers, if it were retained in the Colony. But the Trade Returns of 1858 show an export to the United States of 1,545,412 lbs. at 22½ cents per lb., against an import of 224,664 lbs. at 20½ cents; and the Returns of 1859 show an export of 1,630,531 lbs. against an import of 121,830 lbs. In round numbers our net export of Wool was 1,500,000 of lbs., whilst the export of the United States was only 951,938 lbs., shewing how much more extensive must be their home manufacture of this important staple. The Official Returns of the United States, taken from the Journal of the Society of Arts, show that the whole Union possessed in 1859, 30,000,000 of Sheep and 75,000,000 lbs. of Wool, making the average 2½ lbs. per fleece,—very many of their Sheep being Merinos, will account for this low estimate of the weight of fleece.

Several new woollen factories have been established in Canada within the last year, and the home manufacture of Woollen Goods will, without doubt, continue to increase to a great extent. The average price of Wool given in the Returns is 24 cents per lb., and it may be of importance to know that the supply is so large as to induce others to embark in the manufacture of Woollen Fabrics. Upper and Lower Canada are both specially adapted to the growth of Wool. The climate is very similar to that of Switzerland, where large flocks of Sheep are successfully kept with fair remuneration.

In Lower Canada the Returns show a very great improvement, both in the quality of Sheep and weight of fleece, and also in the number kept on each occupied 100 acres. Five farmers report as many as 30—one 27—four report 25, and the rest from 11 to 20; and the weight of fleece is given from 2 to 7 lbs., averaging on all the returns the large weight of 4 lbs. to the fleece. I have, however, taken 3½ lb. as the general average.

The following very interesting correspondence on the subject of the culture of the Grape, and the manufacture of Wine in Canada, has been considered of sufficient importance to give it a place in the Report of this Bureau, if for no other purpose than to invite enquiry, and procure experimental knowledge upon a subject offering such promise of feasible and beneficial developement.

[Copy.]

VAL DE COURTENAY,
Bury, 3rd August, 1859.

TO THE HON. THE MINISTER OF FINANCE:

SIR:—Circumstances have lately come to my knowledge that convince me of the certainty of being able to establish Vineyards on the hilly parts of this district, having a rocky, gravelly and sandy soil, and of a Southern or Western aspect.

The Blue-Berry buds forth about a month before the Grape, and notwithstanding the growth being in frosty situations, it is as often as free from Spring frosts in this Country as in Northern Italy and Switzerland.

I have, within the last week, observed Blue-Berries situated at the base of a hill of mine, having a Southern aspect, and they are in a prosperous condition, notwithstanding the late frosts of this year.

It is an admitted fact that Vines do not suffer from the most severe winter frosts when they are pruned low. The Crimea is a proof of this axiom---as is also Neufchatel in Switzerland, so remarkable for its wines, and where the climate is much less favorable than here.

Judging from the period of the budding of the Blue-Berry, the Grapes would, in fair situations, have here nothing to fear from the late Spring frosts, and Autumn frosts are beneficial to the Wine Grape, and I consider them absolutely necessary to the production of good Wines.

I forward the following opinion obtained from Messrs. Foigneux et Moreau, the best authority of Northern wine-growers:

"1o. Où la culture du maïs s'arrête, doit s'arrêter aussi celle de la vigne; quand l'un ne "mûrit pas son épi, l'autre ne mûrit pas sa grappe.

"2o. Où les haricots ne mûrissent plus leurs grains, vous aurez beaucoup de peine à "obtenir du raisin.

"3o. Enfin, vigne plantée en pleine argile, ou en terre humide, s'expose aux gelées "tardives, et vous donnera beaucoup d'acides, et peu de sucre, et qui dit sucre, dit alcohol, "puisque c'est l'un qui fait l'autre, et qui dit alcohol, dit richesse et conservation des vins. "Après cela, voici les principales considérations qui devront vous déterminer.

"1o. Qu'elle s'accommode du terrain où l'on doit la cultiver.

"2o. Que la végétation *soit tardive* au printemps, de telle sorte qu'elle échappe plus facile"ment à l'action désastreuse des gelées printannères qui causent les ravages les plus considér"ables dans les vignobles.

"Cependant, c'est moins l'effet de la gelée que celui du soleil brûlant qui lui succède, qui "amène ce résultat—aussi, peut-on le prévenir en soustrayant le vignoble à l'action *immédiate* "du soleil matinal; dans le cas contraire, il arrive aux bourres gelées ce qui arrive à tous les vé"gétaux délicats qui passent brusquement d'un état de refraîchissement excessif à une tempé"rature élevée.

"Enfin, on doit choisir l'exposition du midi ou couchant pour les localités exposées aux "gelées blanches, afin que le soleil ne frappe les bourgeons qu'*après* que la gelée a disparu."

From the above, and from many other reasons, I am convinced that I could produce excellent wine in this country, and I have a grand hill of a Southern aspect of nearly 300 acres in extent, and of sufficient declivity to increase considerably the natural heat of the country. I also consider the Eastern Townships the only part of the Canadas peculiarly adapted for a wine country. The West does not sufficiently preserve the covering of snow through the Winter, and the early Springs expose the grapes to white frosts. The advantages of securing the successful culture of the grape are manifold.

If this country had its plains covered with sheep, and its hills with vines, it would be the Switzerland of America, and by taking from it those ideas of bleakness and excessive cold ever associated with Canada in the minds of Europeans, it would quickly induce an increasing immigration, and draw towards it that capital and intelligence which is necessary to render the country prosperous.

Further, in the point of view of the political economist, it would be equally advantageous.

It would furnish all Canada with wines suited to the wants of every class, and the effect of wine cannot be better demonstrated than by the fact that in wine countries there has never been found a necessity for Temperance Societies, and the most barren hills become the most productive and most nourishing part of a country; for wine is nourishing, and every bottle of it used in a family will save a pound of bread or a pound of meat, and this I have proved myself, as I, at one time in Italy, had two hundred (200) laborers in my service, and I supplied them with wine at their meals from economy.

In the year 1800 the Emperor Napoleon appointed a Commission to enquire into the causes of the poverty of the Province of Brittany. It reported that the use of whiskey was the cause, the inland duties then existing preventing the use of wine in that Province. and the extreme moisture preventing the growth of wine. The excise duties were immediately done away with, and that Province became one of the most flourishing in France, and drunkenness became unknown there.

At a later period the Belgian Government introduced the cultivation of wine in order to prevent this vice, and fully succeeded, and Belgium now competes successfully with Champagne for its sparkling wines, which are found to become superior as they draw closer to the Northern limits of the wine-region.

The preparation of the soil, the importation of the cuttings required for the first 10 acres (about 50,000) from Neufchatel, and the other expenses attendant on a new enterprise, would be difficult for me to support.

To carry it on on a smaller scale than 10 acres (the quantity one man can take care of) would be almost the same expense and would demonstrate no positive result.

[Here Mr. Courtenay stipulates for certain encouragement from Government, in case of entire success,—and thus proceeds: —]

I would engage :—1st. To prepare and plant next spring a good Vineyard of Ten Acres, which in 3 years would produce 2,000 Bottles of good Wine, and 1,000 Bottles of inferior Wine to the Acre, and, within five years, would produce nearly double the quantity, besides some Brandy.

2nd. I would engage in Ten years to prepare a Vineyard of 100 Acres, producing at least 300,000 Bottles of excellent Wines, Red, White and Sparkling, and at least 100,000 Bottles of inferior Wine.

I would require no grant or remuneration of any kind, before I fulfilled to the letter, the first part of my engagement, when if the Wine was found to be of inferior quality or quantity to the engagement, I would have no claim either to the Grant or to any other remuneration.

If, on the contrary, it was found at the end of three years, that I produced 20,000 bottles of superior Wine, I shall then obtain the encouragement in question, on the condition of fulfilling within the given time the second part of my obligation.

I have twenty years experience in Grape cultivation. I have a man who has this 20 years been always employed in cultivating the Vine on the Northern limits of Italy, and as high as it would grow on the Alps. His experience and my own, I think, cannot fail to be correct.

I have now to declare myself,
Your Excellency's
Very obedient humble Servant,
W. De COURTENAY.

On the receipt of the above letter, it was submitted to Professor Hincks, for his opinion, and also to Mr. Henry Parker, of Cooksville. The following are their replies :—

(Copy.)

To WILLIAM HUTTON, Esquire,
Secretary.
Bureau of Agriculture & Statistics,
Quebec

TORONTO, Sept. 24, 1859.

MY DEAR SIR :—I have carefully considered Mr. De Courtenay's paper respecting Vine culture in Canada. He evidently understands the subject practically, and has referred also to good authorities. I must say, however, that I doubt the growth of Maize being any test of a climate suiting the Vine, and although further experiments may be desirable, I incline to the opinion that the true Vine [*vitis vinifera*] does not come to perfection without the glass in this climate, and that our chance of successful Grape culture lies in choosing good varieties derived from our native species.

The Ohio Vine cultivators, in what would seem a more favorable climate than ours, thought themselves obliged to adopt this plan. (I am not aware of the extent of their experimental trials, but they were experienced German cultivators, and would, no doubt, have employed the European Grape, if possible,) and I should recommend at least careful trial before any quantity of European plants is procured. It is quite possible that the hardier kinds derived from American stocks might answer and yield good Vine when the European species would fail.

Mr. De Courtenay asks Government encouragement for his enterprise, but he seeks this only in case of success, and undertakes the risk himself. The doubts I venture to suggest do not, therefore, materially affect the case. They may deserve his attention if his experience has hitherto been European, but if he can succeed in introducing Wine-making as an additional branch of Canadian industry, I should think he would be a public benefactor, and I see no improbability of its being done with American Vines, though I fear the length of our Winter not leaving sufficient time for European Grape to come to perfection.

I believe that the Ohio Vineyards already produce a good article, and are improving from year to year.

Believe me to be, dear Sir,
Very faithfully yours,
WILLIAM HINCKS.

P. S.—Mr. De C. refers to the Blue-Berry, but he should observe that it is not the same species as the European, and is of course one adapted specially to our climate.

(Copy.)

CLAIR HOUSE,
Cooksville, Sep. 30, 1859.

To WILLIAM HUTTON, Esquire,
Secretary,
Bureau of Agriculture & Statistics,
Quebec.

SIR,—Absence from home prevented my replying to your letter, dated Sept. 20.

It gives me the greatest pleasure to coincide with Mr. DeCourtenay in many respects, as regards the cultivation of Vineyards. I cannot, of course, speak with certainty of the Lower Province, but I consider it a matter of vital importance to Upper Canada.

I have proved, beyond a doubt, that immense crops of Grapes can be raised without the necessity of either burying them, as in the Crimea, or pruning low, as recommended by Mr. De Courtenay.

Last year I cut several tons off a few acres, selling some ripe, turning some of the Green Grapes into Champagne, and also making some Red Champage, as well as some Dry Sherry. I sold 100 gallons of Champagne to one person, who speaks highly of it, and I bottled a cask for home consumption, which is universally liked.

I am strongly of opinion that age will greatly improve the fabric, from the fact that a few bottles remaining from my first Vintage are now far superior, and evidently still improving.

My plan of action is this: I strike any quantity of cuttings, a foot apart, and six inches in the rows; these remain two years, requiring little trouble to keep them free from weeds. In the meantime, I trench and underdrain the ground. This done, I take the two year old plants and plant them out Spring or Autumn, encouraging their growth by frequent tillage, and the following year I receive a small return.

If large crops be required, it is necessary to be particular about the under-draining, and for the vineyard to be permanent to trench the ground, making use of whole bones, except the land be pure sand, when trenching may be dispensed with.

I have many vines growing over wire trellises, formed like the roof of a house, others simply tied to stakes. I have much larger crops from the wire trellises, but the expense of erection, and growth of grass and weeds under them would prevent my making use of them on a larger scale. The spring frost has never injured my vines till this year, when that of the 4th June cut off my entire crop, leaving, however, the vines uninjured. The white frost in the Autumn certainly improves the grapes, but I have proved that one, severe enough to cut off the leaves, injures the fruit.

I am of opinion that cuttings procured from abroad would certainly fail, from their requiring to be buried in the Winter, thus causing a large amount of labour, and injuring the vineyard. On the other hand, the native grape, the Clinton, has stood the test of the hardest Winters unharmed, while the Black Hamburg, Black Chester, Sweet Water, Isabella, Catawba and Royal Muscadine have been all killed to the ground. The Clinton, with sugar, makes a splendid wine. The resources of Canada can never be developed unless such men as Mr. De Courtenay meet with every encouragement. His engagement is very fair but difficult. Canada covered with vines would be very different from Canada as it now is; and how many men have had grants of land, on which nothing has been done but felling the timber and planting potatoes.

I have tried everything in my power to spread the vine culture, but without sufficient means; what can I do single-handed. I have given away plants, and tried to impress upon numbers the great advantage accruing to themselves and the country from Grape culture, but they will not incur the first necessary expense, and they also have a fear of the want of a market. Let the engine, however, be once set in motion, and there can be no doubt of the country being soon covered with a splendid article of commerce.

The interest I feel in the matter must be my apology for the length of this letter.

I am, Sir,

Your Obedient Servant,

HENRY PARKER.

On sending a copy of Mr. Parker's letter to Professor Hincks and Mr. De Courtenay, the following replies were received:—

UNIVERSITY COLLEGE,
TORONTO, October 7, 1859.

To W. HUTTON, ESQ.,
Bureau of Agriculture and Statistics,
Quebec.

MY DEAR SIR:—I am much obliged to you for the copy of Mr. Parker's letter, and am glad to find that an intelligent man, of considerable practical experience, confirms my views as to the culture of the Vine. The Clinton Vine, which he thinks hardiest of all that are useful, is one of the varieties from the native species. It is probable, however, that with the system of close pruning the Catawba and Isabella Grapes, also of native origin, and which are so much cultivated in Ohio, would flourish and yield valuable produce; but Mr. Parker confirms my view, that trying the European Grapes in this climate would be useless.

Undoubtedly Grape culture is a desirable branch of industry to introduce, and successful enterprize in it deserves encouragement. I only desire that Mr. De Courtenay should not, through over confidence, run into expenditure in procuring European Vines at the great risk of disappointment. I would try some of the European with the short pruning. I would also try the principal American varieties, and increase most the stock of the kind which answers best, and in this way little time need be lost. It would be well worth while to make immediately a plantation of the Clinton Vine, as it may be accounted that it will succeed certain and yield a good wine. If Catawba and Isabella, and other finer American varieties succeed, they may deserve preference on further planting, and if European varieties succeed, they may be better still, but of them I cannot help entertaining great doubts.

I will endeavour, at a suitable season, if I live, to visit Mr. Parker's Vineyard.

Believe me to be, dear sir,

Very truly yours,

WILLIAM HINCKS.

VAL DE COURTENAY,
BURY, October 8, 1859.

To WM. HUTTON, Esq.,
Secy., Bureau of Agriculture and Statistics,
Quebec.

MY DEAR SIR,—I have just received your favor of the 4th instant, and am indeed grateful to you for the copy of Mr. Parker's most interesting communication. The information he gives as to the Clinton Grape is most important. I was aware that the most part of the other Grapes he mentions could not succeed; but there are two kinds of Burgundy Grapes grown in Belgium that I am certain would answer by being grafted on the Clinton in the way I mention.—"Griffe en fente Couture."

I have no objection to your making what use you please of my letters, and, again thanking you for the interest and kindness you have shown me,

I remain, my dear sir,

Very sincerely Yours,

W. DE COURTENAY.

P. S.—I forgot to say that I think Mr. Parker's plan of transplanting Vines is a bad one, nor do I admit that good wine can ever be grown on any other soil than a sandy or gravelly one. The art of producing good wine is in the grafting and pruning, and if you think Mr. Parker would not think it a liberty, I would address him in detail on the subject of his able letter.

There has been a further correspondence with Mr. De Courtenay on the cultivation of the Silk Worm in Canada which may be found interesting and worthy of attention. His letters will speak for themselves. The first was addressed to the Hon A. T. Galt, and transferred by him to this Department.

(Copy.)

VAL DE COURTENAY,
Bury, August 8, 1859.

The Hon. A. T. GALT,
&c. &c. &c.

"My Dear Sir,—I took the liberty of addressing you a few days since through Mr. "Machin. Since then I have been so fortunate as to make a remarkable discovery, and "one that in itself alone will insure the prosperity of the Country. It is that the Bass wood "so called, is a species of "Morus Alba," Genus "Multicaule" and is the finest kind I ever "saw, and contains more silk than any kind I am acquainted with. My Italian Servant, who is "a first rate Silk grower, came running home a few days ago to inform me that in a distant "part of my Woods he had discovered two magnificient Silk Trees on a small clearing. On "examination I found they were a second growth of Basswood, and by proving them as we "are in the habit of doing, we found them to contain a great abundance of Silk, and to be "a very superior variety of the "Morus Alba," "Multi caule." I have some valuable "treatises on the Silkworm, from the plates of which I find that the leaf is exactly that of "the "Morus Nigra," the fruit of the "Morus Alba," the taste, colour and vigour of growth "all belong to the "Multi caule." It remains to be proved if the Silk Worm will prosper "in this climate. In Italy it will not do so in the low and too warm plains, but both there "and in France it is known to always succeed where the Turkey can be raised without trouble.

"From this and many other indications both myself and my Italian Servants are of opinion "that there is no doubt whatever of being able next Spring to raise any quantity of Silk in "this country. In addressing myself to so distinguished a Statesman, I need not expatiate "on the immense advantages of such a discovery.

"Before concluding, however, I must remark that it is most important that if the "Government should intend to procure some Silk Worm Seed, that it should be imported "before the Winter. In Spring the seed does not well bear changing. The best seed for "this country should be obtained from Constantinople, from Belgium, and from Russia. A "little of each seed would be to be recommended."

"I always found the Italian Seed inferior, and I have always made it a point to obtain "my own seed from Constantinople, where, however, there are two kinds, one of them "producing a coarser and therefore an inferior kind of Silk."

"Myself and servants will be happy, as far as it may be in my power, to instruct the "people in the cultivation, which is exceedingly simple. I have with me here an Italian "Female servant, who always carried it on for me in Italy; the men of course providing "her with leaves.

"I have the honor to remain, Sir,
" Your very faithful servant,
W. DE COURTENAY.

"N. B.—Since writing this letter, I have found another species of Basswood or Moras, "both good."

Upon receipt of this letter, it was inclosed to Professor Hincks, of University College, asking his opinion on the subject. The following is Mr. Hincks's reply:—

(Copy.)

TORONTO, Sept. 12th, 1859.

W. HUTTON, ESQ.,
Secretary
Bureau of Agriculture and Statistics,
Quebec.

MY DEAR SIR,—I have given my best attention to the subject of Mr. De Courtenay's letter, but unless I had before me specimens of the Tree or Trees referred to by him, I should have no right to speak with confidence. My belief, however, is that he must have been deceived by the resemblance of form of the leaf of the Basswood, (which is the American *Lime* or *Linden*,) especially the shoots after the tree has been cut down, to the leaves of the Mulberry. The method referred to of testing the Silk-producing quality of a tree which Mr. De Courtenay states to have been employed, is unknown to me, and I can form no opining respecting its efficiency, but I will state facts in relation to the subject which will enable you to form as good an opinion as I can on the probabilities of the case. The genus Morus Mulberry, contains various species, several of which are valued as the best food for the Silk Worm. Morus Nigra, the fruit-bearing Mulberry, though often used for feeding Silk Worms, does not produce good silk, is not early in leaf, and is of little value in this connection. Morus Rubra, the American Mulberry, is still less valuable for silk culture. It grows in New England, but I have not heard of it in Canada. Morus Alba, the white Mulberry, has long been cultivated in Southern Europe as food for Silk Worms, and answers the purpose well. It is so late in producing its leaves in England, and so delicate that all attempts at silk culture dependent upon it have entirely failed. It was largely tried some years ago in Philadelphia, and after much expense proved a failure. Morus Multicaulis is a distinct species, said to come from the Philippine Islands, introduced into England a few years ago, and much valued for its large and copious foliage, its easy propagation, and eminent fitness for the Silk Worm, as well as its earlier leafing. By using this species an English lady has succeeded in profitably raising silk in the south of England. I much fear our severe Winters and late Springs would be fatal to it. This species cannot be a native of Canada. The reason of species of Mulberry suiting the Silk Worm, and favoring its goodness of silk, is the presence of Caoutchouc (India Rubber), or some similar substance, which is found more or less in all the sections of the great Nettle family, to which the Mulberry belongs. This substance is not, so far as I know, present in the Lime or Basswood

Trees, but they possess *mucilaginous* qualities, similar to what are found in their near relations the Mallows, which might easily be mistaken for the gummy character given by the Caoutchouc.

I cannot think that Basswood would really suit Silk Worms for food, and if I did, I fear our harsh climate would prevent success in this branch of industry. I would not discourage any trial which a public spirited individual might be disposed to make with the assistance of those who have a practical acquaintance with silk culture, but it is manifest, from what I have stated, that there is no great prospect of success, and I fear that the suggestion originates in the external resemblance of plants, not really alike in qualities. If I could see a specimen of the Tree referred to, especially one showing the fruit, I could positively say whether the Tree is a Mulberry or a true Basswood, but as it is, I do not feel much doubt.

Believe me to be,
Dear Sir,
Very truly yours,
WILLIAM HINCKS.

P. S.—Since writing the above, I have been favored with your second note, and the enclosed extract, which I now also return. I cannot say that anything here added alters my previous belief on the subject. In this communication Mr. De Courtenay speaks of the "Bass Tree" as a remarkable and beautiful species of Silk Mulberry." Now, if his Tree is really the Bass Tree, or American Lime Tree, it undoubtedly is no Mulberry, nor in any way related to Mulberries, and is very unlikely to serve as food for Silk Worms, though, of course, if from any indications he thinks it probable, it would be safest to try.

Mr. De C. endeavours to prove that our climate must be favourable for wine. Repeated and varied experience has decided that a true or European grape will not come to perfection in the open air in this country; and even in the fine climate of Southern Ohio, the wine makers are obliged to rely on varieties obtained from native vines, as the Catawba or Isabella. They cannot cultivate the varieties esteemed in Europe.

A copy of this letter was sent to Mr. DeCourtenay, who did not agree with Mr. Hincks in his opinion, and subsequently, after further consideration and enquiry, addressed the following to the Department:—

(Copy.)

VAL DE COURTENAY,
Bury, Oct. 27, 1859.

To WILLIAM HUTTON, Esquire,
Secretary,
Bureau of Agriculture & Statistics,
Quebec.

MY DEAR SIR,—Some professors in Botany have been extremely irritated at my appearing to call in question their classification of the Basswood Tree as an American Lime or Linden.

I therefore beg leave to expose to you my views on this most important subject, and that may have some weight when you consider that I have been for many years a practical Agriculturist and Silk Grower, and that the Italian servants I brought over to this country have from childhood been employed in the cultivation of Silk.

We discovered that the second growth of the Basswood Tree was the fac-simile of the "Morus Multi caule," and presented the two varieties corresponding to the "Nigra" and "Alba" of the Mulberry. The leaf and bark of those varieties vary considerably from each other: the leaves of the "Alba" are longer, narrower, of a lighter green, and of a more acid flavour than the "Nigra." A yellow dye produced from the roots, is of a deeper and richer hue in the "Nigra." These peculiarities are exactly the same in the corresponding varieties of the Bass Tree—the formation of the roots are the same—the extreme regularity of the branches the same—the taste of the leaves and their peculiar position on the stems is the same, and the external appearance of the tree is exactly the same.

Under those circumstances it will not surprise you that, being no Botanists, we considered the Basswood to be a species of fruitless Mulberry, as the Wild Mulberry produces no fruit; and we could discover none on the second growth of the *Bass* wood, though some of the trees were more than twenty years of age.

We have since then discovered fruit on forest Bass trees resembling the Lime in appearance, though of quite a different flavor. That of the European Lime is to me quite familiar, having often used its infusion as a sodorific.

I have not the least pretensions to profound Botanical science, but, examining the question in a practical point of view, I was convinced that the Basswood leaves were suited to the wants of the Silkworm, and this, I have since been able to ascertain, is correct, though the lateness of the season has prevented the investigation being carried on as far as the production of Silk. I have, however, no doubt but that I shall be able, next Spring, to produce the best qualities of Silk from the leaves of the Basswood tree, which I must persist in declaring as exactly resembling the "Morus Multi caule," and as having nothing but the resemblance of the fruit in common with the European Lime Tree.

Silk can be produced from the leaves of the Currant Bush, but that shrub cannot support the severe pruning out of season, and the stripping of its leaves. The Bass Tree will support any hacking and cutting out of season, and this peculiarity is known to every woodsman.

The discovery that the Basswood leaves may be used as a substitute for those of the Mulberry, will, I consider, create quite a revolution in the Silk Trade: the Basswood being protected from the Spring frosts from its tardy vegetation, and from very severe Winter frosts from its vigorous and hardy nature. I am, however, of opinion that neither the Bass Tree or any other tree can produce good Silk where the Summer heat does not surpass at least 2000 degrees (centigrade), accompanied by a pure atmosphere as sufficient heat and strong light is absolutely necessary, so that sufficient matter or fibre may be condensed in the Silk-producing plants.

Theorists and Botanical Professors declare that the long and harsh Winters of this country would render the production of Silk or Wine impossible.

Allow me positively to declare, as a practical man, that the length and severity of the Winter has nothing whatever to do with the production of either Silk or Wine.

Two thousand six hundred degrees (centigrade) of Summer heat is required for the successful and economical production of Wine, Silk, Indian Corn, and Hemp.

This part of the country produces Indian Corn in abundance.

Belgium produces Silk and Wine, and cannot produce Indian Corn.

It is further my opinion that the Winter here is neither as long or as severe (for all practical purposes) as that of Northern Italy, where Silk and Wine are grown in abundance. I have lived there for many years, and have always had from fifty to one hundred head of horned cattle, which I have been ever obliged to keep constantly housed from the fifteenth of October to the fifteenth of May.

Here, my cattle are now in their pastures, and will certainly return there before the first of May.

Believe me to remain,
My dear friend,
Very faithfully yours,
W. De COURTENAY.

Val De Courtenay,
Bury, C. E., Jan. 16, 1860.

To William Hutton, Esquire,
Secretary,
Bureau of Agriculture & Statistics,
Quebec.

Dear Sir,—I have received the Silkworm Eggs in good order, and have no doubt but that this Spring I shall be able to furnish you with some fair specimens of Silk made of the Basswood leaf. The leaves that I forwarded to Italy arrived in good order, and were much approved of, and although much dryer than leaves generally given to the worms, were eaten by them with avidity.

If the Minister of Agriculture would allow me the expenses, I would be happy to prepare ten acres of vineyard this Spring, and I have every certainty of succeeding fully in producing excellent Wine, which, I need not inform you, would be the fortune of this part of the country.

If you should think it advisable, I would memorialize the Honourable the Minister of Agriculture, and our Representative would present it for his consideration.

I take this occasion of assuring you of my high consideration, and remain,

My dear sir,

Yours faithfully,

W. De COURTENAY.

FREE GRANT ROADS.

Believing that a correct official statement of the condition, progress, and prospects of the Settlers on the Free Grant Roads is a matter of deep interest to the Canadian public, and of great importance as exhibiting the successful working of the Free Grant system, and the material value to the Colony accruing thereupon, it has been thought desirable to put on record the more prominent features of the official reports which have been furnished by the several Superintendents of those roads, more especially as these returns, in every case, exhibit a larger acreable value of produce than older settled parts of the country have realized—arising chiefly from the circumstances that the products of the farms in these lumbering regions have borne a much higher value there than even in the frontier towns, or what are generally considered the best markets of the country. The first is from Mr. French, the agent on the Ottawa and Opeongo Road.

Extract from Report by Mr. T. S. French, as to the settlement of the Free Grant Lands on the Ottawa and Opeongo Roads.

OTTAWA AND OPEONGO ROAD AGENCY.

Sebastopol, 7th January, 1860.

"I have the honor to submit for your information a complete list of the Free Grant Settlers on the Ottawa and Opeongo Roads up to the 31st December, 1859; showing the particular lots occupied, the periods at which they were severally taken up, the number of acres cleared and cultivated upon each, together with the actual produce which each settler has raised upon his grant during the past year.

You will perceive that the list now sent contains the names of two hundred and thirty-five settlers, of which number 51 have been located during the year 1859; and also, that upon the portion of the road that has been completed, there is scarcely a lot unoccupied. With a passable Summer road, distance does not seem to deter settlers, and if this road was once finished to Lake Opeongo, many are of opinion that ere two years there would be a thriving settlement on the fertile banks of that now remote but splendid piece of water.

In analyzing the list of settlers, it will be found to consist of:

19	Natives of England.
150	" " Ireland.
4	" " Scotland.
27	" " Canada West.
15	" " Canada East.
14	" " Poland.
2	" " Germany.
2	" " U. States.
1	" " Wales.
234	

A church has been erected upon one of the lots. The foregoing classification exhibits a not undesirable blending of persons of various nationalities upon Canadian soil; and the presence of Poles and Germans forms a new feature in the progress of the settlement.

The resident agent personally visited every farm, and after cautioning the settlers against giving an over estimate of their crops, (which, however, they are not disposed to do,) obtained the following return of each man's crops. From this it would appear that there have been 2,016 acres of the Free Grants cleared up to the 31st December, 1859; that there were 1,090 acres actually cropped, while 87 acres are now sown with Fall wheat.

Upon the 1,090 acres cropped there were raised :

8,515 bushels of	Wheat,	worth	$1 ℔ bushel	$ 8515	00 cts.
8,421 "	Oats,	"	50cts. ℔ bushel	4210	50 "
395 "	Barley,	"	60cts. "	237	00 "
202 "	Corn,	"	$1 "	202	00 "
245 "	Peas,	"	$1 "	245	00 "
22,450 "	Potatoes,	"	50cts. "	11,225	00 "
1,580 "	Turnips,	"	15cts. "	207	00 "
149 tons of	Hay,	"	$16 ℔ ton	2,384	00 "
308 "	Straw,	"	$5 "	1,540	00 "
5,653 lbs.	Sugar,	"	12cts. ℔ lb.	678	36 "
325 gallons	Molasses,	"	$1 ℔ gallon	325	00 "
164 barrels Pork, at $16 ℔ barrel				2,624	00 "
85 " Potash, at $22 "				1,870	00 "
4,667 lbs. Soap, at 10cts ℔ lb.				466	70 "
9,102 bushels Ashes, at 5cts. ℔ bushel				455	10 "
Making the total value of the crops for 1859				$35,184	66cts

And showing the average value of the produce of each acre cropped to be $32.27, nearly $8 per acre above that of last year. In the above return the important items of milk and butter, of which large quantities were produced, are not included; neither are the sawed lumber, shingles, venison or furs taken into account, and it may be remarked that the corn suffered severely from the unusually late frosts in spring.

Some four years ago there were but six settlers in Sebastopol, while Brudenell could only boast of two. Sebastopol now contains close upon a hundred, while Brudenell can count nearly double that number, and the great majority of them are men with families. Sebastopol and another new Township (Griffith) adjoining, have now been organized for municipal purposes, and will henceforth be represented by their Reeve in the County Council. Brudenell, not being within the bounds of any defined county, has not yet been organized.

Mr. French also remarks that, apart from the natural increase of the settlers' travel upon the road, the travel upon it during the past year far surpassed that of any former one; and that in one day more than fifty double teams passed his residence, all heavily laden with supplies for the lumber shanties.

ADDINGTON ROAD.

To W. Hutton, Esq., Tamworth, January 23rd, 1860.

Secretary,

Bureau of Agr. and Stats.,

Quebec.

Sir,—During the year ending the 31st December, 1859, there has been an increase of 117 in the population on the Free Grant Lots on the Addington Road; 406½ acres have been chopped, 410 acres cleared, 119 seeded to grass, 10 bushels of rye and 4 of Fal Wheat sown, and 1517 apple trees planted out.

The length of the Addington Road is 56 miles from the Clare River, in the Township of Sheffield, to the Madawaska River; and from thence, in an easterly direction, to Addington and Renfrew Road is 22½ miles to where it intersects the Opeongo Road, of which there are 17¾ miles completed, leaving 4¾ miles to be made. The continuation of the Addington Road, north of the Madawaska River, runs north-westerly, and intersects the branch of the Hastings Road, which connects with the Opeongo Road, in the Township of Brudenell, about 4 miles from its junction; there are some 4 miles of this road constructed from the Madawaska bridge westwards.

There are now cleared on the Addington Road 1,008 acres, of which 213¾ are laid down in grass; the remainder is ready for Spring cropping; the number of the population is 699, and the nationality of the settlers.

Born in	Canada	West	89
"	"	East	18
"	"	United States, A.	11
"	"	England	24
"	"	Ireland	26
"	"	Scotland	4
"	"	Prussia	4
"	"	Denmark	1
"	"	Cape Breton	1

The Settlers have 35 yoke of Oxen; 29 Horses; 75 Cows; 25 Sheep; and a goodly number of young Cattle and Swine. They raised and manufactured the following articles, in 1859, viz.; 16,158 lbs of Maple Sugar; 748 gallons of Molasses; 893 gallons of Vinegar; $52,000 worth of Cooper work; 164,000 feet of Sawed Lumber; 291,000 of Shingles; 103 Deer killed; $416 worth of Furs taken; 127 yds. of Flannel; 67 yards of fulled Cloth were made; 38½ tons of Artificial and 281 tons of natural Hay cut; and 472 bush. of Winter Wheat; 158 of Rye; 333 of Peas; 348 of Barley; 2,432 of Spring Wheat; 4,455 of Oats; 515 of Corn; 31 of Buck Wheat; 11,656 of Potatoes; 11,075 of Turnips; 73¾ brls. of Potash were made and 11,125 lbs of Beef, and 13,025 lbs of Pork slaughtered; amounting in the aggregate, as per value of cash article in the statement, to the sum of $22,546-85.

The high price that provisions brought during the first three quarters of the year, operated against the increase of the settlement; Flour ranged from $10 to $11 for several months, and that of an inferior grade; Pork, and other articles of consumption, were proportionate, and this prevented settlers from moving in their families, and another reason which prevented several settlers from locating, was the destruction of the Madawaska Bridge; those who proposed settling in the Township of Denbigh, expected to obtain supplies from the settlement, down the River; and from Renfrew, the loss of the Bridge cut off all communication, for there is no road on the South side of the Madawaska River, and having no crafts for water communication, they were compelled to abandon the settlement, until a more favorable opportunity; since harvest, several families have gone on gift lots, in Denbigh, and several others have prepared Shanties, and will move in during the winter.

The frost in June cut off all forward grain and grass, as well as corn, beans and garden vegetables; the winter grain stooled out, and bid fair to be an average crop, but it was so late that the rust struck it, and rendered it totally useless, even for fodder. All late crops, such as corn and buckwheat, were caught by the early frosts of September, and totally ruined. The destruction of the winter grain crop in June, last, has deterred the settlers from sowing fall grain, so that but few bushels were sown.

Yet with all the disasters which befel the settlement, there is no one discouraged, and through the whole length of the settlement, all feel sanguine that, if blessed with health, they will succeed. No agues or fevers, so prevalent in new settlements in the West, are known on the Addington Road; pure water abounds everywhere, and good feeling pervades the whole settlement.

I have the honor to be, Sir,
Your most obedt. servant,
EBENEZER PERRY.

BOBCAYGEON ROAD.

Mr. Richard Hughes, the resident Agent on this road, Reports as to the state of the Free Grants, to the 31st December, 1859; shewing the number of Lots located, the number of actual settlers, number of persons in each family, number of acres under crop, number of acres cleared, Houses, Barns and Stables built, &c.

Viz:—No. of Lots located	195
No. of actual settlers	168
No. of persons in families	697

Of the settlers,	30	are	English	
"	"	14	"	Scotch
"	"	96	"	Irish
"	"	22	"	Canadians
"	"	3	"	Swedes
"	"	2	"	Germans.

No of acres under crop, 371, as follows:—

						$	cts.
90 acres Wheat	1,620	bush.	@ $1		=	1,620	00
138 " Potatoes	20,700	"	@	50 cts.	=	10,350	00
87 " Turnips	15,400	"	@	20 cts.	=	3,080	00
25 " Corn	500	"	@ $1		=	500	00
150 tons Beaver meadow Hay			@ $8		=	120	00
800 lbs Maple Sugar		"	@	10 cts.	=	800	00
400 gals. Molasses		"	@	60 cts.	=	240	00
50 M feet Sawed Lumber		"	@	6 cts.	=	300	00
100 M Shingles		"	@ 1	50 cts.	=	150	00
10 tons Timothy Hay		"	@ 20		=	200	00
200 Deer		"	@ 3	50	=	700	00
Furs		"			=	1,500	00
6 brls. Potash		"	@ 25		=	150	00
						$20,790	00

The balance of 371 acres was planted with vegetables, which although of great benefit to the settler, may not be worthy of being included in a Report.

Three Post Offices have been opened in the settlement during the past year, viz: at Silver Lake, in Galway, 9 miles—at Kinmount, in Somerville, 18 miles—and at the Gull River, 30 miles from Bobcaygeon.

The Bobcaygeon Road is completed to a distance of 36 miles from Bobcaygeon and a winter road is made 3 miles further to the rear concession of Minden, where the settlers moving in to the Eastward have made a winter road for themselves on the boundary between Minden and Stanhope, about 3 miles long.

At this point a good location has been found for a bridge between Little and Big Bushkonk Lakes, making a good opening for the road to run eastward to the Hastings Road. A bridge has been built, where the road crosses the Gull River, which cost about six hundred dollars.

THE HASTINGS ROAD.

Mr. Robert Bird reports the length of this road from the Township of Madoc to the Peterson Opeongo Branch to be 51 miles, and from the said branch-road north 15 miles, making the whole of the Hastings Road 66 miles long. The length of the Peterson Road from the Madawaska River where the bridge is now building up to the Hastings Road, is 21 miles, and from the Hastings Road west 10 miles. Making 31 miles of the Peterson-line of road; and making in all 97 miles.

The 51 miles of the Hastings Road up to the branch-road is now all good except two miles joining the branch-road, the amount appropriated for the improvement of the said road not being sufficient to complete it. And for this purpose £30 more will be required. The 15 miles north of Peterson's line is not so good as the line itself. Were these two miles improved, any ordinary team could take twenty hundred weight to any place on the Peterson line in the winter, and fifteen hundred weight in the summer, and the County Council has so improved the four miles in the rear of Madoc that the settlers cannot complain of the roads.

The improvement of the settlement up to the Peterson-line is greater than any person could anticipate for the time and the settlers seem to be contented, and to have a fair prospect for the future. I think there must be at least six hundred families in the whole. The Township of Tudor has been recently formed into a municipality. I never saw better crops of Spring Wheat, Oats, Potatoes and Turnips, than in this Township. The Fall Wheat was injured by the rust, but the wheat midge has only made its appearance a little on the South end of the road. There is a saw mill five miles on the road and another on the outlet of Lamab's Lake, 31 miles from its commencement, where it is expected that a Grist Mill will be shortly erected. There are three Stores on the line, and very good accommodation throughout for travellers.

It will be very necessary to complete the road up to the Bobcaygeon Road, as there will then be a through line of road from the city of Ottawa to Peterborough, and as we go West the land appears to be better adapted for farming.

HASTINGS ROAD AGENCY,
Madoc, January 9th, 1860.

Mr. M. P. Hayes sends a Report in detail of the progress of settlement on this Road—he says that—

"The number of Settlers in possession is 306, of whom 78 were located during the year 1859—of the latter there were—

Natives of	England,	16
"	Ireland,	28
"	Canada,	16
"	Scotland,	11
"	Germany,	6
"	United States,	1

Of the whole number of Settlers

43	are natives of		England,
139	"	"	Ireland,
45	"	"	Scotland,
46	"	"	Canada,
18	"	"	Germany,
4	"	"	France,
1	"	"	Nova Scotia,
1	"	"	New Jersey,
1	"	"	New Brunswick,
3	"	"	Orkney,
5	"	"	United States.
306			

The total population of the Road is 728 souls;—the total number of acres cleared and under cultivation during the year, was 1657, of which 572 were cleared in 1859. There were also 424 acres chopped ready for burning, shewing the large number of 996 acres reclaimed during the year, and the total of 2081 acres cleared and chopped on the road.

The total number of buildings are 252, including two saw mills, three stores, five houses of public entertainment, and one school house. Of these, 65 were erected in 1859, many of which are a superior class of buildings, evincing a prosperous condition and confidence of the future on the part of the Settlers. The increase in the live Stock owned by Settlers is also a very satisfactory indication of prosperity. The numbers are—Horned Cattle, 226; Hogs, 120; Sheep, 26; Horses, 34, showing an addition of more than 100 per cent to the stock of 1858.

The following is a synopsis of the crops and industrial products of the year:—

Wheat,	bushels,	4,350	@	$ 1.00 =	$4,350.00
Oats,	"	4,975	@	00.40 =	1,990.00
Peas,	"	292	@	00.60 =	175.20
Rye and Barley,	"	279	@	00.60 =	167.40
Potatoes,	"	23,716	@	00.40 =	9,486.40
Indian Corn,	"	373	@	00.50 =	186.50
Turnips,	"	14,066	@	00.30 =	4,219.80
Hay,	101 tons		@	20.00 =	2,020,00

Maple Sugar,	lbs.	11,894	@	8d. =	961.52
Potash,	cwt.	490	@	6.00 =	2,949.08
Shingles,	M.	130	@	1.25 =	162.50
Sawn Lumber,	M.	125	@	8.00 =	1,000.00
Value of the year's Products					$27,659.32
Increase over the value of last year's Products					$ 5,851.00

By adding the value of the labour expended during the year in clearing land and the erection of buildings to the value of the products as above, we are enabled to form a pretty accurate estimate of the productive value of the whole labour expended in the Settlement for the purpose of comparison with other branches of industry:—

Ordinary cost of clearing 572 acres	@	$12 =	$ 6,864
" " chopping 424 "	@	8 =	3,392
Value of 65 buildings erected in 1859	@	50 =	3,550
Value of other Products as above			27,659
Total realized value of year's labour			$41,465

As many of the settlers are obliged to work outside for a considerable portion of their time, we cannot estimate the number who have worked steadily on their lots throughout the year at more than two-thirds of the whole number, or 200 men, and of these fully one-half are inexperienced hands at "bush"-work; and others expended a large portion of their time in shooting, fishing, and other pursuits, the products of which, Mr. Hayes remarks, are not included in his Estimate. With all these drawbacks, however, it will be found that the value of the year's work gives a realized product of $207 per man, realized also in the most solid and productive shape possible for the interests of the country at large. If to this realized value be added the increase in value and accessibility of the public domain in the neighborhood of the grants, it is evident that the same amount of labor could hardly be expended in a more profitable channel.

The agricultural season of 1859 was one of many vicissitudes all over the Province, and from all I can learn, this Settlement has been as much favored, on the whole, as any part of Canada. The severe frosts of last June, which were general all over the Northern Continent, were not so seriously injurious to the crops in this settlement as might have been expected from our comparatively high latitude. The Winter Wheat was injured, and suffered subsequently, in many cases, from rust, so as to be on the whole a short crop. Spring Wheat succeeded well, particularly in the variety called "Fyfe Wheat," which seems to be admirably adapted to our soil and climate. The crops of this grain averaged 22 bushels to the acre. It was in the early part of May, and was free from fly and rust. Potatoes were planted largely, and promised well in the early part of the season, but were thrown back fully a month by the June frosts. This occasioned many to be lost from the lateness of their maturity in the fall, but on the whole the quantity is satisfactory and quality good. Hay was a very short crop all over this part of the Province, but those who have any to spare are getting so high a price from the lumberers that the deficiency is almost compensated. Oats and Turnips were also largely planted, and gave full returns; the former, particularly, has turned out a most profitable crop, as the settlers on the upper part of the road are now selling for cash at their own doors, 10 cents a bushel higher than my estimate. The season for Sugar-making was very favorable, and was largely availed of. Indian Corn was almost a complete failure, owing chiefly to the frosts in June. This grain, however, does not seem to be well adapted to our climate, and although it may be occasionally successful, I do not think it will ever be a staple product. The result of three years' experience leads me to think that the attention of settlers will be most profitably and successfully directed to the raising of Oats, Hay, and Green Crops for sale and fodder, and a sufficient quantity of Wheat to supply their own breadstuffs. These, with large crops of Potatoes, can be relied on with as much certainty as attends the farming operations of any part of the country.

The drive and traffic on the Road has been considerably larger than in any previous year. This is attributable chiefly to the improvements of the Road, effected in the formation of the road, during last summer, by the Bureau of Agriculture.

The Lumber Merchants operating on Egan's Creek, the York branch of the Madawaska, and Papineau Creek, are getting the chief part of their supplies over the Hasting's Road this Winter; and the sleigh track from Madoc to the intersection of the branch roads, a distance of seventy miles, is as well broken as any thoroughfare in the country.

An excellent Saw Mill was erected last Summer by Mr. Wm. Robinson on Lot No 35, East of the Road, Township of Dungaroon, and has been in active operation for the last three months, to the great advantage and accommodation of the Settlement.

The number of barrels of Potash sold in this village by residents on the Hastings Road and the neighbouring townships in my Agency, during 1859, was 428; from this, deducting 100 produced on the Road, we have 328 barrels manufactured in the Townships;—these, at an average value of $30, amount to $9,840. The other products of the Townships do not bear so large a proportion to those of the Road as exhibited in this item, the manufacture of potash being stimulated by proximity to a cash market, but they may be safely estimated as equal to those of the Road.

Exclusive of this article, or......	$24,619
Add 328 barrels of Potash......	9,840
Total value of Road Products......	27,659
	$62,118

making the aggregate realized product of the labor expended in the Settlement, sixty-two thousand one hundred and eighteen dollars."

Mr. Hayes adds that the Settlement has been almost entirely free from crime of any kind during the year—two or three trifling misdemeanours making up the whole criminal calendar.

PATENT OFFICE.

The business in this Department is steadily increasing; the Fees for Patents and Assignments of Patent, amounting during the past year to $2,527 75, being an increase of $422 75, as compared with 1858.

IMMIGRATION.

The 6th sec: of 22 Vict: cap. 32, above referred to, enjoins the encouragement of Immigration from other countries. On this head the Minister of Agriculture has been extremely careful under the present circumstances of the country, not to induce the immigration of parties for whose industry there does not appear at present to be any demand; but to those who are able and willing to settle upon land, every possible encouragement has been afforded by the publication and extensive distribution of Pamphlets in the German and Norwegian languages as well as the English, and also by the distribution of the valuable map of Canada, lately published by the Crown Land Department, which contains particulars of the Free Grant Roads specially marked thereon, so as to attract the attention of intending settlers to those parts of the back country which have been opened out and made easily accessible. The map also contains coloured designations of lands for sale *en block*, and terms of sale, &c., and also valuable statistics as to Fisheries, Minerals, Population, &c., &c. Very many of these maps have been sent to Germany and Norway, under the care of competent persons well acquainted with Canada, and able to give the most reliable information on every subject connected with the Province and the prospects of settlers therein. Special instructions have been given to these gentlemen or to the classes of persons to be encouraged to come to the Colony, and those who, under present circumstances, should be discouraged, and they are put in full possession of the most prominent particulars regarding the chief resources of the country—its mines, minerals, fisheries, climate, facilities of transit, routes, distances, &c., and such other information as is peculiarly desirable that intending Emigrants should possess.

A second edition of the valuable pamphlet called "Canada," has been published for gratuitous distribution with most important additions, and steps are being taken to disseminate it very widely in Great Britain, along with the Map. It is hoped that these two publications when extensively circulated will not only dispel much of the gross ignorance which exists in Europe with regard to Canada, but will also afford every possible information regarding this Colony which intending Emigrants may desire to procure.

The Minister has also thought it advisable to open an office in Liverpool, for the diffusion of information about Canada to all who may be desirous of acquiring it,—availing himself for this purpose of the services of Mr. Hawke, Emigration Agent, Toronto, who was despatched to Great Britain last year, to make enquiries into the subject of Emigration.

[For the Honorable the Minister of Agriculture]
WILLIAM HUTTON,
Secretary.

The Honorable JOHN ROSS,
Minister of Agriculture,
&c., &c., &c.,
Quebec.

WILLOWDALE, 29th February, 1860.

SIR,—I have now the honor to submit the following remarks on the operations on the roads in Canada West, conducted under my superintendence, during the year 1859, viz:

1.—ROADS MADE FROM IMPROVEMENT FUND AND COLONIZATION GRANTS.

(1.) ELORA AND SAUGEEN ROAD.

In my report of 27th January, 1859, I stated that the whole of this road had been made as originally intended, but at same time pointed out certain hills at Serpent River, between Arran and Saugeen, and one a little to the north of the village of Paisley, which stood greatly in need of grading. This was urgently applied for by the settlers, and, under instructions given to me in March last, I let out a contract for the work and have had the hills reduced to an easy grade. The road has been thereby greatly improved and traffic facilitated.

It would be of great advantage to the road were drains made along it in the low ground, south of the Durham Road, to carry away the surface water and keep the road in a drier condition. But there seems much indisposition on the part of the township through or along which this and other roads opened by government are carried, to apply statute labour to the improvement of them, or even to keep them in such a state of repair as is essential to enable them to be travelled over.

2. SOUTHAMPTON AND GODERICH ROAD.

(1.) *Winter Road.*

The portion of this road in the township of Ashfield, contracted for by James Dalton, not having been completed agreeably to specification, he assigned his interest in the contract to another, who undertook to finish it as mentioned in my report of last year; but very little had been done towards this when the portion of the road was taken possession of by the municipal authorities for the purpose of making it under their own direction and at their own cost. I thereupon immediately stopped the work, and arranged to pay for what had actually been performed, less what it would cost to make the work conform to specification; but some claims made by a partner of Dalton has hitherto prevented the settlement arrived at being carried out.

The bridge over Penatengore river and approaches, reserved as formerly reported, till the road should be made a summer road, were let last season. The bridge and south proach are now completed, and the north approach also is very nearly finished.

(2.) *Summer Road.*

In April last, contracts were given out to the extent of the appropriation of $6000 for making the summer road. At that time much privation and distress were reported to prevail along the line of road, and to give employment to as many of the needy settlers as possible, the work was let in sections of ⅘ of a mile each. In this way a great many were enabled to make a little money, and relieve themselves of the severe pressure upon them. Most of the contracts have now been completed, and those remaining will be proceeded with as soon as the ground admits of operations being resumed.

The whole of the road lying in the County of Bruce has now been cleared of timber to the width of 44 feet, and chopped to the width of 66 feet. A considerable amount of crosswaying has been laid; extensive ditching on both sides of the road has also been effected in the low grounds where this could be done to advantage, and the stumps on the space between the ditches grubbed and removed. A great improvement has thus been made; but the amount of the appropriations was quite inadequate to the completion of a good summer road, notwithstanding that the contracts were given out at rates so very low as enabled at least a third more work to be done than could have been effected a few years ago for the same sum. To make this a really good summer road, a farther expenditure of from $4000 to $6000 would still be necessary.

3. Woolwich and Huron Road.

This road has now been completed and opened for travel from its terminus at the west side of Woolwich to the bridge over the river Maitland, at Zetland, between Turnberry and Wawanosh, and the following bridges have also been finished since the date of my last report:

1 Bridge over the Maitland River at Mapleton in Wallace.
2 Do do between Grey and Howick.
3 Do do at Morris Bank, in Morris.
4 Do do at Bluevale in Turnberry.
5 Do do at Wingham in do.
6 Do do at Zetland, between Turnberry and Wawanosh.
7 Do over Eighteen Mile river, between Ashfield and Huron.

These bridges were all under contract prior to the date of last report; and the following, which were contracted for subsequent to that date, have also been completed.

8. Bridge over East Branch of Nine Mile river, between Kinloss and Wawanosh.
9. Do over West Branch do do.

With reference to bridge No. 4, at Bluevale, for which Mr. Gabriel Hawke was contractor, it is proper to mention that having himself, or by his sub-contractor, disregarded the specification and bill of material, and built the bridge disconform thereto, as regards the kind and size of timber as well as workmanship of it, and the framing and putting together of the parts; I declined to pay him the price to which he would have been entitled, had he properly observed his contract. The price in such event payable to him would have been $916 74, but, for the reason referred to, I deducted from that price $308 13, and gave Mr. Hawke the choice of taking what remained unpaid of the balance of $608 61 as in full of his contract, or of making the work conform to specification, &c. He preferred taking the amount offered; and on 4th March last granted receipt for $278 60 in full of the contract.

The road between the east boundary of Ashfield and the Southampton and Goderich road, may be reported as completed, there being now only a few drains to be cut to carry off the surface water.

That portion between the Southampton and Goderich road and Lake Huron is still unfinished. The party to whom it was let failed to complete his contract, and it was last fall given to another, whose operations were brought to a close by the wet weather which set in soon after they were commenced. As soon as the ground admits of the work being resumed, the road will be completed.

Subsequent to the date of my last report, a contract was given out for that portion of the road lying between the river Maitland, at Zetland, and the north east corner of Ashfield. The works are now well advanced and will be completed early in the spring.

It will thus be observed that this important Road is now nearly completed, between its termini at Woolwich and Lake Huron, and it is at present travelled throughout. Formerly the settlers along it were exposed to great hardships and disadvantages through the total want of roads. Now, by this and the various lines which intersect and branch from it, forming a kind of net-work of roads in the countries in and along which it passes, and connecting with other great leading roads, the country is well opened, and great facilities and encouragement given to the enterprise of the settlers. The results are becoming manifest, notwithstanding the general depression and monetary scarcity that have for sometime prevailed in the extensive clearings along the line, which, a few years ago, lay in almost unbroken forest.

(4.) Bridge over Maitland at Manchester.

This contract remains in the same unsettled position as at the date of my last report. The contractors applied for the balance admitted to be due, under a receipt so framed as to leave it open for them to make further demands, and having refused to sign a proper receipt in full of their claim, it has since remained in abeyance.

5.) Road between Howick and Turnberry.

This road has now been completed. The gravel road from the Lake Huron and Buffalo Railroad, at Harpurhay, intersecting the Woolwich and Huron Road, has been made about a mile over the Southerly end of this Road; and from that Railroad there is now a continuous line of Road to the mouth of the River Saugeen, at Southampton.

(6.) Road between Holland and Glenelg.

The Contractor for the completion of the Road had very little done on it during last season, owing to the low rates at which the work was taken, and the extreme scarcity and high price of provisions in that section. He has been repeatedly urged to make progress, and it has now been arranged that he do so as soon as operations can be commenced, or that the work be then given to another. It will be finished this season. Meanwhile the Road admits of being used and is travelled over.

(7.) Road from South-west corner of Proton to Elora and Saugeen Road.

The works on this Road have, since my last Report, been completed. Some additional small hills have been reduced to easier grades, drainage made in low grounds, and a good Road constructed throughout.

(8.) Road South of Proton and Melancthon.

The contracts for this Road have been delayed much more than they should have been. The scarcity and high price of provisions with low rates for the work to a certain extent account for this. The Contractors for the portion along the South boundary of Melancthon, in answer to my urgent representations, declared their inability to proceed, and they have been paid for the work actually performed, and the remainder has been given to the Contractor on the South boundary of Proton. The more plentiful supply of provisions in that section and fall in the price of these, will this season enable the Contractor to proceed with greater energy, and I trust to be able to have the whole road finished this year.

(9.) Road in Kinloss.

This work is now completed and a good road opened. Its Northern terminus is the Durham Road, and its Southern terminus in the Woolwich and Huron Road, where it is met by the gravel Road leading to Goderich.

II. ROADS MADE FROM COLONIZATON GRANTS.

(1.) Collingwood and Meaford Road.

This Road is now completed and opened for travel. The portion of it lying in Simcoe has been gravelled by the Municipal authorities, and I understand that the portion within the County of Grey is to be gravelled by that County.

(2.) Hastings Road.

The damage done to this road by heavy rains during the Spring of 1858 were last year repaired, and the Road put in good condition to within a very short distance of the point where it is intersected by the Peterson Road. It was also much improved by deviations made to avoid the abruptness of certain granite ridges which cross it. A small sum is yet required to be expended South of, and near to, the Peterson Road, and in improving a hill at the Bridge over Papineau Creek.

(3.) Addington Road.

With a view to protect the Bridge built over the River Madawaska against the timber floated down, and to aid the passage of such timber, a strong boom was constructed early last year at a cost of $444 48. A short time afterwards, viz.: in the beginning of May, a jam of about 3,000 pieces of timber formed at the foot of Snake Rapids, about three-quarters of a mile above the Bridge. This jam was broken by the lumbermen, and about one third of it passed down along the boom and under the Bridge without doing harm; but the remainder, having come down in one mass, struck against and broke the boom, overset the pier to which it was made fast, and lodged against the Bridge. Thereupon, to liberate the timber, the lumbermen cut down and destroyed the Bridge. Two Bridges, built by Government at this point, have thus been wilfully destroyed by those rafting timber down the River. It has now been resolved to build another Bridge, of one arch, spanning the whole width of the River, to prevent the recurrence of such destruction and loss.

Meanwhile the Road leading from the River, to connect with the Opeongo Road, has been explored, and about five miles of it, from the River northwards, have been completed. A good tract of country has been found suitable for settlement, and presenting no serious obstacles to the construction of the Road.

(4.) Frontenac and Madawaska Road.

This Road has now been completed by levelling, crosswaying, and bridging for nearly 34 miles from its commencement at Lot No. 11, Con. 2, in Hinchinbrooke. The money appropriated for it last year did not enable a large amount of work to be performed.

(5.) Bobcaygeon Road.

The works on this Road have now been completed to the distance of about miles northwards from Bobcaygeon, and all the streams properly bridged.

6. Road between Elma and Mornington.

This road remains in the same position as at the date of last Report. The appropriation for it has been expended; but it was altogether inadequate to make this bad line passable. As it now remains, the road is of little or no use.

7. Peterson Road.

At the date of last Report this road had been made from the Madawaska River to the south-west angles of the Township of Wicklow, where it intersects the Hastings Road,—a distance of nearly 21 miles. It has since been completed from the Hastings Road to the north-west angle of the Township of Herschell, a distance of over 10 miles,—making in all about 31 miles of a finished and good road.

The portion connecting with the Muskoka Road leaves that road about one-quarter of a mile South of the great Falls of Muskoka, on the District line, and runs south-easterly to the line between Lots 5 and 6 of the Township of Draper; thence southerly along that line to the line between Concession 5 and 6, and thence along the last mentioned line till near the East boundary of that Township, where a deviation has to be made round the North side of a small lake. This line was explored last Autumn. It passes through a tract of good land, and a contract for the road was entered into in November last. It is expected that it will be completed this season.

8. Muskoka Road.

This road is now almost completed. It would have been finished last Fall, had snow not come on so early. It will be so as soon as the ground enables operations to be resumed. From the termination of the navigation on Lake Couchiching, where a wharf has been erected, to the Great Falls of Muskoka,—a distance of about 21 miles,—all streams have been substantially bridged, and the road has been levelled and crosswayed. A very good road between these points has thus been opened, and the country along it is being rapidly settled.

9. Addington and Renfrew Road.

Commencing at the point where the Addington Road intersects the Madawaska, this road runs in a north-easterly course through Griffith and Brougham to the Opeongo Road, in the Township of Grattan. The entire length is about 22½ miles, and a good road has now been made for about 17¾ miles from the Madawaska, leaving about 4¾ miles yet to be made.

10. Bowerman Road and Bridges over Balsam and Gull Rivers.

This road commences at Balsam River, between Balsam and Cameron Lakes, over which a substantial bridge has been built. The road from it to Gull River, and a bridge over that river, are now under contract to be completed during the present year.

11. Victoria Road.

Commencing at the south end of Lot No. 21, of the Township of Fenelon,—being the straight line between Fenelon Falls and Beaverton,—this road runs northerly between the Townships of Fenelon and Bexley, on one side, and Eldon and Carden, on the other. About 10½ miles were given out under contract last year, and the works have been so far advanced as to enable it to be used most of that distance for sleighing this winter. It will be completed this season. There is some good land on this line, but near the Balsam Lake it is low and flat, and subject to floods from the streams which cross the road when the water rises in the Lake. A considerable extent of high crossway is thus rendered necessary.

12. Opeongo Road.

This road was formerly under the charge of Mr. Alexander J. Russell, of Ottawa, and 45 miles of it were made before being transferred to me. Six miles additional have since been completed, but the settlement, in its projected course towards Opeongo Lake, is reported to be about 10 miles in advance of the road.

13. Roads at Sault Ste. Marie.

These are the Sault Ste. Marie and Goulais Bay branches of the great northern road. A contract was last year given out to the extent of the appropriations made therefor, and the work equal to about 5 miles had been performed when the early Winter of that region set in and closed the contractor's operations for the season. These will be resumed and pushed forward to the amount of the grant when navigation opens.

The preceding remarks embrace all the operations of last season, and appended hereto is an approximate statement of the whole works performed under my superintendence.

I have the honor to be, Sir,
Your most ob't serv't,
DAVID GIBSON,
Sup't Colonization Roads, C. W.

APPENDIX.

Approximate Statement of Work performed on the Roads in Canada West, under the Superintendence of David Gidson, at 31st December, 1859.

COUNTIES & COLONIZATION ROADS.	Summer Roads.	Winter Roads.	Cross-wayed.	Ditched.	Excavation laid in Embankm't.	Stumps Extracted.	Bridges compl'td
	Miles.	Miles.	Miles.	Miles.	c. yd.		
County of Bruce	114	....	25¼	41¼	43,783	5,789	17½
do Huron	67¼	6	15½	6⅛	40,422	136	12½
do Wellington	61½	....	13¼	4¼	4,731	18	6½
do Grey	54¾	....	14⅝	14	4,784	1,677	6
do Waterloo	2	....	½	....	2,891	9	½
do Perth	14½	....	5¾	....	....	9	2
	314	6	74⅞	65⅝	96,611	7,638	45

COLONIZATION ROADS.	Miles opened.	COLONIZATION ROADS.	Miles opened.
Collingwood and Meaford	18	Muskoka	21
Hastings	68	Bobcaygeon and Emily	3
Addington	61	Addington and Renfrew	17¾
Elzevir and Kaladar	14	Victoria	6
Frontenac and Madawaska	33	Opeongo	6
Bobcaygeon	36	Sault Ste. Marie	5
Elma	7½		
Elma and Mornington	11¾		339
Peterson	31		

TABLES

OF THE

TRADE AND NAVIGATION

OF THE

PROVINCE OF CANADA,

FOR THE YEAR

1859.

COMPILED FROM OFFICIAL RETURNS.

Presented to both Houses of Parliament by Command of His Excellency.

A. T. GALT, MINISTER OF FINANCE.

QUEBEC:

PRINTED BY THOMPSON & CO., ST. URSULE STREET.

1860.

TABLE OF DUTIES OF CUSTOMS INWARDS.

In force to 26th March, 1859, inclusive.

GOODS PAYING SPECIFIC DUTIES.

ARTICLES.	Duty. $ cts.
Ale, Beer and Porter, in casks, per gallon	0 08
Ale, Beer and Porter, in quart bottles, per dozen bottles	0 25
Ale, Beer and Porter, in pint bottles, per dozen bottles	0 12½
And a Duty of 15 per cent. *ad valorem* on the Bottles containing the same.	
Almonds, Walnuts and Filberts, per lb	0 03
Corn Brooms, per dozen	0 50
" Whisks, per dozen	0 15
Cigars, per lb	0 80
Chicory, raw and kiln-dried, per lb	0 01
" roasted and ground, per lb	0 04
Coffee, green, per lb	0 01
" roasted, per lb	0 04
" ground, per lb	0 04
Cordials, per gallon	1 00
Currants, per lb	0 03
Dried Fruits, per lb	0 03
Figs, per lb	0 03
Ginger, Pimento and Pepper, unground, per lb	0 04
Ginger, Pimento and Pepper, ground, per lb	0 06
Macaroni and Vermicelli, per lb	0 03
Mustard, per lb	0 05
Molasss, per gallon	0 04
Mace, per lb	0 25
Nutmegs, per lb	0 25
Nuts not specially named, except Cocoa Nuts, per lb	0 01
Spirits and Strong Waters, of all sorts, for every gallon of any strength not exceeding the strength of proof by Sykes' Hydrometer, and so in proportion for any greater strength or less quantity than a gallon, viz:	
Brandy, per gallon	1 00
Gin, per gallon	0 80
Rum, per gallon	0 50
Whisky, per gallon	0 18
Spirits and Strong Waters, including Spirits of Wine and Alcohol and not being Brandy, Gin or Whisky, per gallon	0 70
Spices, unground, not otherwise named, per lb	0 07
" ground, " per lb	0 10
Starch, and all preparations of starch, per lb	0 05
Soap, not otherwise specified, per 100 lbs	1 25
Sugar, refined, whether in loaves, or lumps, candied, crushed, powdered or granulated, or in any other form; White Bastard Sugar or other sugar equal to refined in quality, per 100 lbs	2 50
" White Clayed Sugar or Yellow Bastard Sugar, or any kind equal in quality to White Clayed Sugar or Yellow Bastard Sugar, but not equal to Refined Sugar, per 100 lbs	1 75
" Brown Clayed Sugar, Muscovado or Raw Sugar of any kind not equal in quality to the sugars last named, per 100 lbs	1 30
" Raw for refining purposes only, and not within 25 per cent. of the value of the last named sugar, per 100 lbs	0 90
Tea, not exceeding in value 18 cents per lb ,—per lb	0 03
" exceeding in value 18 cents per lb.,—per lb	0 04
Tobacco, manufactured, not exceeding in value 20 cents per lb.,—per lb	0 05
" exceeding 20 and not exceeding in value 40 cents per lb.,—per lb	0 07½
" over 40 cents in value per lb.,—per lb	0 10
Snuff, per lb	0 10

	$	cts
Vinegar, per gallon	0	06
Wine, in wood, not exceeding in value $40 per pipe of 126 gallons,—per gallon	0	20
" in wood, over $40 but not exceeding in value $60 per pipe of 126 gallons,—per gallon	0	30
" in wood, over $60 and not exceeding $100 in value per pipe of 126 gallons,—per gallon	0	40
" in wood, over $100 in value per pipe of 126 gallons,—per gallon	0	50
" in quart bottles, not exceeding $4 in value per dozen bottles,—per dozen bottles	1	50
" in pint bottles, in proportion, per dozen bottles	0	75
" in quart bottles, exceeding $4 and not exceeding $8 in value per dozen bottles,—per dozen bottles	2	00
" in pint bottles, in proportion, per dozen bottles	1	00
" in quart bottles, exceeding $8 and not exceeding $12 in value per dozen bottles,—per dozen bottles	2	50
" in pint bottles, in proportion, per dozen bottles	1	25
" in quart bottles, exceeding $12 in value per dozen bottles,—per dozen bottles	3	00
" in pint bottles, in proportion, per dozen bottles	1	50
And a Duty of 15 per cent. *ad valorem* on the bottles containing such wine.		
Printed, Lithographed or Copper-plate Bills, Bill heads, Cheques, Receipts, Drafts, Posters, Cards, Labels of every description, Advertising Pictures, or Pictorial Show Bills or Cards: For every hundred Cards or Sheets of	1	00
Advertising Pamphlets, per hundred	1	00

Goods paying five per cent.

The following Goods shall be chargeable with a Duty of five per cent. on the value thereof:

Bolting Cloths;
Brass in bars, rods and sheets;
Brass or Copper Wire and Wire Cloth;
Chain Iron, other than Cables, and not being Horse Chain, Dog Chain, Jack Chain, or other small Chain, not exceeding three quarters of an inch;
Canada Plates, Tinned Plates, Galvanized Iron and Sheet Iron;
Copper, in bars, rods, bolts or sheets;
Cotton Candle Wick, Yarn and Warp;
Emery;
Emery, Glass and Sand Paper;
Fishing Nets and Seines;
Fish Hooks, Lines and Fish Twines;
Gold Beaters' Brim Moulds and Skins;
Silk-twist for Hats, Boots and Shoes;
Hat Plush;
Hair, Angola, Goat, Thibet, Horse or Mohair, unmanufactured;
Iron, Bar, Rod or Hoop;
" Nail and Spike Rod;
" Hoop or Tire, for driving wheels of locomotives, bent or welded; 5 per ct.
" Boiler Plate;
" Railroad Bars;
" Rolled Plates;
" Plate and Angle, or other Iron, shaped or unshaped, when forming part of an Iron Ship imported in pieces;
" Rivets, for do.;
" Wire;
Lead, in sheet;
Sails, ready made;
Steel, wrought or cast;
Tin, granulated or bar;
Tubes and Piping, of copper, brass or Iron, when drawn;
Varnish, bright and black, for ship-builders, other than Copal Carriage, Shellac, Mastic or Japan;
Zinc or Spelter, in sheet;
Locomotive and Engine Frames, Cranks, Crank Axles, Railway-car and Locomotive Axles, Piston Rods, Guide and Slide Bars, Crank Pins, Connecting Rods, Steamboat and Mill Shafts and Cranks forged in the rough.

Goods paying twenty per cent.

The following Goods shallbe chargeable with a duty of Twenty per cent. on the value thereof:

Anchovies, Sardines, and all other Fish preserved in Oil:
Argentine, Alabetta, or Albata and German Silver maufactures:
Articles embroidered with gold, silver, or other metals;
Baskets, and all other Articles made of grass, osier, palm leaf, straw, whalebone or willow, not elswhere specified:
Beads of every description;
Billiard Tables and Furnishings;
Bagatelle Boards and do.;
Blacking;
Bracelets, Braids, Chains, Curls, Ringlets or Head-dresses, of any kind composed of hair, or of which hair is a component part;
Brooms and Brushes, not elsewhere specified;
Cameos and Mosaics, real or imitation, when set in gold, silver or other metal:
Capers, Pickles, Olives and Sauces of all kinds, not elsewhere specified:
Candles and Tapers of Wax, Sperm, Belmont, Stearine, Adamantine and composition;
Chandeliers, Girondoles, Gas Fittings;
Carriages, or parts of Carriages, not otherwise specified:
Cabinet Ware or Furniture;
Cashmere;—See *Manufactures.*
Cocks, Taps, and Coupling Joints;
Carpets and Hearth Rugs, Velvet, Brussels, Tapestry, Turkish, Persian and other kinds;
Confectionary, not elsewhere specified:
China Ware of all kinds;
Cutlery, polished of all sorts;
Coach and Harness furniture of all kinds;
Composition Tops for Tables or for other articles of Furniture:
Essences, Balsams, Cosmetics Extracts, Pastes, Perfumes, Tinctures, and Perfumery, of all kinds;
Feathers and Flowers, artificial or ornamental or parts thereof, of whatever material composed;
Fans and Fire Screens;
Fire Works;
Glass, plate;
Glass, silvered:
Glass-shades and Crystals for watches;
Glass Ware, cut, ground or coloured;
Glass, stained, painted or coloured;
Glass bottles and vials, not being wine and beer bottles:
Gold and Silver Leaf:
Gilt Frames;
Guns, Rifles and Fire Arms, of all kinds:
Hats, Caps and Bonnets;
Inks, of all kinds, except printing ink:
Jewellery, real or imitation;
Japanned, Planished Tin, and Britannia Metal Ware, of all kinds;
Leather, Sole, Harness, dressed Kip, Calf, and Upper Leather, and all imitations of Leather:
Marble or imitation of Marble Mantle-pieces, or parts thereof;
Mattresses of hair, moss, or other material;
Millinery of all kinds;
Musical instruments of all kinds, including Musical Boxes and Clocks;
Mowing, Reaping, and Thrashing Machines;
Manufactures of Fur, or of which fur is the principal part;
" of Cashmere;
" of Silk, Satin and Velvet, and of all other fabrics, of which Silk forms the principal part;
" of Bone, Shell, Horn, Pearl, Ivory or Vegetable Ivory;
" of Gold, Silver or Electro Plate:
" of Brass or Copper;
" of Leather or imitation of Leather, or of which Leather or imitation of Leather is the principal part, not otherwise specified;

} 20 per ct.

Manufactures of Marble, or Marble more advanced in manufacture than slabs or blocks in the rough:
" of *Papier Maché*;
" of Caoutchouc or India Rubber or of Gutta Percha, or of which any of these articles forms the principal part:
" of Straw;
Patent Medicines and Medicinal Preparations, not elsewhere specified;
Oil Cloths, of whatever material composed:
Salad Oils, Table Oils, and Linseed Oils:
Opium;
Ornaments of Bronze, Alabaster, Terracotta or Composition:
Plated and Gilded Ware, of all kinds:
Playing Cards:
Preserved Vegetables, Meats, Poultry, Fish and Game:
Railing or Fencing of Iron:
Riddles and Sieves;
Scales and Weights;
Shawls, Thibet wool or filled;
Silks, Satins or Velvets, and all fabrics of which Silk forms the principal part:
Spades, Shovels, Axes, Hoes, Rakes, Forks, and Edge-tools, Scythes and Snaiths, Bolts, Nuts, and Washers;
Spikes, Nails, Tacks, Brads and Sprigs:
Silk, Woollen, Worsted and Cotton embroideries and tambour-work;
Silk-twist and Twist composed of Silk and Mohair;
Silver and Gold Cloth, Thread, and other articles embroidered with Gold or for embroidering;
Skins, Sheep, Calf, Goat and Chamois, dressed:
Soap, perfumed or fancy;
Stoves and all other Iron Castings:
Toys;
Thread Lace and Insertions:
Writing Desks, fancy and ornamental Cases and Boxes of whatsoever material:
Woollen Goods.

20 per ct.

Goods paying twenty-five per cent.

The following Goods shall be chargeable with a Duty of twenty-five per cent. on the value thereof:
Manufactures of Leather, viz:
" Boots and Shoes:
" Harness and Saddlery:
Clothing or Wearing Apparel made by hand or sewing machine.

25 per ct.

Goods paying fifteen per cent.

All articles not hereinbefore enumerated as charged with a specific or *ad valorem* duty, and not exempted from the payment of duty, shall be chargeable with a duty of fifteen per cent. on the value thereof

15 per ct.

Table of Free Goods.

Acids of every description:
Agricultural Societies—Seeds of all kinds, Farming Utensils and Implements of Husbandry, when specially imported by, for the encouragement of Agriculture:
Alum:
Anatomical preparations:
Anchors, over 6 cwt. in weight:
Animals of all kinds:
Antiquities, collections of:
Apparel, wearing, and other personal effects, and Implements of Husbandry, (not merchandise) in actual use of persons coming to settle in the Province and accompanying the owner:
Apparel, wearing, of British subjects dying abroad:
Argol:
Arms for Army or Navy and Indian Nations, provided the duty otherwise payable thereon would be defrayed or borne by the Treasury of the United Kingdom, or of this Province:

Free.

Ashes, Pot, Pearl, and Soda :
Bark, Tanners' ;
Bark, used solely in dyeing ;
Barley, except Pot and Pearl :
Barley Meal :
Beans :
Bean Meal :
Bear and Bigg :
Bear and Bigg Meal ;
Berries, used solely in dyeing :
Bleaching Powder :
Books, Printed, — Periodicals and Pamphlets—not being British Copyrights nor Blank, Account or Copy Books, or Books to be written or drawn upon ;
Borax :
Bottles containing wine, spirituous or fermented liquors of Officers' mess :
Brandy imported for do. :
Bran and Shorts :
Brimstone :
Bristles :
Broom Corn :
Buckwheat :
Buckwheat Meal :
Bulbs and Roots :
Bullion :
Burr Stones, wrought or unwrought, but not bound up into Mill-stones :
Butter :
Coin and Bullion :
Cabinets of Coins ;
Cables, Iron Chain ;
" Tarr'd Hemp ;
" Untarr'd "
" Grass ;
Carriages of Travellers, and carriages employed in carrying merchandise [Hawkers and Circus Troupes excepted] ;
Casks, ships' water, in use ;
Caoutchouc or Indian Rubber, and Gutta Percha, unmanufactured ;
Cement, marine or hydraulic ;
Charitable Societies—donations of clothing for gratuitous distribution by :
Cheese ;
Clothing for Army or Navy or Indian nations, or for gratuitous distribution by any Charitable Society ;
Coal ;
Cochineal :
Coke ;
Commissariat Stores:
Copperas ;
Corkwood, or the Barko of the Corkwood tree :
Corn, Indian ;
Cotton and Flax waste ;
Cotton Wool ;
Cream of Tartar in crystals ;
Diamonds and Precious stones ;
Drugs used solely in dyeing ;
Dye Stuffs, viz : Bark, Berries, Drugs, Nuts, Vegetables, Woods, and extract of Logwood
Earths, Clays and Ochres, dry ;
Eggs ;
Felt Hat bodies and Hat Felts ;
Fire Brick ;
Firewood :
Fish :
do. Oil, in its crude or natural state ;
do. products of, unmanufactured :
Flax, Hemp and Tow, undressed :
Flour
Fruits, green ;
Fruits, dried, from the United States only, while the Reciprocity Treaty is in force ;
Furs, Skins, Pelts or Tails undressed, when imported directly from the United Kingdom or British North American Provinces, or from the United States, while the Reciprocity Treaty is in force ;

} Free.

Gems, and Medals; Gravel; Grains—Barley and Rye; Beans and Peas; Bear and Bigg; Bran and Shorts; Buckwheat; Indian Corn; Oats; Wheat; Meal of above Grains; Grindstones, wrought or unwrought; Gums and Resins, in a crude state; Gypsum or Plaster of Paris, ground or unground; Grease and Scraps; Hams; Hemp; Hides; Horns; Household effects, personal, not merchandize, of subjects of Her Majesty domiciled in Canada but dying abroad; Indigo; Inventions and Improvements in the Arts, models of—provided that no article shall be deemed a model which can be fitted up for use: Junk and Oakum; Lard; Lime, the produce of British North American Provinces only; Machinery, models of—provided the same cannot be put to actual use: Manilla Grass: Manures of all kinds; Maps and Charts in sheets, not mounted nor on cloth: Marble in blocks or slabs unpolished: Meats, fresh, smoked and salt; Menageries, Horses, cattle, carriages and harnesses of, subject to Regulations by the Governor in Council; Military Clothing for Her Majesty's Troops or Militia; Military Stores and Materials for Military Clothing imported for the use of the Provincial Militia, under such restrictions and regulations as may be passed by Governor in Council; Mosses and sea grass, for upholstery purposes; Musical Instruments for Military Bands: Nitre or Saltpetre: Oakum; Oil Cake or Linseed Cake; Oils, cocoa nut, pine and palm—in their crude and natural state; Old Nets; Ordnance Stores; Ores of all kinds of Metals: Osier or Willow, for basket makers' use Packages of all kinds in which Goods are usually imported, except the following, viz.: Spirit, Wine, Oil, Beer, Cider, and other casks for the containing of liquids, baskets of every description, trunks, snuff jars, earthenware jars, glass jars, bags and barrels containing grain, seeds and peas; Pig Iron, Pig Lead: Pitch and Tar: Philosophical Instruments and Apparatus, Books, Globes, Maps and Charts:—provided the same be specially imported by and for the use of Philosophical Societies, Universities, Colleges, Public Schools or Institutes: Plants, Shrubs and Trees; Provisions for Army or Navy, or Indian Nations: Rags; Resin and Rosin: Rice; Sail-cloth; Sal Soda; Sal Ammonia: Salt; Seeds of all kinds;	Free.

Ships' Blocks; Binnacle Lamps; Bunting; Canvas, Duck; Compasses; Cordage; Dead Eyes Dead Lights; Deck Plugs; Shackles; Sheaves; Signal Lamps; Travelling Trucks;	Expressly imported for Ship-building purposes and by Ship-builders or Sail-makers.	Free.
Ships' water-casks in use;		
Silk Hat Felts;		
Soda Ash;		
Specimens of Natural History, Mineralogy or Botany;		
Stone, unwrought;		
Slate;		
Statues, Busts and Casts, of Marble, Bronze, Alabaster or Plaster of Paris; Paintings, and Drawings as works of Art; Specimens of Sculpture; Cabinets of Coins, Medals, Gems, and all Collections of Antiquities;		
Sulphur or Brimstone;		
Tin and Zinc or Spelter, in block or pig;		
Tallow;		
Teasels;		
Timber and Lumber of all kinds, round, hewed, sawed, unmanufactured in whole or in part;		
Tobacco, unmanufactured;		
Tools and Implements of Trade of persons arriving in Canada, when accompanied into the Province by the actual settler, and brought in by such settler for his own use, and not for sale;		
Treenails;		
Turpentine, other than Spirits of Turpentine;		
Type Metal, in blocks or pigs;		
Vegetables, not elswhere specified;		
Vehicles of Travellers, except those of Hawkers and Pedlars;		
Water Lime;		
Wine, Spirits and fermented Liquors of all kinds, imported for any Officers' Mess, and the packages containing the same;		
Wood for Hoops, when not notched;		
Woods of all kinds;		
Wool;		
All importations for the use of Her Majesty's Army and Navy serving in Canada.		

TABLE OF PROHIBITIONS.

The following Articles are prohibited to be imported, under a penalty of Fifty Pounds, together with the forfeiture of the parcel or package of Goods in which the same may be found:

Books and Drawings of an immoral or indecent character;
Coin, base or counterfeit.

TABLE OF DUTIES OF CUSTOMS INWARDS,

In force from the 26th March, 1859, inclusive.

	Duty per cent *ad valorem.*
Goods paying one hundred per cent.	
Brandy: Gin: Cordials: Rum: Spirits and Strong Waters, including Spirits of Wine, and Alcohol, not being Whiskey.	100 per ct.
Goods paying forty per cent from 1st June, 1589 to 30th June, 1860, both days inclusive. *Goods paying thirty-five per cent from 1st July, 1860, to 30th June, 1861, both days inclusive.* *Goods paying twenty-five per cent. from 1st July, 1861, to 30th June, 1862, both days inclusive.* *Goods paying fifteen per cent upon, from and after the 1st July, 1862.*	
The present duties remain in force until the end of May, 1859. — Sugar, refined, whether in loaves or lumps, candied, crushed, or in any other form; White Bastard Sugar, or other sugar equal to refined in quality.	40 per ct. 35 " 25 " 15 "
Goods paying forty per cent.	
Cigars.	40 per ct.
Goods paying thirty per cent from 1st June, 1859, to 30th June, 1860, both days inclusive. *Goods paying twenty-five per cent from 1st July, 1860, to 30th June, 1861, both days inclusive.* *Goods paying fifteen per cent from 1st July, 1861, to 30th June, 1862, both days inclusive.* *Goods paying ten per cent upon, from and after the 1st July, 1862.*	
The present duties remain in force until the end of May, 1859. — Sugar,—being neither refined, nor White Bastard, nor other Sugar equal to refined in quality. Molasses.	30 per ct. 25 " 15 " 10 "

Goods paying fifteen per cent from 1st January, 1860, to 31st December, 1861, both days inclusive. *Goods paying ten per cent from 1st January, 1862, to 31st December, 1862, both days inclusive.* *Goods paying five per cent upon from and after the 1st January, 1863.*	Duty per cent *ad valorem.*
The present duties remain in force until the end of the year 1859. { Coffee, green : Tea.	15 per ct. 10 " 5 "

Goods paying thirty per cent.

Almonds, Walnuts and Filberts ; Ginger, Pimento and Pepper, ground : Mace, Nutmegs and Cinnamon : Nuts of all kinds ; Patent Medicines and Medicinal Preparations, not elsewhere specified : Spices, ground : Snuff ; Wine of all kinds : Currants : Dried Fruit ; Figs : Coffee, ground or roasted ; Blacking : Tobacco, manufactured ; Soap : Starch ; Ale, Beer and Porter.	30 per ct.

Goods paying twenty-five per cent.

Manufactures of Leather, viz. : Boots and Shoes : Harness and Saddlery ; Clothing or wearing apparel made by hand or sewing machine.	25 per ct.

Goods paying fifteen per cent.

Book, Map and News-Printing Paper.	15 per ct.

Goods paying ten per cent.

Anchors 6 cwt. and under. Books, printed : periodicals and pamphlets not being reprints of British Copyrights: nor Blank Account Books, or Copy Books, or Books to be written or drawn upon, and excepting also Bibles, Prayer Books and Devotional Books ; Brass in bars, rods and sheets ; Brass or Copper Wire and Wire Cloth ; Cameos and Mosaics, real or imitation, when set in gold, silver and other metal ; Canada Plates, Tinned Plates, Galvanized Iron and Sheet Iron : Copper, in bars, rods, bolts or sheets ; Silk Twist for hats, boots and shoes : Iron—Bar, Rod or Hoop. " Nail and Spike Rod ; " Hoop or Tire for driving wheels of locomotives, bent and Welded ; " Boiler Plate : " Railroad Bars, Wrought Iron Chairs and Spikes : " Rolled Plate ; " Wire ; Jewellery and Watches ; Lead in sheet ; Maps, Charts and Atlases : Sails, ready made ;	10 per ct.

	Duty per cent ad valorem.
Spirits of Turpentine ; Steel, wrought or cast ; Cotton Candle Wick, Cotton Yarn and Cotton Warp ; White Lead, dry ; Plaster of Paris ground and calcined. Hydraulic cement, ground and calcined ; Red Lead ; Litharge ; Phosphorus ; Medicinal Roots ; Drain Tiles for agricultural purposes ; Engravings and Prints ; Straw, Tuscan and Grass fancy Plaits ; Tin, granulated or bar ; Tubes and Piping, of copper, brass, or iron when drawn ; Zinc or Spelter, in sheet ; Locomotive and Engine Frames, cranks, crank axles, railway car and locomotive axles, piston rods, guide and slide bars, crank pins, connecting rods, steamboat and mill shafts and cranks forged into rough ;	10 per ct.

Goods paying Twenty per Cent.

All articles not hereinbefore enumerated as charged with an ad valorem duty, or hereinafter charged with a Specific duty, or declared free of duty, shall be chargeable with a duty of twenty per cent. on the value thereof.	20 per ct.

Goods paying Specific Duties.

	Duty.
Whiskey of any strength not exceeding the strength of proof by Syke's hydrometer, shall be chargeable with a Duty of eighteen cents per gallon, and so in proportion for any greater strength or less quantity than a gallon ;	0. 18 cts.

Table of Free Goods.

Acids, of every description, except Vinegar ; Agricultural societies,—seeds of all kinds, farming utensils and implements of husbandry, when specially imported by, for the encouragement of agriculture ; Alum ; Anatomical preparations ; Anchors, over 6 cwt. Animals of all kinds ; Antimony ; Antiquities, collections of ; Apparel, wearing, and other personal effects, and implements of husbandry, (not merchandise) in actual use of persons coming to settle in the province and accompanying the owner ; Apparel, wearing, of British subjects dying abroad ; Argol ; Arms for the Army or Navy and Indian nations, provided the duty otherwise payable thereon would be paid or borne by the Treasury of the United Kingdom or of the Province : Ash, Pot, Pearl and Soda ; Bark, Tanners' Bark, used solely in dying ; Barley, except Pot and Pearl ; Barley Meal ; Beans ; Bean Meal ; Bear and Bigg ; Bear and Bigg Meal ; Berries, used solely in dyeing ; Bibles, Testaments, Prayer Books, and Devotional Books ; Bleaching Powder ; Bolting Cloths ; Borax ; Bookbinders' Tools and Implements ;	Free.

Books, Maps and Charts, imported not as Merchandize, but as the personal Effects of persons arriving in Canada to become *bona fide* residents of the Province;	Free.
Bottles, containing Wine, spirituous or fermented Liquors of Officers' Mess;	
Brandy imported for do.;	
Bran and Shorts;	
Brimstone:	
Bristles;	
Broom Corn;	
Buckwheat;	
Buckwheat Meal;	
Bulbs and Roots other than Medicinal;	
Bullion:	
Burstones, wrought or unwrought, but not bound up into Millstones:	
Butter:	
Coin and Bullion	
Cabinets of Coins;	
Cables, Iron chain over ¾ of an inch diameter;	
" Hemp;	
" Grass;	
Carriages of Travellers, and carriages employed in carrying Merchandise (Hawkers and Circus Troupes excepted);	
Casks, Ships' water, in use;	
Caoutchouc or Indian Rubber, and Gutta Percha, unmanufactured;	
Cement, Marine or hydraulic, unground;	
Charitable Societies—donations of clothing for gratuitous distribution by.	
Cheese;	
Clothing for Army or Navy or Indian Nations, or for gratuitous distribution by any charitable Society;	
Coal;	
Cochineal:	
Coke:	
Commissariat Stores;	
Copperas:	
Corkwood, or the Bark of the Corkwood tree;	
Corn, Indian;	
Cotton and Flax waste;	
Cotton Wool;	
Cream of Tartar in crystals;	
Diamonds and Precious Stones;	
Drugs used solely in dyeing;	
Dye stuffs, viz.: Bark, Berries, Drugs, Nuts, Vegetables, Woods and extract of Logwood;	
Earths, Clays and Ochres, dry;	
Eggs:	
Emery:	
Emery, Glass, and Sand Paper:	
Felt hat bodies and Hat Felt:	
Fire Brick:	
Firewood:	
Fish;	
Do. Oil, in its crude or natural state;	
Do. products of, unmanufactured;	
Fishing Nets and Seines;	
Fish Hooks, Lines and Fish Twines;	
Flax Hemp and Tow, undressed;	
Flour;	
Fruits, green:	
Fruits, dried, the growth of the United States only, while the Reciprocity Treaty is in force;	
Furs, Skins, Pelts or Tails, undressed, when imported directly from the United Kingdom or British North American Provinces or from the United States, while the Reciprocity Treaty is in force;	
Gems and Medals;	
Gold Beaters' Brim Moulds and Skins;	
Gravels;	
Grains—Barley and Rye;	
Beans and Peas;	
Bear and Bigg;	
Bran and Shorts;	

Grains—Buckwheat; Indian Corn; Oats; Wheat; Meal of above Grains; Grindstones, wrought or unwrought: Gums and Rosins, in a crude state; Gypsum or Plaster of Paris, ground or unground, but not calcined; Grease and Scraps; Hams; Hair, Angola, Goat, Thibet, Horse or Mohair, unmanufactured; Hemp; Hide; Horns; Household Furniture and Effects that have been in actual use for one month or more of persons coming to settle in this Province, and in charge of the owner; Household Effects, personal, not merchandise, of subjects of Her Majesty domiciled in Canada but dying abroad; Indigo; Inventions and Improvements in the Arts, Models, or patterns of,..provided that no article shall be deemed a model which can be fitted up for use; Junk and Oakum; Lard; Lime, the produce of British North American Provinces only: Machinery, models and patterns of—provided the same be not put to actual use: Manilla grass; Manures of all kinds; Marble in blocks or slabs, unpolished; Meats, fresh, smoked and salt; Menageries—horses, cattle, carriages and harnesses of...subject to Regulations by the Governor in Council; Military Clothing for Her Majesty's troops or Militia; Military Stores and Materials for Military Clothing imported for the use of the Provincial Militia under such restrictions as may be passed by Governor in Council; Mosses and Sea Grass, for Upholstery purposes; Musical Instruments for Military Bands; Nitre or Saltpetre; Oakum; Oils—Cocoa Nut, Pine and Palm, in their crude, unrectified or natural state; Oil Cake or Linseed Cake; Ordnance Stores; Ores, of all kinds of Metals; Osier or Willow, for Basket maker's use; Packages of all kinds in which goods are usually imported, except the following, viz.: Spirit, Wine, Oil, Beer, Cider, and other casks for the containing of liquid, Baskets of every description, Trunks, Snuff Jars, Earthenware Jars, Glass Jars, Bottles,—and Barrels containing Grain, Seeds and Peas; Pig Iron, Pig Lead and Pig Copper; Pitch and Tar; Philosophical Instruments and Apparatus, Globes; Plants, Shrubs and Trees; Printing Ink and Printing Presses; Provisions for Army or Navy or Indian nations: Rags; Resin and Rosin; Rice; Sail Cloth; Sal Soda; Sal Ammoniac; Salt: Seeds, for Agricultural, Horticultural, or Manufacturing purposes only; Ships' Blocks; Binnacle Lamps; Bunting; Canvas, Sail, Nos. 1 to 6; Compasses; Dead Eyes; Dead Lights; Deck Plugs; Shackles;	Free.

Sheaves; Signal Lamps; Travelling Trucks; Cordage which upon importation shall have paid the duty of customs, shall be entitled to draw-back under the 8th Sec. 22 Vic. ch. 76, when applied to ship-building purposes, and under such regulations as the Governor in Council may make; Ships' Water Casks in use; Silk Hat Felts; Soda Ash; Sago Flour; Specimens of Natural History, Mineralogy, anyand Bot: Stone, unwrought; Slate: Stereotype Blocks, for printing purposes; Statues, busts and casts, of marble, bronze, alabaster or plaster of Paris, paintings and drawings as works of Art, specimens of sculpture, cabinets of coins, medals, gems, and all collections of antiquities; Sulphur or Brimstone; Tin and Zinc or Spelter in block or Pig; Tallow; Teasels; Timber and Lumber of all kinds, round, hewed, sawed, unmanufactured in whole or in part; Tobacco, unmanufactured; Tools and Implements of Trade of Handicraftsmen arriving in Canada, when accompanied into the Province by the actual settler, and brought in by such settler fo his own use and not for sale; Treenails; Turpentine other than Spirits of Turpentine; Type Metal, in blocks or pigs; Varnish, bright and black, for ship builders, other than Copal, Carriage, Shellac, Mastic or Japan; Vegetables, not elsewhere specified; Vehicles of Travellers, except those of Hawkers and Pedlars; Water Lime, unground; Wine, spirits and fermented Liquors of all kinds, imported for Officers' Mess, and the packages containing the same; Wood for hoops when not notched; Woods of all kinds; Wool; All importations for the use of Her Majesty's Army and Navy serving in Canada, or for the public uses of the Province.	Free.

Table of Prohibitions.

The following articles are prohibited to be imported under a penalty of fifty pounds, together with the forfeiture of the parcel or package of Goods in which the same may be found:

Books, drawings, paintings and prints of an immoral or indecent character;
Coin, base or counterfeit.

CARRYING

TRADE AND NAVIGATION

OF THE

PROVINCIAL CANALS

OF

CANADA,

FOR THE YEAR 1859.

No. 1.—**GENERAL STATEMENT** shewing the Quantity of each Article transported on the WELLAND CANAL during the year 1859, and the Amount of Revenue collected thereon.

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Ashes, Pot and Pearl	263	21	202		2		1		37	21	242	21 66
Apples, Onions & other Vegetable.	622	44	122	21			1	382	49	450	172	73 41
Bacon	3		3								3	0 24
Bark	894	120	93			225	441		15	345	540	65 80
Barley	2,367		66	8	625	82			1,586	90	2,277	380 26
Barley Meal												
Beef	327		1			1			325	1	326	88 27
Beer, Cider and Vinegar	183	6	14	15		1	64	71	12	93	90	34 98
Bees Wax												
Biscuit and Crakers												
Bran and Ship Stuff	1,941	104	226	218	1,311				82	322	1,619	87 20
Bricks, Lime and Sand	1,415	134	893	8		26	40	314		482	933	151 13
Butter	111				1		2		108		111	22 23
Carts, Waggons and Sleighs	51	10	1	1	4	2	30	3		16	35	11 70
Cattle	3				1			1	1	1	2	0 39
Cement and Water Lime	5,851					54		5,797		5,851		993 30
Chalk and Whiting	148					15		133		148		33 74
Cheese	48					3	1	7	37	10	38	11 34
Charcoal												
Clay	242	103					5	134		237	5	36 70
Clover Seed	92								92		92	19 11
Coal	44,288	262	214			1584	26,725	14,262	1,241	16,108	28,180	6,085 06
Coffee	1,581						1	1,580		1,580	1	407 63
Copperas	38							38		38		9 67
Corn	35,948		13			1,717	4,143		30,075	1,717	34,231	5,607 78
Corn Meal	42		1			32			9	32	10	4 40
Dye and Dye Stuff	145							145		145		36 20
Fish	794	32	15			3	1	658	85	693	101	203 32
Flax and Flax Seed	21								21		21	4 68
Flour	37,494	681	9,070	1	219	200	1,501	12	25,810	894	36,600	6,597 70
Furniture and Baggage	329	22	19	4	3	15	2	148	116	189	140	48 84
Gypsum	3,410		1,438		1,153	15		804		819	2,591	315 74
Hams	320		8				13		299		320	93 46
Hemp	137		18					11	108	11	126	21 43
Hides and Skins, Raw	140							5	135	5	135	37 78
Hogs												
Horns, Hoofs and Bones	116				4				111	1	115	24 60
Horses	93	1	1	1		1	2	75	12	78	15	22 70
Ice	65							65		65		13 00
Iron, Bloom and Broken Castings	161		16	118	4			23		141	20	7 92
do Pig and Scrap	7,372	64	79	3,357	31	32		3,809		7,262	110	1,150 41
do Railroad	18,571	24		898				17,489	160	18,411	160	2,042 75
do Stoves and Castings	2,965	2	22	109		8	54	2,766	4	2,885	80	605 75
do All other not elsewhere described	4,077	436		274		137		3,225	5	4,072	5	582 54
Iron Safes	13							13		13		3 26
Lard	161		6				5		150		161	37 01
Lard Oil	818	22				2	3	769	22	793	25	162 45
Leather	41							31	10	31	10	10 27
Mahogany	6							6		6		1 51
Manilla	211					3		208		211		55 82
Manganese and Manures	62		60					2		2	60	8 11
Marble	339					5		334		339		58 02
Mechanics' Tools	2							2		2		0 50
Molasses	808	14				7		787		808		209 87
Nails	535	182		9			3	341		532	3	102 03
Oats	2,546	4		31	213	4	154		2,140	39	2,507	583 08
Oat Meal												
Oil Cake												
Oil Meal												
Ores, all kinds	12,162	15		9,472				1,446	1,229	10,933	1,229	749 36
Pitch, Tar and Rosin	266					1	1	264		265	1	66 24
Ploughs, and Agricultural Implements	89	2						84	3	86	3	23 10
Pork	1,801		47			19	243	14	1,478	33	1,768	398 49
Potatoes	932	1		1		65	7	858		925	7	171 98
Pressed Hay and Broom Corn	19	4	8						7	4	15	2 71
Rags, Junk and Oakum	157	11	2		1			43	100	54	103	36 18
Raw Cotton												
Rye and Rye Meal	145		70	2	10	60	1		2	62	83	14 36
Salt	81,445	232	3	1,766	50	2,137	33	80,224		84,359	86	13,245 07
Sheep	1							1		1		0 10
Ship Stores	5							5		5		1 26
Slate	42							42		42		6 31
Soda Ash	643	11		48				584		643		161 27
Spikes	375	67		39				269		375		84 87
Stone, Earthen and Glassware	906	59		104			176	481	86	644	262	236 25
Totals carried over	280,198	2,090	12,731	16,509	3,632	6,456	33,653	138,765	65,762	164,420	115,778	43,915 47

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No. 1.—GENERAL STATEMENT shewing the Quantity of each Article transported, &c.—(*Continued.*)

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Totals brought over	280,198	2,690	12,731	16,509	3,632	6,456	33,653	138,765	65,762	164,420	115,778	43,915 47
Stone	4,448	1,929	128	216	3	....	1,582	16	574	2,161	2,287	696 80
Sugar	1,764	47	....	....	....	52	....	1,665	....	1,764	....	447 01
Tallow	133	....	....	....	....	....	18	....	115	....	133	26 35
Tin and Steel	434	26	....	9	....	....	....	386	13	421	13	109 47
Tobacco, Manufactured	9	....	....	....	....	7	2	....	....	7	2	2 34
do Unmanufactured	187	....	32	....	73	....	....	23	59	23	161	33 54
Turpentine	105	....	....	....	....	....	....	105	....	105	....	26 32
Wheat	159,077	2,524	1,999	1	531	1,851	22,639	....	129,532	4,376	154,701	32,937 97
Whiskey, other Spirits, and Wines	634	47	2	....	28	....	15	9	533	56	6	153 11
White Lead and Paints	274	....	....	....	....	....	....	274	....	274	149	68 50
Window Glass	582	41	....	1	....	14	....	520	6	576	1,223	123 55
Wool	149	....	....	....	....	....	....	....	149	....		37 18
All Agricultural Products, not elsewhere described	1,264	....	1,050	5	144	4	1	32	28	41	402 33,955	250 84
All other Merchandise, do	3,045	395	22	36	186	164	17	2,048	177	2,613	35,536	2,631 47
Timber, Square in Vessels	33,965	....	23,133	10	8,366	....	1,944	....	512	10	12,660	8,474 69
do do in Rafts	35,636	100	33,198	....	2,338	....	....	....	....	100	61	1,736 90
do Round or Flatted, in Ves'ls.	16,426	....	283	3,766	12,377	....	....	....	....	3,766	77,423	1,234 70
do do in Rafts.	61	....	61	....	....	....	....	....	....	....	5	16 05
Boards and Sawed Lumber in ves'ls.	78,116	173	2,910	409	42,449	1	1,521	110	30,543	693	13,487	7,169 18
do do in Rafts.	5	....	5	....	....	....	....	....	....	....	11,233	00 75
Staves, Pipe Staves and Headings	13,487	....	7,704	....	4,187	....	914	....	382	....	2,891	2,902 03
do West India do	11,233	....	3,637	....	1,820	....	4,379	....	1,397	....	392	1,881 74
do Barrel do and do	3,541	....	878	200	48	....	582	450	1,383	650	42,918	368 07
Shingles	424	32	45	....	175	....	....	....	172	32	9,327	280 20
Firewood	46,302	107	32,494	823	9,548	2,424	810	....	96	3,354	7,213	1,315 72
Saw Logs	9,446	119	9,072	....	255	....	....	....	....	119	135	593 02
Barrel Hoops	8117	....	7,206	2	7	....	....	902	....	904	11	274 82
Sundry Woods, 40 cubic ft. to 1 ton.	140	....	26	....	20	....	24	5	65	5		54 03
Split Posts and Fence Rails	13	2	11	....	....	....	....	....	....	2	....	4 77

Empty Barrels	346	104	234	....	....	2	....	....	6	106	240	50 25
Boat Knees	23	....	....	....	17	....	6	....	....	....	23	2 06
Floats and Traverses	27	....	27	....	....	....	....	....	....	....	27	00 11
Grand Totals	709,611	8,336	136,888	21,987	86,504	10,975	68,107	145,310	231,504	186,608	523,003	107,819 04

Less Drawback on Free Articles.—See Note*	1,208 45
Total Revenue derived from Tolls on Property	106,610 59
Do. do. do. Vessels	17,795 84
Do. do. do. Passengers	294 39
Do. do. Fines and Damages	4195 82
Do. do. Rents	10,545 92
Total Revenue from all sources $	139,442 56

* NOTE.—Of the quantities of Iron, &c., represented in the above column of Totals as having gone through the Welland Canal, the following quantities were passed free as having paid full Toll on the St. Lawrence Canal, &c., viz:

Scrap and Pig Iron	Tons, 2,106	Tolls, $ 315 90
Railroad Iron	" 907	" 136 05
All other Iron	" 552	" 82 80
Salt	" 1,334	" 200 10
Iron Ore	" 9,472	" 473 60
Total Tons	14,371	Tolls .. $1,208 45

No. 2.—GENERAL STATEMENT shewing the Quantity of each Article transported on the St. Lawrence Canal during the year 1859, and the Amount of Revenue collected thereon.

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Ashes, Pot and Pearl	4,476	158	4,318							158	4,318	848 81
Apples, Onions & other Vegetables	3,261	6	3,224	2			29			8	3,253	448 66
Bacon	11		11								11	2 63
Bark	1,432	73	1,359							73	1,359	77 49
Barley	4,469	56	2,727		1,686					56	1,413	334 24
Beef	95		93				2				95	11 47
Beer, Cider and Vinegar	440	356	84							356	84	81 98
Bees Wax												
Biscuit and Crackers	30	3	27							3	27	2 13
Bran and Ship Stuff	253	3	250							3	250	49 95
Bricks, Lime and Sand	6,803	5,651	503			649				6,300	503	292 46
Butter	404	10	390			4				14	390	61 33
Carts, Waggons and Sleighs	287	94	193							94	193	32 86
Cattle	599	20	579							20	579	17 61
Cement and Water Lime	904	248	514			103	39			351	553	79 52
Cheese	125		125								125	27 67
Chalk and Whiting	113	113								113		17 95
Charcoal												
Clay	342	308	2			32				340	2	24 55
Clover Seed	17	2	15							2	15	2 59
Coal	32,631	25,602	3,640		200		14	3,173	2	28,775	3,856	1,573 30
Coffee	59	48	11							48	11	9 03
Copperas	12	12								12		2 31
Corn	1,504	105	1,389				10			105	1,399	188 77
Corn Meal	22	1	21							1	21	5 14
Dye and Dye Stuffs	60	60								60		7 06
Fish	3,289	3,211	78							3,211	78	521 75
Flax and Flax Seed	250	246	4							246	4	14 23
Flour	64,002	6,015	56,730		107		1,150			6,015	57,987	11,468 43
Furniture and Baggage	1,781	304	1,477							304	1,477	452 44
Gypsum and Manures	959	316	85		525	3				319	610	40 94
Hams	35	1	34							1	34	8 31
Hemp	10	3	7							3	7	1 44
Hides and Skins, Raw	210	27	183							27	183	40 32
Hogs	256	2	254							2	254	22 81
Horns, Hoofs and Bones	82		82								82	17 34
Horses	383	152	231							152	231	54 13
Iron, Bloom and Broken Castings	244	192	52							192	52	24 95
do Pig and Scrap	8,120	6,762	297	1,061						7,823	297	799 83
do Railroad	3,564	2,593	351	449		171				3,213	351	383 42
do Stoves and Castings	2,453	2,098	261			94				2,192	261	412 52
do Safes	3	1	2							1	2	0 69
do all other not elsewhere described	7,315	6,545	586	184						6,720	586	1,333 68
Lard	742	701	41							701	41	121 52
Lard Oil	349	335	13				1			335	14	48 82
Leather	99	66	33							66	33	21 23
Manilla	57	54	3							54	3	5 69
Manganese												
Marble	166	154				12				166		3 92
Mechanics' Tools	10	8	2							8	2	0 83
Molasses	2,709	1,785	33			891				2,676	33	203 16
Nails	2,361	2,318	43							2,318	43	411 69
Oats	3,933	109	3,049		775					109	3,824	344 65
Oatmeal	400	51	114		235					51	349	32 82
Oil Cake and Oil Meal	61	61								61		13 41
Ores, all kinds	5,483	5,355	128							5,355	128	278 38
Pitch, Tar and Rosin	292	121	20			142				263	20	28 60
Ploughs and Agricultural Implements	176	164	12							164	12	12 39
Pork	2,810	883	1,909		17		1			883	1,927	446 15
Potatoes	237	49	175			13				62	175	21 42
Pressed Hay and Broom Corn	1,493	1,481	12							1,481	12	249 03
Rags, Junk and Oakum	601	425	176							425	176	69 23
Raw Cotton	2	2								2		0 33
Rye and Rye Meal	58		32	13			13			13	45	8 94
Salt	19,639	19,452	170				12		5	19,452	187	1,135 45
Sheep	147	3	144							3	144	20 71
Slate	182	169	13							169	13	17 48
Soda Ash	315	315								315		56 10
Spikes	306	275	31							275	311	49 53
Stone, Earthen and Glassware	1,651	1,558	32	61						1,619	32	358 16
Totals carried over	195,584	97,321	86,383	1,770	3,545	2,114	1,271	3,173	7	104,378	91,206	23,814 47

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No. 2—GENERAL STATEMENT shewing the Quantity of each Article transported, &c.—(*Continued.*)

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Totals brought over	195,584	97,321	86,383	1,770	3,515	2,114	1,271	3,173	7	104,378	91,206	23,814 47
Stone	8,757	190	8,447				120			190	8,567	334 31
Sugar	5,970	5,330	21			619				5,949	21	239 52
Tallow	153	3	112			38				41	112	22 13
Tin and Steel	606	592	14							592	14	134 15
Tobacco, Manufactured	93	84	4			5				89	4	12 66
Do. Unmanufactured	201	2	137			62				64	137	21 85
Turpentine	30	26				4				30		2 36
Wheat	17,815	272	17,515				28			272	17,543	3,709 39
Whiskey, other Spirits, and Wine	942	493	441				8			493	449	148 90
White Lead and Paints	233	226	6				1			226	7	54 08
Window Glass	290	276	14							276	14	142 08
Wool	1		1								1	00 22
All Agricultural Products not elsewhere described	6,602	57	6,505		40					57	6,545	867 86
All other Merchandise do.	8,585	7,155	1,086	12	8	281	43			7,448	1,137	3,094 97
Timber, Square, in Vessels	5,710	2,400	3,270				40			2,400	3,310	130 56
Do. do. in Rafts	25,438	286	25,152							286	25,152	635 93
Do. Round or Flatted, in Ves'ls	3,185	375	2,810							375	2,810	25 76
Do. do. do. in Rafts	12,294	250	12,044							250	12,044	229 03
Boards and Sawed Lumber in Ves'ls	83,927	4,388	23,472		54,432		1,162		473	4,388	79,539	1,790 60
Do. do. do. in Rafts	305,972	110	305,862							110	305,862	779 23
Staves, Pipe Staves and Headings	3,832		2,745				1,087				3,832	703 66
Do. W.I. do. & do.	6,740	34	3,837				2,743		126	34	6,706	1,084 60
Do. Brl. do. & do.	3,033		3,033								3,033	211 56
Shingles	72	8	64							8	64	12 09
Firewood	214,317	1,806	212,511							1,806	212,511	8,107 12
Saw Logs	538	426	112							426	112	57 78
Barrell Hoops	1			1						1		00 30
Sundry Woods, 40 cubic feet to 1 ton	365	146	197		14			8		154	211	145 89
Split Posts and Fence Rails	10		10								10	2 00
Empty Barrels	466	244	219	3						247	219	41 42
Boat Knees	6		6								6	0 48
Floats												24 12
Traverses												16 08
Grand Totals	911,768	122,500	716,030	1,786	58,039	3,123	6,503	3,181	606	130,590	781,178	47,557 10

Less Drawback on Free Articles.—See Note *	4,326 58
Total Revenue derived from Tolls on Property	43,230 58
Do. do. do Vessels	7,449 41
Do. do. do. Passengers	1,166 94
Do. Storage, $1,001 41 ... Rents, $18,437 00	19,538 41
Do. Fines and Damages	1,519 71
Total Revenue $	72,905 05

* NOTE.—Of the quantities of Corn, Wheat, Flour and Ores, represented in the last Columns of Totals as having come down or gone up the St. Lawrence Canal, the following quantities were passed Free, as having paid Tolls on the Welland or Chambly Canals, viz:

Corn	Tons, 1,148	Tolls $ 160 72
Wheat	" 9,128	" 2,008 16
Flour	" 8,640	" 1,900 80
Ores	" 5,138	" 256 90
Total	Tons 24,054	Total Tolls $4,326 58

No. 3.—GENERAL STATEMENT shewing the Quantity of each Article transported on the CHAMBLY CANAL and ST. OURS LOCK, during the Year 1859, and the amount of Revenue collected thereon.

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports,		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Ashes, Pot and Pearl	871		2	869						869	2	86 96
Apples, Onions & other Vegetables	737	2	54				681			2	735	73 61
Bacon												
Bark												
Barley	13,763		132	13,631						13,631	132	1,270 42
Beef												
Beer, Cider and Vinegar	72	3					69			3	69	7 05
Bees Wax												
Biscuit and Crackers	4	4								4		0 20
Bran and Ship Stuff	86	3		83						86		8 55
Brick, Lime and Sand	2,278	336	17				1,925			336	1,942	205 37
Butter	15						15				15	1 45
Carts, Waggons and Sleighs	6	2	2				2			2	4	0 60
Cattle	64	2	62							2	62	2 13
Cement and Water Lime	53	5	2				46			5	48	4 96
Cheese												
Charcoal	1	1								1		0 05
Clay	46		10				36				46	4 22
Clover Seed	184	29	20			135				164	20	16 47
Coal	10,483	888	101	822			8,672			1,710	8,773	1,022 56
Coffee	28						28				28	4 13
Copperas	6	6								6		0 30
Corn	9	1					8			1	8	0 85
Corn Meal	3			3						3		0 25
Fish	78	78								78		4 80
Flax and Flax Seed												
Flour	3,634	482	8	180			2,964			662	2,972	454 85
Furniture and Baggage	51	28	23							28	23	6 15
Gypsum	134	134								134		4 46
Hams												
Hemp												
Hides and Skins, Raw	35						35				35	5 25
Hogs	1	1								1		0 10
Horns, Hoofs and Bones												
Horses	10		9	1						1	9	0 55
Iron, Bloom and Broken Castings	189						189				189	18 85
Do. Pig and Scrap	703	5		503			195			508	195	70 11
Do. Railroad	645	645								645		64 50
Do. Stoves and Castings	212	98	17	6			91			104	108	18 29
Do. All other not elsewhere described	64	44					20			44	20	3 46
Lard												
Lard Oil	51			7			44			7	44	5 10
Manilla												
Manganese and Manure	527			527						527		52 70
Marble	82	1					81			1	81	8 15
Mechanics' Tools	6		1				5				6	0 90
Molasses	2,017	59					1,958			59	1,958	296 70
Nails	55	54					1			54	1	2 90
Oats	24,093	356	57	23,680						24,036	57	2,351 35
Oatmeal	250			250						250		25 00
Oil Cake												
Oil Meal												
Ores, all kinds	6,479			59			6,420			59	6,420	322 91
Ploughs and Agricultural Implements												
Pitch, Tar and Rosin	193		5				188				193	28 80
Pork	693	13					680			13	680	68 43
Potatoes	396	4	4				388			4	392	39 55
Pressed Hay and Broom Corn	325	72	253							72	253	27 70
Rags, Junk and Oakum	17			17						17		1 65
Raw Cotton												
Rye												
Salt	3,094	1,265		1,829						3,094		274 81
Sheep	151	5	146							5	146	5 08
Slates	162						162				162	16 20
Spikes												
Stone, Glass and Earthenware	161	65	83				13			65	96	10 03
Totals carried over	73,217	4,691	1,008	42,467		135	24,916			47,293	25,924	6,901 14

No. 3.—GENERAL STATEMENT shewing the quantity of each Article transported.—(*Continued.*)

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Totals brought over	73,217	4,691	1,008	42467		135	24,916			47,293	25,924	6,001 14
Stone	87		2				85				87	8 59
Sugar	1,383	59	1				1,323			59	1,324	202 30
Tallow	65						65				65	6 45
Tin and Steel												
Tobacco, Unmanufactured	174	4					170			4	170	17 14
Wheat	2			2						2		00 20
Whiskey, other Spirits, and Wines	65	65								65		2 85
Window Glass	11	11								11		00 37
Wool												
All Agricultural Products not elsewhere described	2,447	58	1,596	793						851	1,596	107 45
All other Merchandise, do.	2,745	345	220	115			2,065			460	2,2[illegible]	364 63
Timber, Square, in Vessels												
Do. do. in Rafts	14,616			14,616						14,616		1,463 74
Do. Round or Flatted, in Vessels												
Do. do. do. in Rafts	80	80								80		2 44
Boards and Sawed Lumber in Vessels	79,251	1,420	24	77,787			20			79,207	44	4,684 56
Do. do. do. in Rafts												
Staves, Pipe Staves and Headings												
Do. W.I. do. and do.												
Do. Brl. do. and do.	18			18						18		1 05
Shingles	66	9		57						66		10 57
Firewood	1,730		714				1,016				1,730	44 30
Saw Logs												
Barrel Hoops	141			141						141		28 20
Sundry Woods, 40 cubic feet to 1 ton	499		2	491			6			491	8	124 75
Split Posts and Fence Rails	13	13								13		00 87
Empty Barrels	45		13	32						32	13	8 04
Boat Knees	2			2						2		3 12
Traverses	15			15						15		3 50
Floats, &c.	21			21						21		5 17
Grand Totals	176,693	6,571	3,580	136,557		135	29,666			143,417	33,216	

Total Revenue derived from Tolls on Property	14,060 72
Do. do. do. Vessels	2,282 10
Do. do. do. Passengers	66 66
Do. do. Damages and Fines	91 07
Do. do. Rents	20 00
Total Revenue derived from all sources $	16,520 55

No. 4.—GENERAL STATEMENT shewing the Quantity of each Article transported on the BURLINGTON BAY CANAL during the Year 1859, and the Amount of Revenue collected thereon.

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT of TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Ashes, Pot and Pearl	713		687		26						713	274 15
Apples, Onions and Vegetables	207	122	62		6	17				139	68	66 36
Bacon												
Bark												
Barley	3,147		234		2,913						3,147	520 24
Beef												
Beer, Cider and Vinegar	136	128	8							128	8	38 05
Beeswax												
Biscuit and Crackers												
Bran and Ship Stuff	12		1	1			10			1	11	6 40
Bricks, Lime and Sand	355	271				84				355		59 09
Butter	48	2	46							2	46	35 07
Carts, Waggons and Sleighs	9	4	5							4	5	4 72
Cattle	7		7								7	1 45
Cement and Water Lime	264	21				243				261		28 91
Cheese												
Charcoal												
Clay												
Clover Seed												
Coal	6,488	161				6,324				6,488		1,205 83
Coffee												
Copperas												
Corn	486	1				485				486		73 04
Corn Meal												
Fish	363	363								363		181 40
Flax and Flax Seed												
Flour	6,061	14	3,009		3,029	9				23	6,038	1,382 00
Furniture and Baggage	16	5	4		2	5				10	6	3 93
Gypsum												
Hams	5		5								5	3 30
Hemp	21	2				19				21		6 81
Hides and Skins, Raw	87	11	71		5					11	76	15 49
Hogs												
Horns, Hoofs and Bones	6	2	4							2	4	00 80
Horses												
Iron, Bloom and Broken Castings	3,851	2,813	182		783	73				2,886	965	767 93
Do. Scrap and Pig Iron												
Do. Railroad	875	761	77		11	26				787	88	437 63
Do. Stoves and Castings												
Do. all other not elsewhere described												
Lard	269	237	2			30				267	2	120 40
Lard Oil												
Manilla	6	6								6		1 65
Maganese and Manures												
Marble												
Mechanics' Tools												
Molasses												
Nails	625		11		614						625	145 75
Oats												
Oat Meal												
Oil Cake												
Oil Meal												
Ores, all kinds												
Ploughs and Agricultural Implements	42		42								42	22 47
Pork	84	30	2			52				32	2	13 35
Potatoes	100	14	86							14	86	33 49
Pressed Hay and Broom Corn	87		87								87	29 00
Rags, Junk and Oakum												
Raw Cotton												
Rye and Rye Meal												
Salt												
Sheep												
Slate												
Spikes	212	205				7				212		85 06
Stone, Earthen and Glassware												
Totals carried over	24,582	5,176	4,632	1	7,389	7374	10			12,551	12,031	5,053 80

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No. 4.—GENERAL STATEMENT shewing the Quantity of each Article transported, &c.—(*Continued.*)

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Totals brought over	24,582	5,176	4,632	1	7,389	7,374	10			12,551	12,031	5,653 86
Stone	764	150	281			327	6			477	287	43 93
Sugar	1,014	794	8			212				1,006	8	471 22
Tallow	3					3				3		1 80
Tin and Steel												
Tobacco, Unmanufactured	19	1	15			3				4	15	18 40
Wheat	3,914	4	819		3,068	28				32	3,882	541 17
Whiskey, other Spirits and Wines	206	132	46			28				160	46	74 54
Window Glass												
Wool	2		1			1				1	1	0 11
All Agricultural products not elsewhere described	1		1								1	0 68
All other Merchandise, do	2,496	2,211	79			206				2,417	70	1,871 28
Timber, Square, in Vessels	1,307		1,307								1,307	40 32
Do. do. Rafts												
Do. Round or Flatted, in Vessels												
Do. do. Rafts												
Boards and sawed Lumber in Vessels	34,320		1,384		32,936						34,320	1,997 99
Do. do in Rafts												
Staves, Pipe Staves and Headings	5,899		4,558		1,341						5,899	1,006 07
Do. West India, and do	12,024		8,844		3,180						12,024	548 19
Do. Barrel do. and do.												
Shingles	52		27		25						52	31 50
Fire Wood	1,678	1,528	150							1,528	150	18 07
Saw Logs												
Barrel Hoops												
Sundry Woods, 40 cubic feet to one ton												
Split Posts and Fence Rails												
Empty Barrels	240		240								240	18 02
Boat Knees												
Floats												
Traverses												
Grand Totals	88,521	9,996	22,392	1	47,934	8,182	16			18,179	70,342	

Total Revenue derived from Tolls on Property	12,397 15
Do. do. do. Vessels	1,137 75
Do. do. do. Passengers	
Do. do. do. Arrears	824 05
Total Revenue from all sources	14,358 95

No. 5.—GENERAL STATEMENT shewing the Quantity of each article transported through the St. Ann's Lock Canal during the Year 1859, and the Amount of Revenue collected thereon.

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Ashes, Pot and Pearl	954		954								954	47 70
Apples, Onions and other Vegetables	2	1	1							1	1	0 10
Bacon												
Bark	529		529								529	15 87
Barley and Barley Meal	1,424	24	1,400							24	1,400	71 20
Beef												
Beer, Cider and Vinegar	45	45								45		2 25
Bees Wax												
Biscuit												
Bran and Ship Stuff												
Bricks, Lime and Sand	242	162	80							162	80	7 26
Butter	124	124								124		6 18
Carts, Waggons and Sleighs	21	19	2							19	2	1 05
Cattle	218	10	208							10	208	10 90
Cement and Water Lime	49	49								49		1 47
Cheese												
Charcoal												
Clay												
Clover Seed	3		3								3	0 13
Coal	993	993								993		29 78
Coffee												
Copperas												
Corn	7	7								7		0 33
Corn Meal												
Fish	773	773								773		38 65
Flax and Flax Seed												
Flour	1,584	1,390	194							1,390	194	79 20
Furniture and Baggage	143	100	43							100	43	7 13
Gypsum												
Hams												
Hemp												
Hides and Skins, Raw												
Hogs	8		8								8	0 38
Horns, Hoofs and Bones												
Horses	80	26	54							26	54	3 98
Iron, Bloom and Broken Castings												
Do. Pig and Scrap	550	497	53							497	53	27 50
Do. Railroad	60	60								60		Free.
Do. Stoves and Castings	291	291								291		14 55
Do. All other not elsewhere described	825	825								825		41 23
Lard												
Lard Oil	189	189								189		0 45
Manilla	58	58								58		2 88
Manganese and Manure	295		295								295	8 85
Marble	20	20								20		0 98
Mechanics' Tools												
Molasses	401	401								401		20 05
Nails	340	340								340		17 00
Oats	1,076	5	1,071							5	1,071	53 80
Oatmeal	25	6	19							6	19	1 25
Oil Cake												
Oil Meal												
Ores, all kinds												
Ploughs and Agricultural Implements	74	74								74		3 68
Pork	468	418	50							418	50	23 40
Potatoes	20		20								20	0 98
Pressed Hay and Broom Corn	290	290								290		14 50
Rags, Junk and Oakum												
Raw Cotton												
Rye and Rye Meal												
Salt	3,194	3,194								3,194		95 82
Sheep	13		13								13	0 65
Slates	8	8								8		0 40
Spikes	14	14								14		0 70
Stone, Glass and Earthenware	258	258								258		12 90
Totals carried over	15,668	10,671	4,997							10,671	4,997	674 13

No.5.—GENERAL STATEMENT shewing the Quantity of each Article transported, &c.—(*Continued.*)

ARTICLES.	TOTAL TONS.	From Canadian to Canadian Ports.		From Canadian to American Ports.		From American to Canadian Ports.		From American to American Ports.		TOTALS.		AMOUNT OF TOLLS.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	$ cts.
Totals brought over	15,668	10,671	4,997							10,671	4,997	074 13
Stone	28	10	18							10	18	00 84
Sugar	420	420								420		20 98
Tallow												
Tin and Steel	102	102								102		5 08
Tobacco, Unmanufactured												
Wheat	221	220	1							220	1	11 03
Whiskey, other Spirits, and Wines	246	246								246		12 28
Window Glass	126	126								126		6 28
Wool												
All other Agricultural Products not elsewhere specified	100		100								100	4 98
All other Goods and Merchandise	2,365	2,005	360							2,005	360	118 20
Timber, Square, in Vessels												
Do. do. in Rafts												
Do. Round or Flatted, in Vessels	4		4								4	00 50
Do. do. do. in Rafts												
Boards and Sawed Lumber in Vessels	38,883		38,883								38,883	1,166 49
Do. do. in Rafts	6,106		6,106								6,106	183 18
Staves, Pipe Staves and Headings												
Do. W. I. & do	20		20								20	2 44
Do. Brl. do. & do	730		730								730	51 10
Shingles	516		516								516	10 32
Firewood	22,747		22,747								22,747	682 46
Saw Logs												
Barrel Hoops												
Sundry Woods 40 cubic feet to 1 ton	2		2								2	00 10
Split Posts and Fence Rails												
Floats	269		269								269	13 45
Traverses	69		69								69	3 45
Empty Barrels	74	43	31							43	31	3 68
Boat Knees, &c												6 35
Grand Totals	88,696	13,843	74,853							13,843	74,853	

Total Revenue derived from Tolls on Property	2,977 32
Do. do. do. Vessels	2,539 08
Do. do. do. Passengers	137 77
Do. do. Fines and Damages	5 00
Do. do. do. Rents	
Total Revenue from all sources	5,659 17

NOTE.—The quantity of Railroad Iron represented in this Table as having passed through the St. Ann's Lock Canal, was passed free as having paid full Toll on the St. Lawrence Canal, viz., 60 Tons

No. 6.—GENERAL STATEMENT shewing the Quantity of each Article transported on the OTTAWA and RIDEAU CANALS and their LOCKS, during the Year 1859, and the Amount of Revenue collected thereon.

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ARTICLES.	SECTIONS.									TOTAL TOLLS.
	KINGSTON.			OTTAWA.			CARILLON AND GRENVILLE.			
	Number.	Tons.	Tolls.	Number.	Tons.	Tolls.	Number.	Tons.	Tolls.	$ cts.
Apples, Onions, and other Vegetables....Barrels.				1,090	110	9 12	10	1	00 04	9 16
Ashes, Pot and Pearl.... do.	5,028	1,257	102 20	1,460	365	88 97				191 17
Bark ....Tons.	5,558	1,856	77 14	393	131	10 92	933	311	12 82	100 88
Barley....Bushels.	135	3	00 25							00 25
Biscuit and Crackers ....Barrels.							10	1	00 14	00 14
Bran and Ship Stuffs....Tons.								2	00 09	00 09
Bricks....₩ M.							96	48	00 24	00 24
Butter ....Kegs.	1,248	104	8 23	1,284	107	26 08	12	1	00 04	34 35
Cattle ....Numbers							15	5	00 27	00 27
Cement....Barrels.				248	31	2 58	336	42	1 75	4 33
Coal ....Tons.		213	8 91		1,005	83 75		786	32 83	125 49
Corn ....Bushels.							216	6	00 46	00 46
Fish....Barrels.	14	2	00 16				5,741	713	71 30	71 46
Flour.... do.	1,800	180	14 63	7,740	774	63 40	10,370	1,037	149 15	227 18
Furniture and Baggage....Tons.		38	3 06					42	4 10	7 16
Hay (Pressed) and Broom Corn.... do.					200	12 50		290	17 45	29 95
Hides and Skins, Raw.... do.		1	00 4		26	4 13				4 17
Horns, Hoofs, and Bones .... do.		4	00 25							00 25
Horses ....Numbers							6	2	00 20	00 20
Iron, Pig and Srap ....Tons.					568	71 12		492	30 70	101 82
Other Iron.... do.		47	3 70		746	102 50		1,734	237 18	343 38
Lime ....Bushels.				1,008	28	2 36				2 36
Manganese and Manures....Tons.		75	3 12							3 12
Marble .... do.								14	00 58	00 58
Meal .... do.		3	00 44		29	3 55				3 99
Molasses .... do.								76	9 72	9 72
Oats ....Bushels.	7,000	125	1 05				112	2	00 10	1 15
Ores, all kinds....Tons.		3,030	151 50							151 50
Ploughs and Agricultural Implements.... do								3	00 23	00 23
Pork ....Barrels.	376	47	3 83	2,408	301	60 20	3,648	456	45 70	109 73
Potatoes....Bushels.	99	3	00 12	274	8	00 67				00 79
Rosin....Barrels.							18	2	00 08	00 08
Salt.. ....Bushels.	684	18	75	106,020	2,945	122 68	112,968	3,138	130 95	254 38
Sand....Tons					120	5 00		10	00 41	5 41
Stone, Earthen and Glassware.... do.		2	00 16					343	34 38	34 54
Stone.... do.								8	00 32	00 32
Stoves and Castings.... do.		2	00 9		48	3 90				3 99
Sugar .... do.								694	92 18	92 18
Vinegar ....Barrels.							21	3	00 39	00 39
Wheat ....Bushels.	54,982	1,487	120 82	26,122	706	172 10	7,260	220	29 30	322 22
Whiskey ....Barrels.							728	104	10 30	10 30
Window Glass....Boxes.							323	19	2 39	2 39
Wool ....Tons.					16	2 42				2 42
Other Agricultural Products.... do.		4	00 32							00 32
Other Merchandise not elsewhere enumerated.... do.		301	23 50		3,790	900 12		1,100	255 90	1,179 52
TIMBER.										
Square Timber....cubic feet, ₩ M.	5	110	5 20	9	180	8 14	35	706	15 45	28 79
Round and Flatted do....lineal do, ₩ M.	4	102	1 37	10	250	7 55				8 92
Boards and other Sawed Lumber, superficial feet.... ₩ M.	56,922	94,870	1,206 25	2,608	4,374	43 47	11,223	187,050	463 32	1,713 04
Barrels, Empty....Numbers	630	63	1 05				495	50	2 07	3 12
Totals carried over....		103,947	1,738 14		16,858	1,807 22		199,511	1,652 53	5,197 90

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No. 6.—GENERAL STATEMENT shewing the quantity of each article transported, &c.—(*Continued.*)

SECTIONS.

ARTICLES.		KINGSTON.			OTTAWA.			CARILLION AND GRENVILLE.			TOTAL TOLLS.
		Number.	Tons.	Tolls.	Number.	Tons.	Tolls.	Number.	Tons.	Tolls.	$ cts.
Totals brought over		....	103,947	1,738 14	....	16,858	1,807 22	....	199,511	1,652 53	5,197 90
Cord Wood	Cords	19,000	64,958	1,249 15	7,818	22,854	428 50	7,460	22,380	419 80	2,097 45
Saw Logs	Number.	12,460	6,230	103 84	61,189	30,594	1,019 82	3,240	1,620	27 00	1,150 66
Shingles	⅌ M.	1,986	166	16 55	34	3	57	18	2	00 15	17 27
Staves [Barrel Staves]	⅌ M.	....	....	....	832	2,080	110 94	....	....	....	110 94
Other Woods, 40 cubic feet to 1 ton		....	1,156	115 60	....	63	12 60	....	56	5 82	134 02
Floats and Traverses	Number.	48,411	....	64 57	7,903	....	13 47	....	....	13 56	91 60
Grand Totals		....	176,457	3,287 85	....	72,452	3,393 13	....	223,569	2,118 86	....

Total Tolls Derived from Property	$ 8,799 84
Do do do Vessels	1,536 02
Do do do Passengers	121 17
Do do do Wintering, Wharfage, &c.	286 87
Total Revenue from all Sources	$ 10,743 90

No. 7.—SUMMARY STATEMENT of the WELLAND, ST. LAWRENCE, CHAMBLY, BURLINGTON BAY, OTTAWA and RIDEAU CANALS, ST. ANN'S, ST. OURS, and other Locks, showing the Total Quantity of each description of Property passing through and on the same, and the Amount of tolls collected during the year 1859.

ARTICLES.	Welland Canal.		St. Lawrence Canal.		Chambly Canal, including St. Ours Locks.		Burlington Bay Canal.		St. Ann's Lock.		Ottawa and Rideau Canals, and their Locks.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
		$ cts.		$ cts.		$ Cts.		$ Cts.		$ Cts.		$ cts.
VESSELS OF ALL KINDS	856,918	17,795 84	765,636	7,449 41	198,052	2,282 10	108,068	1,137 75	203,126	2,539 08	323,221	1,536 02
PASSENGERS .... Number	12,332	294 39	24,850	1,166 94	4,037	66 66	....	....	13,777	137 77	3,618	121 17
THE FOREST.												
Produce of Wood—Boards and other Sawed Lumber	73,121	7,169 93	399,899	2,569 83	79,251	4,684 56	34,320	1,997 99	44,989	1,349 67	286,294	1,716 76
Cord Wood	46,302	1,315 72	214,317	8,107 12	1,730	44 30	1,678	18 07	22,747	682 46	110,339	2,214 41
Shingles	424	280 20	72	12 09	66	19 57	52	31 50	516	10 32	171	17 27
Staves, [all kinds]	28,261	5,151 84	13,605	1,999 82	18	1 05	17,923	1,614 26	750	53 54	2,080	110 94
Bark	894	65 89	1,432	77 49	....	....	....	....	529	15 87	2,298	100 88
Timber and other Woods	99,737	12,391 15	47,547	1,267 93	15,387	1,631 85	1,307	40 32	344	23 85	41,067	1,410 27
Total Forest	253,739	26,374 73	666,872	14,034 28	96,452	6,381 33	55,280	3,702 14	69,875	2,135 71	442,249	5,570 53
AGRICULTURE.												
Farm Stock—Cattle, Sheep and Hogs	4	49	1,002	61 13	216	7 31	7	1 45	239	11 93	5	27
Horses	93	22 70	383	54 13	10	55	6	80	80	3 98	2	20
Total Farm Stock	97	23 19	1,385	115 26	226	7 86	13	2 25	319	15 91	7	47
Produce of Animals—Bacon and Hams	323	93 70	46	10 94	....	....	5	3 30	....	....	....	....
Beef and Pork	2,128	486 76	2,905	457 62	693	68 43	42	22 47	468	23 40	804	109 73
Butter and Cheese	159	33 57	529	89 00	15	1 45	48	35 07	124	6 18	212	34 35
Hides, Skins, Horns, Hoofs and Bones	256	62 38	292	57 68	35	5 25	87	15 49	....	....	31	4 42
Lard, Tallow and Bees Wax	294	64 26	895	143 65	65	6 45	3	1 80	....	....	....	....
Wool	149	37 18	1	22	....	....	2	11	....	....	16	2 42
Total Animal Produce	3,309	777 85	4,668	759 09	808	81 58	187	78 24	592	29 58	1,063	150 92
Vegetable Food—Barley, Oats and other Grains	4,913	963 34	8,402	678 89	37,856	3,621 77	3,772	665 99	2,500	125 00	130	1 40
Bran and Ship Stuff	1,941	87 20	253	49 95	86	8 55	12	6 40	....	....	2	9
Corn Meal, Oatmeal and Oil Meal	42	4 40	422	37 96	253	25 25	....	....	25	1 25	32	3 99
Corn	35,948	5,607 78	1,504	188 77	9	85	486	73 04	7	33	6	46
Flour	37,494	6,597 79	64,002	11,468 53	3,634	454 85	6,061	1,382 00	1,584	79 20	1,991	227 18
Onions, Apples and Potatoes	1,554	245 39	3,498	470 08	1,133	113 16	291	79 71	22	1 08	122	9 95
Wheat	159,077	32,937 97	17,815	3,769 39	2	20	3,914	541 17	221	11 03	2,413	222 22
Total Vegetable Food	240,969	46,443 87	95,896	16,663 57	42,973	4,224 63	14,536	2,748 31	4,359	217 89	4,696	565 29
Other Agricultural Products—Seeds [all sorts]	21	23 79	267	16 82	184	18 47	....	....	3	13	4	32
Hay, Straw and Broom Corn	19	2 71	1,493	249 03	325	27 70	100	33 49	290	14 50	490	29 95
Hemp and Manilla	348	77 25	67	7 13	....	....	21	6 81	58	2 88	....	....
Raw Cotton	....	....	2	33	....	....	....	....	....	....	....	....
Tobacco [all kinds]	196	35 83	294	34 51	174	17 14	19	18 40	....	....	....	....
Other articles not enumerated	1,409	265 20	6,660	876 90	2,447	167 45	1	68	395	13 83	4	32
Total Agricultural Products	1,993	404 83	8,783	1,184 72	3,130	228 76	141	59 38	746	31 34	498	30 59
MANUFACTURES.												
Ashes, (Pot and Pearl)	263	21 66	4,476	848 81	871	86 96	713	274 15	954	47 70	1,622	191 17
Biscuit and Crackers	....	....	30	2 13	4	20	....	....	....	....	1	14
Bricks, Lime and Sand	1,415	151 13	6,803	292 46	2,278	205 37	355	59 09	242	7 26	182	8 73
Cement, Water Lime and Clay	6,093	1,030 00	1,246	104 07	99	9 18	264	28 91	49	1 47	73	4 33
Cider, Beer and Vinegar	183	34 98	440	81 98	72	7 05	136	38 05	45	2 25	3	39
Domestic Spirits and Wines	634	153 11	942	148 90	65	2 85	206	74 54	246	12 28	104	10 30
Carried over	8,588	1,390 88	13,937	1,478 35	3,389	311 61	1,674	474 64	1,536	70 96	1,985	215 06

No. 7.—SUMMARY STATEMENT of the WELLAND, ST. LAWRENCE, CHAMBLY, BURLINGTON BAY, OTTAWA and RIDEAU CANALS, &c.—(*Continued.*)

ARTICLES.	Welland Canal.		St. Lawrence Canal.		Chambly Canal, including St. Ours Locks.		Burlington Bay Canal.		St. Ann's Lock.		Ottawa and Rideau Canals and other Locks.	
	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.	Tons.	Tolls.
Manufactures.—*Continued.*		$ cts.		$ cts.		$ Cts.		$ Cts.		$ Cts.		$ Cts.
Brought over	8,588	1,390 88	13,937	1,478 35	3,389	311 61	1,674	474 64	1,536	70 96	1,985	215 06
Empty Barrels	346	50 25	466	41 42	45	8 04	240	18 02	74	3 68	113	3 12
Earthen Stone and Glass Wares	906	236 25	1,651	358 16	161	16 63	212	85 06	258	12 90	345	34 54
Railroad Iron	18,571	2,942 75	3,564	383 42	645	64 50			60			
Scrap, Pig and Broken Castings	7,533	1,158 33	8,364	824 78	892	88 96	3,851	767 93	550	27 50	1,060	101 82
Spikes, Nails, Tin and Steel	1,344	296 37	3,273	595 17	55	2 90			456	22 78		
Stoves and Castings	2,965	605 75	2,453	412 52	212	18 29	875	437 63	291	14 55	50	3 99
Iron not elsewhere described	4,077	582 54	7,315	1,333 68	64	3 46			825	41 23	2,527	243 38
Iron Safes	13	3 26	3	69								
Oil	818	162 45	349	48 82	51	5 10	269	120 40	189	9 45		
Oil Cake			61	13 41								
Salt	84,445	13,245 07	19,639	1,135 45	3,094	274 81			3,194	95 82	6,101	254 38
Sugar and Molasses	2,572	656 91	8,679	502 68	3,400	499 00	1,014	471 22	821	41 03	770	101 90
Vehicles and Agricultural Implements	140	34 89	463	45 25	6	60	9	4 72	95	4 73	3	23
Window Glass	582	123 55	290	142 08	11	37			126	6 28	19	2 39
Total Manufactures	132,900	21,489 25	70,507	7,315 88	12,025	1,294 27	8,144	2,379 72	8,475	350 91	12,873	960 81
MERCHANDISE.												
Coffee	1,581	407 63	59	9 03	28	4 13						
Coal	44,288	6,685 06	32,631	1,573 39	10,483	1,022 56	6,488	1,295 83	993	29 78	2,004	125 49
Fish	794	203 32	3,289	521 75	78	4 80	363	181 40	773	38 65	715	71 46
Furniture and Baggage	329	48 84	1,781	452 44	51	6 15	16	3 93	143	7 13	80	7 16
Gypsum	3,410	345 74	959	40 94	134	4 45						
Marble, Slate and Stone	4,829	761 13	9,105	355 71	331	32 94	764	43 93	56	2 22	22	90
Ores, [all kinds]	12,162	749 36	5,483	276 38	6,479	322 91					3,030	151 50
Rags, Junk and Oakum	157	36 18	601	69 23	17	1 65	87	29 09				
All other Merchandise not elsewhere included	9,054	3,068 15	9,749	4,185 49	3,478	442 70	2,502	1,872 93	2,365	98 40	5,268	1,164 72
Total Merchandise	76,604	12,305 41	63,657	7,484 36	21,079	1,842 29	10,220	3,427 11	4,330	195 98	11,119	1,521 23
Grand Totals—[Tonnage of Vessels and Passengers not included.]	709,611	125,909 26	911,768	56,173 51	176,693	16,409 48	88,521	13,534 90	88,696	5,654 17	472,505	10,457 03
Less drawback on Free Articles		1,208 45		4,326 58			Arrears.	824 05			Add Whfge. &c.	286 87
Grand Totals Tolls		124,700 81		51,846 94		16,409 48		14,358 95		5,654 17		10,743 90

No. 8.—**STATEMENT** shewing the Monthly Receipt of Tolls collected at the different Offices of the several Canals, during the year 1859.

CANALS AND OFFICES.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTALS.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Welland Canal.											
Chippawa	....	34 92	55 30	91 11	112 46	113 41	63 37	22 34	49 92	14 11	556 94
Colbourne	....	6,068 02	12,935 18	10,489 38	6,511 48	7,212 08	10,251 50	13,644 17	13,492 03	701 70	81,305 63
Dalhousie	....	1,903 81	4,717 86	3,813 55	3,249 76	4,254 78	6,297 35	5,188 29	4,321 73	217 52	33,964 65
Dunville	....	186 55	250 83	352 03	710 14	475 50	530 66	590 90	540 92	28 19	3,665 72
Maitland	....	4 89	52 35	49 74	705 94	70 48	60 96	133 44	74 49	....	1,152 29
Robinson	....	223 81	359 31	528 94	256 86	273 94	436 83	291 33	381 62	51 50	2,804 20
St. Catherines	....	138 42	144 90	196 41	130 23	118 47	132 63	195 77	168 87	25 65	1,251 38
Total Welland	....	8,560 42	18,515 73	15,521 19	11,676 87	12,518 66	17,773 30	20,066 24	10,029 58	1,038 82	124,700 81
St. Lawrence Canal.											
Beauharnois	....	....	108 06	102 51	137 99	119 87	119 58	136 10	80 86	....	804 07
Cornwall	....	6 90	20 50	39 20	24 62	41 25	18 07	17 45	14 02	....	182 01
Williamsburg	....	....	29 10	12 72	6 05	6 66	7 87	9 26	6 06	5 55	84 17
Montreal	....	1,220 73	7,578 23	6,761 20	5,667 63	6,234 20	6,961 80	8,100 75	6,011 29	....	49,135 83
Lachine	....	....	198 43	252 30	309 18	331 59	221 31	184 49	142 66	....	1,639 96
Total St. Lawrence	....	1,227 63	7,934 32	7,167 93	6,146 37	6,733 57	7,328 63	8,448 05	6,854 89	5 55	51,846 94
Chambly Canal.											
Chambly	....	271 46	1,923 70	1,770 94	1,353 03	1,161 00	1,434 49	1,689 29	2,290 73	....	11,894 64
St. John's	....	322 30	720 61	518 16	518 19	445 50	600 02	682 99	309 29	9 77	4,126 83
St. Ours	....	22 62	50 40	48 80	86 82	37 03	28 19	58 94	55 21	....	388 01
Total Chambly	....	616 38	2,694 71	2,337 90	1,958 04	1,643 53	2,062 70	2,431 22	2,655 23	9 77	16,409 48
Burlington Bay Canal.											
Hamilton	302 26	1,148 86	1,409 38	1,357 07	1,255 29	1,421 94	2,246 03	2,262 72	2,205 84	749 56	14,358 95
St Ann's Lock.											
St. Ann's	....	102 84	722 09	717 30	885 02	943 88	797 43	898 78	586 83	....	5,654 17
Ottawa and Rideau Canal.	....	1,064 40	1,250 92	1,195 68	1,329 35	1,279 61	1,552 17	1,366 12	1,116 47	580 09	10,743 90
Grand Totals	302 26	11,656 13	32,527 15	28,297 07	23,250 94	24,541 19	31,760 26	35,473 13	32,448 84	2,392 79	223,714 25

No. 9.—A RETURN of the Business of the WELLAND, ST. LAWRENCE, CHAMBLY, BURLINGTON BAY, OTTAWA and RIDEAU CANALS, ST. ANN'S, ST. OURS, and other Locks, shewing the Total Revenue from each Class or Rate of Toll on each Canal, during the year 1859.

ARTICLES.	Rates of Toll Levied. Welland. Up or Down. $ cts.	St. Lawrence. Up. $ cts.	St. Lawrence. Down. $ cts.	Chambly and St. Ours' Locks. Up or Down. $ cts.	Burlington Bay Canal. Up or Down. $ Cents.	St. Ann's Lock. Up or Down. $ Cents.	Welland Canal. Tons.	Welland Canal. Tolls. $ cts.	St. Lawrence Canal. Tons.	St. Lawrence Canal. Tolls. $ cts.	Chambly Canal. Tons.	Chambly Canal. Tolls. $ cts.	Burlington Bay Canal. Tons.	Burlington Bay Canal. Tolls. $ cts.	St. Ann's Locks. Tons.	St. Ann's Locks. Tolls. $ cts.	Ottawa and Rideau Canals and their Locks. Tons.	Ottawa and Rideau Canals and their Locks. Tolls. $ cts.
CLASS No. 1.																		
Steam and other Vessels per Ton Measurement	0 02½	0 02½	0 01¼	0 01¼	50 cts to 100	1½	856,918	17,795 84	765,636	7,449 41	198,052	2,282 10	108,068	1,137 75	203,126	2,539 08	323,221	1,526 02
CLASS No. 2.							Number.		Number.		Number.		Number.		Number.		Number.	
Passengers, 21 years and over, each	0 10	0 10	0 05	0 05		1	12,332	294 39	24,850	1,166 94	4,037	66 66			13,777	137 77	5,763	121 17
Do under 21 years, each	0 05	0 05	0 02½	0 02½		1												
CLASS No. 3.					cts.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.	
Apples, Onions, and other Vegetables, per Ton	15	0 14	0 14	0 10	Barrel, 3	3	622	72 41	3,261	448 66	737	73 61	207	66 36	2	10	111	9 16
Bark, "	"	"	"	"	Cord, 12½	"	894	65 89	1,432	77 49					529	15 87	2,298	100 88
Bricks, Lime and Sand, "	"	"	"	"	Ton, 17	"	1,415	151 13	6,803	292 46	2,278	205 37	355	59 09	242	7 26	237	8 01
Castings [broken], Pig, Scrap and Railroad Iron, "	"	"	"	"	Ton,	"	26,104	4,101 08	11,930	1,208 20	1,537	153 46	3,851	767 93	610	27 50	1,060	101 82
Cement, Clay and Water Lime, "	"	"	"	"	Barrel, 2	"	6,093	1,030 00	1,246	104 07	99	9 18	264	28 91	49	1 47	73	4 33
Coal, "	"	"	"	"	" 3	"	44,228	6,685 06	32,631	1,573 39	10,483	1,022 56	6,488	1,295 83	993	29 78	2,004	125 49
Corn, "	"	"	"	"	Bushel, ½	"	35,948	5,607 78	1,504	188 77	9	85	486	73 04	7	33	6	46
Gypsum, "	"	"	"	"	Barrel, 3	"	3,410	345 74	950	40 94	134	4 45						
Hemp, "	"	"	"	"	Ton, 33	"	137	21 43	10	1 44			21	6 81				
Ice, "	"	"	"	"	"	"	65	13 00										
Manganese and Manures, "	"	"	"	"	" 25	"	62	8 11			527	52 70	6	1 65	295	8 85	75	3 12
Marble and Slate, "	"	"	"	"	" 17	"	381	64 33	348	21 40	244	24 35			28	1 38	14	58
Ores, [all kinds], "	"	"	"	"	" 17	"	12,162	749 36	5,483	276 38	6,479	322 91					3,030	151 50
Potatoes, "	"	"	"	"	Bushel, ½	"	932	171 98	237	21 42	396	39 55	84	13 35	20	98	11	79
Salt, "	"	"	"	"	Free.	"	84,445	13,245 07	19,639	1,135 45	3,094	274 81			3,194	95 82	6,101	254 78
Stones, [wrought or unwrought], "	"	"	"	"	Ton, 17	"	4,448	696 80	8,757	334 31	87	8 59	764	43 93	28	84	8	32
Tobacco, [unmanufactured, &c], "	"	"	"	"	Cwt, 5	"	187	33 54	201	21 85	174	17 14	19	18 40				
Total Class No. 3							221,593	33,063 71	94,441	5,746 23	26,278	2,209 53	12,545	2,375 30	5,997	190 18	15,028	760 84
CLASS No. 4.																		
Ashes [Pot and Pearl], per Ton	20	0 22	0 22	0 10	Barrel, 12½	5	263	21 66	4,476	848 81	871	86 96	713	274 15	254	47 70	1,622	191 17
Bacon, Butter and Pork, "	"	"	"	"	"	"	1,915	420 96	3,225	510 11	708	69 88	90	57 54	592	29 58	1,016	144 08
Barley, Oats, Rye and other Grain, "	"	"	"	"	"	"	5,058	977 70	8,402	678 89	37,856	3,617 00	3,772	665 99	2,500	125 00	130	1 40
Beer, Cidar and Vinegar, "	"	"	"	"	"	"	183	34 98	440	81 98	72	7 05	136	38 05	45	2 25	3	39
Bran and Ship Stuff, "	"	"	"	"	"	"	1,941	87 20	253	49 95	86	8 55	12	6 40			2	9
Cattle, Sheep and Hogs, "	"	"	"	"	"	"	4	49	1,002	61 13	216	7 31	7	1 45	239	11 93	5	27
Corn Brooms and Pressed Hay, "	"	"	"	"	"	"	19	2 71	1,493	249 03	325	27 70	100	23 49	290	14 50	490	29 95
Cotton [Raw], "	"	"	"	"	"	"			2	33								
Flax, Flax and other Seeds, "	"	"	"	"	"	"	113	23 79	267	16 82	184	16 47			3	13		
Flour, "	"	"	"	"	"	"	37,494	6,597 79	64,002	11,468 53	3,634	454 85	6,061	1,382 00	1,584	79 20	1,991	227 18
Horns, Hoofs and Bones, "	"	"	"	"	"	"	116	24 60	82	17 34							4	25
Horses, "	"	"	"	"	"	"	93	22 70	383	54 13	10	55	6	80	80	3 98	2	20
Meal of Oats, Barley, Corn, &c., "	"	"	"	"	"	"	42	4 40	422	37 96	253	25 25			25	1 25	32	3 99
Nails, Spikes and Iron not elsewhere described, "	"	"	"	"	"	"	4,987	769 44	9,982	1,794 70	119	6 36			1,179	58 93	2,527	343 38
Oil, Lard and Tallow, "	"	"	"	"	"	"	1,112	226 71	1,244	192 47	116	11 55	272	122 20	189	9 45		
Oil Cake, "	"	"	"	"	"	"			61	13 41								
Rags, Junk and Oakum, "	"	"	"	"	"	"	157	36 18	601	69 23	17	1 65	87	29 09				
Stoves and other Iron Castings, "	"	"	"	"	"	"	2,965	605 75	4,253	412 52	212	18 29	875	437 63	291	14 55	50	3 99
Wheat, "	"	"	"	"	"	"	159,077	32,937 97	17,815	2,769 39	2	20	3,914	541 17	221	11 03	2,413	322 22
Window Glass, "	"	"	"	"	"	"	582	123 55	290	142 08	11	37			126	6 28	19	2 39
All other Agricultural produce not enumerated and not being merchandise, "	"	"	"	"	"	"	1,264	250 84	6,658	896 89	2,447	167 45	1	68	100	4 98	4	32
Total Class No. 4							217,385	43,169 42	123,553	21,365 70	47,139	4527 44	16,046	3,590 64	8,418	420 74	10,310	1,271 27
CLASS No. 5.																		
Beef, Bees Wax, Cheese and Hams, per ton	0 25	0 25	0 22	0 15	Beef, barrel, 7; Bees Wax, ct. 5; Cheese, " 10; Hams, barrel, 7	5	695	103 07	255	27 45			5	3 30				
Biscuit and Crackers, "	"	"	"	"	Barrel, 7	"			80	2 13	4	20					1	14
Carts, other Vehicles & Agricultural Implements, "	"	"	"	"	Ton, 50	"	140	34 89	463	45 25	6	60	9	4 72	95	4 73	3	23
Chalk and Whitening, "	"	"	"	"		"	148	33 74	113	17 95								
Charcoal, "	"	"	"	"	Ton, 25	"					1	5						
Coffee, "	"	"	"	"		"	1,581	407 63	59	9 03	28	4 13						
Copperas, "	"	"	"	"	Ton, 25	"	38	9 67	12	2 31	6	30						
Dye and Dye Stuffs, "	"	"	"	"		5	145	36 20	63	7 06								
Fish, "	"	"	"	"	Barrel, 7	"	794	203 32	3,289	521 75	78	4 80	363	181 40	773	38 65	715	71 46
Furniture and Baggage, "	"	"	"	"	Ton, 5	"	329	48 84	1,781	452 44	51	6 15	16	3 93	143	7 13	80	7 16
Glassware, Stone and Earthenware, "	"	"	"	"	" 40	"	906	236 25	1,651	358 16	161	16 63	212	85 06	258	12 90	345	34 54
Hides and Skins [Raw], "	"	"	"	"	Cwt. 20	"	140	37 78	210	40 32	35	5 25	87	15 49			27	4 17
Iron Safes, "	"	"	"	"		"	13	3 26	3	69								
Leather, "	"	"	"	"		"	41	10 27	99	21 23								
Mohagany, "	"	"	"	"		"	6	1 51										
Molasses and Sugar, "	"	"	"	"	Cwt. 40	"	2,572	656 91	8,679	502 68	3,400	499 00	1,014	471 22	821	41 03	739	101 90
Manilla, "	"	"	"	"	Ton, 33	"	211	55 82	57	5 69					58	2 88		
Paints and white Lead, "	"	"	"	"		"	274	68 50	233	54 08								
Pitch, Tar and Rosin, "	"	"	"	"		"	266	66 24	292	28 60	193	28 89					2	8
Ship Stores, "	"	"	"	"		"	5	1 26										
Soda Ash, "	"	"	"	"		"	643	161 27	315	56 10								
Spirits, Liquors, and Wines, "	"	"	"	"	Pipe or Brl. 10	"	634	153 71	942	148 90	65	2 85	206	74 54	246	12 28	104	10 30
Tin and Steel, "	"	"	"	"		"	434	109 47	606	134 15					102	5 08		
Tobacco [all kinds], "	"	"	"	"		"	9	2 34	93	12 66								
Tools [Mechanics], "	"	"	"	"		"	2	50	10	83	6	90						
Turpentine, "	"	"	"	"		"	105	26 32	30	2 36								
Wool, "	"	"	"	"	Ton, 50	"	149	37 18	1	22			2	11			16	2 42
Total Class No. 5							10,280	2,595 35	19,283	2,452 04	4,034	569 75	1,914	839 77	2,496	124 68	2,032	232 40
CLASS No. 6.																		
All Goods and Merchandise not elsewhere described, per Ton	0 50	0 50	0 27	0 15		5	3,045	2,631 47	8,585	3,994 97	2,745	364 63	2,496	1,871 28	2,365	118 25	5,191	1,179 52
CLASS No. 7.																		
Barrels, Empty, each	0 02	0 02	0 02	0 02	Ton, 12½	5	346	50 25	466	41 42	45	8 04	240	18 02	74	3 68	113	3 12
Barrel Hoops, per M.	0 03	0 03	"	"		"	8,117	274 82	1	30	141	28 20						
Boards and Sawed Lumber reduced to 1 inch, in Vessels per M.	0 20	0 15	0 10	0 10	M. 6¼	3	78,116	7,169 18	83,927	1,790 60	79,251	4,684 56	34,320	1,997 99	38,883	1,166 49	286,294	1,713 04
Do do in Raft, per M.	0 60	0 30	0 20	0 20	" "		5	75	305,972	779 23					6,106	183 18		
Fire Wood, per Cord	0 12½	0 25	0 25	0 10	Cord, 6¼	"	46,302	1,315 72	214,317	8,107 12	1,730	44 30	1,678	18 07	22,747	682 46	110,219	2,097 55
Saw Logs, 12 feet long, [if more in proportion, entering the Canal], each	0 03	0 03	0 03	0 02	Ton	5												
Do do leaving the Canal, each	0 03	0 03	0 03	0 02		5	9,446	593 02	538	57 78							38,444	1,150 66
Shingles, per M.	0 07	0 07	0 02	0 02½		2	424	280 20	72	12 09	66	19 57	52	31 50	516	10 32	171	17 27
Staves [Pipe Staves and Headings], per M.	1 50	1 50	1 50	0 50	Mille, 50	25	13,487	2,902 03	3,832	703 66			5,899	1,066 07				
Do [West India do and do], per M.	0 60	0 60	0 60	0 25	" 25	12½	11,233	1,881 74	6,740	1,084 60			12,024	548 19	20	2 44		
Do [Barrel do and do], per M.	0 30	0 20	0 20	0 15	" 25	7	3,540	368 07	3,033	211 56	18	1 05			730	51 10	2,080	110 84
Timber, [Square or Round, above 12 x 12, in vessels cubic feet], per M.	5 00	1 00	1 00	1 00	M. 100	25	33,965	8,474 69	5,710	130 56			1,307	40 32			996	28 79
Do do in Rafts, per M.	8 00	2 00	2 00	2 00	" 200	25	35,636	1,736 90	25,438	635 93	14,616	1,463 74						
Do [Round or Flatted, under 12 x 12 or Rail Road Ties, in Vessels, lineal feet], per M.	4 00	0 75	0 75	0 75	M. L. 75	12½	16,426	1,234 70	3,185	25 76					4	50	352	8 92
Do do in Raft, per M.	7 00	1 50	1 50	1 50	" 150	12½	61	16 05	12,294	229 03	80	2 44						
Other Timber and Wooden Articles 40 cubic feet to 1 ton, per Ton	0 40	0 40	0 40	0 25	Ton, 25	5	140	54 03	365	145 89	499	124 75			2	10	1,275	134 02
Split Posts and Fence Rails, in Vessels, per M.	0 40	0 40	0 40	0 20		"	13	4 77	10	2 00	13	87						
Do do do in Rafts, per M.	0 80	0 80	0 80	0 40		"												
Floats, each Lock passed, per 100	0 03	0 03	0 03	0 03		"	27	11		40 20	36	8 73			338	16 90		91 60
Traverses do "	0 01	0 01	0 01	0 01		"												
Boat Knees, each	0 05	0 02	0 02	0 02		"	23	2 06	6	48	2	3 12				6 30		
Total Class No. 7							257,308	26,359 09	665,006	13,998 21	96,497	6,389 37	55,520	3,720 16	69,420	2,127 47	439,944	5,355 81
Total Tolls								125,907 26		56,173 52		16,409 48		13,534 90		5,654 17		10,457 03
Less Tolls refunded								1,208 45		4,326 58			Arrears.	824 05			Wharfage.	286 87
Grand Totals, [Tonnage of Vessels and Passengers not included]							709,611	124,700 81	911,768	51,846 94	176,693	16,409 48	88,521	14,358 95	88,696	5,654 17	224,241	10,743 90

No. 10.—STATEMENT shewing the Number, National Character and Tonnage of Vessels which passed on and through the Welland, St. Lawrence, Chambly, Burlington Bay, Ottawa and Rideau Canals, St. Ann's, St. Ours, and other Locks during the year 1859, and the amount of Tolls collected thereon.

VESSELS	TOTALS.		From Canadian to Canadian Ports.				From Canadian to American Ports.				From American to Canadian Ports.				From American to American Ports.				TOTALS.				Amount of Tolls on Vessels.
			Up.		Down.		Up.		Down.		Up.		Down.		Up.		Down.		Up.		Down.		
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	$ cts.
WELLAND CANAL—																							
Canadian Sailing and other Vessels	2,026	291,126	561	86,024	553	78,329	168	27,798	313	39,162	264	31,573	167	28,[illegible]	......	......	......	......	993	145,395	1,033	145,731	5,580 95
Do Steamers	159	27,043	80	13,911	69	12,079	......	......	6	518	3	335	1	[illegible]	......	......	......	......	83	14,246	76	12,797	191 95
Total Canadian	2,185	318,169	641	99,935	622	90,408	168	27,798	319	39,680	267	31,908	168	28,[illegible]	......	......	......	......	1,076	159,641	1,109	158,528	5,772 00
American Sailing and other Vessels	1,487	401,857	15	1,697	11	1,965	70	17,537	117	21,008	66	8009	106	24,[illegible]	553	162,913	549	163,808	704	190,156	783	211,701	9,773 46
Do Steamers	887	136,892	2	50	3	197	2	399	324	26,788	322	26,471	3	[illegible]4	117	42,205	114	40,408	443	69,125	444	67,767	2,250 38
Total American	2,374	538,749	17	1,747	14	2,162	72	17,936	441	47,796	388	34,480	109	25,[illegible]4	670	205,118	663	204,216	1,147	259,281	1,227	279,468	12,023 84
Grand Total, Welland Canal	4,559	856,918	658	101,682	636	92,570	240	45,734	760	87,476	655	66,388	277	53,[illegible]4	670	205,118	663	204,216	2,223	418,922	2,336	437,996	17,795 84
ST. LAWRENCE CANAL—																							
Canadian Sailing and other Vessels	6,598	512,709	3,473	259,987	2,665	212,457	7	987	445	37,945	......	......	8	1,3[illegible]	......	......	......	......	3,480	260,974	3,118	251,735	3,877 58
Do Steamers	2,199	228,448	1,208	124,302	950	100,810	3	459	22	605	1	48	15	2,[illegible]4	......	......	......	......	1,212	124,809	987	103,639	3,268 74
Total Canadian	8,797	741,157	4,681	384,289	3,615	313,267	10	1,446	467	38,550	1	48	23	3,5[illegible]	......	......	......	......	4,692	385,783	4,105	355,374	7,146 32
American Sailing and other Vessels	222	23,039	3	120	......	......	21	3,918	47	2,620	103	5934	34	7,[illegible]5	1	40	13	3,272	128	10,012	94	13,027	275 15
Do Steamers	5	1,440	......	......	......	......	3	995	......	......	......	......	1	[illegible]3	......	......	1	85	3	995	2	445	27 94
Total American	227	24,479	3	120	......	......	24	4,913	47	2,620	103	5,934	35	7,45	1	40	14	3,357	131	11,007	96	13,472	303 09
Grand Total, St. Lawrence Canal	9,024	765,636	4,684	384,409	3,615	313,267	34	6,359	514	41,170	104	5,982	58	11,02[illegible]	1	40	14	3,357	4,823	396,790	4,201	368,846	7,449 41
CHAMBLY CANAL—																							
Canadian Sailing and other Vessels	1,794	129,837	189	7,182	162	9,090	726	58,066	......	......	......	......	717	55,[illegible]9	......	......	......	......	915	65,248	879	64,589	1,575 44
Do Steamers	493	19,992	180	8,301	179	8,202	68	1,779	......	......	......	......	66	1,[illegible]7	......	......	......	......	248	10,083	245	9,909	114 01
Total Canadian	2,287	149,829	369	15,486	341	17,202	794	59,848	......	......	......	......	783	57,206	......	......	......	......	1,163	75,331	1,124	74,498	1,689 45
American Sailing and other Vessels	845	45,847	3	148	5	223	420	22,782	......	......	......	......	416	22,634	1	60	......	......	424	22,990	421	22,857	562 77
Do Steamers	36	2,376	......	......	6	396	18	1,188	......	......	......	......	12	72	......	......	......	......	18	1,188	18	1,188	29 88
Total American	881	48,223	3	148	11	619	438	23,970	......	......	......	......	428	23,4[illegible]8	1	60	......	......	442	24,178	439	24,045	592 65
Grand Total, Chambly Canal	3,168	198,052	372	15,634	352	17,911	1,232	83,815	......	......	......	......	1,211	80,6[illegible]2	1	60	......	......	1,605	99,509	1,563	98,543	2,282 10
BURLINGTON BAY CANAL—																							
Canadian Sailing and other Vessels	376	52,754	......	......	155	19,479	......	......	221	33,275	......	......	......	......	......	......	......	......	......	......	376	52,754	660 25
Do Steamers	276	47,268	264	45,365	......	......	......	......	......	......	12	1,903	......	......	......	......	......	......	276	47,268	......	......	392 00
Total Canadian	652	100,022	264	45,365	155	19,479	......	......	221	33,275	12	1,903	......	......	......	......	......	......	276	47,268	376	52.754	1.052 25
American Sailing and other Vessels	44	7,967	......	......	2	334	......	......	42	7,633	......	......	......	......	......	......	......	......	......	......	44	7,967	84 00
Do Steamers	1	79	1	79	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	79	......	......	1 50
Total American	45	8,046	1	79	2	334	......	......	42	7,633	......	......	......	......	......	......	......	......	1	79	44	7,967	85 50
Grand Total, Burlington Bay Canal	697	108,068	265	45,444	157	19,813	......	......	263	40,908	12	1,903	......	......	......	......	......	......	277	47,347	420	60,721	1,137 75
ST. ANN'S LOCK CANAL—																							
Canadian Sailing and other Vessels	2,311	151,079	1,196	77,388	692	38,720	......	......	423	34,971	......	......	......	......	......	......	......	......	1,196	77,388	1,115	73,691	1,888 49
Do Steamers	860	47,311	447	24,770	395	21,961	......	......	18	580	......	......	......	......	......	......	......	......	447	24,770	413	22,541	591 39
Total Canadian	3,171	198,390	1,643	102,158	1,087	60,681	......	......	441	35,551	......	......	......	......	......	......	......	......	1,643	102,158	1,528	96,232	2,479 88
American Sailing and other Vessels	84	4,736	......	......	......	......	......	......	42	2,368	42	2,368	......	......	......	......	......	......	42	2,368	42	2,368	59 20
Do Steamers	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Total American	84	4,736	......	......	......	......	......	......	42	2,368	42	2,368	......	......	......	......	......	......	42	2,368	42	2,368	59 20
Grand Total, St. Ann's Lock	3,255	203,126	1,643	102,158	1,087	6),681	......	......	483	37,919	42	2,368	......	......	......	......	......	......	1,685	104,526	1,570	98,600	2,539 08
OTTAWA AND RIDEAU CANALS—																							
Canadian Sailing and other Vessels	4,411	259,009	2,189	129,209	2,222	124,800	......	......	......	......	......	......	......	......	......	......	......	......	2,189	129,209	2,222	129,800	1,202 21
Do Steamers	1,306	61,807	648	29,613	658	32194	......	......	......	......	......	......	......	......	......	......	......	......	648	29,613	658	32,194	326 37
Total Canadian	5,717	320,816	2,837	158,822	2,880	161,994	......	......	......	......	......	......	......	......	......	......	......	......	2,837	158,822	2,880	161,994	1,528 58
American Sailing and other Vessels	46	2,405	......	......	......	......	......	......	23	1,223	23	1,182	......	......	......	......	......	......	23	1,182	23	1,223	7 47
Do Steamers	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Total American	46	2,405	......	......	......	......	......	......	23	1,223	23	1,182	......	......	......	......	......	......	23	1,182	23	1,223	7 47
Grand Total, Ottawa and Rideau	5,763	323,221	2837	158,822	2,880	161,994	......	......	23	1,223	23	1,182	......	......	......	......	......	......	2,860	160,004	2,903	163,217	1,536 05
RECAPITULATION.																							
CANADIAN VESSELS AND STEAMERS—																							
Welland	2,185	318,169	641	99,935	622	90,[illegible]8	168	27,798	319	39,680	267	31,908	168	28,440	......	......	......	......	1,076	159,641	1,109	158,528	5,772 00
St. Lawrence	8,797	741,157	4,681	384,289	3,615	313,[illegible]7	10	1,446	467	38,550	1	48	23	3,557	......	......	......	......	4,692	385,783	4,105	355,374	7,146 32
Chambly	2,287	149,829	369	15,486	341	17,2[illegible]2	794	59,845	......	......	......	......	783	57,206	......	......	......	......	1,163	75,331	1,124	74,498	1,689 45
Burlington Bay	652	100,022	264	45,365	155	19,4[illegible]9	......	......	221	33,275	12	1,903	......	......	......	......	......	......	276	47,268	376	52,754	1,052 25
St. Ann's Lock	3,171	198,390	1,643	102,158	1,087	60,6[illegible]1	......	......	441	35,551	......	......	......	......	......	......	......	......	1,643	102,158	1,528	96,232	2,479 88
Rideau and Ottawa	5,717	320,816	2,837	158,822	2,880	161,9[illegible]4	......	......	......	......	......	......	......	......	......	......	......	......	2,837	158,822	2,880	161,994	1,528 58
Total Canadian Vessels	22,809	1,828,383	10,435	806,055	8,700	663,[illegible]21	972	89,089	1,448	147,056	280	33,859	974	89,203	......	......	......	......	11,687	929,003	11,122	899,380	19,668 48
AMERICAN VESSELS AND STEAMERS—																							
Welland	2,374	538,749	17	1,747	14	2,1[illegible]2	72	17,936	441	47,796	388	34,480	109	25,294	670	205,118	663	204,216	1,147	259,281	1,227	279,468	12,023 84
St. Lawrence	227	24,479	3	120	......	......	24	4,913	47	2,620	103	5,934	35	7,495	1	40	14	3,357	131	11,007	96	13,472	303 09
Chambly	881	48,223	3	148	11	619	438	23,970	......	......	......	......	428	23,426	1	60	......	......	442	24,178	439	24,045	592 65
Burlington Bay	45	8,046	1	79	2	334	......	......	42	7,633	......	......	......	......	......	......	......	......	1	79	44	7,967	85 50
St. Ann's Lock	84	4,736	......	......	......	......	......	......	42	2,368	42	2,368	......	......	......	......	......	......	42	2,368	42	2,368	59 20
Rideau and Ottawa	46	2,405	......	......	......	......	......	......	23	1,223	23	1,182	......	......	......	......	......	......	23	1,182	23	1,223	7 47
Total American Vessels	3,657	626,638	24	2,094	27	3,[illegible]15	534	46,819	595	[illegible]40	556	43,964	572	56,215	672	205,218	677	207,573	1,786	298,095	1,871	328,543	13,071 75
Grand Total, American and Canadian	26,466	2,455,021	10,459	808,149	8,727	666,[illegible]36	1,506	135,908	2,043	208,696	863	77,823	1,546	145,418	672	205,218	677	207,573	13,473	1,227,098	12,993	1,227,923	$32,740 23

NOTE.—This Table is computed from the aggregate number of trips each vessel made during the season of navigation. For the number and tonnage actually employed see Table No. 14.

No. 11.—COMPARATIVE STATEMENT of the Tonnage of Vessels and Goods passed through and on the undermentioned Canals for the years 1856, 1857, 1858, and 1859, distinguishing the Up and Down Trade.

PROPERTY AND VESSELS.	Welland.				St. Lawrence.			
	1856.	1857.	1858.	1859.	1856.	1857.	1858.	1859.
Tonnage of Property up	276,919	245,256	195,144	186,608	131,430	134,382	110,807	130,590
Do do down	699,637	655,816	659,968	523,003	503,106	459,270	494,751	781,178
Total Tonnage of Property up and down	976,556	901,072	855,112	709,611	634,536	593,652	605,558	911,768
Tonnage of Vessels up	594,266	582,282	582,406	418,922	367,142	351,324	386,799	396,790
Do do down	584,980	566,149	566,365	437,996	347,899	338,707	371,020	368,846
Total Tonnage of Vessels up and down	1,179,246	1,148,434	1,148,771	856,918	715,041	690,031	757,810	765,636
Grand Totals Tonnage of Property and Vessels up and down	2,155,802	2,049,506	2,003,883	1,566,529	1,349,577	1,283,683	1,363,368	1,677,404

PROPERTY AND VESSELS.	Chambly.				Burlington Bay.			
	1856.	1857.	1858.	1859.	1856.	1857.	1858.	1859.
Tonnage of Property up	107,878	112,634	105,806	143,447	47,642	32,952	21,195	18,179
Do do down	21,788	21,053	20,839	33,246	49,462	36,799	38,059	70,342
Total Tonnage of Property up and down	129,666	133,687	126,645	176,693	97,104	69,751	59,254	88,521
Tonnage of Vessels up	74,374	77,676	79,808	99,509	411,380	113,170	76,471	47,347
Do do down	76,696	80,388	80,015	98,543	38,663	29,240	76,562	60,721
Total Tonnage of Vessels up and down	151,070	158,064	159,823	198,052	450,043	142,410	153,033	108,068
Grand Totals Tonnage of Property and Vessels up and down	280,736	291,751	286,668	374,745	547,147	212,161	212,287	196,589

PROPERTY AND VESSELS.	St. Ann's Lock.				Ottawa and Rideau.			
	1856.	1857.	1858.	1859.	1856.	1857.	1858.	1859.
Tonnage of Property up	10,784	10,425	11,839	13,843	....	....	....	56,088
Do do down	158,617	138,420	142,605	74,853	....	....	....	416,417
Total Tonnage of Property up and down	169,401	148,845	154,444	88,696	....	....	224,241	472,505
Tonnage of Vessels up	90,179	92,683	93,536	104,526	....	....	....	160,004
Do do down	87,507	84,273	89,167	98,600	....	....	....	163,217
Total Tonnage of Vessels up and down	177,686	176,956	128,703	203,126	....	....	310,226	323,221
Grand Totals Tonnage of Property and Vessels up and down	347,087	325,801	337,147	291,822	....	....	534,467	795,726

No. 12.—COMPARATIVE STATEMENT of the Total movement of Property, Passengers, and Vessels on the WELLAND, ST. LAWRENCE, CHAMBLY, [including ST. OURS LOCK], BURLINGTON BAY, OTTAWA and RIDEAU CANALS, ST. ANN'S and other LOCK'S, for the year 1859 and three preceding years.

GOODS, WARES, AND MERCHANDISE.	Welland Canal.				St. Lawrence Canal.			
	1856.	1857.	1858.	1859.	1856.	1857.	1858.	1859.
Farm Stock	310	247	290	97	1,961	1,567	1,270	1,385
Forest	273,038	300,987	235,582	253,739	302,716	327,343	346,498	666,872
Manufactures	161,959	140,636	142,031	132,900	92,075	92,223	76,769	70,507
Merchandise	99,588	114,170	63,117	76,604	87,236	46,132	45,839	63,657
Vegetable Food	408,405	338,334	407,524	240,969	132,177	120,306	125,124	95,896
Other Agricultural Products	33,405	6,698	6,568	5,302	18,371	6,081	10,058	13,451
Total Tons	976,705	901,072	855,112	709,611	634,536	593,652	605,558	911,768
Passengers ... Number	17,424	17,232	10,599	12,332	38,530	31,962	20,962	24,850
No. of Vessels and Boats of all kinds	6,766	6,239	5,700	4,559	8,306	7,872	8,621	9,024
Total tonnage of Vessels and Boats do	1,179,246	1,148,434	1,148,771	856,918	715,041	690,031	757,810	765,636

GOODS, WARES, AND MERCHANDISE.	Chambly Canal.				Burlington Bay Canal.			
	1856.	1857.	1858.	1859.	1856.	1857	1858.	1859.
Farm Stock	10	44	104	226	18	45	47	13
Forest	87,822	89,758	71,709	96,452	9,559	19,528	17,973	55,280
Manufactures	10,321	9,874	10,553	12,025	18,365	14,557	10,210	8,144
Merchandise	10,078	14,440	14,896	21,079	26,307	17,775	10,807	10,220
Vegetable Food	1,519	18,117	26,345	42,973	46,442	17,650	19,004	14,536
Other Agricultural Products	19,916	1,454	3,038	3,938	2,413	196	1,213	328
Total Tons	129,666	133,687	126,645	176,693	97,104	69,751	59,254	88,521
Passengers ... Number	1,777	2,423	2,299	4,037	....	....	....	....
No. of Vessels and Boats of all kinds	2,617	2,631	2,682	3,169	885	692	711	697
Total tonnage of Vessels and Boats do	151,070	158,064	159,823	198,052	450,043	142,410	153,033	856,918

GOODS, WARES, AND MERCHANDISE.	St. Ann's Lock.				Ottawa and Rideau Canals and their Locks.			
	1856	1857	1858.	1859	1856.	1857.	1858.	1859.
Farm Stock	287	285	284	319	....	....	....	7
Forest	154,457	133,381	138,240	69,875	....	....	197,543	442,249
Manufactures	6,692	6,876	8,945	8,175	....	....	12,560	12,873
Merchandise	3,916	5,072	3,047	4,330	....	....	10,653	11,119
Vegetable Food	1,656	2,185	3,027	4,359	....	....	2,805	4,696
Other Agricultural Products	2,399	1,046	901	1,338	....	....	740	1,561
Total Tons	169,401	148,845	154,444	88,696	....	....	224,241	472,505
Passengers ... Number	12,731	11,614	11,232	13,777	....	....	....	3,618
No. of Vessels and Boats of all kinds	2,874	2,849	2,922	3,255	....	....	5,159	5,763
Total tonnage of Vessels and Boats do	177,686	176,956	182,703	203,126	....	....	310,226	323,221

Welland.		St. Lawrence.		Chambly.		Burlington Bay.		St. Ann's Lock.		Ottawa and Rideau Canals and their Locks.	
Percentage of Decrease, in 1859 Compared with 1858.	Percentage of Decrease of 1859 compared with 1856.	Percentage of Increase of 1859 Over 1858.	Percentage of Increase of 1859 over 1856.	Percentage of Increase in 1859 Over 1858.	Percentage of Increase of 1859 over 1856.	Percentage of Increase in 1859 Over 1858	Percentage of Decrease of 1859 compared with 1856.	Percentage of Decrease of 1859 Compared with 1858	Percentage of Decrease of 1859 compar'd with 1856.	Percentage of Increase in 1859 Over 1858.	Percentage of Increase of 1859 over 1856.
[A] 17.02	27.45	50.56.	43.69.	39.51.	36.26.	49.89.	8.84.	42.55.	47.65.	110.71	....

The average increase of the movement of Property on the six Canals in 1859, compared with 1858 is 30.20 per cent.

The average decrease of the movement of Property on the six Canals in 1859 with 1856 is 10.66 per cent.

(A) This table of percentage applies to the first line of Totals shewing the movement of Property.

No. 13.—AN ACCOUNT of the Gross and Net Revenue derived from Canal Tolls for the year 1859, as compared with the five preceding years.

	YEARS.					
	1854.	1855.	1856.	1857.	1858.	1859.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Gross receipt of tolls	331,061 25	324,691 42	381,582 08	330,107 33	293,322 32	223,714 25
Charges for collection (1)	74,865 57	78,951 07	101,665 03	107,548 80	106,885 23	131,344 61
Net revenue (repairs and incedental expenses) not deducted..	256,195 68	245,740 35	279,917 05	222,558 53	186,437 09	92,369 64

Average yearly net Revenue........ $ 216,869 72

(1) This covers expenses attending Lock Tenders and Masters as well as Collectors of Tolls.

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No. 14.—STATEMENT of the Number and Tonnage of all kinds of Vessels passing through and on the Canadian Canals, during the Season of Navigation, in the year 1859, and a Table shewing the Number and average Tonnage in Six Classes.

CANADIAN.

SAILING AND OTHER VESSELS.						STEAM VESSELS.					
Tonnage.	No.	Total Tonnage.	Tonnage.	No.	Total Tonnage.	Tonnage.	No.	Total Tonnage.	Tonnage.	No.	Total Tonnage.
		Brought up.		572	44,383			Brought up.		60	3,091
4	12	48	170			4	1	4	100	2	200
8	10	80		3	510	10	1	10	101	1	101
10	7	70	175	6	1,050	16	2	32	103	1	103
15	20	300	180	4	720	20	4	80	105	1	105
20	8	160	185	3	555	22	1	22	120	1	120
25	9	225	190	1	190	24	1	24	128	1	128
30	4	120	195	2	390	31	1	31	132	1	132
35	6	210	200	8	1,600	32	1	32	140	1	140
40	34	1,360	205	3	615	35	2	70	144	1	144
45	17	765	210	2	420	36	1	36	150	1	150
50	32	1,600	215	1	215	39	1	39	156	1	156
55	19	1,045	220	3	660	40	4	160	160	1	160
60	28	1,680	225	3	675	41	1	41	170	2	340
65	13	845	230	2	460	42	1	42	173	1	173
70	37	2,590	235	3	705	43	2	86	176	1	176
75	28	2,100	240	2	480	44	1	44	184	1	184
80	39	3,120	245	1	245	48	4	192	186	1	186
85	31	2,635	250	3	750	50	2	100	195	1	195
90	19	1,710	255	3	765	52	3	156	210	1	210
95	18	1,710	260	4	1,040	53	1	53	221	2	442
100	37	3,700	265	2	530	54	1	54	223	1	223
105	13	1,365	270	3	810	56	4	224	225	1	225
110	18	1,980	275	1	275	59	1	59	228	1	228
115	19	2,185	280	2	560	60	1	60	250	2	500
120	25	3,000	285	1	285	63	1	63			
125	12	1,500	290	5	1,450	64	2	128			
130	10	1,300	295	1	295	68	1	68			
135	9	1,215	300	2	600	72	2	144			
140	4	560	310	3	930	75	1	75			
145	3	435	320	4	1,280	79	2	158			
150	18	2,700	330	1	300	80	2	160			
155	4	620	340	3	1,020	88	3	264			
160	7	1,120	355	5	1,775	93	2	186			
165	2	330	365	1	365	95	1	95			
						99	1	99			
Carried up.	572	44,383	Totals.	663	66,903	Carried up.	60	3,091	Totals.	88	7,812

AMERICAN.

SAILING AND OTHER VESSELS.						STEAM VESSELS.		
Tonnage.	No.	Total Tonnage.	Tonnage.	No.	Total Tonnage.	Tonnage.	No.	Total Tonnage.
			Bought up.	265				
10	8	80	180	3	17,590	10	1	10
15	6	90	185	2	540	25	1	25
20	6	120	190	4	370	30	1	30
25	7	175	195	5	760	35	1	35
30	6	180	200	3	975	40	1	40
35	11	385	205	2	600	52	1	52
40	21	840	210	7	410	54	1	54
45	30	1,350	215	3	1,470	66	1	66
50	33	1,650	220	2	645	80	1	80
55	22	1,210	225	1	440	85	1	85
60	24	1,440	230	10	225	104	1	104
65	12	780	235	4	2.300	107	1	107
70	17	1,190	240	5	940	115	1	115
75	3	225	245	1	1,200	125	1	125
80	1	80	250	14	245	155	1	155
85	2	170	255	8	3,500	225	1	225
90	3	270	260	4	2,040	298	1	298
95	1	95	265	7	1,040	321	1	321
100	9	900	270	5	1,855	326	1	326
105	2	210	275	3	1,350	341	1	341
110	1	110	280	18	825	344	1	344
115	1	115	390	11	5,040	349	1	349
120	6	720	300	24	3,190	352	3	1,056
125	2	250	320	12	7,200	354	1	354
130	1	130	330	6	3,840	360	1	360
135	2	270	340	12	1,980	367	2	734
140	2	280	350	22	4,080	372	1	372
145	2	290	360	11	7,700	375	1	375
150	1	150	370	23	3,960	378	1	378
155	2	310	380	16	8,410	385	1	385
160	5	800	390	14	6,080	394	1	394
165	3	495	400	2	5,460	396	1	596
170	9	1,530	421	3	800			
175	4	709	457	1	1,236			
					457			
Carried up.	265	17,590	Totals.	533	98,753	Totals.	35	8,091

NUMBER AND AVERAGE TONNAGE OF ALL VESSELS DIVIDED INTO SIX CLASSES.

CANADIAN.

Class.	Sailing and Other Vessels.	No.	Tonnage.	Class.	Steam Vessels.	No.	Tonnage.
1	250 to 365 Tons	44	13,030	1	250 Tons	2	500
2	200 to 250 Tons	28	6,075	2	200 to 250 Tons	6	1.328
3	150 to 200 Tons	50	8,185	3	150 to 200 Tons	10	1,720
4	100 to 150 Tons	150	17,240	4	100 to 150 Tons	10	1,173
5	50 to 100 Tons	264	19,035	5	50 to 100 Tons	31	2,146
6	Under 50 Tons	127	3,338	6	Under 50 Tons	29	945
	Totals	663	66,903		Totals	88	7,812

AMERICAN.

Class.	Sailing and other Vessels.	No.	Tonnage.	Class.	Steam Vessels.	No.	Tonnage.
1	250 to 457 Tons	216	70,043	1	250 to 396 Tons	19	6,783
2	200 to 250 Tons	38	8,475	2	200 to 250 Tons	1	225
3	150 to 200 Tons	38	6,630	3	150 to 200 Tons	1	165
4	100 to 150 Tons	28	3,275	4	100 to 150 Tons	4	451
5	50 to 100 Tons	118	7,110	5	50 to 100 Tons	5	337
6	Under 50 Tons	95	3,220	6	Under 50 Tons	5	140
	Totals	533	98,753		Totals	35	8,091

No. 15.—COMPARATIVE STATEMENT shewing the quantity of each article transported on the Provincial Canals, during the years 1858 and 1859, and also the amount of tolls paid thereon.

ARTICLES.	1858.		1859.	
	Tons.	Tolls.	Tons.	Tolls.
		$ cts.		$ cts.
Apples, Onions, and other Vegetables	1,355	187 62	4,940	671 30
Ashes (Pot and Pearl)	6,967	1,030 22	8,899	1,470 45
Bacon	69	19 54	14	2 87
Bark	3,157	146 56	5,153	260 43
Barley and Barley Meal	14,731	1,561 27	25,173	2,576 61
Beef	1,048	334 19	422	99 74
Beer, Cider, and Vinegar	686	124 96	879	164 70
Bees Wax	....	....	....	....
Biscuit and Crackers	27	1 99	35	2 47
Bran and Ship Stuff	2,783	420 79	4,294	152 19
Brick, Lime and Sand	6,520	629 24	11,299	723 32
Butter	1,815	236 79	914	160 61
Carts and Vehicles	457	79 26	374	51 02
Cattle	868	144 47	896	32 75
Cement and Water Lime	7,125	1,167 90	7,194	1,112 39
Chalk and Whiting	....	....	261	51 69
Charcoal	16	4 14	1	0 05
Cheese	142	34 03	173	39 03
Clay	157	26 78	630	65 47
Clover and other Seeds	219	38 14	296	38 30
Coal	73,295	9,935 30	96,887	10,732 11
Coffee	1,405	446 77	1,668	420 79
Copperas	22	5 42	56	12 28
Corn and Corn Meal	106,915	20,935 96	38,027	5,881 02
Dye and Dye Stuffs	....	....	205	43 26
Fish	4,154	922 58	6,012	1,021 38
Flax and Flax Seeds	228	17 95	271	18 91
Flour	121,560	27,707 45	114,766	20,209 55
Furniture and Baggage	1,818	463 07	2,400	525 65
Gypsum	2,949	149 44	4,503	391 13
Hams	435	165 36	360	105 07
Hemp	103	20 03	168	29 68
Hides and Skins (Raw)	531	158 93	499	103 01
Hogs	234	19 36	265	23 26
Horns, Hoofs and Bones	201	23 37	202	42 19
Horses	620	130 48	574	82 36
Ice	....	....	65	13 00
Iron, Bloom and Broken Castings	724	140 18	594	51 72
Do Pig and Scrap	16,252	2,553 54	21,656	2,917 60
Do Railroad	47,566	7,302 25	22,840	3,390 67
Do Stoves and Castings	9,386	2,839 34	6,846	1,492 73
Do Safes	....	....	16	3 95
Do all other not elsewhere described	18,319	2,800 71	14,808	2,304 29
Lard	531	150 32	903	159 43
Leather	....	....	140	31 50
Mahogany	....	....	6	1 51
Manganese and Manures	1,128	82 38	965	74 43
Manilla	349	90 98	326	64 39
Marble	684	96 35	621	71 65
Mechanics' Tools	11	2 65	18	2 23
Molasses	2,855	520 81	6,011	799 50
Nails	3,602	753 94	3,291	533 62
Oats and Oatmeal	30,868	4,811 70	33,067	3,542 74
Totals Carried up	494,367	$89,350 36	448,883	$62,771 68

ARTICLES.	1858.		1859.	
	Tons.	Tolls.	Tons.	Tolls.
		$ cts.		$ cts.
Brought up	494,367	89,350 36	448,883	62,771 68
Oil	989	213 03	1,676	346 22
Oil Cake and Oil Meal	228	52 96	61	13 41
Ores, all sorts	17,563	1,007 74	27,154	1,500 15
Pitch, Tar and Rosin	....	....	753	123 81
Ploughs and Agricultural Implements	470	91 28	342	39 40
Pork	4,218	826 23	6,618	1,068 67
Potatoes	756	120 09	1,680	248 07
Pressed Hay and Broom Corn	81	4 70	2,717	357 38
Rags, Junk and Oakum	632	97 43	862	136 15
Raw Cotton	36	9 00	2	0 33
Rye and Rye Meal	993	206 23	203	23 30
Salt	116,907	20,154 74	116,473	15,005 53
Sheep	273	29 01	312	26 54
Ship Stores	....	....	5	1 26
Slate	698	71 90	394	40 39
Soda Ash	....	....	958	217 27
Spikes	533	94 74	695	134 90
Stone, Glass and Earthenware	3,241	824 80	3,533	743 54
Stone	20,262	1,246 23	14,092	1,084 79
Sugar	11,687	2,899 79	11,245	1,473 24
Tallow	299	69 51	324	56 73
Tin and Steel	1,131	290 63	1,142	248 70
Tobacco	392	73 44	683	105 93
Turpentine	....	....	135	28 68
Wheat	303,873	89,044 22	183,442	37,581 98
Whiskey, other Spirits and Wines	2,542	707 76	2,197	401 98
White Lead and Paints	....	....	507	122 58
Window Glass	1,122	248 15	1,028	274 67
Wool	185	52 13	168	39 93
All Agricultural Products not elsewhere described	11,189	2,215 73	10,418	1,639 00
All Goods and Merchandise do do	24,901	12,081 58	24,427	10,983 97
TIMBER, &c.				
Barrel Hoops	494	165 88	8,259	303 32
Boards, all kinds, and Sawed Lumber	371,877	16,426 39	912,874	19,485 12
Boat Knees	69	12 92	31	8 89
Empty Barrels	778	80 95	1,284	124 53
Fire Wood	421,926	10,367 27	396,993	12,265 12
Saw Logs	43,400	1,885 25	48,428	1,801 46
Shingles	468	121 67	1,301	370 95
Staves, all kinds	68,047	8,697 96	62,637	8,931 45
Timber and Wooden Articles	98,107	12,382 81	152,857	14,591 13
Grand Totals [Tonnage of Vessels and Passengers not included]	2,025,245	....	2,447,794	....
Passengers—Total number	45,091	1,608 41	58,614	1,786 93
Vessels—Total Tonnage	2,712,366	39,552 23	2,455,021	32,740 20
Tolls	....	314,471 30	....	229,249 28
Less drawback	....	12,036 92	....	5,535 03
Grand Total Tolls	....	302,434 38	....	$223,714 25

No. 16.—AN ACCOUNT of the Gross Revenue derived from Canal Tolls during the year 1859.

	$ Cts.
Welland Canal	124,700 81
St. Lawrence Canal	51,846 93
Chambly Canal, including St. Ours Locks	16,409 48
Burlington Bay Canal	14,358 95
St. Ann's Lock	5,654 17
Ottawa and Rideau Canals and their Locks	10,743 90
Total Tolls collected $	223,714 25

No. 17.—AN ACCOUNT of the Gross and Net Revenue derived from all Sources from the Provincial Canals of Canada, for the year 1859.

			$ Cts.
Gross Amount of Tolls			229,249 28
Do Welland Canal, Damages and Fines, $4,195 00	Rents $10,545 92		14,740 92
Do St. Lawrence Canal, do do do $1,519 71,	Rents $18,437 00		19,956 71
Storeage and Winterage			1,001 41
Do Chambly Canal, Fines, $91 07	Rents, $20 00		111 07
Do St. Ann's Lock, Fines			5 00
Do Ottawa and Rideau Canals, Winterage, &c			286 87
Gross Revenue from all Sources $			265,351 26
Less Charges for Collectors' Salaries, Lock Tenders, Masters, &c		$131,344 61	
Do Repairs and other Incidental Expenses		79,069 14	215,948 78
Do Tolls Refunded on Free Goods		5,535 63	
Net Revenue, all Incidental Expenses deducted $			49,402 48

No. 1.

GENERAL STATEMENT OF IMPORTS,

BEING A DETAILED ACCOUNT

OF THE

PRINCIPAL ARTICLES

OF

BRITISH AND FOREIGN MERCHANDIZE,

ENTERED FOR CONSUMPTION IN CANADA,

During the year ending the 31st December, 1859, shewing the Quantity and Value of each Article, and indicating from what Country imported.

No. 1.—GENERAL STATEMENT OF IMPORTS, being a detailed Account of the principal Articles of British and Foreign Merchandise entered for Consumption in Canada, during the year ending 31st December, 1859, showing the Quantity and Value of each Article imported at the undermentioned Ports, and indicating from what Country imported.

PORTS.	Total Quantity.	Total Value.	WHISKEY—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
	Gallons.	$	$	$	$	$	$
Hamilton	9,887	4,077				4,077	
London	1,556	679	142			537	
Montreal	20,181	14,590	12,397			2,193	
Prescott	7,153	3,069				3,069	
Quebec	7,338	4,249	2,639			1,610	
Queenston	1,864	591				591	
Toronto	531	350	243			107	
Other Ports	7,468	3,041	50	283		2,708	
Totals	55,978	30,646	15,471	283		14,892	
			COFFEE, Green.				
	Lbs.	$	$	$	$	$	$
Brantford	30,437	3,782				3,782	
Dalhousie	26,294	3,292				3,292	
Guelph	38,906	4,713				4,713	
Hamilton	352,068	43,585				43,585	
Kingston	100,095	11,970				11,970	
London	80,296	10,186				10,186	
Montreal	620,670	75,226	3,473			70,042	1,711
Quebec	239,694	26,970	471			26,499	
Toronto	424,336	52,282				52,282	
Other Ports	190,712	24,537	555	1,586		22,396	
Totals	2,103,508	256,543	4,499	1,586		248,747	1,711

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies, North America.	British Colonies, West Indies.	United States.	Foreign Countries.
			TEA.				
	Lbs.	$	$	$	$	$	$
Belleville	79,627	28,983				28,983	
Brantford	77,965	36,145				36,145	
Brockville	128,867	43,003				43,003	
Bytown	210,559	70,918				70,918	
Cobourg	96,791	43,417	507			42,910	
Dalhousie	49,263	20,075				20,075	
Guelph	79,122	31,756	146			31,610	
Hamilton	626,749	255,033	1,227			253,806	
Hope	50,789	21,812				21,812	
Kingston	314,903	105,625				105,575	50
London	404,309	153,580				153,580	
Montreal	2,411,291	717,320	109,897	3,697		497,020	106,706
Prescott	65,301	19,559				19,559	
Quebec	608,496	164,795	28,704	516		135,575	
Toronto	900,304	329,912	24			329,888	
Other Ports	735,359	288,268	3,743	3,035		280,880	610
Totals	6,839,695	2,330,201	144,248	7,248		2,071,339	107,366
			BRANDY.				
	Gallons.	$	$	$	$	$	$
Hamilton	1,150	1,656	34			274	1,348
Kingston	1,497	3,177				393	2,784
Montreal	27,437	31,475	3,402			1,885	26,188
Quebec	6,869	7,349	729			2,594	4,026
Queenston	425	546	285			261	
Toronto	650	1,157	53			1,104	
Other Ports	208	283	105			130	48
Totals	38,236	45,643	4,608			6,641	34,394

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	GIN—IMPORTED FROM Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Gallons.	$	$	$	$	$	$
Gaspé	1,667	666	666				
Hamilton	1,098	425	105			257	63
London	104	94				94	
Montreal	77,276	31,914	26,821				5,093
New Carlisle	874	402	344	58			
Quebec	42,685	16,566	13,063			115	3,388
Toronto	1,106	589	91			425	73
Other Ports	798	363	168	57		138	
Totals	125,508	51,019	41,258	115		1029	8,617
			RUM.				
	Gallons.	$	$	$	$	$	$
Montreal	14,638	8,761	6,633	270		946	912
Quebec	2,532	1,880	1,880				
Queenston	551	277	114			163	
Toronto	577	427	336			91	
Other Ports	775	524	185	181		137	21
Totals	19,073	11,869	9,148	451		1337	933
			SPIRITS AND STRONG WATERS.				
	Gallons.	$	$	$	$	$	$
Hamilton	132	79				79	
Montreal	332	232				22	210
Owen's Sound	288	75				75	
Quebec	166	103	5			85	13
Other Ports	48	28				28	
Totals	966	517	5			289	223
			CORDIALS.				
	Gallons.	$	$	$	$	$	$
Montreal	2,376	3,686	2,805			190	691
Quebec	184	301	6				295
Other Ports	53	122	53			69	
Totals	2,613	4,109	2,864			259	986
			CIGARS.				
	Lbs.	$	$	$	$	$	$
Hamilton	2,044	2,648				2,648	
Hope	1,119	347				347	
Montreal	17,699	16,471	2,442			12,884	1,146
Quebec	5,345	5,349				4,916	434
Toronto	5,167	1,520				1,520	
Other Ports	2,059	3,387				3,387	
Totals	33,433	29,722	2,442			25,701	1,579
			SUGAR—Refined, or equal to Refined.				
	Lbs.	$	$	$	$	$	$
Bytown	20,121	1,963				1,963	
Dalhousie	44,180	4,436	212			4,224	
Guelph	21,375	2,073				2,073	
Hamilton	198,736	18,075				18,075	
Kingston	20,114	1,877	250			1,627	
London	87,879	8,017				8,017	
Montreal	591,151	48,244	23,934			8,523	15,787
Quebec	197,688	16,426	6,390			5,885	4,151
Toronto	150,149	13,053				13,653	
Other Ports	131,764	12,845	214	70		12,561	
Totals	1,463,157	127,609	31,000	70		76,601	19,938

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	ALE, BEER AND PORTER, in Casks—IMPORTED FROM: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
	Gallons.	$	$	$	$	$	$
Amherstburgh	1,362	312				312	
Fort Erie	1,646	238				238	
Hamilton	1,565	354	354				
Kingston	100	127	127				
London	2,243	689	370			319	
Montreal	21,575	6,511	6,511				
Quebec	5,063	1,634	1,634				
Sault Ste. Marie	647	162	4			158	
Toronto	1,302	367	306			61	
Windsor	9,105	1,904				1,904	
Other Ports	2,677	387				387	
Totals	47,285	12,685	9,306			3,379	

ALE, BEER AND PORTER, in Bottles.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Dozens.	$	$	$	$	$	$
Hamilton	700	677	677				
Kingston	100	110	110				
Montreal	12,601	12,133	12,133				
Quebec	3947	4,011	4,002				9
Toronto	632	734	730			4	
Other Ports	98	170	76			94	
Totals	18,078	17,835	17,728			98	9

BLACKING.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Hamilton		270				270	
Kingston		225	81			144	
London		241				241	
Montreal		3,693	2,908			785	
Quebec		1,721	206			1,515	
Toronto		97				97	
Windsor		84				84	
Other Ports		845	13			832	
Totals		7,176	3,208			3,968	

COFFEE—Ground, or Roasted.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Chatham	1,260	162				162	
Coaticook	1,125	132				132	
Gaspé	1,700	191	191				
Montreal	16,504	712				712	
New Carlisle	3,578	433	420	6		7	
Sarnia	930	124				124	
Windsor	1,072	121				121	
Other Ports	9,756	1,177		48		1,129	
Totals	35,925	3,052	611	54		2,387	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
			CINNAMON, MACE AND NUTMEGS—IMPORTED FROM				
	Lbs.	$	$	$	$	$	$
Brantford	511	218				218	
Dalhousie	873	371				371	
Hamilton	3,483	1,301				1,301	
Kingston	1,398	457				457	
London	947	461				461	
Montreal	47,306	13,063	8,028			4,896	139
Quebec	4,025	905	64			841	
Toronto	2,447	1,097	232			865	
Other Ports	1,725	763	2			761	
Totals	62,715	18,636	8,326			16,171	139
			SPICES—including GINGER, PIMENTO AND PEPPER, Ground.				
	Lbs.	$	$	$	$	$	$
Brantford	3,602	317				317	
Brockville	2,403	218				218	
Cobourg	1,776	237	13			224	
Hamilton	2,616	285				285	
Kingston	2,056	153	10			143	
London	3,464	387				387	
Montreal	28,887	1,275	306			969	
Quebec	9,513	927		35		892	
Toronto	1,465	145				145	
Other Ports	8,054	917	4	18		895	
Totals	63,894	4,861	333	53		4,475	
			DRIED FRUITS.				
	Lbs.	$	$	$	$	$	$
Brantford	30,160	2,408				2,408	
Clifton	60,807	3,451				444	3,007
Guelph	33,591	1,444				1,444	
Hamilton	220,555	15,664				15,061	
Kingston	107,437	6,903	472			6,491	
London	108,108	7,772				7,772	
Montreal	1,533,751	93,923	24,585			52,636	16,702
Quebec	237,022	15,124	4,250			6,984	3,890
Toronto	272,842	17,961	1,318			16,643	
Other Ports	134,946	10,058	129	179		9,750	
Totals	2,739,819	174,768	30,754	179		120,236	23,599
			PATENT MEDICINES, AND MEDICINAL PREPARATIONS.				
		$	$	$	$	$	$
Brockville		1,334				1,334	
Bytown		1,184				1,184	
Hamilton		4,199				4,199	
Kingston		1,422	97			1,325	
London		2,149				2,149	
Montreal		26,665	6,057			20,575	33
Newcastle		3,581				3,581	
Quebec		3,067	809	185		2,073	
Toronto		7,039	772			6,267	
Other Ports		8,347	67	20		8,251	
Totals		58,987	7,802	214		50,938	33

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	MOLASSES—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
	Gallons.	$	$	$	$	$	$
Amherst	10,538	3,104		3,088		16	
Gaspé	12,378	3,380		3,343		37	
Hamilton	36,305	10,615				10,645	
Kingston	7,296	1,568				1,568	
London	8,903	2,530				2,530	
Montreal	705,799	123,052		6,458		104,177	12,417
New Carlisle	16,937	4,597		4,541		56	
Quebec	235,900	49,133		5,090		44,043	
Toronto	31,762	9,310			530	8,780	
Windsor	12,262	4,853				4,853	
Other Ports	70,734	24,973				24,973	
Totals	1,148,814	237,145		22,520	530	201,678	12,417
			SUGAR—other than Refined.				
	Lbs.	$	$	$	$	$	$
Brantford	247,395	15,102				15,102	
Clifton	188,427	11,658				11,658	
Dalhousie	350,573	21,399				21,399	
Guelph	240,067	13,060				13,060	
Hamilton	2,607,490	150,847				150,847	
Kingston	1,118,451	61,238				61,238	
London	879,377	52,721				52,721	
Montreal	8,990,312	1,031,302	94,993	20,816		865,025	50,468
Quebec	2,136,963	125,720	15	21,925		102,258	1,522
Toronto	2,513,269	149,058		3,214		145,844	
Windsor	160,303	11,373				11,373	
Other Ports	1,951,476	121,485	101	3,835		117,549	
Totals	21,384,103	1,764,963	95,109	49,790		1,568,074	51,990

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			SNUFF.				
	Lbs.	$	$	$	$	$	$
Belleville	1,144	200				200	
Brantford	838	170				170	
Hamilton	11,619	2,083				2,083	
Kingston	3,110	588				588	
London	3,993	768				768	
Montreal	1,643	258				258	
Toronto	2,156	377				377	
Other Ports	8,213	1,609	19	1		1,589	
Totals	32,716	6,053	19	1		6,033	
			SOAP.				
	Lbs.	$	$	$	$	$	$
Amherstburgh	12,213	621				621	
Gaspé	8,006	486	478	8			
Hamilton	11,302	1,346	771			575	
Kingston	5,484	593	42			551	
Montreal	467,358	28,995	23,595			1,950	3,450
New Carlisle	6,494	406	397	9			
Quebec	284,724	11,047	10,842			130	75
Toronto	10,475	1,694	1,144			550	
Windsor	16,434	950				950	
Other Ports	57,038	3,638	94	189		3,355	
Totals	879,528	49,776	37,363	206		8,682	3,525

No 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	STARCH—IMPORTED FROM: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Dalhousie	8,457	511				511	
Hamilton	56,692	3,490				3,490	
Kingston	22,941	1,302	24			1,278	
London	14,214	951				951	
Montreal	289,596	18,772	9,250			9,522	
Quebec	115,013	6,769				6,769	
Toronto	113,140	6,827				6,827	
Windsor	4,746	310				310	
Other Ports	41,603	3,135	41	12		3,082	
Totals	669,402	42,070	9,315	12		32,743	

TOBACCO. Manufactured.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Brantford	54,258	10,048				10,048	
Brockville	89,812	14,626				14,626	
Bytown	100,575	15,733				15,733	
Cobourg	57,614	10,559				10,559	
Guelph	73,084	11,633				11,633	
Hamilton	424,568	76,565				76,565	
Kingston	184,233	27,680				27,680	
London	240,849	40,369				40,369	
Montreal	927,725	141,241				141,204	37
Quebec	274,841	41,236				41,236	
Toronto	505,736	81,320				81,320	
Other Ports	560,158	103,933	300	6,171		97,462	
Totals	3,493,453	574,943	300	6,171		568,435	37

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WINE, of all kinds—in Wood.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Gallons.	$	$	$	$	$	$
Hamilton	4,322	4,887	1,665			2,974	248
Kingston	1,186	1,727	445	426		538	318
London	2,292	4,421	2,204			2,217	
Montreal	189,516	129,832	57,764	67		9,555	62,446
Quebec	47,319	37,680	12,872	590		5,087	18,231
Toronto	12,972	11,603	6,161			3,004	1,838
Other Ports	3,112	3,413	1,820	32		1,425	106
Totals	260,779	193,593	82,031	1,115		26,300	83,247

WINE, of all kinds—in Bottles.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Dozens.	$	$	$	$	$	$
Hamilton	214	1,281				1,076	205
Montreal	6,112	24,140	10,609			1,744	11,787
Quebec	902	4,133	997			1,179	2,257
Toronto	698	5,207	2,257			2,601	349
Other Ports	252	1,711	145			954	612
Totals	8,208	36,772	14,008			7,551	15,210

BOOTS AND SHOES.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brantford		5,802				5,802	
Clifton		3,452				3,452	
Gaspé		5,443	5,443				
Hamilton		8,019				8,010	
London		6,327	261			6,066	
Montreal		27,569	3,457			21,765	2,347
New Carlisle		2,345	2,305	40			
Quebec		1,633	1,599			34	
Toronto		43,403	1,007			42,396	
Other Ports		29,116	1,386	646		27,084	
Totals		133,109	15,458	686		114,618	2,347

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			HARNESS AND SADDLERY—IMPORTED FROM				
		$	$	$	$	$	$
Kingston		231				231	
Montreal		2,497	1,851			646	
Prescott		266				266	
Quebec		317	292			25	
Toronto		419	209			210	
Windsor		395				395	
Other Ports		3,084	354	57		2,673	
Totals		7,209	2,706	57		4,146	
			CLOTHING OR WEARING APPAREL.				
		$	$	$	$	$	$
Brantford		3,410				3,410	
Gaspé		4,559	4,559				
Hamilton		10,237	4,275			5,962	
Montreal		43,293	41,036			2,257	
New Carlisle		4,203	4,015	188			
Quebec		14,506	14,376			126	4
Sault Ste. Marie		3,538	3,202			336	
Toronto		13,192	9,966			3,226	
Other Ports		11,454	4,484	740		6,230	
Totals		108,392	85,913	928		21,547	4
			BAGATELLE BOARDS AND BILLIARD TABLES.				
		$	$	$	$	$	$
Bytown		800				800	
Dalhousie		408				408	
London		800				800	
Montreal		1,108	351			757	
Other Ports		614	44			570	
Totals		3,730	395			3,335	
			BOOK, MAP, AND NEWS-PRINTING PAPER.				
		$	$	$	$	$	$
Hamilton		235				235	
Montreal		1,282	568			94	620
Morrisburgh		388				388	
Toronto		602	123			479	
Other Ports		859				859	
Totals		3,366	691			2,055	620
			BROOMS AND BRUSHES.				
		$	$	$		$	$
Hamilton		1,984	585			1,104	295
London		912				912	
Montreal		9,848	4,846			4,889	115
Quebec		1,021	960			61	
Toronto		2,089	768			1,086	235
Other Ports		2,481	206	10		2,265	
Totals		18,335	7,365	10		10,317	643

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	CANDLES, Tallow—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Amherstburgh	....	798	....	....	....	798	....
Fort Erie	....	413	....	....	....	413	....
London	....	518	....	....	....	518	....
New Carlisle	....	485	460	5	....	20	....
Quebec	....	4,962	3,881	....	....	521	560
Windsor	....	2,307	....	....	....	2,307	....
Other Ports	....	3,916	474	149	....	3,293	....
Totals	....	13,309	4,815	154	....	7,870	560
			CANDLES AND TAPERS, other than Tallow.				
		$	$	$	$	$	$
Clifton	....	1,877	....	....	....	1,877	....
Hamilton	....	1,630	583	....	....	1,047	....
Montreal	....	24,871	20,891	....	....	1,416	2,564
Quebec	....	5,929	5,929	....	....	....	....
Toronto	....	1,751	1,061	....	....	690	....
Other Ports	....	3,268	590	....	....	2,678	....
Totals	....	39,326	29,054	....	....	7,708	2,564

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			CHANDELIERS—GIRONDOLES—GAS FITTINGS.				
		$	$	$	$	$	$
Hamilton	....	272	189	....	....	83	....
Montreal	....	4,956	3,237	....	....	1,719	....
Quebec	....	2,892	2,434	....	....	458	....
Other Ports	....	223	97	....	....	126	....
Totals	....	8,343	5,957	....	....	2,386	....
			CIDER.				
	Gallons.	$	$	$	$	$	$
Cobourg	3,678	202	....	....	....	202	....
London	1,206	263	....	....	....	263	....
Montreal	2,966	387	....	....	....	387	....
Toronto	7,734	417	....	....	....	417	....
Other Ports	9,533	696	....	....	....	696	....
Totals	25,117	1,965	....	....	....	1,965	....
			COCOA AND CHOCOLATE.				
	Lbs.	$	$	$	$	$	$
Hamilton	647	112	....	....	....	112	....
Montreal	16,827	2,018	1,016	271	....	731	....
Quebec	7,178	941	103	....	....	838	....
Toronto	1,580	310	13	....	....	297	....
Other Ports	723	134	14	9	....	111	....
Totals	26,955	3,515	1,146	280	....	2,089	....

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

CARRIAGES—IMPORTED FROM

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brockville		1,706				1,706	
Bytown		841				841	
Clifton		972				972	
Coaticook		1,512				1,512	
Kingston		676				676	
Montreal		5,269	1,486			3,783	
Philipsburgh		825				825	
Prescott		1,344				1,344	
Stanstead		2,662				2,662	
Toronto		1,367	438			929	
Woodstock		799				799	
Other Ports		9,280	8	56		9,216	
Totals		27,253	1,932	56		25,265	

COACH AND HARNESS FURNITURE.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	
Brockville		2,755				2,755	
Hamilton		2,189	79			2,110	
Kingston		1,125	81			1,044	
Napanee		1,423				1,423	
Picton		1,466				1,466	
Prescott		1,233				1,233	
Other Ports		4,438	204			4,234	
Totals		14,629	364			14,265	

CABINET WARE OR FURNITURE.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brantford		1,147				1,147	
Clifton		1,279				1,279	
Montreal		7,266	3,157			4,109	
Quebec		1,382	132			1,250	
Stanstead		1,018				1,018	
Toronto		1,302	210			1,092	
Windsor		2,553				2,553	
Other Ports		13,713	311	80		13,280	12
Totals		29,660	3,840	80		25,728	12

CARPETS AND HEARTH RUGS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Hamilton		18,010	13,175			4,835	
Kingston		5,558	5,501			57	
Montreal		58,687	56,811			1,876	
Quebec		20,031	19,918			113	
Toronto		16,741	15,906			835	
Other Ports		9,178	6,503			2,675	
Totals		128,205	117,814			10,391	

CHICORY.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Hamilton	3,318	146				146	
London	1,950	120				120	
Montreal	51,730	2,112	1,885			227	
Toronto	27,915	917				917	
Other Ports	3,947	143				93	50
Totals	88,860	3,468	1,885			1,533	50

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	CHINA WARE—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Hamilton		1,920	236			1,084	
London		791	194				597
Montreal		323	175			148	
Quebec		917	742			90	85
Toronto		2,501	1,333			912	256
Other Ports		753	199			554	
Totals		7,205	2,879			3,388	938
			EARTHENWARE AND CROCKERY.				
		$	$	$	$	$	$
Dalhousie		1,980	1,875			105	
London		6,214	5,166			1,048	
Montreal		108,711	106,212			2,314	155
Quebec		22,349	21,927			16	406
Toronto		31,256	26,721			4,535	
Other Ports		13,254	6,506	528		6,220	
Totals		100,764	168,437	528		14,238	561

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			CLOCKS.				
		$	$	$	$	$	$
Brockville		4,423				4,423	
Hamilton		1,637				1,509	128
Montreal		7,968	1,500			6,468	
Quebec		1,904				1,904	
Toronto		4,804	24			4,780	
Other Ports		4,843	31			4,812	
Totals		25,579	1,555			23,896	128
			CONFECTIONARY AND SWEETMEATS.				
		$	$	$	$	$	$
Kingston		1,427	159			1,268	
London		1,343				1,243	
Montreal		9,658	497			9,161	
Quebec		3,894	468			2,870	556
Toronto		6,231	704			5,527	
Windsor		1,630				1,630	
Other Ports		7,838	176	66		7,596	
Totals		32,021	2,004	66		29,395	556
			CORDAGE.				
		$	$	$	$	$	$
Gaspé		5,440	5,440				
Hamilton		1,878				1,878	
Montreal		13,393	7,327			6,066	
Quebec		11,430	11,195			235	
Toronto		5,819	1,102			4,717	
Other Ports		6,492	1,382	529		4,581	
Totals		44,452	26,446	529		17,477	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
CORKS—IMPORTED FROM							
		$	$	$	$	$	$
Hamilton		1,096				1,096	
London		1,549	193			1,356	
Montreal		10,112	2,543			453	7,116
Quebec		839				386	453
Toronto		2,162	152			2,010	
Other Ports		1,918				1,918	
Totals		17,676	2,888			7,219	7,569
COTTONS.							
		$	$	$	$	$	$
Bytown		58,120	50,133			7,987	
Hamilton		539,427	500,216			38,798	413
Kingston		50,929	45,098			5,831	
London		120,969	90,897			30,072	
Montreal		2,685,463	2,597,168			85,092	3,203
Quebec		384,470	352,322			32,039	100
Toronto		771,475	720,281			51,194	
Other Ports		252,591	110,621	3,567		138,403	
Totals		4,863,444	4,466,736	3,567		389,416	3,725
DRUGS.							
		$	$	$	$	$	$
Hamilton		9,819	2,015			7,804	
London		8,794				8,794	
Montreal		74,451	54,398			19,073	980
Quebec		4,804	4,120	56		439	189
Toronto		18,418	9,339			9,079	
Other Ports		10,341	534	50		9,757	
Totals		126,627	70,406	106		54,946	1,169
ESSENCES AND PERFUMERY.							
		$	$	$	$	$	$
Hamilton		838	167			598	73
London		543				543	
Montreal		15,990	7,418			8,179	393
Quebec		3,347	2,516			546	285
Toronto		1,880	1,022			858	
Other Ports		2,398	87			2,114	197
Totals		24,996	11,210			12,838	948
FANCY GOODS AND MILLINERY.							
		$	$	$	$	$	$
Bytown		5,335	5,308			27	
Hamilton		15,362	12,523			1,779	1,060
Kingston		4,505	2,996			1,509	
London		1,219				1,219	
Montreal		187,815	138,394			40,388	9,033
Quebec		18,798	15,170			2,364	1,264
Toronto		70,613	51,163			18,818	632
Other Ports		14,496	3,440	2		9,533	1,521
Totals		318,143	228,094	2		75,637	13,510

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

FIREWORKS—IMPORTED FROM

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Hamilton		214				214	
Kingston		83				83	
London		165				165	
Montreal		251				251	
Prescott		1,100				1,100	
Quebec		167				167	
Toronto		710				710	
Other Ports		576				576	
Totals		3,266				3,266	

GUNS, RIFLES, AND FIREARMS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Hamilton		465	327			138	
Kingston		546	209			337	
Montreal		3,625	1,830			215	1,580
Quebec		444	362			82	
Sault Ste. Marie		349	349				
Toronto		550	104			446	
Other Ports		1,167	348	16		803	
Totals		7,146	3,529	16		2,021	1,580

GUNPOWDER.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Kingston		300				300	
Montreal		2,838	2,838				
Quebec		1,825	1,825				
Sault Ste. Marie		4,565	467			4,098	
Other Ports		1,023	135	190		698	
Totals		10,551	5,265	190		5,096	

GLASS AND GLASSWARE.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Bytown		1,833				1,833	
Coaticook		1,331				1,331	
Dalhousie		2,357	1,026			1,331	
Hamilton		14,195	5,713			8,101	381
Kingston		2,716	1,523			1,193	
London		4,481				4,481	
Montreal		119,925	53,514			22,949	43,462
Quebec		31,888	10,874			2,511	18,503
Toronto		31,975	8,508			23,063	404
Other Ports		16,794	373	24		16,397	
Totals		227,495	81,531	24		83,190	62,750

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS	Total Quantity.	Total Value.	HATS, CAPS, AND BONNETS—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brantford		3,514				3,514	
Brockville		4,362				4,362	
Bytown		9,074	1,682			7,392	
Coaticook		4,524				4,524	
Cobourg		5,006	714			4,292	
Hamilton		22,144	5,359			16,614	171
Kingston		5,368	1,438			3,930	
London		7,653				7,653	
Montreal		92,169	21,352			70,070	747
Prescott		4,139				4,139	
Quebec		32,179	17,999			14,180	
Toronto		31,040	10,472			20,331	237
Other Ports		35,727	1,659	96		33,972	
Totals		256,899	60,675	96		104,973	1,155

HAY.

PORTS	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Tons.	$	$	$	$	$	$
Penetanguisheno	25	154				154	
Sault Ste. Marie	51	497				497	
Toronto	115	594				594	
Wallaceburgh	28	78				78	
Other Ports	34	201				201	
Totals	253	1,524				1,524	

HOPS.

PORTS	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Dundee	16,442	1,139				1,139	
Hamilton	11,072	1,565	436			1,129	
Kingston	11,297	1,533				1,533	
Montreal	35,128	5,199				5,199	
Prescott	10,003	1,440	440			1,000	
Quebec	15,102	1,768	901			867	
Toronto	46,629	5,565				5,565	
Other Ports	22,427	2,902	101			2,801	
Totals	168,100	21,111	1,878			19,233	

IRON AND HARDWARE.

PORTS	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Belleville		11,383	2,364			9,019	
Bytown		22,412	9,431			12,981	
Cobourg		11,913	5,725			6,188	
Dalhousie		15,861	7,525			8,336	
Hamilton		77,618	44,017			33,601	
Kingston		22,669	8,535			13,889	245
London		35,798	8,257			27,541	
Montreal		701,984	498,639			197,280	6,065
Prescott		8,223	1,543			6,680	
Quebec		126,827	97,593	120		24,744	4,370
Toronto		138,966	66,651			72,207	108
Other Ports		173,513	15,536	1,417		156,560	
Totals		1,347,167	705,816	1,537	....	569,026	10,788

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			INKS, of all kinds, except PRINTING—IMPORTED FROM				
		$	$	$	$	$	$
Clifton		104				104	
Credit		142				142	
Montreal		3,815	2,524			1,291	
Quebec		239	23			216	
Toronto		995	434			561	
Other Ports		367	25			342	
Totals		5,662	3,006			2,656	
			LUMBER OR PLANK,—Manufactured				
		$	$	$	$	$	$
Montreal		4,200	90			4,110	
Prescott		821				821	
Sarnia		2,193				2,193	
Other Ports		1,046				1,046	
Totals		8,260	90			8,170	
			LEATHER.				
		$	$	$	$	$	$
Bytown		5,647				5,647	
Hamilton		5,886	449			5,437	
Kingston		10,108	4,794			2,734	2,580
London		4,390				4,390	
Montreal		230,370	72,520			122,972	34,878
Quebec		9,960	9,470			490	
Toronto		26,105	5,646			20,459	
Other Ports		31,404	625	262		30,517	
Totals		323,870	93,504	262		192,646	37,458
			SKINS—SHEEP, CALF, GOAT AND CHAMOIS, Dressed.				
		$	$	$	$	$	$
Montreal		4,098	1,154			2,944	
Quebec		2,595	2,464			131	
Toronto		621				621	
Other Ports		1,318	373			945	
Totals		8,632	3,991			4,641	
			MANUFACTURES OF INDIA RUBBER OR GUTTA PERCHA.				
		$	$	$	$	$	$
Clifton		1,544				1,544	
Hamilton		4,274	39			4,176	59
Kingston		440				440	
London		575	88			487	
Montreal		7,402	1,497			5,905	
Quebec		5,904	2,152			3,623	129
Toronto		3,990	539			3,451	
Other Ports		3,860				3,860	
Totals		27,989	4,315			23,486	188

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
MANUFACTURES of CASHMERE—IMPORTED FROM							
		$	$	$	$	$	$
Montreal		227	227				
Napanee		436	436				
Totals		663	663				
MANUFACTURES of FUR, or of which FUR is the principal part.							
		$	$	$	$	$	$
Bytown		1,743	1,743				
Hamilton		1,271	506			765	
Kingston		2,568	32			2,327	209
Montreal		50,040	41,788			8,252	
Quebec		4,312	3,197			1,115	
Toronto		1,348	1,107			241	
Other Ports		1,061				1,061	
Totals		62,343	48,373			13,761	209
MANUFACTURES of PAPIER MACHÉ.							
		$	$	$	$	$	$
Kingston		57	57				
Montreal		308				308	
Quebec		232	232				
Toronto		15				15	
Totals		612	289			323	

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PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
MANUFACTURES of GRASS, OSIER, PALM LEAF, &c.							
		$	$	$	$	$	$
Bytown		4,112	4,066			46	
Hamilton		17,727	9,363			8,364	
Kingston		4,329	1,366			2,963	
London		4,249				4,249	
Montreal		8,214	1,176			7,038	
Quebec		1,547	1,523				24
Toronto		25,985	16,738			9,247	
Other Ports		13,726	827	26		12,873	
Totals		79,889	35,059	26		44,780	24
MANUFACTURES of BONE, SHELL, &c.							
		$	$	$	$	$	$
Brockville		905				905	
Hamilton		6,807	2,109			4,698	
Kingston		606	338			268	
London		768				768	
Montreal		7,265	2,857			4,408	
Quebec		2,778	1,630			1,148	
Toronto		5,569	1,984			3,585	
Other Ports		1,808	50			1,758	
Totals		26,506	8,968			17,538	
MANUFACTURES of GOLD, SILVER, &c.							
		$	$	$	$	$	$
Hamilton		3,041	1,821			1,220	
Kingston		1,377	897			480	
Montreal		23,405	17,200			6,205	
Quebec		6,359	6,035			324	
Toronto		10,179	6,391			3,768	20
Other Ports		3,636	845			2,212	579
Totals		47,997	33,189			14,209	599

No. 1.—GENERAL STATEMENT OF IMPORTS.—(*Continued.*)

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
MANUFACTURES OF BRASS OR COPPER—IMPORTED FROM							
		$	$	$	$	$	$
Hamilton		5,969	2,792			3,105	72
Kingston		2,384	150			2,234	
Montreal		23,151	13,120			10,031	
Prescott		1,539				1,539	
Quebec		3,928	2,414			1,514	
Toronto		13,904	3,030			10,874	
Other Ports		5,944	489	34		5,421	
Totals		56,819	21,995	34		34,718	72
MANUFACTURES OF LEATHER—OR IMITATION OF							
		$	$	$	$	$	$
Bytown		2,540	46			2,494	
Hamilton		11,073	5,483			5,188	402
London		2,595				2,595	
Montreal		33,818	18,615			7,988	7,215
Quebec		6,208	3,891			2,030	287
Toronto		17,889	5,034			12,855	
Other Ports		15,268	954			14,297	17
Totals		89,391	34,023			47,447	7,921

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
MANUFACTURES OF MARBLE.							
		$	$	$	$	$	$
Clarenceville		4,613				4,613	
Hamilton		350				350	
Montreal		4,536	452			4,062	22
Toronto		596	493			103	
Other Ports		1,473				1,473	
Totals		11,568	945			10,601	22
VARNISH, Other than Bright or Black.							
		$	$	$	$	$	$
Hamilton		1,449				1,449	
Montreal		6,849	862			5,987	
Oshawa		1,218				1,218	
Quebec		1,918	368			1,550	
Toronto		3,184				3,184	
Other Ports		5,177	10			5,167	
Totals		19,795	1,240			18,555	
MANUFACTURES OF WOOD.							
		$	$	$	$	$	$
Hamilton		2,886	143			2,694	49
Kingston		1,761	15			1,746	
London		2,350				2,350	
Montreal		26,433	4,433			21,918	82
Prescott		1,822				1,822	
Quebec		2,117	344	12		1,612	149
Toronto		10,547	647			9,900	
Windsor		7,952				7,952	
Other Ports		19,960	67	1,577		18,316	
Totals		75,828	5,649	1,589		68,310	280

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value	HOSIERY—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Bytown		2,130	2,130				
Hamilton		2,363	2,020			41	302
Kingston		2,758	2,735			23	
Montreal		11,960	11,674			286	
Toronto		2,338	2,338				
Other Ports		767	747			20	
Totals		22,316	21,644			370	302
			LINEN.				
		$	$	$	$	$	$
Bytown		4,028	4,028				
Hamilton		16,465	16,217			248	
Kingston		7,531	7,512			19	
London		4,471	4,444			27	
Montreal		93,876	92,588			1,219	69
Quebec		22,630	22,608			22	
Toronto		47,329	46,818			511	
Other Ports		7,341	5,710			1,631	
Totals		203,671	199,925			3,677	69

PORTS.	Total Quantity.	Total Value	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			LOCOMOTIVE ENGINES AND RAILROAD CARS.				
		$	$	$	$	$	$
Brockville		75				75	
Clifton		1,339				1,339	
Totals		1,414				1,414	
			OTHER STEAM ENGINES.				
		$	$	$	$	$	$
Kingston		245				245	
Quebec		1,161	1,161				
Totals		1,406	1,161			245	
			MACARONI AND VERMICELLI.				
	Lbs.	$	$	$	$	$	$
Clifton	200	23				23	
Hamilton	220	19				19	
Montreal	46,780	2,510	1,076			228	1,206
Quebec	6,273	289				147	142
Toronto	437	46				46	
Other Ports	290	30				30	
Totals	54,200	2,917	1,076			493	1,348

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	MUSTARD—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Brantford	1,636	220				220	
Hamilton	4,495	563	513			50	
Kingston	1,789	223	221			2	
London	4,143	756				756	
Montreal	115,738	15,714	15,714				
Quebec	18,979	2,919	2,619			300	
Toronto	8,356	1,135	416			719	
Other Ports	3,114	543	280	2		261	
Totals	158,250	22,073	19,763	2		2,308	
			MUSICAL INSTRUMENTS.				
		$	$	$	$	$	$
Clifton		1,611				1,611	
Cobourg		1,982				1,982	
Hamilton		2,542				2,200	342
Kingston		2,287	105			2,182	
Montreal		54,992	9,411			45,154	427
Quebec		9,914	3,912			713	5289
Toronto		27,504	718			26,181	605
Other Ports		8,161	428			7,733	
Totals		108,993	14,574			87,756	6,663
			MOWING, REAPING, AND THRESHING MACHINES.				
		$	$	$	$	$	$
Frelighsburgh		1,480				1,480	
Montreal		933	314			619	
Philipsburgh		712				712	
Stanstead		670				670	
Sutton		481				481	
Other Ports		3,351	73			3,278	
Totals		7,627	387			7,240	
			OTHER MACHINERY.				
		$	$	$	$	$	$
Belleville		3,267				3,267	
Brockville		2,868				2,868	
Hamilton		6,342	724			5,618	
Montreal		24,319	3,257			21,062	
Prescott		2,361				2,361	
Quebec		2,096	1,251			845	
Toronto		27,170	460			26,710	
Windsor		4,337				4,337	
Other Ports		19,817	1,077			18,740	
Totals		92,577	6,769			85,808	
			FOREIGN NEWSPAPERS.				
		$	$	$	$	$	$
Clifton		7,723				7,723	
Montreal		521	4			517	
Prescott		610				610	
Totals		8,854	4			8,850	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	OIL CLOTHS—IMPORTED FROM: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Bytown	....	979	389	....	....	590	....
Hamilton	....	3,372	2,757	....	....	615	....
Kingston	....	1,111	555	....	....	556	....
London	....	590	102	....	....	488	....
Montreal	....	22,063	18,644	....	....	3,419	....
Prescott	....	740	....	....	....	740	....
Quebec	....	6,248	3,985	....	....	2,263	....
Toronto	....	4,099	2,344	....	....	1,755	....
Other Ports	....	3,696	943	....	....	2,753	....
Totals	....	42,898	29,719	....	....	13,179	....

OILS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Gallons.	$	$	$	$	$	$
Clifton	24,297	15,532	....	....	....	15,532	....
Hamilton	29,287	19,681	6,170	5,117	....	8,049	345
Kingston	11,520	7,490	3,363	....	....	4,127	....
London	3,183	2,198	120	....	....	2,078	....
Montreal	246,076	166,136	106,207	839	....	42,201	16,889
Quebec	21,509	21,509	15,436	838	....	1,915	3,320
Toronto	49,743	31,778	8,449	496	....	22,833	....
Other Ports	28,823	23,601	2,180	150	....	21,271	....
Totals	414,438	287,925	141,925	7,440	....	118,006	20,554

OPIUM.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Coaticook	....	2	....	....	....	2	....
Montreal	....	1,550	972	....	....	578	....
Picton	....	58	....	....	....	58	....
Totals	....	1,610	972	....	....	638	....

PACKAGES.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Clifton	....	712	12	....	....	700	....
Hamilton	....	2,788	458	166	....	2,120	44
Montreal	....	61,910	17,377	2,054	....	22,084	20,395
Quebec	....	12,658	3,329	1,064	....	5,642	2,623
Toronto	....	2,914	574	....	....	2,233	107
Other Ports	....	3,402	152	297	....	2,953	....
Totals	....	84,384	21,902	3,581	....	35,732	23,169

PAINTS AND COLOURS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Clifton	....	1,031	....	....	....	1,031	....
Hamilton	....	3,473	2,071	....	....	1,402	....
London	....	3,035	150	....	....	2,885	....
Montreal	....	82,816	77,390	....	....	4,609	817
Quebec	....	25,306	25,022	....	....	284	....
Toronto	....	15,139	5,321	....	....	9,818	....
Other Ports	....	11,230	1,673	124	....	9,433	....
Totals	....	142,030	111,627	124	....	29,462	817

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	PAPER—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Hamilton		1,546	66			1,480	
Kingston		964	837			127	
Montreal		38,312	32,019			4,079	2,214
Quebec		2,497	2,260			237	
Toronto		2,225	638			1,587	
Windsor		503				503	
Other Ports		4,620	603			4,017	
Totals		50,667	36,423			12,030	2,214
			PAPER HANGINGS.				
		$	$	$	$	$	$
Cobourg		1,124	197			927	
Hamilton		3,262	929			2,333	
Kingston		1,727	411			1,316	
London		1,472				1,472	
Montreal		28,769	21,279			7,490	
Quebec		7,053	3,161			2,650	1,242
Toronto		8,067	4,128			3,939	
Other Ports		11,943	119			11,824	
Totals		63,417	30,224			31,951	1,242

			PARASOLS AND UMBRELLAS.				
		$	$	$	$	$	$
Bytown		432				432	
Hamilton		704	704				
Kingston		498	498				
Montreal		894	321			573	
Quebec		550	550				
Toronto		819	783			36	
Other Ports		696	344			352	
Totals		4,593	3,200			1,393	
			PLAYING CARDS.				
		$	$	$	$	$	$
Montreal		3,759	1,071			2,337	351
Quebec		2,479	2,397			82	
Toronto		124	43			81	
Other Ports		161				161	
Totals		6,523	3,511			2,661	351
			PICKLES AND SAUCES.				
		$	$	$	$	$	$
London		352	51			301	
Montreal		9,003	7,103			101	1,799
Quebec		4,346	4,035			311	
Toronto		1,170	1,102			68	
Other Ports		656	171			485	
Totals		15,527	12,462			1,266	1,799

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	PRESERVED MEATS, POULTRY, &c.—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Clifton		69				69	
Hamilton		31				31	
Montreal		1,003	397	80		526	
Quebec		69	24				45
Toronto		108				108	
Other Ports		241		8		233	
Totals		1,521	421	88		967	45

PRINTED or LITHOGRAPHED, BILLS, PAMPHLETS, &c.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Clifton		928				928	
Hamilton		820	148			672	
Montreal		4,232	636			3,580	16
Quebec		746	85			661	
Toronto		900	101			799	
Other Ports		1,865				1,865	
Totals		9,491	970			8,505	16

SILKS, SATINS AND VELVETS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brockville		2,009	1,638			371	
Bytown		16,173	16,173				
Clifton		4,670	3,391			1,279	
Dalhousie		3,868	3,382			486	
Hamilton		79,651	74,792			515	4,344
Kingston		13,923	13,529			377	17
London		8,715	6,519			2,196	
Montreal		449,462	431,068			17,218	1,176
Quebec		117,889	108,597			7,578	1,714
Toronto		196,118	183,668			12,421	29
Other Ports		9,378	4,969	1		4,408	
Totals		901,856	847,726	1		46,849	7,280

SPICES,—including GINGER, PIMENTO and PEPPER,—unground.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	lbs.	$	$	$	$	$	$
Hamilton	41,793	3,647				3,647	
Kingston	12,293	1,048	381			667	
London	12,404	1,046				1,046	
Montreal	368,808	30,389	12,300	253		17,696	140
Quebec	42,917	3,987	1,958			2,029	
Toronto	58,715	5,336				5,336	
Other Ports	18,044	1,884	155			1,729	
Totals	554,974	47,337	14,794	253		32,150	140

No 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS	Total Quantity.	Total Value.	STATIONERY—IMPORTED FROM Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Bytown		1,331	1,331				
Clifton		2,124				2,124	
Hamilton		4,191	1,121			3,033	37
Kingston		2,382	1,679			703	
London		1,326	55			1,271	
Montreal		98,310	72,174			22,335	3,801
Quebec		8,885	8,117			337	431
Toronto		33,423	11,816			21,607	
Woodstock		1,432	250			1,182	
Other Ports		7,025	842	22		5,124	1,037
Totals		160,429	97,385	22		57,716	5,306
			SMALL WARES.				
		$	$	$	$	$	$
Bytown		2,852	2,852				
Hamilton		8,488	3,985			3,157	1,346
Kingston		3,352	3,008			344	
London		8,968	203			8,765	
Montreal		59,597	44,864			14,416	317
Quebec		33,902	32,115			1,310	477
Toronto		12,701	7,477			5,224	
Other Ports		9,722	2,600			7,122	
Totals		139,582	97,104			40,338	2,140
			TOBACCO PIPES.				
		$	$	$	$	$	$
Hamilton		750				85	665
Montreal		11,454	10,811			48	595
Quebec		469	218			251	
Toronto		1,557	933			624	
Other Ports		776	469	15		292	
Totals		15,006	12,431	15		1,300	1,260
			TOYS.				
		$	$	$	$	$	$
Hamilton		1,310	348			744	218
Montreal		10,955	2,776			7,955	224
Quebec		1,312	202			550	560
Toronto		1,612	646			966	
Other Ports		1,171	12			1,159	
Totals		16,360	3,984			11,374	1,002
			VINEGAR.				
	Gallons.	$	$	$	$	$	$
Chatham	2,244	236				236	
Dalhousie	3,084	322				322	
Kingston	3,025	636				636	
London	2,004	341				341	
Montreal	101,027	16,957	235			4,936	11,786
Quebec	19,602	3,164	87			723	2,354
Toronto	4,868	762				487	275
Other Ports	12,928	1,666	239	6		1,421	
Totals	148,782	24,084	561	6		9,102	14,415

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			WOOLLENS—IMPORTED FROM				
		$	$	$	$	$	$
Bytown		57,264	56,154			1,110	
Cobourg		15,042	11,688			3,354	
Dalhousie		12,550	6,212			6,338	
Gaspé		9,553	9,553				
Hamilton		222,070	98,019			120,883	3,168
Kingston		39,294	36,989			2,305	
London		39,505	28,689			10,816	
Montreal		2,109,887	2,034,769			66,759	8,359
New Carlisle		7,759	7,345	78		336	
Quebec		313,140	294,225			18,665	250
Toronto		525,920	509,497			16,423	
Other Ports		81,864	42,231	291		39,330	
Totals		3,433,848	3,135,374	369		286,328	11,777
			UNENUMERATED ARTICLES.—20 *and* 15 *per Cent.*				
		$	$	$	$	$	$
Belleville		4,495	213			4,282	
Coaticook		3,162				3,162	
Cobourg		3,843	266			3,577	
Gaspé		5,658	5,582	76			
Hamilton		7,974	241			7,720	13
Kingston		11,847	1,040			10,807	
Montreal		93,537	37,654	57		52,120	3,706
Prescott		3,852				3,852	
Quebec		29,547	13,764		3	13,201	2,579
Toronto		15,819	2,692			13,127	
Windsor		6,524				6,521	
Other Ports		53,788	5,596	905		47,197	
Totals		240,046	67,048	1,128	3	165,560	6,298
			ANCHORS—6 cwt. and under.				
		$	$	$	$	$	$
Amherst		101	10	91			
Burwell		19				19	
Bytown		14				14	
Gaspé		316	316				
Hamilton		2				2	
Picton		12				12	
Quebec		1,028	1,028				
Totals		1,492	1,354	91		47	
			PRINTED BOOKS, PERIODICALS AND PAMPHLETS.				
		$	$	$	$	$	$
Clifton		13,087	165			12,922	
Hamilton		11,339	640			10,699	
Kingston		7,201	916			6,285	
London		4,432				4,432	
Montreal		57,175	17,452			35,075	4,648
Prescott		6,050				6,050	
Quebec		14,781	2,574			2,309	9,898
Toronto		55,384	20,153			35,231	
Other Ports		17,522	847			15,563	1,112
Totals		186,971	42,747			128,566	15,658
			BRASS—in Bars, Rods or Sheets.				
		$	$	$	$	$	$
Clifton		340				340	
Hamilton		515				515	
Montreal		649	181			468	
Quebec		6,796	6,558			238	
Toronto		932	26			906	
Other Ports		209				209	
Totals		9,441	6,765			2,676	

No1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	BRASS or COPPER WIRE and WIRE CLOTH—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Brantford		200				200	
Guelph		120				120	
Hamilton		261	121			140	
Montreal		5,473	4,432			1,041	
Prescott		110				110	
Quebec		102	102				
Toronto		835	509			326	
Other Ports		689	31			658	
Totals		7,790	5,195			2,595	
			COPPER,—in Bars, Rods, Bolts or Sheets.				
		$	$	$	$	$	$
Hamilton		3,190	291			2,899	
Kingston		2,233	163			2,070	
Montreal		10,692	9,518			1,174	
Quebec		2,753	2,753				
Toronto		3,472	394			3,078	
Other Ports		2,320	121			2,199	
Totals		24,660	13,240			11,420	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			COPPER, BRASS or IRON TUBES, and PIPING.				
		$	$	$	$	$	$
Clifton		1,892				1,892	
Montreal		16,603	10,535			6,068	
Quebec		17,259	15,942			1,262	55
Toronto		7,836	1,115			6,721	
Other Ports		2,895	499			2,396	
Totals		46,485	28,091			18,339	55
			COTTON CANDLE WICK.				
		$	$	$	$	$	$
Bytown		3,071				3,071	
Hamilton		2,594				2,594	
Montreal		8,693	1,039			7,654	
Quebec		1,668	1,481			187	
Toronto		6,745				6,745	
Other Ports		6,796				6,796	
Totals		29,567	2,520			27,047	
			COTTON YARN and WARP.				
		$	$	$		$	$
Hamilton		20,640	4,369			16,271	
Kingston		4,156	253			3,903	
London		8,218	29			8,189	
Montreal		71,054	39,963			30,378	713
Quebec		16,839	16,815			24	
Toronto		19,438	1,775			17,663	
Other Ports		34,760	2,528	545		31,687	
Totals		175,105	65,732	545		108,115	713

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
DRAIN TILES, FOR AGRICULTURAL PURPOSES.—IMPORTED FROM							
		$	$	$	$	$	$
Amherstburgh		330				330	
Clifton		13				13	
Fort Erie		1				1	
Montreal		274	274				
Quebec		3,116	3,116				
Totals		3,734	3,390			344	
ENGRAVINGS AND PRINTS.							
		$	$	$	$	$	$
Clifton		634	303			331	
Montreal		9,198	3,689			5,481	28
Quebec		991	102			773	116
Toronto		849	136			713	
Other Ports		1,100	482			618	
Totals		12,772	4,712			7,916	144
SILK TWIST—FOR HATS, BOOTS AND SHOES.							
		$	$	$	$	$	$
Montreal		9,377	8,765			612	
Quebec		847	847				
Toronto		980	381			599	
Other Ports		152	15			137	
Totals		11,356	10,008			1,348	

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
HAT PLUSH.							
		$	$	$	$	$	$
Kingston		34				34	
London		63				63	
Montreal		3,535	3,340			195	
Toronto		503	28			475	
Totals		4,135	3,368			767	
JEWELLERY AND WATCHES.							
		$	$	$	$	$	$
Bytown		3,901				3,901	
Hamilton		4,800	405			4,345	50
Montreal		71,827	42,638			25,781	3,408
Quebec		3,758	2,737			982	39
Toronto		13,827	3,801			9,942	84
Other Ports		7,951	116			7,835	
Totals		106,064	49,697			52,786	3,581
CANADA PLATES AND TINNED PLATES.							
		$	$	$	$	$	$
Hamilton		24,381	8,509			15,872	
Kingston		8,892	8,892				
London		5,634				5,634	
Montreal		144,006	141,868				2,138
Quebec		30,445	30,445				
Toronto		11,321	10,029			1,292	
Other Ports		5,093	611			4,482	
Totals		229,772	200,354			27,280	2,138

No. 1.—GENERAL STATEMENT OF IMPORTS—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
IRON—GALVANIZED AND SHEET.							
		$	$	$	$	$	$
Hamilton	....	7,533	4,500	....	....	3,033	....
Kingston	....	8,083	7,212	....	....	871	....
Montreal	....	28,751	28,189	....	....	562	....
Quebec	....	19,114	19,114	....	....	....	....
Toronto	....	2,638	2,439	....	....	199	....
Other Ports	....	3,265	....	....	....	3,265	....
Totals	....	69,384	61,454	....	....	7,930	....
IRON—WIRE, NAIL, AND SPIKE ROD.							
		$	$	$	$	$	$
Hamilton	....	10,424	9,710	....	....	714	....
Kingston	....	1,116	898	....	....	218	....
Montreal	....	174,817	171,375	....	....	1,508	1,934
Quebec	....	3,362	3,362	....	....	....	....
Toronto	....	1,703	816	....	....	887	....
Other Ports	....	1,728	428	....	....	1,300	....
Totals	....	193,150	186,589	....	....	4,627	1,934

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
IRON—BAR, ROD or HOOP.							
		$	$	$	$	$	$
Hamilton	....	15,988	11,300	....	....	4,688	....
Kingston	....	20,157	19,994	....	....	163	....
Montreal	....	418,092	414,592	....	....	3,185	315
Quebec	....	67,646	67,391	....	....	255	....
Toronto	....	36,932	36,010	....	....	922	....
Other Ports	....	28,823	5,672	294	....	22,857	....
Totals	....	587,638	554,959	294	....	32,070	315
IRON—HOOP or TIRE FOR LOCOMOTIVE WHEELS.							
		$	$	$	$	$	$
Bytown	....	49	....	....	....	49	....
Hamilton	....	2,858	2,858	....	....	....	....
Montreal	....	14,053	7,028	....	....	7,025	....
Toronto	....	489	....	....	....	489	....
Totals	....	17,449	9,886	....	....	7,563	....
IRON—BOILER PLATE.							
		$	$	$	$	$	$
Hamilton	....	683	683	....	....	....	....
Kingston	....	1,080	....	....	....	1,080	....
Montreal	....	23,322	19,803	....	....	3,519	....
Sarnia	....	1,508	....	....	....	1,508	....
Toronto	....	821	244	....	....	577	....
Other Ports	....	1,324	407	....	....	917	....
Totals	....	28,738	21,137	....	....	7,601	....

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
			IRON-RAILROAD BARS, &c.—IMPORTED FROM				
		$	$	$	$	$	$
Brockville		44,110	44,110				
Coaticook		21,751	21,151			600	
Kingston		3,599	3,599				
Montreal		13,265	13,265				
Quebec		54,226	54,226				
Toronto		19,104	18,013			1,091	
Windsor		22,000				22,000	
Totals		178,055	151,361			23,691	
			IRON—ROLLED PLATE.				
		$	$	$	$	$	$
Gananoque		4,797				4,797	
Hamilton		304				304	
Kingston		22				22	
St. Johns		14				14	
Totals		5,137				5,137	
			LOCOMOTIVES, AND ENGINE FRAMES, &c.				
		$	$	$	$	$	$
Brantford		979				979	
Clifton		4,570				4,570	
Hamilton		35,693	35,693				
Montreal		12,543	3,415			9,128	
Niagara		2,670				2,670	
Other Ports		2,168				2,168	
Totals		58,623	39,108			19,515	
			STEAMBOAT AND MILL SHAFTS AND CRANKS.				
		$	$	$	$	$	$
Clarenceville		350				350	
Dundas		111				111	
Kingston		415				415	
Montreal		2,108	200			1,908	
Toronto		757	658			99	
Totals		3,741	858			2,883	
			LEAD IN SHEET.				
		$	$	$	$	$	$
Hamilton		776	776				
Montreal		15,520	12,705			2,815	
Toronto		691	691				
Other Ports		967	641			326	
Totals		17,954	14,813			3,141	
			STEEL—WROUGHT OR CAST.				
		$	$	$	$	$	$
Dalhousie		2,947	112			2,835	
Gananoque		2,107				2,107	
Kingston		4,956	4,956				
Montreal		57,153	56,646			507	
Quebec		4,904	4,904				
Toronto		4,922	4,832			90	
Other Ports		5,694	2,443	23		3,228	
Totals		82,683	73,893	23		8,707	

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No 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
			TIN—GRANULATED or BAR.				
		$	$	$	$	$	$
London		5,970				5,970	
Montreal		1,854	1,854				
Quebec		5,070	5,070				
Toronto		382	308			74	
Other Ports		1,367	389			978	
Totals		14,643	7,621			7,022	
			ZINC or SPELTER—IN SHEET.				
		$	$	$	$	$	$
Belleville		508				508	
Hamilton		983	135			848	
London		566				566	
Montreal		13,317	5,374			1,882	6,061
Quebec		880	152			32	696
Toronto		653	588			65	
Other Ports		1,406	17			1,389	
Totals		18,313	6,266			5,290	6,757
			LITHARGE.				
		$	$	$	$	$	$
Hamilton		24				24	
Montreal		6,283	5,508			775	
Quebec		14	14				
Toronto		11				11	
Other Ports		5				5	
Totals		6,337	5,522			815	
			MAPS, CHARTS AND ATLASES.				
		$	$	$	$	$	$
Kingston		408				408	
Montreal		1,069	65			970	34
Quebec		316	124				192
Toronto		803	267			536	
Other Ports		304				304	
Totals		2,900	456			2,218	226
			MEDICINAL ROOTS.				
		$	$	$	$	$	$
Hamilton		374	71			303	
Montreal		2,749	2,187			562	
Toronto		345	104			241	
Other Ports		251	47			204	
Totals		3,710	2,409			1,310	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			PHOSPHORUS.—IMPORTED FROM				
		$	$	$	$	$	$
Hamilton		355	81			274	
London		108				108	
Montreal		1,400				1,400	
New Carlisle		45	45				
Toronto		273				273	
Totals		2,181	126			2,055	
			PLASTER OF PARIS AND HYDRAULIC CEMENT.				
		$	$	$	$	$	$
Brockville		1,008				1,008	
Hamilton		1,375				1,375	
Kingston		710				710	
Montreal		2,414	316			2,098	
Quebec		182	182				
Toronto		1,657				1,657	
Other Ports		3,608				3,608	
Totals		10,954	498			10,456	

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			RED LEAD, WHITE LEAD—DRY.				
		$	$	$	$	$	$
Brockville		729	729				
Hamilton		736	597			139	
Montreal		23,870	23,659			211	
Quebec		400	400				
Toronto		1,335	880			455	
Other Ports		2,724	927			1,797	
Totals		29,794	27,192			2,602	
			SAILS READY MADE.				
		$	$	$	$	$	$
Amherst		1,282	152	1,020		110	
Gaspé		551	551				
New Carlisle		540	512	28			
Quebec		2,781	2,661			120	
Other Ports		819				819	
Totals		5,973	3,876	1,048		1,049	
			SPIRITS OF TURPENTINE.				
	Gallons.	$	$	$	$	$	$
Chippawa	4,178	1,914				1,914	
Hamilton	7,494	3,780	155			3,625	
London	2,426	1,203				1,203	
Montreal	56,720	27,498				27,498	
Quebec	6,088	4,870	55			4,815	
Toronto	11,029	5,721				5,721	
Other Ports	8,541	4,847	59	7		4,781	
Totals	96,476	49,833	269	7		49,557	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			STRAW, TUSCAN AND GRASS FANCY PLAITS.—IMPORTED FROM				
		$	$	$	$	$	$
Hamilton	....	255	255	....	....		....
Montreal	....	1,538	....	....	....	1,538	....
Toronto	....	949	277	....	....	672	....
Other Ports	....	144	....	....	....	144	....
Totals	....	2,886	532	....	....	2,354	....
			VESSELS—FOREIGN BUILT.				
		$	$	$	$	$	$
Amherst	....	120	....	....	....	120	....
Burwell	....	430	....	....	....	430	....
Chippawa	....	400	....	....	....	400	....
Dover	....	390	....	....	....	390	....
Goderich	....	20	....	....	....	20	....
Philipsburgh	....	150	....	....	....	150	....
Wallaceburgh	....	300	....	....	....	300	....
Windsor	....	64	....	....	....	64	....
Totals	....	1,874	....	....	....	1,874	....
			BOLTING CLOTHS.				
		$	$	$	$	$	$
Dundas	....	330	....	....	....	330	....
Montreal	....	1,002	366	....	....	636	....
Quebec	....	344	....	....	....	344	....
Toronto	....	144	144	....	....		....
Other Ports	....	111	....	....	....	111	....
Totals	....	1,031	510	....	....	1421	....
			EMERY—EMERY, GLASS AND SAND PAPER.				
		$	$	$	$	$	$
Kingston	....	34	....	....	....	34	....
Montreal	....	23	....	....	....	23	....
Oshawa	....	45	....	....	....	45	....
Quebec	....	30	....	....	....	30	....
Toronto	....	142	....	....	....	142	....
Other Ports	....	42	....	....	....	42	....
Totals	....	316	....	....	....	316	....
			FISHING HOOKS, NETS, &c.				
		$	$	$	$	$	$
Goderich	....	126	....	....	....	126	....
Kingston	....	179	....	....	....	179	....
Lacolle	....	141	....	....	....	141	....
Quebec	....	682	682	....	....	....	....
Toronto	....	1,188	819	....	....	369	....
Windsor	....	338	....	....	....	338	....
Other Ports	....	244	....	....	....	244	....
Totals	....	2,898	1,501	....	....	1,397	....

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
HAIR—ANGOLA, GOAT, &c., UNMANUFACTURED.—IMPORTED FROM							
		$	$	$	$	$	$
Hamilton		123			123		
Quebec		10			10		
Other Ports		20			20		
Totals		153			153		
ACIDS—OF EVERY DESCRIPTION EXCEPT VINEGAR.							
		$	$	$	$	$	$
Belleville		207				207	
Hamilton		939	179			760	
London		237	4,822			237	115
Montreal		6,544	503			1,607	3
Quebec		541	898			35	
Toronto		2,827	147			1,929	
Other Ports		931				787	
Totals		12,229	6,549			5,562	118
ALUM.							
		$	$	$	$	$	$
London		95				95	
Montreal		5,078	5,078				
Quebec		625	625				
Toronto		540				540	
Other Ports		219	78	2		139	
Totals		6,557	5,781	2		774	
ANATOMICAL PREPARATIONS.							
		$	$	$	$	$	$
Chippawa		3				3	
Gaspé		125	125				
Toronto		66				66	
Totals		194	125			69	
ANCHORS—WEIGHING OVER 6 CWT.							
		$	$	$	$	$	$
Amherst		106	26	80			
Quebec		5,106	5,106				
Totals		5,212	5,132	80			
ANIMALS—Horses.							
	Number.	$	$	$	$	$	$
Beauce	83	3,502				3,502	
Clifton	34	4,805				4,805	
Coaticook	109	9,129				9,129	
Fort Erie	48	3,900				3,900	
Frelighsburgh	97	8,099				8,099	
Montreal	46	25,785	21,689			4,096	
Philipsburgh	84	5,581				5,581	
Potton	100	5,655				5,655	
Prescott	219	36,215				36,215	
Sarnia	34	4,125				4,125	
Stanstead	126	10,223				10,223	
Toronto	25	3,289				3,289	
Windsor	100	8,760				8,760	
Other Ports	426	36,279				36,179	100
Totals	1,531	165,317	21,689			143,558	100

No. 1.—GENERAL STATEMENT OF IMPORTS—*Continued.*

PORTS.	Total Quantity.	Total Value.	HORNED CATTLE—IMPORTED FROM Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
	Number.	$	$	$	$	$	$
Coaticook	92	4,061				4,061	
Dundee	417	10,662				10,662	
Frelighsburgh	293	2,541				2,541	
Montreal	133	2,994	561			2,433	
Philipsburgh	103	2,109				2,109	
Prescott	86	3,468				3,468	
St. John's	109	1,959				1,959	
Sault Ste. Marie	58	3,018				3,018	
Stanstead	108	2,534				2,531	
Windsor	136	4,283				4,283	
Other Ports	868	19,134				19,134	
Totals	2,403	56,763	561			56,202	
			SHEEP.				
	Number.	$	$	$	$	$	$
Clifton	228	740				740	
Fort Erie	172	450				450	
Kingsville	307	364				364	
Montreal	60	313	230			83	
Niagara	210	637				637	
Saint John's	530	1,010				1,010	
Stanstead	287	1,019				1,019	
Other Ports	994	2,684	39			2,645	
Totals	2,788	7,217	269			6,948	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			PIGS.				
	Number.	$	$	$	$	$	$
Clifton	2,576	12,747				12,747	
Cornwall	35	650				650	
Dundee	158	2,725				2,725	
Gananoque	51	1,226				1,226	
Windsor	2,031	9,506				9,506	
Other Ports	163	1,115				1,115	
Totals	5,014	27,969				27,969	
			OTHER ANIMALS.				
		$	$	$	$	$	$
Toronto		127				127	
Totals		127				127	
			POULTRY AND FANCY BIRDS				
		$	$	$	$	$	$
Hamilton		137				137	
Montreal		393				393	
Quebec		184	116			68	
Toronto		182				182	
Windsor		133				133	
Other Ports		141				141	
Totals		1,170	116			1,054	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
ANTIMONY.—IMPORTED FROM							
		$	$	$	$	$	$
Dalhousie		7				7	
Hamilton		26				26	
Montreal		757	757				
Totals		790	757			33	
ANTIQUITIES,—COLLECTIONS OF							
		$	$	$	$	$	$
Dalhousie		150				150	
Montreal		52				52	
Quebec		155	40			115	
Other Ports		54	21			33	
Totals		411	61			350	
ARGOL.							
		$	$	$	$	$	$
Toronto		400	200			200	
Totals		400	200			200	

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
ARTICLES FOR THE PUBLIC USES OF THE PROVINCE.							
		$	$	$	$	$	$
Amherstburgh		723				723	
Bytown		180				180	
Quebec		1,663	1,004			659	
Toronto		22,134	16,855			5,279	
Other Ports		6				6	
Totals		24,706	17,859			6,847	
ASHES—PEARL.							
	Barrels.	$	$	$	$	$	$
Dundee	242	5,671				5,671	
Montreal	57	283				283	
Toronto	9	321				321	
Other Ports	5	133		8		125	
Totals	313	6,408		8		6,400	
ASHES—POT.							
	Barrels.	$	$	$	$	$	$
Dundee	27	675				675	
Kingston	14	420				420	
Montreal	520	2,595				2,595	
Saint Johns	32	1,005				1,005	
Saint Regis	75	1,500				1,500	
Other Ports	8	241		10		231	
Totals	676	6,436		10		6,426	

No. 1.—GENERAL STATEMENT OF IMPORTS—*Continued.*

PORTS.	Total Quantity.	Total Value.	BARK, BERRIES, &c., USED SOLELY IN DYEING.—IMPORTED FROM: Great Britain.	British Colonies: North America	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brantford		1,493				1,493	
Brockville		1,556				1,556	
Hamilton		6,134				6,134	
London		2,889				2,889	
Montreal		38,488	8,974			25,812	3,702
Toronto		6,399				6,399	
Other Ports		8,167	229	12		7,926	
Totals		65,126	9,203	12		52,209	3,702
BARK—TANNER'S.							
		$	$	$	$	$	$
Chatham		520				520	
Chippawa		400				400	
Dalhousie		636				636	
Kingston		385				385	
Other Ports		629				629	
Totals		2,570				2,570	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America	West Indies.	United States.	Foreign Countries.
PRINTED BOOKS.							
		$	$	$	$	$	$
Clifton		8,164	44			8,120	
Hamilton		6,678	731			5,947	
Kingston		3,550	522			3,028	
London		2,849	67			2,782	
Montreal		48,243	19,378			22,279	6,586
Prescott		5,880				5,880	
Quebec		8,391	1,385			3,668	3,338
Toronto		38,772	13,623			25,149	
Other Ports		10,357	388	3		9,966	
Totals		132,884	36,138	3		86,819	9,924
BLEACHING POWDERS.							
		$	$	$	$	$	$
Montreal		2,799	2,076			723	
Quebec		1,725	1,725				
Other Ports		232				232	
Totals		4,756	3,801			955	
BOLTING CLOTHS.							
		$	$	$	$	$	$
Dundas		2,009				2,009	
Hamilton		749				749	
Montreal		1,287				1,187	100
Quebec		864	864				
Toronto		834				834	
Other Ports		1,375				1,375	
Totals		7,118	864			6,154	100

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	BORAX.—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Hamilton		142	67			75	
Montreal		6,367	6,207				160
Quebec		195	195				
Toronto		651	589			62	
Other Ports		208	34			174	
Totals		7,563	7,092			311	160
			BOOKBINDER'S TOOLS AND IMPLEMENTS.				
		$	$	$	$	$	$
Montreal		146				146	
Quebec		189	183			6	
Queenston		129				129	
Three Rivers		280				280	
Other Ports		234				234	
Totals		978	183			795	
			BRISTLES.				
		$	$	$	$	$	$
Hamilton		121	12			109	
Montreal		7,708	2,145			5,563	
Toronto		1,607	38			1,569	
Other Ports		98	28			70	
Totals		9,534	2,223			7,311	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			BROOM CORN.				
		$	$	$	$	$	$
Brantford		2,986				2,986	
Hamilton		3,771				3,771	
Montreal		14,504				14,504	
Toronto		7,122				7,122	
Other Ports		1,918				1,918	
Totals		30,301				30,301	
			BUSTS, CASTS, AND STATUES.				
		$	$	$	$	$	$
Hamilton		1,131	1,103			28	
Montreal		312	60			252	
Quebec		228					228
Toronto		2,347	552				1,795
Other Ports		162				162	
Totals		4,180	1,715			442	2,023
			BURR-STONES AND GRIND-STONES,—Wrought and Unwrought.				
		$	$	$	$	$	$
Dundas		1,253				1,253	
Hope		949				949	
Kingston		1,147				1,147	
Montreal		7,473	2,385			3,502	1,586
Prescott		1,238				1,238	
Quebec		1,855	525			12	1,318
Toronto		2,658				2,658	
Other Ports		3,624				3,624	
Totals		20,197	2,910			14,383	2,904

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
			BUTTER—IMPORTED FROM				
	Lbs.	$	$	$	$	$	$
Clifton	3,881	732				732	
Hamilton	10,315	1,547				1,547	
Kingston	35,004	6,198				6,198	
Montreal	88,498	17,410				17,410	
New Carlisle	4,480	814		814			
Niagara	2,997	889				889	
Prescott	12,992	1,886				1,886	
Quebec	4,180	622	622				
Sault Ste. Marie	13,560	1,857				1,857	
Toronto	55,164	7,064				7,061	
Windsor	5,217	763				763	
Other Ports	13,454	2,136		147		1,989	
Totals	249,742	41,918	622	961		40,335	
			BISCUIT AND BREAD				
		$	$	$	$	$	$
Amherst		743	19	724			
Gaspé		191	191				
Totals		934	210	724			
			COCOA PASTE.				
		$	$	$	$	$	$
Amherst		3		3			
New Carlisle		8	8				
Quebec		234		234			
Totals		245	8	237			
			COIN AND BULLION.				
		$	$	$	$	$	$
Brockville		534				534	
Chatham		20				20	
Dalhousie		22				22	
Gaspé		893	508	385			
Hamilton		75				75	
Montreal		17,704	17,704				
Totals		19,248	18,212	385		651	
			CABLES—IRON CHAIN,—Over ¾ of an inch in diameter.				
		$	$	$	$	$	$
Gaspé		420	420				
Montreal		1,326	1,326				
Quebec		10,681	10,681				
Other Ports		543	439			104	
Totals		12,970	12,866			104	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
			CABLES, HEMP AND GRASS.—IMPORTED FROM				
		$	$	$	$	$	$
Bytown		442				442	
Montreal		476				476	
New Carlisle		476	476				
Other Ports		379	82	45		252	
Totals		1,773	558	45		1,170	
			CAOUTCHOUC OR INDIA RUBBER, AND GUTTA PERCHA,—Unmanufactured.				
		$	$	$	$	$	$
London		1				1	
Montreal		88,972				88,972	
Totals		88,973				88,973	
			CARRIAGES AND VEHICLES OF TRAVELLERS, &c.				
		$	$	$	$	$	$
Kingston		5,801				5,801	
Morrisburgh		6,190				6,190	
Prescott		32,017				32,017	
Other Ports		3,662				3,662	
Totals		47,670				47,670	

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
			CEMENT,—Marine or Hydraulic.—Unground.				
		$	$	$	$	$	$
Kingston		145				145	
Montreal		200				200	
Quebec		145	65			80	
Toronto		200				200	
Other Ports		127	5			122	
Totals		817	70			747	
			CHEESE.				
	Lbs.	$	$	$	$	$	$
Brantford	17,591	1,200				1,200	
Chatham	11,627	1,250				1,250	
Clifton	11,700	1,148				1,148	
Fort Erie	81,704	3,287				3,287	
Guelph	14,419	1,382				1,382	
Hamilton	86,329	7,986	255			7,731	
Kingston	93,637	9,825	46			9,779	
Montreal	187,470	33,556	2,110			31,446	
Prescott	55,040	4,710				4,710	
Quebec	10,040	2,009	1,969				40
Queenston	16,350	1,385				1,385	
Sarnia	11,681	1,314				1,314	
Toronto	117,627	14,821				14,821	
Windsor	14,386	1,832				1,832	
Other Ports	128,350	12,293	72	7		12,214	
Totals	857,951	97,998	4,452	7		93,499	40

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	COAL AND COKE—IMPORTED FROM Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries
	Tons.	$	$	$	$	$	$
Brantford	631	3,629				3,629	
Cobourg	1,176	5,653				5,653	
Dunnville	1,249	4,381				4,381	
Hamilton	6,677	26,138				26,138	
Hope	1,008	4,431				4,431	
Kingston	1,983	8,217				8,217	
Montreal	9,606	34,415	2,250	2,743		29,422	
Quebec	76,152	184,643	178,500	4,613			1,500
Saint John's	3,388	10,494				10,494	
Stanley	1,259	5,885				5,885	
Toronto	24,364	91,166				91,166	
Windsor	2,451	12,149				12,149	
Other Ports	8,700	37,205	943	51		36,211	
Totals	138,644	428,406	181,693	7,437		237,776	1,500

CLOTHING AND ARMS FOR INDIAN NATIONS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
		$	$	$	$	$	
Toronto		7,082	7,052			30	
Totals		7,082	7,052			30	

CLOTHING AND ARMS FOR MILITARY.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
		$	$	$	$	$	$
Coaticook		1,000	1,000				
Montreal		30,530	30,530				
Quebec		9,683	9,529			154	
Other Ports		1,027	987			40	
Totals		42,240	42,046			194	

COMMISSARIAT AND ORDNANCE STORES.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
		$	$	$	$	$	$
Montreal		827	827				
Totals		827	827				

CORKWOOD, OR BARK OF THE CORKWOOD TREE.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
		$	$	$	$	$	$
Montreal		224				224	
Other Ports		140	56	13		71	
Totals		364	56	13		295	

COTTON AND FLAX WASTE.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
		$	$	$	$	$	$
Clifton		4,545				4,545	
Cobourg		1,696				1,696	
Montreal		22,564	752			21,812	
Other Ports		2,364	164			2,200	
Totals		31,169	916			30,253	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	COTTON-WOOL—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Clifton		9,955				9,955	
Cobourg		2,143				2,143	
Hamilton		1,513				1,513	
Montreal		3,341	581			2,760	
Other Ports		930	91			836	
Totals		17,882	675			17,207	
			CREAM OF TARTAR,—In Crystals.				
		$	$	$	$	$	$
Hamilton		424	150			274	
Montreal		9,372	1,967			3,439	3,966
Other Ports		53				53	
Totals		9,819	2,117			3,766	3,966
			DIAMONDS AND PRECIOUS STONES.				
		$	$	$	$	$	$
Montreal		7				7	
Quebec		3				3	
Toronto		300				300	
Totals		310				310	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			DONATIONS.				
		$	$	$	$	$	$
London		100				100	
Montreal		496	230			266	
Windsor		110				110	
Other Ports		201				201	
Totals		907	230			677	
			DRAWINGS.				
		$	$	$	$	$	$
Montreal		2,961	2,179			722	60
Prescott		17,130				17,130	
Quebec		3,350	3,273			77	
Toronto		2,349	1,676			673	
Other Ports		902				902	
Totals		26,692	7,128			19,504	60
			EARTHS, CLAYS, SANDS, AND OCHRES,				
		$	$	$	$	$	$
Montreal		2,512	1,719			793	
Quebec		1,544	1,318			22	204
Toronto		496	72			424	
Other Ports		1,518	21			1,497	
Totals		6,070	3,130			2,736	204
			EGGS.				
	Dozen.	$	$	$	$	$	$
Brockville	1,858	187				187	
Clifton	4,875	781				781	
Hamilton	885	145				145	
Niagara	2,939	305				305	
Toronto	2,242	265				265	
Other Ports	2,124	231		21		210	
Totals	14,923	1,914		21		1,893	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
EMERY—EMERY, GLASS, AND SAND-PAPER—IMPORTED FROM							
		$	$	$	$	$	$
Hamilton		113	21			92	
Kingston		224	19			205	
Montreal		2,609	1,358			1,251	
Quebec		364	19			345	
Toronto		471	59			412	
Other Ports		373				373	
Totals		4,154	1,476			2,678	
FARMING UTENSILS AND IMPLEMENTS.							
		$	$	$	$	$	$
Montreal		59	30			29	
Morrisburgh		5				5	
Niagara		18				18	
Quebec		29	29				
Totals		111	59			52	

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
FELT HAT-BODIES AND HAT-FELTS.							
		$	$	$	$	$	$
Hamilton		746	357			389	
Kingston		459				459	
Montreal		7,115	721			6,394	
Toronto		1,321	177			1,144	
Other Ports		243				243	
Totals		9,884	1,255			8,629	
FLAX, HEMP, AND TOW—Undressed.							
		$	$	$	$	$	$
Collingwood		1,130				1,130	
Kingston		1,156				1,156	
Montreal		43,276	139			42,188	919
Quebec		14,639	5,793			8,846	
Toronto		1,977				1,977	
Other Ports		2,004				2,004	
Totals		64,182	5,932			57,301	919
FIREWOOD.							
	Cords.	$	$	$	$	$	$
Dundee	5,357	13,658				13,658	
Montreal	130	400				400	
Saint Johns	589	1,388				1,388	
Saint Regis	6,282	11,403				11,403	
Toronto	6,084	12,201				12,201	
Other Ports	1,410	1,805		45		1,760	
Totals	19,852	40,855		45		40,810	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
FIRE BRICK AND CLAY—IMPORTED FROM							
		$	$	$	$	$	$
Hamilton		651				651	
Montreal		1,666	195			1,471	
Quebec		8,760	8,474			66	220
Toronto		4,783				4,783	
Other Ports		2,074	388	15		1,671	
Totals		17,934	9,057	15		8,612	220
FISH—fresh							
		$	$	$	$	$	$
Clifton		26,240				26,240	
Coaticook		10,646				10,646	
Hamilton		1,219				1,219	
Kingston		4,203				4,203	
Prescott		5,758				5,758	
Quebec		7,902		4,335		3,567	
Sarnia		1,117				1,117	
Toronto		1,131				1,131	
Other Ports		7,088		27		7,061	
Totals		65,304		4,362		60,942	
FISH—Salt.							
		$	$	$	$	$	$
Coaticook		3,956				3,956	
Hamilton		1,777				1,777	
London		1,201				1,201	
Montreal		141,352	4,821	100,309		28,119	8,103
New Carlisle		23,391		23,391			
Quebec		32,237	212	31,748		277	
Stanstead		1,256				1,256	
Toronto		1,907				1,907	
Windsor		1,149				1,149	
Other Ports		8,000				8,000	
Totals		216,226	5,033	155,448		47,642	8,103
FISH OIL—Crude.							
	Gallons.	$	$	$	$	$	$
Clifton	4,172	2,609				2,609	
Hamilton	4,478	2,377				2,377	
London	2,013	1,199				1,199	
Montreal	128,649	71,623		32,044		39,579	
New Carlisle	5,960	1,936		1,936			
Quebec	9,869	5,490		5,344		146	
Toronto	40,174	23,034				23,034	
Other Ports	6,183	4,154				4,154	
Totals	201,498	112,422		39,324		73,098	
FISHING NETS, SEINES, HOOKS, &c.							
		$	$	$	$	$	$
Amherst		1,991	194	1,797			
Gaspé		15,418	15,296			122	
Hamilton		1,163	596			567	
Montreal		6,831	6,226			404	201
New Carlisle		3,423	3,054	187		182	
Quebec		5,337	4,986			351	
Toronto		2,832	1,265			1,567	
Other Ports		8,344	1,136			7,208	
Totals		45,339	32,753	1,984		10,401	201

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	FRUIT, Green—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
			$	$	$	$	$
Hamilton		8,590				8,590	
Kingston		12,163				12,163	
London		8,584				8,584	
Montreal		62,423				62,423	
Niagara		16,130				16,130	
Prescott		10,061				10,061	
Quebec		4,639					
Sarnia		6,253	590	57		3,692	300
Toronto		31,687				6,253	
Other Ports		56,062				31,687	
				36		56,026	
Totals		216,592	590	93		215,609	300

PORTS.	Total Quantity.	Total Value.	FRUIT—Dried.				
		$		$	$	$	$
Coaticook		1,677				1,677	
Dundas		1,737				1,737	
Fort Erie		1,364				1,364	
Guelph		1,998				1,998	
Hamilton		4,487				4,487	
Kingston		3,836				3,836	
London		2,521				2,521	
Toronto		5,411				5,411	
Woodstock		1,072				1,072	
Other Ports		11,311				11,311	
Totals		35,414				35,414	

PORTS.	Total Quantity.	Total Value.	FURS AND SKINS, PELTS OR TAILS,—Undressed.				
		$	$	$	$	$	$
Hamilton		1,601				1,601	
Montreal		119,754	20,375			99,379	
Paris		3,970				3,970	
Prescott		1,890				1,890	
Quebec		2,444	270			2,174	
Windsor		1,510				1,510	
Other Ports		4,839	467	364		4,008	
Totals		136,008	21,112	364		114,532	

PORTS.	Total Quantity.	Total Value.	FLOUR.				
	Barrels.	$	$	$	$	$	$
Belleville	4,925	29,700				29,700	
Chatham	7,532	46,310				46,310	
Fort Erie	11,634	62,620				62,620	
Hamilton	5,055	33,895				33,895	
Kingston	31,659	176,511				176,511	
Montreal	249,228	1,282,563	9,077			1,252,086	21,400
Prescott	5,006	33,223				33,223	
Quebec	16,679	86,680	29,615			45,717	11,348
Saint Johns	5,381	31,489				31,489	
Sarnia	9,263	57,210				57,210	
Toronto	7,632	41,725				41,725	
Windsor	11,438	59,551				59,551	
Other Ports	39,661	242,824	1,219	13,866		220,616	7,123
Totals	405,093	2,184,331	39,911	13,866		2,090,683	39,871

PORTS.	Total Quantity.	Total Value.	BARLEY AND RYE.				
	Bushels.	$	$	$	$	$	$
Chippawa	4,771	3,470				3,470	
Clifton	1,721	1,234				1,234	
Kingston	5,329	4,477				4,477	
Prescott	5,402	4,432				4,432	
Toronto	23,561	16,930				16,930	
Windsor	5,548	3,592				3,592	
Other Ports	3,015	2,509		51		2,458	
Totals	49,347	36,644		51		36,593	

No. 1.—GENERAL STATEMENT OF IMPORTS—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
			BRAN AND SHORTS—IMPORTED FROM				
		$	$	$	$	$	$
Belleville		619				619	
Burwell		507				507	
Goderich		818				818	
Kingston		3,220				3,220	
Sarnia		543				543	
Windsor		2,177				2,177	
Other Ports		2,382				2,382	
Totals		10,266				10,266	
			BUCKWHEAT.				
	Bushels.	$	$	$	$	$	$
Goderich	656	496				496	
Hamilton	488	499				499	
London	442	493				493	
Sarnia	221	341				341	
Stanley	280	472				472	
Toronto	149	207				207	
Other Ports	1,577	1,799				1,799	
Totals	3,813	4,307				4,307	
			BEAR AND BIGG.				
	Bushels.	$	$	$	$	$	$
Goderich	118	143				143	
Totals	118	143				143	
			OATS.				
	Bushels.	$	$	$	$	$	$
Clifton	1,851	859				859	
Dalhousie	7,710	3,908				3,908	
Montreal	208	106				106	
Rowan	2,275	1,429				1,429	
Sarnia	11,187	6,661				6,661	
Toronto	19,295	7,853				7,853	
Other Ports	12,120	5,870		81		5,786	
Totals	54,646	26,686		81		26,602	
			BEANS AND PEAS.				
	Bushels.	$	$	$	$	$	$
Fort Erie	810	803				803	
Hamilton	1,037	1,038				1,038	
Owen's Sound	246	323				323	
Prescott	332	349				349	
Sarnia	458	448				448	
Toronto	302	312				312	
Other Ports	2,397	2,601	10	120		2,471	
Totals	5,582	5,874	10	120		5,744	
			INDIAN CORN.				
	Bushels.	$	$	$	$	$	$
Belleville	15,335	12,294				12,294	
Chatham	21,362	17,479				17,479	
Chippawa	63,973	45,317				45,317	
Collingwood	21,328	16,877				16,877	
Dover	20,814	15,146				15,146	
Hamilton	20,524	12,285				12,285	
Kingston	90,688	65,105				65,105	
Montreal	19,596	15,991				15,991	
Prescott	59,009	42,396				42,396	
Toronto	143,524	100,333				100,333	
Windsor	136,994	98,851				98,851	
Other Ports	145,387	116,325				116,325	
Totals	758,534	558,399				558,390	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	WHEAT—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries
	Bushels.	$	$	$	$	$	$
Chippawa	58,985	57,102				57,102	
Dalhousie	325,171	327,746				327,746	
Hamilton	24,133	29,385				29,385	
Kingston	347,376	328,661				328,661	
London	18,593	21,403				21,403	
Montreal	142,834	147,730				137,072	10,658
Prescott	22,924	22,490				22,490	
Quebec	10,195	15,522	15,522				
Stanley	17,193	21,052				21,052	
Toronto	12,828	13,337				13,337	
Windsor	31,811	33,683				33,683	
Other Ports	61,922	74,094				74,089	5
Totals	1,073,965	1,092,205	15,522			1,066,020	10,663
			SAGO FLOUR.				
	Lbs.	$	$	$	$	$	$
Kingston	180	15				15	
Montreal	32,162	2,579	1,606			973	
Other Ports	198	15				15	
Totals	32,540	2,609	1,606			1,003	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
			MEAL.				
	Bushels.	$	$	$	$	$	$
Belleville	2,863	8,028				8,028	
Fort Erie	4,166	12,424				12,424	
Goderich	1,570	9,525				9,525	
Hamilton	1,028	3,342				3,342	
Kingston	5,557	22,235				22,235	
Montreal	987	3,949	44			3,905	
Picton	830	4,659				4,659	
Prescott	885	3,351				3,351	
Sarnia	1,845	6,829				6,829	
Toronto	2,308	7,368				7,368	
Windsor	1,090	3,567				3,567	
Other Ports	10,957	41,077	140	268		40,669	
Totals	34,086	126,354	184	268		125,902	
			GEMS AND MEDALS.				
		$	$	$	$	$	$
Montreal		249	137			56	56
Toronto		227	214			6	7
Totals		476	351			62	63
			GOLD BEATERS' BRIM MOULDS AND SKINS				
		$	$	$	$	$	$
Dalhousie		2,915				2,915	
Toronto		44	44				
Totals		2,959	44			2,915	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

GREASE AND SCRAPS.—IMPORTED FROM

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Hamilton		7,638				7,638	
London		629				629	
Montreal		534				534	
Saint Johns		636				636	
Toronto		3,365				3,365	
Other Ports		2,847				2,847	
Totals		15,649				15,649	

GRAVELS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Chatham		19				19	
Hamilton		15				15	
Montreal		814				814	
Quebec		30	30				
Saint Johns		260				260	
Totals		1,138	30			1,108	

GYPSUM, OR PLASTER OF PARIS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Belleville		1,504				1,504	
Cobourg		1,149				1,149	
Montreal		398				398	
Picton		1,824				1,824	
Toronto		1,649				1,649	
Whitby		1,047				1,047	
Other Ports		4,192				4,192	
Totals		11,763				11,763	

HAIR—ANGOLA, GOAT, &c.—Unmanufactured.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brockville		107				107	
Bytown		239				239	
Hamilton		201				201	
Quebec		1,633				1,633	
Toronto		25				25	
Other Ports		275				275	
Totals		2,480				2,480	

HIDES AND HORNS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Brockville		52,167				52,167	
Coaticook		51,429				51,429	
Kingston		84,301				84,301	
London		14,697				14,697	
Maitland		15,713				15,713	
Montreal		138,978				138,978	
Philipsburgh		30,528				30,528	
Prescott		13,239				13,239	
Saint Johns		97,110				97,110	
Toronto		113,326				113,326	
Other Ports		99,395	594	200		95,197	3,404
Totals		710,883	594	200		706,685	3,404

INDIGO.

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Hamilton		928	304			624	
Kingston		331				331	
London		635				635	
Montreal		28,262	25,169			2,264	829
Quebec		6,189	5,749			440	
Toronto		1,485	429			1,056	
Other Ports		1,509	91	183		1,235	
Totals		39,339	31,742	183		6,585	829

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
JUNK AND OAKUM—IMPORTED FROM							
		$	$	$	$	$	$
Belleville		715				715	
Dalhousie		349				349	
Kingston		213				213	
Montreal		2,979				2,979	
Quebec		1,219	727	326		166	
Toronto		651	626			25	
Windsor		262				262	
Other Ports		1,963	210	55		1,698	
Totals		8,351	1,563	381		6,407	
LARD.							
	Lbs.	$	$	$	$	$	$
Dalhousie	7,600	2,280				2,280	
Hamilton	11,161	1,327				1,327	
Kingston	12,047	1,205				1,205	
Montreal	103,193	12,251				12,251	
Toronto	97,461	10,409				10,409	
Other Ports	48,510	5,979	288	117		5,574	
Totals	279,975	33,454	288	117		33,049	
LIME.							
	Bbls.	$	$	$	$	$	$
Amherst	22	29		29			
Totals	22	29		29			
MANILLA GRASS, SEA GRASS, AND MOSSES.							
		$	$	$	$	$	
Bytown		438				438	
Hamilton		488				488	
Montreal		512				512	
Quebec		1,071				1,071	
Toronto		201				201	
Other Ports		1,153		15		1,138	
Totals		3,863		15		3,848	
MANURES.							
		$	$	$	$	$	$
Darlington		1,311				1,311	
Hope		1,255				1,255	
Montreal		1,461				1,461	
Oshawa		944				944	
Toronto		6,262				6,262	
Other Ports		1,482				1,482	
Totals		12,721				12,721	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries
			MARBLE IN BLOCKS,—Unpolished.—IMPORTED FROM				
		$	$	$	$	$	$
Brockville		889				889	
Hamilton		2,165				2,165	
Kingston		1,248				1,248	
Montreal		6,980				6,980	
Morrisburgh		729				729	
Newcastle		1,131				1,131	
Toronto		3,016				3,016	
Other Ports		6,403	17			6,386	
Totals		22,561	17			22,544	
			MEATS,—Fresh, smoked, and salt.				
	Cwt.	$	$	$	$	$	$
Bytown	4,600	46,279				46,279	
Coaticook	1,600	9,975				9,975	
Fort Erie	1,418	11,344				11,344	
Hope	803	7,232				7,232	
Kingston	2,822	20,839				20,839	
Montreal	20,348	228,427				228,427	
Prescott	15,463	112,550				112,550	
Quebec	3,807	30,747	171			29,201	1,375
Saint Johns	1,239	11,845				11,845	
Sarnia	899	8,648				8,648	
Toronto	340	3,203				3,203	
Windsor	1,403	11,103				11,103	
Other Ports	12,730	105,900	1,112	3,980		100,808	
Totals	67,472	608,092	1,283	3,980		601,454	1,375

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries
			MENAGERIES—HORSES, CARRIAGES, &c., OF				
	$	$	$	$	$	$	$
Coaticook		19,800				19,800	
Totals		19,800				19,800	
			MILITARY AND NAVAL STORES.				
		$	$	$	$	$	$
Montreal		37,073	37,013			60	
Quebec		260	260				
Toronto		286	271			15	
Totals		37,619	37,544			75	
			MODELS.				
		$	$	$	$	$	$
Montreal		656				656	
Newcastle		181				181	
Oshawa		590				590	
Other Ports		910	23			887	
Totals		2,337	23			2,314	
			MUSICAL INSTRUMENTS FOR MILITARY BANDS.				
		$	$	$	$	$	$
Belleville		26				26	
Montreal		4				4	
Quebec		40	30			10	
Toronto		293	248			45	
Totals		363	278			85	

NO. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			NITRE, OR SALTPETRE.—IMPORTED FROM				
		$	$	$	$	$	$
Hamilton		6,063	12			6,051	
Montreal		11,200	10,536			499	165
Toronto		1,135	455			980	
Other Ports		590	5			585	
Totals		19,288	11,008			8,115	165
			OILS—Cocoanut, Pine and Palm.				
	Gallons.	$	$	$	$	$	$
Hamilton	8,388	842				842	
Montreal	59,576	17,661	18,223			29,092	346
Quebec	4,740	4,112	2,996			1,116	
Toronto	30,353	13,467				13,467	
Other Ports	9,259	3,507				3,507	
Totals	109,316	69,589	21,219			48,024	346
			ORES OF ALL KINDS.				
		$	$	$	$	$	$
Hamilton		20				20	
Kingston		1,770				1,770	
Montreal		599				599	
Totals		2,389				2,389	
			PHILOSOPHICAL INSTRUMENTS AND APPARATUS.				
		$	$	$	$	$	$
Kingston		1,844	80			1,764	
Montreal		2,197	2,143			54	
Quebec		1,580	274	50		634	622
Toronto		1,877	1,494			383	
Other Ports		740				740	
Totals		8,238	3,991	50		3,575	622
			PIG IRON, PIG LEAD, AND PIG COPPER.				
	Tons.	$	$	$	$	$	$
Hamilton	88	4,913				4,913	
Montreal	3,980	80,809	79,296			1,513	
Niagara	85	3,400				3,400	
Oshawa	135	3,740				3,740	
Prescott	4,226	57,818	57,770			48	
Toronto	100	1,372	1,344			28	
Other Ports	69	1,649	315	27		1,307	
Totals	8,683	153,701	138,725	27		14,949	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
PITCH AND TAR—IMPORTED FROM							
	Barrels.	$	$	$	$	$	$
Gaspé	127	372	24	348			
Montreal	1,962	3,984				3,984	
New Carlisle	161	492	20	472			
Quebec	996	2,728	1,133			1,595	
Toronto	218	731				731	
Other Ports	733	2,411		249		2,162	
Totals	4,197	10,718	1,177	1,069		8,472	
PRINTING INK AND PRINTING PRESSES.							
		$	$	$	$	$	$
Bytown		2,094				2,094	
Hamilton		696				696	
Montreal		6,960	561			6,399	
Quebec		4,328	9			4,319	
Stanstead		700				700	
Toronto		4,577				4,577	
Other Ports		2,513				2,513	
Totals		21,868	570			21,298	

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries
PACKAGES.							
		$	$	$	$	$	$
Montreal		3,123	41			3,082	
Quebec		556	471			82	3
Other Ports		586				586	
Totals		4,265	512			3,750	3
RAGS.							
		$	$	$	$	$	$
Dundee		212				212	
Montreal		3,513				3,513	
Quebec		291	286			5	
Other Ports		142				142	
Totals		4,158	286			3,872	
RESIN AND ROSIN.							
	Barrels.	$	$	$	$	$	$
Hamilton	524	1,300				1,300	
Montreal	10,650	7,753				7,753	
Quebec	2,414	4,048				4,048	
Toronto	1,489	5,107				5,107	
Other Ports	1,682	3,095	29	3		3,063	
Totals	16,759	21,303	29	3		21,271	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued*

PORTS.	Total Quantity.	Total Value.	RICE—IMPORTED FROM: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Brantford	36,771	1,409				1,409	
Hamilton	85,169	2,999				2,999	
London	51,273	1,867				1,867	
Montreal	2,162,870	61,924	59,826			1,255	3,843
Quebec	965,328	26,218	26,213				5
Toronto	49,962	3,003				3,003	
Other Ports	203,184	9,337	317	991		8,029	
Totals	3,557,557	109,757	86,356	991		18,562	3,848
SAIL CLOTH.							
		$	$	$	$	$	$
Gaspé		1,212	1,212				
Montreal		16,871	5,811			11,060	
New Carlisle		1,910	1,631	279			
Quebec		18,398	13,474			4,924	
Toronto		1,378				1,378	
Other Ports		1,668	198	115		1,355	
Totals		41,437	22,326	394		18,717	
SALT.							
	Bushels.	$	$	$	$	$	$
Amherst	58,956	9,569	300	8,906		363	
Belleville	26,940	5,195				5,195	
Cobourg	25,158	5,220				5,220	
Gaspé	76,812	7,887	4,519			6	3,362
Hamilton	74,864	15,639				15,639	
Kingston	37,020	7,506				7,506	
Montreal	38,450	3,845	3,665				180
New Carlisle	42,901	6,605	4,230	2,375			
Quebec	831,781	88,510	82,779	600			5,161
Stanley	24,186	11,397				11,397	
Toronto	95,880	24,389				24,389	
Other Ports	309,679	75,493				75,493	
Totals	1,622,630	261,285	95,493	11,881		145,208	8,703
SAL AMMONIAC, SAL SODA, SODA ASH.							
		$	$	$	$	$	$
Hamilton		1,019	637			382	
Montreal		51,191	49,465			1,726	
Quebec		9,749	9,584			165	
Toronto		2,828	203			2,625	
Other Ports		3,856	34			3,822	
Totals		68,643	59,923			8,720	

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	SEEDS.—IMPORTED FROM Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Clifton		1,961				1,961	
Cobourg		2,973				2,973	
Fort Erie		1,836				1,836	
Hamilton		11,094	1,532			9,562	
Kingston		2,003	319			1,684	
London		3,971				3,971	
Montreal		27,857	7,390			19,934	533
Picton		2,170				2,170	
Prescott		4,776				4,776	
Quebec		4,071	1,678			1,518	875
Sarnia		1,794				1,794	
Stanstead		2,268				2,268	
Toronto		10,581	673			9,908	
Windsor		1,724				1,724	
Other Ports		16,739	703	4		16,032	
Totals		95,818	12,295	4		82,111	1,408

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			SETTLERS' GOODS.				
		$	$	$	$	$	$
Chatham		8,471				8,471	
Clifton		7,597				7,597	
Dalhousie		6,337				6,337	
Fort Erie		8,732				8,732	
Hamilton		16,948	121			16,827	
Kingston		7,827	304			7,523	
London		12,913				12,913	
Montreal		41,523	10,436	169		30,866	52
Prescott		11,287				11,287	
Quebec		46,595	24,832	40		942	20,781
Sarnia		7,186				7,186	
Toronto		30,321	2,843			27,478	
Windsor		10,055				10,055	
Other Ports		99,378	2,146	930		96,302	
Totals		315,170	40,682	1,139		252,516	20,833
			SHIPS' WATER CASKS IN USE.				
		$	$	$	$	$	$
Quebec		71	44				27
Russeltown		1,739				1,739	
Totals		1,810	44			1,739	27
			SHIPS' BLOCKS,—BINNACLE LAMPS, &c				
		$	$	$	$	$	$
Amherst		604	56	546		2	
Dalhousie		4,633				4,633	
Kingston		1,041				1,041	
Montreal		2,926	243			2,683	
Quebec		2,839	2,551			288	
Other Ports		3,623	683			2,940	
Totals		15,666	3,533	546		11,587	

No 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	SPECIMENS—IMPORTED FROM Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Montreal		1,088	355			733	
Toronto		833				833	
Other Ports		235				235	
Totals		2,156	355			1,801	
			SLATE.				
		$	$	$	$	$	$
Hamilton		1,380				1,380	
London		1,080				1,080	
Montreal		4,639				4,639	
Sarnia		2,100				2,100	
Toronto		2,211				2,211	
Other Ports		1,353				1,353	
Totals		12,763				12,763	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			STONE UNWROUGHT.				
	$	$	$	$	$	$	
Coaticook		1,165				1,165	
Fort Erie		7,750				7,750	
Hamilton		1,356				1,356	
Montreal		959				959	
Sarnia		3,765				3,765	
Stanley		1,110				1,110	
Toronto		7,374				7,374	
Other Ports		3,058		16		3,042	
Totals		26,537		16		26,521	
			STEREOTYPE BLOCKS, FOR PRINTING PURPOSES.				
		$	$	$	$	$	$
Hamilton		67				67	
Montreal		192	6			186	
Toronto		458	5			453	
Other Ports		78				78	
Totals		795	11			784	
			SULPHUR AND BRIMSTONE.				
		$	$	$	$	$	$
Hamilton		324				324	
London		176				176	
Montreal		1,010	879			131	
Quebec		175	175				
Other Ports		128	1			127	
Totals		1,813	1,055			758	

No. 1.—GENERAL STATEMENTS OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	TALLOW—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Brockville	47,654	4,795				4,795	
Clifton	66,490	8,317				8,317	
Cobourg	56,464	5,533				5,533	
Dalhousie	119,363	11,823				11,823	
Hamilton	224,592	22,821				22,821	
Kingston	62,989	6,571				6,571	
London	71,681	7,154				7,154	
Montreal	1,686,915	176,150				176,150	
Quebec	49,912	4,896				4,896	
Toronto	405,628	41,598				41,598	
Other Ports	184,528	19,381				19,381	
Totals	2,976,216	309,039				309,039	

			TEASELS.				
		$	$	$	$	$	$
Cobourg		91				91	
Credit		84				84	
Hamilton		108				108	
Other Ports		265				265	
Totals		548				548	

			TIMBER AND LUMBER, of all sorts—Unmanufactured.				
		$	$	$	$	$	$
Amherst		2,441				2,441	
Cornwall		3,674				3,674	
Dundee		4,454				4,454	
Kingston		27,738				27,738	
New Carlisle		17,225		17,225			
Prescott		3,760				3,760	
Saint Regis		10,507				10,507	
Sarnia		22,134				22,134	
Windsor		12,529				12,529	
Other Ports		10,870		672		10,198	
Totals		115,332		17,897		97,435	

			TIN AND ZINC, OR SPELTER				
		$	$	$	$	$	$
Hamilton		1,197	338			1,159	
Montreal		5,571	4,856			181	534
Quebec		761	761				
Toronto		2,498	370			2,128	
Other Ports		884	56			828	
Totals		11,217	6,381			4,299	534

			TREES AND SHRUBS, BULBS, &c				
		$	$	$	$	$	$
Cobourg		3,310				3,310	
Hamilton		1,731	70			1,661	
Hope		1,262				1,262	
Kingston		1,057	24			1,033	
London		1,030				1,030	
Montreal		2,097	532			1,565	
Toronto		5,094				5,094	
Whitby		1,329				1,329	
Other Ports		8,158	49			8,109	
Totals		25,098	675			24,423	

No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	TREENAILS.—IMPORTED FROM				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Quebec		992				992	
Totals		992				992	
			TOBACCO.—Unmanufactured.				
	Lbs.	$	$	$	$	$	$
Hamilton	19,873	2,496				2,496	
Hope	3,566	1,038				1,038	
Montreal	1,100,819	67,215				67,215	
Quebec	699,154	53,958	8			53,950	
Toronto	122,305	18,288				18,288	
Other Ports	18,976	3,969		12		3,957	
Totals	1,964,693	146,964	8	12		146,944	
			VARNISH.—Bright and Black.				
		$	$	$	$	$	$
Chippawa		6				6	
Montreal		217				217	
New Carlisle		118	118				
Quebec		91	91				
Totals		462	209			253	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			VEGETABLES.				
		$	$	$	$	$	$
Clifton		3,024				3,024	
Hamilton		4,373				4,373	
Kingston		7,193				7,193	
Montreal		5,544				5,544	
Saint Johns		4,578				4,578	
Sarnia		4,873				4,873	
Toronto		7,596				7,596	
Other Ports		29,647	110	609		28,928	
Totals		66,828	110	609		66,109	
			WINES, SPIRITS, &c., for Officers' Mess.				
		$	$	$	$	$	$
Montreal		9,555	8,503				1,052
Quebec		4,274	2,753	304		295	922
Totals		13,829	11,256	304		295	1,974

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No. 1.—GENERAL STATEMENT OF IMPORTS.—*Continued.*

PORTS	Total Quantity.	Total Value.	WOOD, of all kinds—IMPORTED FROM: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States	Foreign Countries
		$	$	$	$	$	$
Dundee		3,931				3,931	
Montreal		7,417				7,417	
Prescott		1,260				1,260	
Quebec		3,353	148			3,205	
Toronto		1,286				1,286	
Other Ports		2,539	646	9		1,884	
Totals		19,789	794	9		18,986	

WOOL.

PORTS	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States	Foreign Countries
	Lbs.	$	$	$	$	$	$
Bytown	18,513	9,645				9,645	
Clifton	12,259	5,192				5,192	
Coaticook	22,347	6,011				6,011	
Cobourg	25,391	22,515	1,550			20,965	
Credit	9,831	2,749				2,749	
Hamilton	24,604	4,139				4,139	
Montreal	233,224	58,306	57,537			769	
Prescott	18,001	5,574				5,574	
Quebec	9,000	1,870	1			1,869	
Toronto	7,101	1,372				1,372	
Whitby	11,000	2,706				2,706	
Other Ports	22,269	5,186		2		5,184	
Totals	413,570	125,265	59,088	2		66,175	

FOREIGN REPRINTS of BRITISH COPYRIGHTS.

PORTS	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States	Foreign Countries
		$	$	$	$	$	$
Clifton		997				997	
Coaticook		34				34	
Cobourg		18				18	
Dalhousie		32				32	
Darlington		20				20	
Dover		2				2	
Hamilton		252				252	
Kingston		52				52	
Montreal		855				855	
Picton		119				119	
Quebec		397				397	
Stanley		2				2	
Stanstead		2				2	
Toronto		728				728	
Totals		3,510				3,510	

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No. 2.—SUMMARY STATEMENT of the Quantity and Value of, and Amount of Duty Collected on, the Principal Articles of British and Foreign Merchandise entered for Consumption during the Year 1859, and indicating from what Country Imported.

No.	ARTICLES.		TOTAL IMPORTS. Quantities.	TOTAL IMPORTS. Total Value.	FROM WHAT COUNTRY IMPORTED. Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Other Foreign Countries.	Amount of Duty.	No.
	Specific Duties.			$	$	$	$	$	$	$ cts.	
1	Whisky	Galls.	55,978	30,646	15,471	283	.....	14,892	.....	10,076 04	1
2	Coffee, Green	Lbs.	2,103,508	256,543	4,499	1,586	.....	248,747	1,711	21,035 08	2
3	Tea	"	6,839,695	2,330,201	144,248	7,248	.....	2,071,339	107,366	270,229 53	3
	Total Articles paying Specific Duties		.....	2,617,390	164,218	9,117	.....	2,334,978	109,077	301,340 65	
	Specific Duties, and 100 per cent. ad valorem.										
4	Brandy	Galls.	38,236	45,643	4,608	.....	.....	6,641	34,394	39,386 41	4
5	Gin	"	125,568	51,019	41,258	115	.....	1,029	8,617	51,975 75	5
6	Rum	"	19,073	11,869	9,148	451	.....	1,337	933	10,947 60	6
7	Spirits and Strong Waters, including Spirits of Wine and Alcohol, and not being Whisky	"	966	517	5	.....	.....	289	223	516 88	7
8	Cordials	"	2,613	4,109	2,864	.....	.....	259	986	3,128 56	8
	Total Specific Duties, and 100 per cent. ad valorem		.....	113,157	27,883	566	.....	9,555	45,153	105,955 20	
	Specific Duties, and 40 per cent. ad valorem.										
9	Cigars	Lbs.	33,423	29,722	2,412	.....	.....	25,701	1,579	11,604 36	9
10	Sugar, refined—or other Sugar equal to refined	"	1,463,157	127,609	31,060	70	.....	76,601	19,938	37,795 99	10
	Total Specific Duties, and 40 per cent. ad valorem		.....	157,331	33,442	70	.....	102,302	21,517	49,400 35	
	Specific Duties, and 30 per cent. ad valorem.										
11	Ale, Beer and Porter, in Casks	Galls.	47,285	12,685	9,306	.....	.....	3,379	.....	3,806 28	11
12	do do in Bottles	Doz.	18,078	17,835	17,728	.....	.....	98	9	4,997 80	12
13	Blacking		.....	7,176	3,208	.....	.....	3,968	.....	2,681 36	13
14	Coffee, Ground or Roasted	Lbs.	35,925	3,052	611	54	.....	2,387	.....	922 04	14
15	Cinnamon, Mace, and Nutmegs	"	62,715	18,636	8,326	.....	.....	10,171	139	5,678 47	15
16	Spices, including Ginger, Pimento, and Pepper—Ground	"	63,894	4,861	333	53	.....	4,475	.....	1,485 25	16
17	Dried Fruits, including Almonds, Walnuts, Filberts, and Nuts of all kinds	"	2,739,819	174,768	30,754	179	.....	120,236	23,599	53,022 59	17
18	Patent Medicines and Medicinal preparations		.....	58,987	7,802	211	.....	50,938	33	15,776 17	18
19	Molasses	Galls.	1,148,814	237,145	.....	22,520	530	201,678	12,417	49,629 79	19
20	Sugar—being neither refined, nor other Sugar equal to refined	Lbs.	21,384,103	1,764,963	95,109	49,790	.....	1,568,074	51,990	413,587 71	20
21	Snuff	"	32,716	6,053	19	1	.....	6,033	.....	1,959 29	21
22	Soap	"	879,528	49,776	37,363	206	.....	8,682	3,525	14,836 41	22
23	Starch	"	669,402	42,070	9,315	12	.....	32,743	.....	13,019 84	23
24	Tobacco, manufactured	"	3,493,453	574,943	300	6,171	.....	568,435	37	171,020 71	24
25	Wine of all kinds, in Wood	Galls.	260,779	193,593	82,931	1,115	.....	26,300	83,247	56,734 04	25
26	do do in Bottles	Doz.	8,208	36,772	14,008	.....	.....	7,554	15,210	10,481 91	26
	Total Specific Duties, and 30 per cent. ad valorem		.....	3,203,315	317,113	80,315	530	2,615,151	190,206	819,169 36	
	25 per cent. ad valorem.										
27	Manufactures of Leather—Boots and Shoes		.....	133,109	15,458	686	.....	114,618	2,347	33,278 03	27
28	do do Harness and Saddlery		.....	7,209	2,706	57	.....	4,446	.....	1,818 20	28
29	Clothing or Wearing Apparel, made by Hand or Sewing Machine		.....	108,392	85,913	928	.....	21,547	4	27,105 54	29
	Total 25 per cent. ad valorem		.....	248,710	104,077	1,671	.....	140,611	2,351	62,201 77	
	20 and 15 per cent. ad valorem.										
30	Bagatelle Boards and Billiard Tables, and furnishings		.....	3,730	395	.....	.....	3,335	.....	745 56	30
31	Book, Map, and News Printing Paper		.....	3,366	691	.....	.....	2,055	620	497 46	31

No. 2.—SUMMARY STATEMENT of the Quantity and Value of, and Amount of Duty Collected on, the Principal Articles, &c.—*Continued.*

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	ARTICLES.	TOTAL IMPORTS.		FROM WHAT COUNTRY IMPORTED.					Amount of Duty.		
		Quantities.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Other Foreign Countries.			
	20 and 15 per cent. ad valorem.—Continued.		$	$	$	$	$	$	$	cts.	
1	Brooms and Brushes, of all kinds		18,335	7,365	10		10,317	643	3,673	42	1
2	Candles—Tallow		13,399	4,815	154		7,870	560	2,578	46	2
3	do and Tapers, other than Tallow		39,326	29,054			7,708	2,564	7,863	88	3
4	Chandeliers, Girondoles, Gas Fittings		8,343	5,957			2,386		1,668	72	4
5	Cider ....Galls.	25,117	1,965				1,965		379	92	5
6	Cocoa and Chocolate ....Lbs.	26,955	3,515	1,146	280		2,089		692	02	6
7	Carriages		27,253	1,932	56		25,265		5,449	67	7
8	Coach and Harness Furniture		14,629	364			14,265		2,927	44	8
9	Cabinet Ware or Furniture		29,660	3,840	80		25,728	12	5,930	05	9
10	Carpets and Hearth Rugs		128,205	117,814			10,391		25,639	93	10
11	Chicory ....Lbs.	88,860	3,468	1,885			1,533	50	744	86	11
12	China Ware of all kinds		7,205	2,879			3,388	938	1,441	31	12
13	Earthenware and Crockery		183,764	168,437	528		14,238	561	36,324	16	13
14	Clocks		25,579	1,555			23,896	128	4,808	37	14
15	Confectionary and Sweetmeats		32,021	2,004	66		29,395	556	6,407	17	15
16	Cordage		44,452	26,446	529		17,477		8,821	33	16
17	Corks		17,676	2,888			7,219	7,569	3,382	85	17
18	Cottons		4,863,444	4,466,736	3,567		389,416	3,725	902,150	21	18
19	Drugs, not otherwise specified		126,627	70,406	106		54,946	1,169	24,814	43	19
20	Essences and Perfumery		24,996	11,210			12,838	948	4,999	49	20
21	Fancy Goods and Millinery		318,143	228,994	2		75,637	13,510	63,599	83	21
22	Fireworks		3,266				3,266		652	94	22
23	Guns, Rifles, and Fire Arms, of all kinds		7,146	3,529	16		2,021	1,580	1,429	02	23
24	Gunpowder		10,551	5,265	190		5,096		1,934	45	24
25	Glass and Glass Ware		227,495	81,531	24		83,190	62,750	44,943	86	25
26	Hats, Caps, and Bonnets		256,899	60,675	96		194,973	1,155	51,378	97	26
27	Hay ....Tons.	253	1,524				1,524		281	86	27
28	Hops ....Lbs.	168,100	21,111	1,878			19,233		3,996	72	28
29	Iron and Hardware		1,347,167	765,816	1,537		569,026	10,788	266,892	52	29
30	Inks of all kinds, except Printing Ink		5,662	3,006			2,656		1,132	61	30
31	Lumber or Plank, manufactured		8,260	90			8,170		1,630	60	31
32	Leather		323,870	93,504	262		192,646	37,458	64,771	31	32
33	Skins—Sheep, Calf, Goat, and Chamois,—dressed		8,632	3,991			4,641		1,726	66	33
34	Manufactures of Caoutchouc or India Rubber, or of Gutta Percha		27,989	4,315			23,486	188	5,599	59	34
35	do of Cashmere		663	663					132	56	35
36	do of Fur, or of which Fur is principal part		62,343	48,373			13,761	209	12,447	15	36
37	do of Papier Maché		612	289			323		122	20	37
38	do of Grass, Osier, Palm-Leaf, Straw, Whalebone, or Willow, not elsewhere specified		79,889	35,059	26		44,780	24	15,975	33	38
39	do of Bone, Shell, Horn, Pearl, Ivory		26,506	8,968			17,538		5,300	61	39
40	do of Gold, Silver, or Electro-plate, Argentine, Albata, and German Silver, and Plated and Gilded Ware, of all kinds		47,997	33,189			14,209	599	9,598	08	40
41	do of Brass or Copper		56,819	21,995	34		34,718	72	11,364	13	41
42	do of Leather, or imitation of Leather		89,391	34,023			47,447	7,921	17,877	62	42
43	do of Marble		11,568	945			10,601	22	2,302	84	43
44	do of Varnish—other than bright and black		19,795	1,240			18,555		3,794	38	44
45	do of Wood—not elsewhere specified		75,828	5,649	1,589		68,310	280	14,520	52	45
46	Hosiery		22,316	21,644			370	302	4,398	17	46
47	Linen		203,671	199,925			3,677	69	38,951	56	47
48	Locomotive Engines and Railroad Cars		1,414				1,414		268	10	48
49	Other Steam Engines		1,406	1,161			245		281	14	49
50	Macaroni and Vermicelli ....Lbs	54,200	2,917	1,076			493	1,348	605	63	50
51	Mustard .... "	158,250	22,073	19,763	2		2,308		4,416	03	51
52	Musical Instruments, including Musical Boxes and Clocks		108,993	14,574			87,756	6,663	21,798	20	52
53	Mowing, Reaping, and Threshing Machines		7,627	387			7,240		1,424	28	53
54	Other Machinery		92,577	6,769			85,808		17,732	06	54
55	Newspapers—Foreign		8,854	4			8,850		1,770	80	55
56	Oil Cloths		42,898	29,719			13,179		8,579	58	56
57	Oils, in any way rectified or prepared ....Galls.	414,438	287,925	141,925	7,440		118,006	20,554	55,899	78	57

No. 2.—SUMMARY STATEMENT of the Quantity and Value of, and Amount of Duty Collected on, the Principal Articles &c.—*Continued.*

23 Victoria. Sessional Papers (No. 23). A. 1860.

	ARTICLES.	TOTAL IMPORTS.		FROM WHAT COUNTRY IMPORTED					Amount of Duty.
		Quantities.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Other Foreign Countries.	
	20 and 15 per cent. ad valorem.—Continued.		$	$	$	$	$	$	$ cts.
1	Opium		1,610	972			638		321 90
2	Packages		84,384	21,902	3,581		35,732	23,169	16,232 81
3	Paints and Colors		142,030	111,627	124		29,462	817	27,682 47
4	Paper		50,667	36,423			12,030	2,214	9,917 72
5	Paper Hangings		63,417	30,224			31,951	1,242	12,301 44
6	Parasols and Umbrellas		4,593	3,200			1,393		904 95
7	Playing Cards		6,523	3,511			2,661	351	1,304 17
8	Pickles and Sauces		15,527	12,462			1,266	1,799	3,105 16
9	Preserved Meats, Poultry, Fish and Vegetables, &c.		1,521	421	88		967	45	304 28
10	Printed, Lithographed or Copper Plate Bills, &c., Advertising Pamphlets		9,491	970			8,505	16	2,178 65
11	Silks, Satins, and Velvets		901,856	847,726	1		46,849	7,280	180,371 17
12	Spices, including Ginger, Pimento, and Pepper—Unground .....Lbs.	554,974	47,337	14,794	253		32,150	140	10,221 22
13	Stationery		160,429	97,385	22		57,716	5,306	31,103 10
14	Small Wares		139,582	97,104			40,338	2,140	28,687 36
15	Tobacco Pipes		15,006	12,431	15		1,300	1,260	2,704 25
16	Toys		16,360	3,984			11,374	1,002	3,271 51
17	Vinegar .....Galls.	148,782	24,084	561	6		9,102	14,415	4,814 33
18	Woollens		3,433,848	3,135,374	369		286,328	11,777	686,767 83
19	Unenumerated Articles		240,046	67,048	1,128	3	165,569	6,298	47,869 63
	TOTAL *20 and 15 per cent. ad valorem*		14,821,066	11,305,872	22,181	3	3,228,204	264,806	2,881,536 35
	10 and 5 per cent. ad valorem.								
20	Anchors—6 cwt. and under		1,492	1,354	91		47		149 31
21	Books Printed; Periodicals and Pamphlets		186,971	42,747			128,566	15,658	18,684 89
22	Brass in Bars, Rods, or Sheets		9,441	6,765			2,676		909 73
23	Brass or Copper Wire, and Wire Cloth		7,790	5,195			2,595		768 38
24	Copper in Bars, Rods, Bolts, or Sheets		24,660	13,240			11,420		2,259 43
25	Copper, Brass, or Iron Tubes, and Piping, when drawn		46,485	28,091			18,339	55	4,443 48
26	Cotton Candle Wick		29,567	2,520			27,047		2,599 15
27	do Yarn and Warp		175,105	65,732	545		108,115	713	16,247 45
28	Drain Tiles for Agricultural purposes		3,734	3,390			344		373 39
29	Engravings and Prints		12,772	4,712			7,916	144	1,280 50
30	Silk Twist, for Hats, Boots, and Shoes		11,356	10,008			1,348		1,132 15
31	Hat Plush		4,135	3,368			767		207 24
32	Jewellery and Watches		106,064	49,697			52,786	3,581	11,048 47
33	Iron—Canada Plates and Tinned Plates		229,772	200,354			27,280	2,138	22,888 49
34	do Galvanized and Sheet		69,384	61,454			7,930		6,946 92
35	do Wire, Nail, and Spike Rod		193,150	186,589			4,627	1,934	19,033 58
36	do Bar, Rod, or Hoop		587,638	554,959	294		32,070	315	57,206 89
37	do Hoop or Tire for Locomotive Wheels, bent and welded		17,449	9,886			7,563		1,744 94
38	do Boiler Plate		28,738	21,137			7,601		2,752 14
39	do Railroad Bars, wrought Iron Chairs and Spikes		178,055	154,364			23,691		17,805 66
40	do Rolled Plate		5,137				5,137		508 70
41	Locomotive and Engine Frames, Crank Axles, Railway Car and Locomotive Axles, Piston Rods, Guide and Slide Bars, Crank Pins, Connecting Rods		58,623	39,108			19,515		3,648 95
42	Steamboat and Mill Shafts and Cranks, forged in the rough		3,741	858			2,883		371 08
43	Lead in Sheet		17,954	14,813			3,141		1,795 11
44	Steel, wrought or cast		82,683	73,893	23		8,767		7,958 58
45	Tin, granulated or bar		14,643	7,621			7,022		1,445 65
46	Zinc or Spelter in Sheet		18,313	6,266			5,290	6,757	1,787 43
47	Litharge		6,337	5,522			815		633 69
48	Maps, Charts and Atlases		2,900	456			2,218	226	290 01
49	Medicinal Roots		3,719	2,409			1,310		371 90
50	Phosphorus		2,181	126			2,055		218 08
51	Plaster of Paris and Hydraulic Cement, ground and calcined		10,954	498			10,456		1,095 28
52	Red Lead—White Lead—dry		29,794	27,192			2,602		2,979 37

No. 2.—SUMMARY STATEMENT of the Quantity and Value of, and Amount of Duty Collected on, the Principal Articles, &c.—*Continued.*

23 Victoria. Sessional Papers (No. 23). A. 1860.

	ARTICLES.	TOTAL IMPORTS.		FROM WHAT COUNTRY IMPORTED.						
					British Colonies.					
		Quantities.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Other Foreign Countries.	Amount of Duty.	
	10 *and* 5 *per cent. ad valorem.*—Continued.		$	$	$	$	$	$	$ cts.	
1	Sails, ready made		5,973	3,876	1,048		1,049		566 46	1
2	Spirits of Turpentine ... Galls.	96,476	49,833	269	7		49,557		5,408 03	2
3	Sraw, Tuscan and Grass fancy Plaits		2,886	532			2,354		288 76	3
4	Vessels—Foreign built		1,874				1,874		187 40	4
5	Bolting Cloths ... Free since 26th March		1,931	510			1,421		96 58	5
6	Emery—Emery, Glass and Sand Paper... do do		316				316		16 34	6
7	Fishing-Hooks, Nets, &c. ... do do		2,898	1,501			1,397		144 90	7
8	Hair—Angola, Goat, Thibet, Horse or Mohair, unmanufactured ... do do		153				153		7 65	8
	TOTAL 10 *and* 5 *per cent. ad valorem.*		2,246,601	1,611,012	2,008		602,060	31,521	218,302 14	
	Free Goods.									
9	Acids of every description except Vinegar		12,229	6,549			5,562	118		9
10	Alum		6,557	5,781	2		774			10
12	Anatomical Preparations		194	125			69			11
13	Anchors, weighing over 6 cwt		5,212	5,132	80					12
14	Animals—Horses ... No.	1,531	165,347	21,689			143,558	100		13
15	Horned Cattle ... "	2,403	56,763	561			56,202			14
15	Sheep ... "	2,788	7,217	269			6,948			15
16	Pigs ... "	5,014	27,969				27,969			16
17	Other Animals		127				127			17
18	Poultry, and Fancy Birds		1,170	116			1,054			18
19	Antimony		790	757			33			19
20	Antiquities, collections of		411	61			350			20
21	Argol		400	200			200			21
22	Articles for the public uses of the Province		24,706	17,859			6,847			22
23	Ashes—Pearl ... Bbls.	313	6,408		8		6,400			23
24	do Pot ... "	676	6,436		10		6,426			24
25	Bark Berries, Nuts and Vegetables, Woods and Drugs,—used solely in dyeing		65,126	9,203	12		52,209	3,702		25
26	Bark, Tanner's		2,570				2,570			26
27	Books, printed		132,884	36,138	3		86,819	9,924		27
28	Bleaching Powders		4,756	3,801			955			28
29	Bolting Cloths		7,118	864			6,154	100		29
30	Borax		7,563	7,092			311	160		30
31	Bookbinder's Tools and Implements		978	183			795			31
32	Bristles		9,534	2,223			7,311			32
33	Broom Corn		30,301				30,301			33
34	Busts, Casts, and Statues		4,180	1,715			442	2,023		34
35	Burrstones and Grindstones—wrought and unwrought		20,197	2,910			14,383	2,904		35
36	Butter ... Lbs.	249,742	41,918	622	961		40,335			36
37	Biscuit and Bread from Great Britain and B. N. A. Provinces		934	210	724					37
38	Cocoa Paste do do do		245	8	237					38
39	Coin and Bullion		19,248	18,212	385		651			39
40	Cables—Iron Chain—over ⅜ of an inch diameter		12,970	12,866			104			40
41	do —Hemp and Grass		1,773	558	45		1,170			41
42	Caoutchouc or India Rubber and Gutta Percha, unmanufactured		88,973				88,973			42
43	Carriages, and Vehicles of Travellers, &c.		47,670				47,670			43
44	Cement—Marine or Hydraulic, unground		817	70			747			44
45	Cheese ... Lbs.	857,951	97,998	4,452	7		93,499	40		45
46	Coal and Coke ... Tons.	138,644	428,406	181,693	7,437		237,776	1,500		46
47	Clothing and arms for Indian Nations		7,082	7,052			30			47
48	do and do for Military		42,240	42,046			194			48
49	Commissariat and Ordnance Stores		827	827						49
50	Corkwood, or Bark of the Corkwood Tree		364	56	13		295			50
51	Cotton and Flax Waste		31,169	916			30,253			51
52	do Wool		17,882	675			17,207			52
53	Cream of Tartar, in crystals		9,849	2,117			3,766	3,966		53

No. 2.—SUMMARY STATEMENT of the Quantity and Value of, and Amount of Duty Collected on the Principal Articles, &c.—*Continued.*

23 Victoria. Sessional Papers (No. 23). A. 1860.

No.	ARTICLES.	TOTAL IMPORTS. Quantities.	TOTAL IMPORTS. Total Value.	FROM WHAT COUNTRY IMPORTED. Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Other Foreign Countries.	Amount of Duty.	No.
			$	$	$	$	$	$	$ cts.	
	Free Goods.—Continued.									
1	Diamonds and precious Stones		310				310			1
2	Donations		907	230			677			2
3	Drawings		26,692	7,128			19,504	60		3
4	Earth, Clays, Sand, and Ochres		6,070	3,130			2,736	204		4
5	Eggs ... Doz.	14,923	1,914		21		1,893			5
6	Emery—Emery, Glass, and Sand Paper		4,154	1,476			2,678			6
7	Farming Utensils and Implements—when specially imported for encouragement of Agriculture		111	59			52			7
8	Felt Hat-bodies and Hat Felts		9,884	1,255			8,629			8
9	Flax, Hemp, and Tow—undressed		64,182	5,932			57,301	949		9
10	Firewood ... Cords.	19,852	40,855		45		40,810			10
11	Fire-Brick and Clay		17,934	9,057	15		8,642	220		11
12	Fish—Fresh		65,304		4,362		60,942			12
13	do Salt		216,226	5,033	155,448		47,642	8,103		13
14	do Oil—Crude ... Galls.	201,498	112,422		39,324		73,098			14
15	Fishing Nets, and Seines, Hooks, Lines, and Twines		45,339	32,753	1,984		10,401	201		15
16	Fruit, Green		216,592	590	93		215,609	300		16
17	do Dried—from United States only		35,414				35,414			17
18	Furs and Skins, Pelts or Tails, undressed		136,008	21,112	364		114,532			18
19	Flour ... Bbls.	405,093	2,184,331	39,911	13,866		2,090,683	39,871		19
20	Grains—Barley and Rye ... Bus.	49,347	36,644		51		36,593			20
21	Bran and Shorts		10,266				10,266			21
22	Buckwheat ... Bus.	3,813	4,307				4,307			22
23	Bear and Bigg ... "	118	143				143			23
24	Oats ... "	54,646	26,686		84		26,602			24
25	Beans and Pease ... "	5,582	5,874	10	120		5,744			25
26	Indian Corn ... "	758,534	558,399				558,399			26
27	Wheat ... "	1,073,965	1,092,205	15,522			1,066,020	10,663		27
28	Sago Flour ... Lbs.	32,540	2,609	1,606			1,003			28
29	Meal of the above Grains ... Bbls.	34,086	126,354	184	268		125,902			29
30	Gems and Medals		476	351			62	63		30
31	Gold Beaters' Brim Moulds and Skins		2,959	44			2,915			31
32	Grease and Scraps		15,649				15,649			32
33	Gravels		1,138	30			1,108			33
34	Gypsum, or Plaster of Paris, ground or unground, but not calcined		11,763				11,763			34
35	Hair—Angola, Goat, Thibet, Horse or Mohair, unmanufactured		2,480				2,480			35
36	Hides and Horns		710,883	594	200		706,685	3,404		36
37	Indigo		39,339	31,742	183		6,585	829		37
38	Junk and Oakum		8,351	1,563	381		6,407			38
39	Lard ... Lbs.	279,975	33,454	288	117		33,049			39
40	Lime—From British North American Provinces only ... Bbls.	22	29		29					40
41	Manilla Grass, Sea Grass, and Mosses, for Upholstery purposes		3,863		15		3,848			41
42	Manures		12,721				12,721			42
43	Marble in blocks or slabs—unpolished		22,561	17			22,544			43
44	Meats—Fresh, Smoked, and Salt ... Cwt.	67,472	608,092	1,283	3,980		601,454	1,375		44
45	Menageries—Horses, Cattle, Carriages, and Harnesses of		19,800				19,800			45
46	Military and Naval Stores		37,619	37,544			75			46
47	Models		2,337	23			2,314			47
48	Musical Instruments for Military Bands		363	278			85			48
49	Nitre or Saltpetre		19,288	11,008			8,115	165		49
50	Oils—Cocoanut, Pine and Palm—in their crude, unrectified, or natural state ... Galls.	109,316	69,589	21,219			48,024	346		50
51	Ores of all kinds of Metals		2,389				2,389			51
52	Philosophical Instruments and Apparatus—Globes		8,238	3,991	50		3,575	622		52
53	Pig Iron, Pig Lead, and Pig Copper ... Tons.	8,683	153,701	138,725	27		14,949			53
54	Pitch and Tar ... Bbls.	4,197	10,718	1,177	1,069		8,472			54
55	Printing Ink, and Printing Presses		21,868	570			21,298			55
56	Packages		4,265	512			3,750	3		56
57	Rags		4,158	286			3,872			57

23 Victoria. Sessional Papers (No. 23). A. 1860.

No. 2.—SUMMARY STATEMENT of the Quantity and Value of, and Amount of Duty Collected on, Principal Articles, &c.—*Continued.*

No.	ARTICLES.	TOTAL IMPORTS.		FROM WHAT COUNTRY IMPORTED.					Amount of Duty.
		Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Other Foreign Countries.	
	Free Goods.—Continued.		$	$	$	$	$	$	$ cts.
1	Resin and Rosin .... Bbls.	16,759	21,303	29	3		21,271		
2	Rice .... Lbs.	3,557,557	109,757	86,356	991		18,562	3,848	
3	Sail Cloth		41,437	22,326	394		18,717		
4	Salt .... Bus	1,622,630	261,285	95,493	11,881		145,208	8,703	
5	Sal Ammoniac—Sal Soda—Soda Ash		68,643	59,923			8,720		
6	Seeds, for Agricultural, Horticultural, or Manufacturing purposes only		95,818	12,295	4		82,111	1,408	
7	Settler's Goods		315,170	40,682	1,139		252,516	20,833	
8	Ship's Water Casks, in use		1,810	44			1.739	27	
9	do Blocks, Binnacle Lamps, Bunting, Sail-Canvas Nos. 1 to 6, Compasses, Cordage, Dead Eyes, Dead Lights, Deck Plugs, Shackles, Sheaves, Signal Lamps, Travelling Trucks		15,666	3,533	546		11,587		
10	Specimens		2,156	355			1.801		
11	Slate		12,763				12,763		
12	Stone, unwrought		26,537		16		26,521		
13	Stereotype Blocks, for Printing purposes		795	11			784		
14	Sulphur and Brimstone		1,813	1,055			758		
15	Tallow .... Lbs.	2,976,216	309,039				309,039		
16	Teasels		548				548		
17	Timber and Lumber of all sorts, unmanufactured		115,332		17,897		97,435		
18	Tin, and Zinc, or Spelter, in Blocks or Pigs		11,217	6,384			4,299	534	
19	Trees, Plants, and Shrubs—Bulbs and Roots		25,098	675			24,423		
20	Treenails		992				992		
21	Tobacco, unmanufactured .... Lbs.	1,964,693	146,994	8	12		146,974		
22	Varnish, bright and black, for Ship builders		462	209			253		
23	Vegetables		66,828	110	609		66,109		
24	Wines, Spirits, and Malt Liquors, for Officers' Mess		13,829	11,256	304		295	1,974	
25	Wood of all kinds		19,789	794	9		18,986		
26	Wool .... Lbs.	413,570	125,265	59,088	2		66,175		
	TOTAL, *Free Goods*		10,144,061	1,192,467	265,827		8,556,545	129,242	
27	Foreign Reprints of British Copyright Works, [subject to a duty of 12½ per cent. payable to the Imperial Government for the benefit of the Copyright Holder]		3,510				3,510		
	RECAPITULATION.								
28	Goods paying Specific Duties		2,617,390	164,218	9,117		2,334,978	109,077	301,340 65
29	do do and 100 per cent. *ad valorem*		113,157	57,883	566		9,555	45,153	105,955 20
30	do do and 40 do *do*		157,331	33,442	70		102,302	21,517	49,400 35
31	do do and 30 do *do*		3,203,315	317,113	80,315	530	2,615,151	190,206	819,109 66
32	do 25 per cent. *ad valorem*		248,710	104,077	1,671		140,611	2,351	62,201 77
33	do 20 and 15 per cent. *ad valorem*		14,821,066	11,305,872	22,181	3	3,228,204	264,806	2,881,536 35
34	do 10 and 5 do *do*		2,246,601	1,611,012	2,008		602,060	31,521	218,302 14
35	Free Goods		10,144,081	1,192,467	265,827		8,556,545	129,242	
	Totals		33,551,651	14,786,084	381,755	533	17,589,406	793,873	4,437,846 12
36	Foreign Reprints of British Copyright Works		3,510				3,510		
	Grand Totals		33,555,161	14,786,084	381,755	533	17,592,916	793,873	4,437,846 12

23 Victoria. Sessional Papers (No. 23). A. 1860.

No. 3.—COMPARATIVE STATEMENT shewing in Contrast the Quantities and Values of the Principal Articles of British and Foreign Merchandize entered for Consumption in Canada, during the Years 1857, 1858 and 1859—Alphabetically arranged.

	ARTICLES.	1857.			1858.			1859.			
		Quantity.	Value.	Duty.	Quantity.	Value.	Duty.	Quantity.	Value.	Duty.	
			$ cts.	$ cts.		$ cts.	$ cts.		$ cts.	$ cts.	
1	Ale, Beer and Porter .... Galls.	366,361	102,075 00	15,320 15	159,228	46,812 00	7,476 65	92,480	30,520 00	8,804 08	1
2	Blacking	....	....	....	....	10,053 00	1,744 54	....	7,176 00	2,081 36	2
3	Bleaching Powders	....	5,424 00	135 65	....	2,994 00	74 84	....	4,756 00	....	3
4	Brandy .... Galls.	25,591	52,531 00	20,472 50	53,943	109,973 00	43,679 44	38,236	45,643 00	39,386 41	4
5	Brooms and Brushes of all kinds	....	38,573 00	6,274 34	....	2,452 00	581 60	....	18,335 00	3,673 42	5
6	Candles	....	73,160 00	10,969 40	....	51,896 00	8,611 86	....	52,725 00	10,442 34	6
7	Carriages, and Coach and Harness Furniture	....	....	....	....	29,542 00	5,724 01	....	41,882 00	8,377 11	7
8	China Ware, Earthenware and Crockery	....	277,658 00	41,649 93	....	192,765 00	29,303 33	....	190,969 00	37,765 47	8
9	Cigars .... Lbs.	27,316	54,573 00	16,389 94	18,135	33,046 00	11,488 34	33,433	29,722 00	11,604 36	9
10	Clocks and Watches, Jewellery and Plate	....	242,679 00	36,403 48	....	144,698 00	23,723 64	....	131,643 00	15,856 84	10
11	Clothes, Ready-made	....	145,107 00	21,766 72	....	113,239 00	23,161 31	....	108,392 00	27,105 54	11
12	Coffee, Green .... Lbs.	1,374,121	166,356 00	17,181 73	1,778,835	203,357 00	20,205 31	2,103,508	256,543 00	21,035 08	12
13	Do other .... Lbs.	24,318	3,279 00	810 60	27,633	3,686 00	992 70	35,925	3,052 00	922 04	13
14	Confectionary and Sweetmeats	....	41,991 00	6,300 25	....	39,967 00	6,857 26	....	32,021 00	6,407 17	14
15	Cordials .... Galls.	3,239	5,192 00	3,238 70	1,439	2,500 00	1,438 35	2,613	4,109 00	3,128 56	15
16	Cottons	....	4,796,046 00	719,413 08	....	3,315,119 00	497,234 20	....	4,863,444 00	902,150 21	16
17	Cotton-wick, Yarn and Warp	....	151,308 00	3,784 08	....	149,595 00	6,030 98	....	204,672 00	18,846 60	17
18	Dried Fruits and Nuts .... Lbs.	1,831,293	197,697 00	38,153 92	1,969,093	161,577 00	49,526 66	2,739,819	174,768 00	53,022 59	18
19	Drugs and Medicines	....	243,139 00	36,475 43	....	183,498 00	29,014 16	....	185,614 00	40,590 60	19
20	Essences and Perfumery	....	....	....	....	25,656 00	4,514 69	....	24,996 00	4,999 49	20
21	Fancy Goods	....	608,172 00	91,229 04	....	260,237 00	41,701 47	....	318,143 00	63,599 83	21
22	*Felts	....	5,297 00	132 52	....	8,680 00	111 21	....	9,884 00	....	22
23	*Fire-Brick	....	7,958 00	199 20	....	6,891 00	112 39	....	17,934 00	....	23
24	*Fishing-Hooks, Nets, Lines, &c.	....	16,572 00	414 36	....	25,622 00	817 49	....	48,237 00	144 90	24
25	Gas-fittings, Girondoles and Chandeliers	....	....	....	....	1,251 00	249 99	....	8,343 00	1,668 72	25
26	Gin .... Galls.	99,976	56,862 00	69,983 60	132,884	68,363 00	95,306 35	125,508	51,019 00	51,975 75	26
27	Glass and Glassware	....	300,297 00	45,049 63	....	194,110 00	31,496 90	....	227,495 00	44,943 86	27
28	Guns, Rifles and Fire-Arms	....	....	....	....	4,924 00	974 70	....	7,146 00	1,429 02	28
29	Gunpowder and Fireworks	....	33,715 00	5,057 48	....	12,084 00	1,877 81	....	13,817 00	2,587 39	29
30	Hats, Caps and Bonnets	....	229,033 00	34,360 40	....	150,810 00	25,099 64	....	256,899 00	51,378 97	30
31	Hosiery	....	157,197 00	23,579 68	....	46,984 00	7,047 68	....	22,316 00	4,398 17	31
32	Iron—and Hardware	....	1,959,769 00	293,985 80	....	1,331,983 00	216,448 45	....	1,347,167 00	266,892 52	32
33	Bar, Rod, Sheet, Hoop and Galvanized	....	1,025,824 00	25,824 87	....	758,217 00	29,369 95	....	850,172 00	83,187 39	33
34	Boiler Plate, Rolled Plate, Canada Plate, &c.	....	158,191 00	7,033 29	....	231,164 00	9,069 56	....	263,647 00	26,149 33	34
35	Chains and Chain-Cables	....	69,984 00	1,493 06	....	29,095 00	389 00	....	12,970 00	....	35
36	Hoops or Tires for Railroad purposes	....	55,037 00	2,752 05	....	36,909 00	1,811 84	....	17,449 00	1,744 94	36
37	Bars and Wrought Iron Chairs and Spikes for Railroad purposes	....	849,774 00	21,244 40	....	1,070,213 00	35,874 22	....	178,055 00	17,805 66	37
38	Other articles for Railroad purposes	....	....	....	....	15,658 00	2,348 63	....	62,364 00	4,020 03	38
39	Leather, Tanned	....	514,493 00	77,182 15	....	447,346 00	75,199 98	....	332,502 00	66,497 97	39
40	Manufactured—Boots and Shoes	....	325,345 00	65,074 74	....	197,934 00	42,162 07	....	133,109 00	33,278 03	40
41	other than Boots and Shoes	....	206,799 00	41,361 91	....	113,046 00	22,820 58	....	96,600 00	19,695 82	41
42	Linen	....	334,985 00	50,248 17	....	138,110 00	20,716 40	....	203,671 00	38,951 56	42
43	Locomotive Engines and Railroad Cars	....	....	....	....	125,332 00	18,799 80	....	2,820 00	549 24	43
44	Machinery	....	317,657 00	47,667 45	....	94,924 00	14,000 80	....	100,204 00	19,156 34	44
45	Macaroni and Vermicelli .... Lbs.	16,457	1,226 00	342 86	18,818	1,567 00	462 41	54,200	2,917 00	605 63	45
46	Manufactures of Brass or Copper	....	....	....	....	....	....	....	56,819 00	11,364 13	46
47	Fur	....	153,747 00	23,062 15	....	65,202 00	10,208 73	....	62,343 00	12,447 15	47
48	Gold, Silver and Plated Ware	....	....	....	....	....	....	....	47,997 00	9,598 08	48
49	India Rubber or Gutta Percha	....	58,471 00	11,694 84	....	41,045 00	8,211 24	....	27,989 00	5,599 59	49
50	Marble	....	....	....	....	1,796 00	356 89	....	11,568 00	2,302 84	50
51	Paper-Machie, Bone, Shell, Horn, Pearl and Ivory	....	....	....	....	22,859 00	4,291 89	....	27,118 00	5,422 81	51
52	Straw, Grass, Osier and Palm Leaf, &c.	....	190,571 00	28,586 72	....	93,338 00	14,204 62	....	79,889 00	15,975 33	52
53	Wood	....	283,884 00	42,601 02	....	205,568 00	32,825 50	....	113,748 00	2[illegible],081 17	53
54	Molasses .... Galls.	1,286,186	466,394 00	53,592 46	1,360,073	314,949 00	55,477 10	1,148,814	237,145 00	[illegible],629 79	54
55	Musical Instruments	....	133,079 00	19,962 38	....	100,179 00	17,783 46	....	108,993 00	2[illegible],798 20	55
56	Mustard .... Lbs.	85,740	13,407 00	4,287 02	79,459	11,791 00	3,972 88	158,250	22,073 00	4,416 03	56
57	Oil .... Galls.	283,190	214,307 00	32,147 00	245,484	181,681 00	28,302 20	414,438	287,925 00	55,899 78	57
58	Oil Cloths	....	....	....	....	21,561 00	3,797 79	....	42,898 00	8,579 58	58
59	Packages	....	162,918 00	4,087 21	....	102,434 00	2,568 29	....	88,649 00	16,[illegible]32 81	59

* Free in 1859.

No. 3.—COMPARATIVE STATEMENT shewing in Contrast the Quantities

23 Victoria. Sessional Papers (No. 23). A. 1860.

and Values of the Principal Articles, &c.—*Continued.*

	ARTICLES.	1857.			1858.			1859.		
		Quantity.	Value.	Duty.	Quantity.	Value.	Duty.	Quantity.	Value.	Duty.
			$ cts.	$ cts		$	$ cts.		$ cts.	$ cts.
1	Paints and Colours	....	190,746 00	28,611 98	....	139,629 00	20,937 73	....	142,030 00	27,682 47
2	Paper and Paper hangings	....	139,327 00	20,902 90	....	121,646 00	15,939 08	....	114,084 00	22,219 16
3	Parasols and Umbrellas	....	21,463 00	3,219 75	....	11,845 00	1,776 58	....	4,593 00	904 95
4	Pickles and Sauces	....	36,319 00	5,448 26	....	23,121 00	3,662 91	....	15,527 00	3,105 16
5	Rum ... Galls.	21,725	14,640 00	9,776 82	25,533	16,274 00	11,823 75	19,073	11,869 00	10,947 60
6	Silks, Satins and Velvets, &c	....	1,025,839 00	153,875 60	....	658,045 00	112,592 67	....	901,856 00	180,371 17
7	Smallwares	....	255,625 00	38,346 40	....	213,918 00	35,048 05	....	239,853 00	48,400 06
8	Snuff ... Lbs.	23,126	4,608 00	2,312 56	26,921	5,492 00	2,685 04	32,716	6,053 00	1,959 29
9	Soap ... "	....	117,753 00	17,667 39	....	82,447 00	15,692 81	879,528	49,776 00	14,836 41
10	Spices ... "	156,558	27,062 00	8,011 40	392,207	47,894 00	18,284 37	681,583	70,834 00	17,384 94
11	Spirits and Strong Waters ... Galls.	....	....	....	211	156 00	147 97	966	517 00	516 88
12	Spirits of Turpentine ... "	....	....	....	....	....	....	96,476	40,833 00	5,408 03
13	Starch ... Lbs.	280,165	21,083 00	9,338 84	467,659	31,660 00	17,428 19	669,402	42,070 00	13,019 84
14	Stationery	....	222,818 00	33,424 78	....	140,523 00	21,079 65	....	160,429 00	31,103 10
15	Steel	....	104,952 00	2,624 24	....	58,788 00	2,384 55	....	82,683 00	7,958 58
16	Sugar—Refined and White Bastard ... Lbs.	1,773,121	171,278 00	44,330 85	1,428,913	132,876 00	35,696 77	1,463,157	127,609 00	37,795 99
17	do other kinds ... "	25,061,095	1,924,010 00	336,426 90	27,899,005	1,739,301 00	369,171 29	21,384,103	1,764,963 00	413,587 71
18	* Sulphur and Brimstone	....	329 00	8 23	....	1,669 00	5 36	....	1,813 00	....
39	Tea ... Lbs.	3,790,760	1,350,601 00	157,954 95	6,015,981	1,914,742 00	241,271 88	6,839,695	2,330,201 00	270,229 53
20	Tin and Zinc	....	231,729 00	5,802 05	....	89,287 00	3,865 94	....	44,173 00	3,233 08
21	Tobacco—Manufactured ... Lbs.	2,926,185	602,030 00	121,930 98	3,294,154	592,250 00	150,890 70	3,493,453	574,943 00	171,090 71
22	* do Unmanufactured ... "	1,003,878	133,828 00	1,466 07	1,409,941	141,667 00	662 09	1,964,693	146,994 00	....
23	Varnish	....	....	....	....	21,796 00	3,268 00	....	20,257 00	3,794 38
24	Vinegar ... Galls.	127,526	27,519 00	7,439 02	105,694	21,926 00	6,202 25	148,782	24,084 00	4,814 33
25	Whiskey ... "	313,551	138,292 00	39,194 75	257,746	97,972 00	37,119 23	55,978	30,646 00	10,076 04
26	Wine of all kinds ... "	222,547	222,008 00	79,081 55	242,435	250,928 00	91,137 04	281,300	230,365 00	67,215 95
27	Woollens	....	3,907,789 00	586,152 28	....	2,658,515 00	481,836 38	....	3,562,716 00	712,540 32
28	Unenumerated Articles	....	783,551 00	92,725 27	....	287,692 00	31,466 28	....	339,653 00	57,473 73
	FREE GOODS.									
29	Animals—viz. ... No Horses ... " Horned Cattle ... " Sheep ... " Pigs ... " Other Animals ... " Poultry and Fancy Birds ... "	19,900	498,524 00	....	10,250	248,768 00	....	11,736	258,593 00	....
30	Ashes—Pearl and Pot	....	18,802 00	....	....	23,385 00	....	....	12,844 00	....
31	Bark, Berries, Nuts and Vegetables, Wood and Drugs—used solely in dyeing	....	20,050 00	....	....	39,981 00	....	....	65,126 00	....
32	* Books	....	533,572 00	....	....	363,197 00	....	....	319,855 00	18,684 89
33	Bristles	....	7,150 00	....	....	7,888 00	....	....	9,534 00	....
34	Broom Corn	....	32,870 00	....	....	30,872 00	....	....	30,301 00	....
35	Burrstones and Grindstones	....	18,502 00	....	....	16,656 00	....	....	20,197 00	....
36	Busts, Casts and Statues	....	7,822 00	....	....	1,957 00	....	....	4,180 00	....
37	Butter ... Lbs	230,048	43,118 00	....	47,936	7,902 00	....	249,742	41,918 00	....
38	Caoutchouc	....	38,570 00	....	....	16,229 00	....	....	88,973 00	....
39	Cheese ... Lbs.	1,781,920	164,438 00	....	1,119,552	92,317 00	....	857,951	97,998 00	....
40	Coal and Coke ... Tons.	207,483	666,987 00	....	121,697	385,366 00	....	138,644	428,406 00	....
41	* Copper and Brass in Bars, Rods or Sheets	....	41,412 00	....	....	30,065 00	....	....	88,376 00	8,381 02
42	* Cordage	....	188,989 00	....	....	83,945 00	....	....	44,452 00	8,821 33
43	Cotton Wool	....	3,557 00	....	....	11,238 00	....	....	17,882 00	....
44	Donations	....	965 00	....	....	846 00	....	....	907 00	....
45	Drawings	....	51,778 00	....	....	24,671 00	....	....	26,692 00	....
46	Farming Implements	....	501 00	....	....	247 00	....	....	111 00	....
47	Firewood ... Cords.	31,472	64,218 00	....	24,605	47,657 00	....	19,852	40,855 00	....
48	Fish	....	316,526 00	....	....	215,520 00	....	....	281,530 00	....
49	Flax, Hemp and Tow, undressed	....	96,034 00	....	....	56,261 00	....	....	64,182 00	....
50	Fruit, Green	....	158,620 00	....	....	89,849 00	....	....	216,592 00	....
51	Dried, from U. S. only	....	32,096 00	....	....	29,922 00	....	....	35,414 00	....
52	Furs and Skins, undressed	....	91,527 00	....	....	40,108 00	....	....	136,008 00	....
53	Flour ... Brls.	214,542	1,262,485 00	....	195,263	763,960 00	....	405,093	2,184,331 00	....

(*) Dutiable in 1859.

No. 3.—COMPARATIVE STATEMENT shewing in contrast the Quantities and Values of the Principal Articles, &c.—*Continued.*

	ARTICLES.	1857.			1858.			1859.		
		Quantity.	Value.	Duty.	Quantity.	Value.	Duty.	Quantity.	Value.	Duty.
			$ cts.	$ cts.		$ cts.	$ cts.		$ cts.	$ cts.
1	Grains—Barley and Rye……Bus.	9,028	7,803 00		17,777	10,465 00		49,347	36,644 00	
2	Beans and Peas…… "	10,488	15,841 00		2,092	2,097 00		5,582	5,874 00	
3	Bran and Shorts……		5,961 00			4,051 00			10,409 00	
4	Indian Corn……Bus.	1,095,703	720,435 00		599,229	392,656 00		758,534	558,399 00	
5	Oats…… "	175,481	85,399 00		72,485	21,975 00		54,646	26,686 00	
6	Wheat…… "	2,414,366	2,375,638 00		2,240,514	1,647,489 00		1,073,965	1,092,205 00	
7	* Hops……		21,806 00			29,734 00	1,659 17		21,111 00	3,996 72
8	Meal of the above Grains……Brls.	14,287	53,697 00		6,772	21,983 00		34,086	128,963 00	
9	Grease and Scraps……		22,363 00			21,264 00			15,649 00	
10	Hides and Horns……		307,404 00			495,375 00			710,883 00	
11	Indigo……		24,482 00			20,620 00			39,339 00	
12	Junk and Oakum……		27,205 00			10,089 00			8,351 00	
13	Lard……Lbs.	501,270	58,974 00		347,963	41,412 00		279,975	33,454 00	
14	† Lead—Pig and Sheet……		35,581 00			18,509 00			17,954 00	1,795 11
15	Manures……		26,954 00			13,464 00			12,721 00	
16	‡ Maps, Charts, &c……		31,452 00			8,980 00			2,900 00	290 01
17	Marble in Blocks, unpolished……		26,137 00			19,010 00			22,561 00	
18	Meats of all kinds……Lbs.	10,315,200	920,898 00		10,577,728	549,419 00		7,556,864	608,092 00	
19	Military Clothing……		37,736 00			30,607 00			42,240 00	
20	Military and Naval Stores……		85,902 00			35,527 00			37,619 00	
21	Models……		1,050 00			1,379 00			2,337 00	
22	Oil—Cocoanut, Pine and Palm……Galls.		20,913 00			34,553 00		109,316	69,589 00	
23	Do Fish…… "	338,323	276,767 00		154,900	123,521 00		201,498	112,422 00	
24	Philosophical Instruments……		8,034 00			5,882 00			8,238 00	
25	Pig Iron……Tons.	19,582	406,133 00		6,717	124,905 00		8,603	153,701 00	
26	Pitch and Tar……Brls.	3,250	11,251 00		2,708	7,670 00		4,197	10,718 00	
27	Printing Implements……		65,474 00			24,418 00			22,663 00	
28	Resin and Rosin……Brls.	5,907	14,566 00		6,050	15,571 00		16,759	21,303 00	
29	Rice……Lbs.	2,864,624	122,675 00		1,658,272	62,565 00		3,557,557	109,757 00	
30	Salt……Bus.	1,333,691	251,039 00		1,713,696	327,925 00		1,622,630	261,285 00	
31	Sail Cloth……		75,291 00			36,030 00			41,437 00	
32	Seeds……		140,939 00			89,118 00			95,818 00	
33	Settler's Goods……		374,679 00			364,343 00			315,170 00	
34	Soda Ash……		18,335 00			21,118 00			68,643 00	
35	Specimens……		926 00			2,121 00			2,156 00	
36	Stone and Slate……					54,149 00			39,300 00	
37	Tallow……Lbs	3,578,680	357,569 00		4,000,054	401,875 00		2,976,216	309,039 00	
38	Timber and Lumber……		230,344 00			151,584 00			135,121 00	
39	Trees and Shrubs, Bulbs and Roots……		51,562 00			22,867 00			25,098 00	
40	Vegetables……		66,906 00			18,751 00			66,828 00	
41	Wine, &c., for Officers' Mess……Galls.	4,100	10,265 00		8,306	7,617 00			13,829 00	
42	Wool……Lbs.	121,830	40,182 00		224,664	46,575 00		413,570	125,265 00	
43	Yellow Metal……		47,970 00			17,972 00				
44	Other Articles……		403,995 00			234,144 00			296,693 00	
			39,430,598 00	3,925,051 18		29,078,527 00	3,381,389 51		33,555,161 00	4,437,846 12
	RECAPITULATION.									
45	Goods paying Specific duty…… And 100 per cent., 40 per cent. and 30 per cent. ad valorem……		5,538,203 00	1,042,784 63		5,801,245 00	1,274,960 27		6,091,193 00	1,275,805 86
46	Goods at 25 per cent. ad valorem……								248,710 00	62,201 77
47	Do at 20 per cent., 15 per cent. and 12½ per cent. ad valorem……		18,465,486 00	2,799,486 32		12,251,549 00	2,009,619 72		14,821,066 00	2,881,536 35
48	Do at 10 per cent., 5 per cent. and 2½ per cent. ad valorem……		3,019,005 00	82,780 23		2,652,119 00	96,809 52		2,246,601 00	218,302 14
49	Free Goods……		12,407,904 00			8,373,614 00			10,144,081 00	
50	Foreign Reprints of British Copyrights……								3,510 00	
	Totals……		39,430,598 00	3,925,051 18		29,078,527 00	3,381,389 51		33,555,161 00	4,437,846 12

† Dutiable in 1858 and 1589.
† Sheet Lead dutiable in 1859.
‡ Dutiable in 1859.

No. 4.—**STATEMENT** of the Importation of the following Articles into Canada from Foreign West Indies, distinguishing whether such Importations have been direct, or through any British Possession, or Foreign Country, during the year 1859.

ARTICLES.		TOTAL.		Direct from Foreign West Indies, *vià* St. Lawrence.	THROUGH OTHER COUNTRIES.	
		Quantity.	Value.		United States.	Nova Scotia, New Brunswick, Newfoundland and Prince Edward Island.
			$	$	$	$
Coffee	Lbs.	147,609	16,705	....	15,198	1,507
Sugar	do	2,183,672	115,068	46,842	57,100	11,126
Molasses	Galls.	207,693	39,832	2,313	28,290	9,229
Rum	do	4,052	1,078	787	291	....
Cigars	Lbs.	315	411	....	411	....
Spices	do	2,140	341	....	328	13
Other Articles		....	5,500	2,228	3,272	....
Totals		....	178,935	52,170	104,890	21,875

No. 5.—A DETAILED ACCOUNT shewing the Value of the Principal Articles Imported into Canada, by Sea, *via* St. Lawrence, at each of the undermentioned Ports, during the year 1859.

PORTS.	Animals.	Coals.		Coffee.		Cordage.	Drugs and Medicines.	Fish.	Fruits.
	Value.	Quantity.	Value.	Quantity.	Value.	Value.	Value.	Value.	Value.
	$	Tons.	$	Lbs.	$	$	$	$	$
Amherst	....	20	40	10,854	1,491	722	....	173	29
Dundas	....	....	....	....	....	....	204		....
Gaspé	....	203	518	3,391	406	5,440	3	....	44
Guelph	....	....	....	....	....	....	68	....	....
Hamilton	....	....	....	....	....	....	1,052	....	....
Montreal	22,480	1,250	4,993	33,752	4,508	4,673	144,709	113,233	50,349
Quebec	....	76,152	184,643	246	24	15,381	4,933	36,295	4,123
Sault Ste. Marie	....	....	....	117	17	5	56	....	71
Toronto	....	....	....	....	....	893	7,670	....	1,318
Totals	22,480	77,625	190,194	48,360	6,446	27,114	158,695	149,701	55,934

No. 5.—A DETAILED ACCOUNT shewing the Value of the Principal Articles, &c.—*Continued.*

PORTS.	Iron not Manufactured.	Leather Tanned.	Liquors.		Candles.	Cottons.	Furs.
	Value.	Value.	Quantity.	Value.	Value.	Value.	Value.
	$	$	Gallons.	$	$	$	$
Amherst	129	204	781	496	149	2,903	
Belleville						1,988	
Brantford						139	
Brockville						4,983	
Bytown			25	57		50,133	
Clifton			203	504			
Dalhousie	1,367		64	183		4,195	
Gaspé	639	441	1,739	702	360	16,877	
Guelph			620	920		6,167	
Hamilton	6,685		6,034	6,034	697	254,767	495
Hope						2,222	
Kingston	28,103	4,794	464	464	534	18,781	32
London			1,286	2,346		90,897	
Montreal	790,976	49,220	179,946	331,433	28,589	1,627,302	58,140
Niagara			256	353			
Owen's Sound						1,060	
Quebec	258,667	8,755	87,000	87,054	10,512	358,048	2,856
Sarnia						1,947	
Sault Ste. Marie			105	105		1,099	
Toronto	52,531	2,712	8,252	8,252	1,061	371,099	497
Whitby						1,036	
Woodstock						6,439	
Totals	1,139,097	66,126	286,775	438,903	41,902	2,822,082	62,020

No. 5.—A DETAILED ACCOUNT shewing the Value of the Principal Articles, &c.—*Continued.*

PORTS.	Glass, Glassware, and Earthenware.	Iron and Hardware.	Jewellery, Clocks and Watches.	Manufactures of Leather.	Linen.	Lace and Fancy Goods.	Silk.	Soap.
	Value.	Value.	Value.	Value.	Value.	Value.	Value.	Value.
	$	$	$	$	$	$	$	$
Amherst	14	1,267		667			1	
Belleville		2,364	32				750	
Brantford	974	787			417	676		
Brockville					1,043		1,215	
Bytown	939	9,431			4,028	6,709	16,039	
Clifton							109	
Cobourg	467	8,596			1,686		1,620	
Dalhousie	1,641	9,328	144	491	1,212		2,898	
Darlington	138							
Dover	115							
Dundas	544	644						
Gaspé	1,182	6,591		5,476		238		
Guelph		733		34				
Hamilton	5,184	68,382	9,452	6,673	6,468	6,073	32,855	
Hope		1,432		6	135		441	
Kingston	2,754	6,433	24	1,059	3,580	1,604	4,460	
London	5,166	7,667			4,444		6,519	
Montreal	188,931	495,138	29,095	25,276	76,540	125,601	167,805	29,129
Owen's Sound					459		115	
Picton	286							
Quebec	59,200	85,933	7,693	3,683	20,374	53,882	46,623	11,585
Sarnia					102	1,000		
Sault Ste. Marie	105	1,682						
Three Rivers						1,353		
Toronto	34,173	58,501	5,819	3,178	25,465	31,774	66,762	1,077
Whitby	422							
Woodstock		103						
Totals	302,235	765,012	52,259	46,543	145,953	229,510	348,212	41,791

No. 5.—A DETAILED ACCOUNT shewing the Value of the Principal Articles, &c.—*Continued.*

PORTS.	Woollens.	Molasses.		Oil.		Paper, Stationery and Books.	Paints and Colours.	Railroad Iron.
	Value.	Quantity.	Value.	Quantity.	Value.	Value.	Value.	Value.
		Gallons.	$	Gallons.	$	$	$	$
Amherst	297	10,538	3,104	154	142			
Belleville	4,367							
Brantford	3,252							
Brockville	4,720			1,395	769	438	596	6,462
Bytown	69,027					2,024		
Clifton						303		
Cobourg	12,549			450	212			
Dalhousie	3,629						574	112
Darlington						204		
Dover	746							
Dundas				91	121	229		
Gaspé	9,553	12,378	3,380	680	680	27	459	
Guelph	5,116					235		
Hamilton	143,534			3,556	3,750	1,024	780	
Hope	4,863						160	
Kingston	24,893			6,220	3,363	3,231	91	3,599
London	28,689			149	120	55	150	
Montreal	1,254,906	113,993	23,465	217,166	172,133	126,308	101,291	27,828
Owen's Sound	846							
Quebec	251,395	24,622	4,604	29,700	29,729	27,602	26,008	61,356
Sarnia	1,065							
Sault Ste. Marie	5,939					32	26	
Three Rivers						3,088		
Toronto	276,996			4,287	3,001	27,993	4,936	18,013
Woodstock						311		
Totals	2,097,382	161,531	34,553	263,848	214,020	194,004	135,071	117,370

No. 5.—A DETAILED ACCOUNT shewing the Value of the Principal Articles, &c.—*Continued.*

PORTS.	Rice.		Steel.	Salt.		Sugar.		Spices.
	Quantity.	Value.	Value.	Quantity.	Value.	Quantity.	Value.	Spices.
	Lbs.	$	$	Bushels.	$	Lbs.	$	$
Amherst	44	255	....	38,956	9,569	1,616	131	13
Cobourg	....	....	....	....	....	....	....	13
Dalhousie	....	....	....	....	....	2,352	212	....
Gaspé	52	272	46	76,812	7,887	11,961	793	....
Hamilton	....	....	1,297	....	....	....	....	....
Kingston	....	....	3,989	....	....	2,949	250	381
London	....	....	908	....	....	....	....	....
Montreal	17,060	59,826	51,640	38,450	3,845	1,518,304	113,492	43,875
Quebec	769	26,348	5,942	831,782	88,540	657,000	31,788	5,303
Sault Ste. Marie	2	10	....	....	....	....	....	10
Toronto	....	....	2,886	....	....	....	....	....
Totals	17,927	86,711	66,708	986,000	109,841	2,194,182	146,666	49,595

No. 6.—COMPARATIVE STATEMENT of the Quantity and Value of the principal Articles Imported into Canada, from Sea, viâ the St. Lawrence, during the years 1858 and 1859.

ARTICLES.	1858.		1859.	
	Quantity.	Value.	Quantity.	Value.
		$		$
Animals	....	2,988	....	22,480
Coals ....Tons.	60,685	143,329	77,625	190,194
Coffee ....Lbs.	90,620	10,872	48,360	6,446
Cordage	....	45,886	....	27,114
Drugs and Medicines	....	71,735	....	158,695
Fish	....	68,515	....	149,701
Fruits	....	32,206	....	55,934
Iron—not manufactured	....	887,156	....	1,139,097
Leather—Tanned	....	118,169	....	66,126
Liquors ....Gallons.	426,453	191,956	286,775	438,903
Manufactures—Candles	....	17,696	....	41,902
Cottons	....	2,134,156	....	2,822,082
Furs	....	51,190	....	62,020
Glass, Glassware and Earthenware	....	264,359	....	302,235
Iron and Hardware	....	565,732	....	765,012
Jewellery, Clocks and Watches	....	....	....	52,259
Leather	....	61,537	....	46,543
Linen	....	124,214	....	145,953
Lace and Fancy Goods	....	265,455	....	229,510
Silk	....	359,596	....	348,212
Soap	....	63,573	....	41,791
Woollens	....	2,139,154	....	2,097,382
Molasses ....Gallons.	202,162	56,178	161,531	34,553
Oil ....do	133,311	95,755	263,848	214,020
Paper, Stationery and Books	....	210,576	....	194,004
Paints and Colours	....	95,818	....	135,071
Railroad-Iron	....	1,025,744	....	117,370
Rice ....Cwt.	11,410	44,432	17,927	86,711
Steel	....	45,825	....	66,708
Salt ....Bushels.	988,282	97,611	986,000	109,841
Sugar ....Lbs.	3,244,283	198,714	2,194,182	146,666
Spices	....	19,669	....	49,595
Tea ....Lbs.	843,427	146,722	869,361	272,218
Tobacco ....do	76,881	14,610	14,711	3,032
Tin, Zinc, Copper and Lead	....	239,395	....	130,642
Other Articles	....	857,638	....	702,732
		10,768,161		11,472,754
Add—Goods in transitu for United States	....	26,916		76,314
Totals	....	$10,795,077		$11,549,068

No. 7.—COMPARATIVE STATEMENT of the Quantity and Value of Goods enumerated in the Reciprocity Treaty—being the growth and produce of the United States and Imported into Canada during the Years 1858 and 1859.

ARTICLES.		1858.		1859.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Animals	No.	10,170	240,186	10,847	234,677
Ashes		....	23,369	....	12,826
Bark	Cords.	525	2,117	600	2,570
Broomcorn		....	30,872	....	30,301
Burr and Grindstones		....	13,528	....	14,383
Butter	Lbs.	43,120	7,037	246,719	40,335
Cheese	do.	1,092,672	90,045	791,410	93,499
Coal	Tons.	70,097	242,700	78,557	237,776
Cotton Wool		....	11,238	....	17,207
Dye Stuffs		....	28,545	....	52,209
Eggs	Doz.	20,735	2,487	14,713	1,893
Fish		....	78,030	....	108,584
Fish Oil	Galls.	95,000	78,936	129,983	73,098
Fish, products of		....	708	....	....
Firewood	Cords.	24,605	47,657	19,803	40,810
Fruit, Dried		....	29,922	....	35,414
do. Undried		....	89,071	....	215,609
Flax, Hemp, and Tow, unmanufactured		....	46,372	....	57,301
Flour	Brls.	192,250	750,580	387,062	2,090,683
Furs, Skins, and Tails, undressed		....	37,568	....	114,532
Grain of all kinds	Bus.	3,031,725	2,078,464	1,790,835	1,709,077
Gypsum		....	5,337	....	11,763
Hides and Pelts		....	125,000	....	250,000
Lard	Lbs.	347,963	41,209	275,205	33,049
Manures		....	12,134	....	12,721
Meal	Brls.	6,492	21,064	33,964	125,902
Meat of all kinds	Cwt.	93,600	544,366	66,730	601,454
Ores of Metals		....	9,038	....	2,389
Pitch and Tar	Brls.	2,308	6,204	3,345	8,472
Plants and Shrubs		....	22,647	....	24,423
Poultry		....	1,582	....	1,054
Rags		....	943	....	3,872
Rice	Cwt.	482,160	18,142	600,254	18,562
Seeds		....	78,356	....	82,111
Slate		....	15,830	....	12,763
Stone and Marble, unwrought		....	51,469	....	49,065
Tallow	Lbs.	3,999,904	401,860	2,976,216	309,039
Timber and Lumber		....	115,231	....	97,435
Tobacco, unmanufactured	Lbs.	1,390,074	135,025	1,964,488	146,974
Turpentine		....	31	....	....
Vegetables		....	18,614	....	66,109
Wool	Lbs.	....	11,101	....	66,175
Totals		.... $	5,564,615	.... $	7,106,116

No. 8.—COMPARATIVE STATEMENT of Goods in Warehouse under Bond, in the Province of Canada, for the Years ending 31st December, 1857, 1858, and 1859, and shewing the Amount of Duty chargeable thereon at those dates.

ARTICLES.		31st December, 1857.			31st December, 1858.			31st December, 1859.		
		Quantity.	Value.	Duty.	Quantity.	Value.	Duty.	Quantity.	Value.	Duty.
			$	$ cts.		$	$ cts.		$	$ cts.
Ale, Beer, & Porter	Galls.				7,063	11,236	560 24	28,383	12,680	3,804 00
Coffee	Lbs.	118,226	13,890	1,477 82	119,904	13,530	1,199 00	3,988	577	86 55
Cigars	"	9,979	12,958	5,987 40	1,355	2,413	1,084 00	5,736	6,967	2,786 80
Molasses	Galls.	190,530	61,242	7,938 75	81,207	19,763	3,248 28	324,336	58,481	17,544 30
Mustard	Lbs.	15,279	1,950	763 95	1,190	164	59 50			
Snuff	"	1,078	218	107 80	905	443	90 50	619	380	114 00
Starch	"	63,130	5,326	2,104 33	42,172	2,686	2,108 60	118,721	8,481	2,544 30
Soap	"				47,496	1,536	593 70	103,455	4,255	1,276 50
Spirits—Whisky	Galls.	54,131	33,050	6,766 38	15,496	10,419	2,789 28	15,282	10,143	2,750 76
Brandy	"	89,128	189,670	71,302 40	21,584	41,853	21,584 00	42,123	42,141	42,141 00
Gin	"	80,912	43,541	56,638 40	22,630	11,856	18,104 00	43,508	20,521	20,521 00
Rum	"	19,212	10,005	8,645 40	5,928	3,785	2,964 00	17,767	8,054	8,054 00
Spirits & Strong Waters	"							571	407	407 00
Cordials	"	2,715	5,454	2,715 00	2,549	4,403	2,549 00	1,726	2,222	2,222 00
Wine of all kinds	"	325,577	361,399	128,185 65	270,590	180,466	71,712 00	196,264	170,694	51,208 20
Sugar refined	Lbs.	115,780	11,086	2,769 50	127,699	12,172	3,192 48	127,479	9,583	3,833 20
do other kinds	"	4,825,408	380,068	64,635 17	5,847,551	319,554	74,236 26	4,079,814	176,048	52,814 40
Dried Fruits	"	467,890	41,060	9,747 70	167,028	11,191	5,010 84	337,972	16,879	5,063 70
Macaroni & Vermicelli	"	11,774	688	245 30	560	175	16 80			
Spices	"	68,124	8,482	3,180 24	27,924	3,452	2,194 62	18,729	4,238	1,271 40
Tea	"	1,256,343	413,562	52,347 61	1,228,108	375,352	48,600 00	238,617	54,588	8,188 20
Tobacco	"	303,010	60,111	12,484 08	306,649	54,508	15,332 45	734,835	106,743	32,022 90
Vinegar	Galls.	32,506	8,755	1,896 19	15,404	2,224	924 24			
Patent Medicines									1,350	405 00
Blacking									124	37 20
Goods paying 25 per cent.					[25, 20 & 15 p. c.]	101,472	20,294 00	[25 p. ct.]	1,882	470 50
do do 20 do			14,877	2,975 38					422,462	84,492 40
do do 15 do			899,031	134,854 67		197,663	29,649 00			
do do 10 do									92,351	9,235 10
do do 5 and 2½ per cent.			174,908	5,343 03		176,652	8,832 60			
Totals		$	2,751,331	583,112 15		1,558,968	336,929 39		1,232,251	353,294 41

No. 9.—COMPARATIVE STATEMENT of Imports, exhibiting in contrast the Value of, and Amounts of Duties collected on Goods entered for Consumption in Canada, during the years 1856, 1857, 1858, and 1859, respectively.

WHENCE IMPORTED.	VALUE.				DUTY.			
	1856.	1857.	1858.	1859.	1856.	1857.	1858.	1859.
	$	$	$	$	$ cts.	$ cts.	$ cts.	$ cs.
Great Britain	18,212,934	17,559,025	12,287,053	14,786,084				
North American Colonies	1,032,595	751,888	423,826	381,755				
West Indies	17,613	26,823	....	533	4,508,882 08	3,925,051 18	3,381,389 51	4,437,846 12
United States	22,704,509	20,224,651	15,635,565	17,592,916				
Other Forei Countries	1,616,736	868,211	732,083	793,873				
Totals	43,584,387	39,430,598	29,078,527	33,555,161	4,508,882 08	3,925,051 18	3,381,389 51	4,437,846 12

No. 10.—RETURN of the Quantity and Value of Goods imported into Canada *via* St. Lawrence, from the Provinces of Nova Scotia, New Brunswick, Prince Edward's Island and Newfoundland, during the year 1859.

ARTICLES.	Nova Scotia.		New Brunswick.		Prince Edward's Island.		Newfoundland.		TOTAL.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		$		$		$		$		$
Sugars........Lbs.	1,362,206	69,417					24,842	1,144	1,387,048	70,561
Molasses........Galls.	147,778	21,158					30	5	147,808	21,163
Cigars........Lbs.	16	26							16	26
Wine........Galls.	575	618					520	847	1,095	1,465
Rum........ "	9,558	2,008							9,558	2,008
Spices........Lbs.	9,769	380							9,769	380
Dried Fruits........ "	2,234	172							2,234	172
Coffee........ "	11,765	1,616							11,765	1,616
Tea........ "	4,458	1,477							4,458	1,477
Tobacco........ "	13,969	2,904							13,969	2,904
Fish........		69,670		17,334				53,186		140,190
Fish Oil........Galls.	37,075	14,835	3,710	2,512			33,458	21,280	74,243	38,627
Other Oil........ "			2,500	1,267			35	38	2,535	1,305
Furs and Skins........		60								60
Hides........		200								200
Coal........Tons.	3,659	10,546							3 659	10,546
Coin and Bullion........		385								385
Flour and Meal........Brls.	2,061	13,336			77	457			2,138	13,793
Salt........Bus.	29,537	8,199	675	218	1,032	489			31,244	8,906
Other Articles........		34,438		303		1,078		619		36,438
Totals........		251,445		21,634		2,024		77,119		352,222

No. 11.—RETURN of the Quantity and Value of Goods Imported, first into the United States, and thence into Canada, distinguishing Goods *passing through* under Bond, from those *purchased in* the United States, also Goods, the Produce or Manufacture of the United States,—during the year 1859.

ARTICLES.		Passing through the United States under Bond.		Purchased in the United States.			
				Produce of the United States.		Not the Produce of the U. S.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
			$		$		$
Whiskey	Galls.	2,254	1,913	40,024	14,892	....	....
Brandy	do.	1,819	1,264	1,879	1,984	3,337	4,057
Gin	do.	837	314	240	108	2,008	921
Rum	do.	216	114	481	269	1,769	1,068
Spirits and Strong Waters, not included above	do.	....	....	643	289	....	....
Cordials	do.	....	....	250	259	....	....
Cigars	Lbs.	....	....	20,962	16,670	11,190	9,031
Sugar, Refined	do.	....	....	421,004	39,078	402,842	37,523
do. other kinds	do.	210,318	10,495	3,173,813	258,170	18,695,200	1,309,904
Molasses	Galls.	....	....	531,719	104,101	442,400	97,577
Ale, Beer and Porter	do.	....	....	17,039	3,477	....	....
Blacking		....	....	....	3,968	....	....
Tea	Lbs.	8,812	1,956	....	....	5,825,052	2,071,339
Coffee	do.	4,263	507	....	....	2,099,590	251,134
Cinnamon, Mace and Nutmegs	do.	490	232	....	....	30,696	10,171
Spices—including Ginger, Pimento and Pepper—ground	do.	....	....	....	....	58,650	4,475
Dried Fruits	do.	179,920	10,603	361,900	19,694	1,443,160	100,542
Patent Medicines, and Medicinal Preparations		....	97	....	50,938	....	....
Snuff	Lbs.	....	....	32,612	5,938	300	95
Soap	do.	....	....	135,595	8,682	....	....
Starch	do.	....	....	545,510	32,743	....	....
Tobacco—manufactured	do.	....	....	3,020,842	491,880	424,568	76,555
Wine of all kinds—in Wood	Galls.	46,586	22,524	10,842	7,491	20,267	18,800
do. do. in Bottles	doz.	457	2,228	357	2,090	904	5,456
Goods paying 25 ₩ cent.		....	28,652	....	140,611	....	....
do. do. 20 and 15 ₩ cent.		....	4,278,237	....	2,487,251	....	740,953
do. do. 10 and 5 do.		....	120,547	....	506,724	....	95,336
Free Goods		....	66,808	....	8,040,225	....	516,320
Totals.		....	4,546,491	....	12,237,541	....	5,351,865

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No. 12.

GENERAL STATEMENT OF EXPORTS,

BEING A DETAILED ACCOUNT

OF THE

PRINCIPAL ARTICLES

OF

CANADIAN PRODUCE AND MANUFACTURE,

Shipped during the year 1859.

Shewing the Quantity and Value of each Article Shipped, and indicating to what Country Exported.

No 12.—**GENERAL STATEMENT OF EXPORTS**, being a detailed Account of the Principal Articles of Canadian Produce and Manufacture, Shipped during the Year 1859, shewing the Quantity and Value of each Article Shipped at the undermentioned Ports, and indicating to what Country Exported.

PORTS.	Total Quantity.	Total Value.	COPPER—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
	Tons.	$	$	$	$	$	$
Coaticook	40	3,967				3,967	
Quebec	20	5,260	5,260				
Other Ports	1	216				216	
Totals	61	9,443	5,260			4,183	
			COPPER ORE				
	Tons.	$	$	$	$	$	$
Coaticook	1¼	280				280	
Fort Erie	1¼	310				310	
Quebec	27	2,750	2,750				
Sault Ste.-Marie	3,373½	337,346	232,391			101,955	
Totals	3,403	340,686	235,141			105,545	
			IRON ORE.				
	Tons.	$	$	$	$	$	$
Kingston	9,097	25,765				25,765	
Montreal	120	200	200				
Totals	9,217	25,965	200			25,765	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			PIG AND SCRAP IRON.				
	Tons.	$	$	$	$	$	$
Coaticook	215	9,935				9,935	
Fort Erie	254	5,990				5,990	
Hamilton	788	11,272				11,272	
Kingston	484	9,379				9,379	
Montreal	30	300				300	
Sault Ste.-Marie	42	1,982				1,982	
St. Johns	460	9,011				9,011	
Toronto	277	4,912				4,912	
Windsor	716	21,490				21,490	
Other Ports	120	2,202				2,202	
Totals	4,086	76,473				76,473	
			STONE.				
		$	$	$	$	$	$
Amherstsburgh		14,693				14,693	
Dundee		153				153	
Georgeville		203				203	
Kingston		371				371	
Prescott		400				400	
Other Ports		125				125	
Totals		15,945				15,945	
			FISH—DRIED AND SMOKED.				
	Cwt.	$	$	$	$	$	$
Amherst	12,429	29,271		28,569		702	
Gaspé	78,186	236,720	36,337	19,281			181,102
New Carlisle	52,279	171,212	28,181	3,542			139,489
Quebec	116	1,272	1,192	80			
Other Ports		14				14	
Totals	143,010	438,489	65,710	51,472		716	320,591

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No. 12.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	PICKLED FISH.—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries
				North America.	West Indies.		
	Barrels.	$	$	$	$	$	$
Amherst	101,380	215,485		132,753		82,732	
Brighton	412	2,413				2,413	
Coaticook	460	7,317				7,317	
Gaspé	243	1,928	469	1,084		175	200
Kingston	250	1,176				1,176	
Milford	872	5,294				5,294	
Montreal	593	7,473				7,473	
New Carlisle	14,550	21,468	408	5,836		15,224	
Picton	1,475	7,788				7,788	
Sarnia	1,012	4,050				4,050	
Sault Ste.-Marie	791	4,143				4,143	
Wellington	1,485	6,950				6,950	
Other Ports	2,456	13,289	1,308	50	144	11,787	
Totals	125,979	298,774	2,185	139,723	144	156,522	200
			FRESH FISH.				
		$	$	$	$	$	$
Cobourg		2,232				2,232	
Cramahe		4,063				4,063	
Fort Erie		1,166				1,166	
Sarnia		1,945				1,945	
Windsor		7,956				7,956	
Other Ports		2,368				2,368	
Totals		19,730				19,730	
			FISH OIL.				
	Gallons.	$	$	$	$	$	$
Amherst	27,971	15,490		14,860		630	
Coaticook	7,085	5,873				5,873	
Gaspé	6,140	3,042	2,958	84			
New Carlisle	29,101	12,216	12,216				
Quebec	238	140	20	120			
Other Ports	278	194				194	
Totals	70,813	36,955	15,194	15,064		6,697	
			FURS or SKINS.				
		$	$	$	$	$	$
Amherst		5,097		5,097			
Gaspé		460	460				
Kingston		17,795				17,795	
Other Ports		123				123	
Totals		23,475	460	5,097		17,918	
			ASHES—POT.				
	Barrels.	$	$	$	$	$	$
Amherst	63	1,900				1,900	
Chatham	37	1,024				1,024	
Dover	46	1,195		420		775	
Fort Erie	92	3,694				3,694	
Montreal	24,403	733,159	587,451			145,708	
Quebec	73	2,175	2,175				
Sarnia	437	12,625				12,625	
Wallaceburgh	70	2,800				2,800	
Windsor	233	8,050				8,050	
Other Ports	144	2,890				2,890	
Totals	25,598	769,512	589,626	420		179,466	

No. 12.—GENERAL STATEMENTS OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	PEARL ASHES—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries
				North America.	West Indies.		
	Barrels.	$	$	$	$	$	$
Clifton	1	50				50	
Coaticook	4,613	132,546	89,331			43,215	
Montreal	7,112	191,393	191,393				
Quebec	485	13,470	13,470				
Stanstead	10	300				300	
Totals	12,221	337,759	294,194			43,565	
			TIMBER-ASH.				
	Tons.	$	$	$	$	$	$
Quebec	4,254	23,831	23,819				12
St. Johns	59	236				236	
Totals	4,313	24,067	23,819			236	12
			BIRCH.				
	Tons.	$	$	$	$	$	$
New Carlisle	802	3,417	3,417				
Quebec	6,805	49,911	49,905				6
Rimouski	319	2,906	2,906				
St. Johns	11	60				60	
Totals	7,937	56,294	56,228			60	6

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
			ELM				
	Tons.	$	$	$	$	$	$
Quebec	26,269	200,801	200,787				14
St. Johns	9	39				39	
Totals	26,273	200,840	200,787			39	14
			MAPLE.				
	Tons.	$	$	$	$	$	$
Quebec	81	715	715				
St. Johns	3	13				13	
Totals	84	728	715			13	
			OAK.				
	Tons.	$	$	$	$	$	$
Chatham	506	2,600				2,600	
Chippawa	2,957	12,969				12,969	
Dover	585	7,497		3,300		4,197	
Quebec	25,157	235,834	285,690	144			
Rowan	500	1,563				1,563	
Sarnia	4,260	34,038				34,038	
Wallaceburgh	156	12,480				12,480	
Other Ports	179	2,750				2,750	
Totals	34,300	359,731	285,690	3,444		70,507	

No. 12.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	WHITE PINE—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries
				North America.	West Indies.		
	Tons.	$	$	$	$	$	$
Belleville	305	1,450				1,450	
Burwell	332	1,755				1,755	
New Carlisle	1,836	7,586	7,376	210			
Quebec	370,556	2,145,576	2,144.576				
Rowan	4,560	20,633				20,633	
St. Johns	17,617	69,784				69,784	
Other Ports	488	2,222				2,222	
Totals	395,694	2,249,006	2,152,952	210		95,844	
			RED PINE.				
	Tons.	$	$	$	$	$	$
Coaticook	80	471				471	
Gananoque	160	860				860	
Quebec	43,330	361,079	361,937	42			
St. Johns	64	257				257	
Totals	43,643	363,567	361,937	42		1,588	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
			TAMARACK.				
	Tons.	$	$	$	$	$	$
Coaticook	380	2,049				2,040	
New Carlisle	229	1,832	1,832				
Quebec	1,504	7,217	7,217				
Other Ports	72	284				284	
Totals	2,185	11,382	9,049			2,333	
			WALNUT.				
	M. Feet.	$	$	$	$	$	$
Chatham	585	11,748				11,748	
Kingsville	83	1,245				1,245	
Quebec	169	3,851	3,851				
Rondeau	159	3,054				3,054	
Wallaceburg	311	5,821				5,821	
Totals	1,307	25,719	3,851			21,868	
			BASSWOOD, BUTTERNUT AND HICKORY.				
	M. Feet.	$	$	$	$	$	$
Chatham	36	365				365	
Napanee	48	484				484	
Quebec	220	1,600	1,600				
Rondeau	1,070	12,318				12,318	
St. Johns	4	33				33	
Totals	1,378	14,800	1,600			13,200	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	STANDARD STAVES—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
	Mille.	$	$	$	$	$	$
Amherstburg	20	1,536				1,536	
Chatham	568	30,873				30,873	
Hamilton	157	8,766	371			8,395	
Montreal	171	10,568	10,568				
Quebec	1,731	260,192	259,892	300			
Wallaceburgh	210	10,705				10,705	
Other Ports	111	7,236	324	6,375		537	
Totals	2,968	329,876	271,155	6,675		52,046	

OTHER STAVES.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Mille.	$	$	$	$	$	$
Chatham	487	6,256				6,256	
Fort Erie	203	3,968				3,968	
Hamilton	494	10,479	1,629			8,850	
Montreal	701	20,644	7,859	12,465			320
Quebec	2,624	135,840	134,590	700	550		
Sarnia	368	13,078	2,000			11,078	
Wallaceburgh	77	3,126				3,126	
Other Ports	791	7,656		297		7,359	
Totals	5,745	201,047	146,078	13,462	550	40,637	320

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BATTENS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Collingwood		50				50	
New Carlisle		65	65				
Quebec		1,847	1,847				
Totals		1,962	1,912			50	

KNEES.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Pieces.	$	$	$	$	$	$
Coaticook	3,932	4,465				4,465	
Colborne	69	52				52	
Fort Erie	16	20				20	
Quebec	32	44	44				
St. Johns	248	142				142	
Totals	4,297	4,723	44			4,679	

SCANTLING.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
New Carlisle		1,186	241	945			
Philipsburgh		9,470				9,470	
Quebec		120	120				
St. Johns		12,984				12,984	
Totals		23,760	361	945		22,454	

TREENAILS.

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
New Carlisle		90	90				
Quebec		210	210				
Totals		300	300				

No. 12.—GENERAL STATEMENT OF EXPORTS—*Continued.*

PORTS.	Total Quantity.	Total Value.	DEALS—EXPORTED TO: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
	Standard Hund.	$	$	$	$	$	$
Gaspé	70	2,100	2,100				
Isle Verte	1,100	34,406	34,406				
Montreal	4	58	58				
New Carlisle	581	13,213	13,011				202
Quebec	39,205	1,374,031	1,374,031				
Rimouski	1,906	53,573	53,573				
Totals	42,866	1,477,381	1,477,179				202
			DEAL ENDS.				
	Stand. Hund.	$	$	$	$	$	$
Isle Verte	81	1,496	1,496				
New Carlisle	40	513	513				
Quebec	1,340	40,474	40,474				
Rimouski	82	2,043	2,043				
Totals	1,543	44,526	44,526				

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			PLANK AND BOARDS.				
	M. Feet.	$	$	$	$	$	$
Belleville	15,067	137,941				137,941	
Burwell	20,375	169,505				169,505	
Bytown	11,783	117,966				117,966	
Coaticook	9,918	81 983				81,983	
Cobourg	24,525	245,063				245,063	
Dover	10,451	97,655				97,655	
Dunnville	15,855	103,197				103,197	
Hamilton	16,859	170,908				170,908	
Hope	15,270	126,631				126,631	
Kingston	15,233	121,999				121,999	
Napanee	6,961	64,529				64,529	
Rowan	9,482	63,480				63,480	
St Johns	46,326	549,260				549,260	
Toronto	13,875	136,543				136,543	
Trenton	13,467	132,137				132,137	
Other Ports	68,649	371,322	4,137	8,751	66	357,650	718
Totals	314,096	2,690,119	4,137	8,751	66	2,676,447	718
			SPARS.				
	Pieces.	$	$	$	$	$	$
Burwell	17	191				191	
Quebec	3,559	18,072	18,315	588			69
Rowan	133	3,932				3,932	
St. Johns	250	2,000				2,000	
Other Ports	108	288		108		180	
Totals	4,067	25,383	18,315	696		6,303	69
			MASTS.				
	Pieces.	$	$	$	$	$	$
Burwell	17	204				204	
New Carlisle	4	80		80			
Quebec	812	87,103	87,103				
Rowan	191	5,327				5,327	
Totals	1,024	92,714	87,103	80		5,531	

No. 1.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
HANDSPIKES.							
	Pieces.	$	$	$	$	$	
New Carlisle	30	16		16			
Quebec	6,487	1,553	1,553				
Totals	6,517	1,569	1,553	16			
LATH AND LATHWOOD.							
	Cords.	$	$	$	$	$	$
Burwell	237	948				948	
Coaticook	674	1,121				1,121	
Dunnville	50	219				219	
Kingston	118	596				596	
Napanee	323	579				579	
New Carlisle	159	680	573	107			
Quebec	4,650	30,832	30,832				
St. Johns	668	1,191				1,191	
Other Ports	495	1,050	136			914	
Totals	7,374	37,216	31,541	107		5,568	
FIREWOOD.							
	Cords.	$	$	$	$	$	$
Amherstburgh	8,592	13,168				13,168	
Chippawa	1,237	1,751				1,751	
Dunnville	298	298				298	
Fort Erie	888	1,828				1,828	
Gananoque	1,200	1,208				1,208	
Kingston	106	188				188	
Philipsburgh	1,719	1,719				1,719	
Wallaceburgh	19,087	17,597				17,597	
Windsor	2,074	3,065				3,065	
Other Ports	812	1,365	128			1,237	
Totals	36,013	42,187	128			42,059	
SHINGLES.							
	Mille.	$	$	$	$	$	$
Brighton	597	724				724	
Burwell	4,909	9,866				9,866	
Coaticook	1,816	3,279				3,279	
Dover	1,598	2,547				2,547	
Fort Erie	1,081	1,571				1,571	
Hope	1,237	2,060				2,060	
New Carlisle	4,681	6,539		6,281		258	
Rowan	997	1,582				1,582	
Toronto	1,549	1,807				1,807	
Other Ports	4,199	6,182		169		6,013	
Totals	22,664	36,157		6,450		29,707	
RAILROAD TIES.							
	Pieces.	$	$	$	$	$	$
Chippawa	9,225	1,851				1,851	
Colborne	18,470	5,294				5,294	
Dover	13,836	1,365				1,365	
Dunnville	63,141	12,956				12,956	
St. Johns	5,891	882				882	
Other Ports	6,784	1,513				1,513	
Totals	117,347	23,861				23,861	

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No. 12—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	OARS.—EXPORTED TO				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
	Pairs.	$	$	$	$	$	$
Coaticook	615	1,229				1,229	
Gananoque	5	25				25	
Quebec	10,000	15,934	15,925				9
Totals	11,520	17,188	15,925			1,254	9
			OTHER WOODS.				
		$	$	$	$	$	$
Brighton		2,288				2,288	
Burwell		12,704				12,704	
Coaticook		1,944				1,944	
Fort Erie		17,130				17,130	
Montreal		5,958	4,725			1,233	
Philipsburgh		3,964				3,964	
Quebec		10,251	2,589	3,280	4,382		
St. Johns		2,595				2,595	
Other Ports		18,294	49	118		18,097	
Totals		75,098	7,363	3,398	4,382	59,955	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			SAW LOGS.				
	Number.	$	$	$	$	$	$
Belleville	12,591	12,591				12,591	
Burwell	8,726	8,726				8,726	
Chippawa	1,168	958				958	
Dunnville	527	557				557	
Rowan	17,317	17,185				17,185	
Stanley	80,000	85,000				85,000	
Other Ports	1,352	473				473	
Totals	121,671	125,490				125,490	
			ANIMALS—HORSES.				
	Number.	$	$	$	$	$	$
Amherstburgh	49	4,180				4,180	
Brockville	89	9,090				9,090	
Chatham	103	7,620				7,620	
Coaticook	341	36,769				36,769	
Cornwall	63	4,173				4,173	
Dundee	102	6,689				6,689	
Fort Erie	218	27,136				27,136	
Frelighsburgh	156	11,580				11,580	
Georgeville	87	20,780				20,780	
Kingston	227	23,276				23,276	
Lacolle	901	59,886				59,886	
London	363	32,050				32,050	
Montreal	3,674	288,080				288,080	
Philipsburgh	77	5,494				5,494	
Prescott	314	29,298				29,298	
Queenston	160	12,880				12,880	
Russeltown	140	10,172				10,172	
Sarnia	268	25,030				25,030	
Stanstead	690	71,992				71,992	
Sutton	76	6,600				6,600	
Windsor	504	29,944				29,944	
Other Ports	595	56,068		130		55,938	
Totals	9,187	778,787		130		778,667	

No. 12.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	HORNED CATTLE—EXPORTED TO				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
	Number.	$	$	$	$	$	$
Brockville	525	11,547				11,547	
Coaticook	2,392	70,318				70,318	
Cornwall	699	13,888				13,888	
Credit	418	18,508				18,508	
Dundee	727	12,807				12,807	
Fort Erie	3,365	85,132				85,132	
Frelighsburgh	1,256	22,475				22,475	
Georgeville	1,209	40,475				40,475	
Kingston	4,127	95,632				95,632	
London	4,736	147,004				147,004	
Maitland	645	13,297				13,297	
Morrisburgh	599	12,795				12,795	
Philipsburgh	1,009	27,841				27,841	
Picton	791	12,194				12,194	
Prescott	3,244	91,232				91,232	
Sarnia	654	18,085				18,085	
Stanstead	2,113	78,657				78,657	
Stratford	629	23,486				23,486	
St. Regis	801	14,962				14,962	
Windsor	833	22,939				22,939	
Other Ports	4,085	92,199				91,799	400
Totals	34,857	925,473				925,073	400

PORTS.	Total Quantity.	Total Value.	SWINE. Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Number.	$	$	$	$	$	$
Belleville	2,300	11,700				11,700	
Brantford	286	2 051				2,051	
Brockville	472	1,873				1,873	
Fort Erie	2,688	14,284				14,284	
Frelighsburgh	486	2,407				2,407	
Guelph	387	5,250				5,250	
Kingston	1,363	4,524				4,524	
London	1,866	9,185				9,185	
Montreal	755	9,031				9,031	
Picton	808	3,739				3,739	
Prescott	921	4,806				4,806	
Toronto	1,332	4,055				4,055	
Windsor	1,295	13,427				13,427	
Other Ports	1,293	5,126				5,120	
Totals	16,251	91,458				91,458	

PORTS.	Total Quantity.	Total Value.	SHEEP. Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
	Number.	$	$	$	$	$	$
Belleville	970	3,630				3,630	
Clarenceville	2,356	4,499				4,499	
Coaticook	10,803	27,194				27,194	
Fort Erie	4,307	14,198				14,198	
Frelighsburgh	2,178	3,760				3,760	
Georgeville	18,448	20,411				20,411	
Kingston	2,448	7,821				7,821	
London	2,225	10,394				10,394	
Morrisburgh	2,066	4,261				4,261	
Montreal	1,616	7,282				7,282	
Philipsburgh	7,842	16,662				16,662	
Prescott	5,181	13 112				13,112	
Russeltown	2,621	4,939				4,939	
Stanstead	4,980	14,172				14,172	
Other Ports	8,337	22,458				22,358	100
Totals	76,378	174,793				174,693	100

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No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	POULTRY.—EXPORTED TO: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
		$	$	$		$	$
Clarenceville		1,200				1,200	
Coaticook		14,567				14,567	
Hemmingford		1,150				1,150	
Montreal		18,568				18,568	
Philipsburgh		1,836				1,836	
Prescott		1,233				1,233	
Stanstead		1,933				1,933	
Other Ports		3,835				3,835	
Totals		44,322				44,322	
			BEEF.				
	Cwt.	$	$	$	$	$	$
Clifton	239	1,874				1,874	
Coaticook	72	782				782	
Montreal	1,059	9,094	8,429	650		15	
Prescott	570	3,391				3,391	
Quebec	472	3,055	1,397	1,658			
Windsor	652	4,267				4,267	
Other Ports	171	870		216		654	
Totals	3,235	23,333	9,826	2,524		10,983	
			BACON AND HAMS.				
	Cwt.	$	$	$	$	$	$
Coaticook	118	1,101	1,101				
Guelph	22	179				179	
London	480	5,380				5,380	
Montreal	38	342	342				
Other Ports	26	337		126		211	
Totals	684	7,339	1,443	126		5,770	
			BUTTER.				
	Lbs.	$	$	$	$	$	$
Belleville	47,600	4,027				4,027	
Brockville	219,184	31,561				31,561	
Clifton	47,600	5,418				5,418	
Coaticook	507,584	84,115	15,515			68,600	
Cornwall	32,243	5,697				5,697	
Dundee	23,888	3,915				3,915	
Fort Erie	61,638	7,705				7,705	
Frelighsburgh	140,552	25,452				25,452	
Georgeville	67,648	12,084				12,084	
Kingston	152,398	17,243				17,243	
London	40,544	4,559				4,559	
Montreal	1,176,224	166,546	92,801	66,481		6,460	804
Philipsburgh	99,120	18,501				18,501	
Prescott	446,096	37,033				37,033	
Quebec	104,944	16,792	4,420	11,852			520
Russeltown	72,516	9,899				9,899	
Sarnia	42,000	5,126				5,126	
Stanstead	45,792	8,662				8,662	
Stanley	52,640	6,584				6,584	
Sutton	58,240	10,100				10,100	
Trout River	35,840	5,109				5,109	
Other Ports	276,005	40,122		1,549		38,573	
Totals	2,750,296	526,250	112,736	79,882		332,308	1,324

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	BEESWAX—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries
				North America.	West Indies.		
	Lbs.	$	$	$	$	$	$
Clifton	204	36				36	
London	170	85				85	
Montreal	1,913	574				574	
Stanley	152	38				38	
Other Ports	342	50				50	
Totals	2,781	783				783	
			CHEESE.				
	Cwt.	$	$	$	$	$	$
Brockville	27	270				270	
Coaticook	25	228				228	
Kingston	49	927				927	
Lacolle	15	187				187	
Montreal	110	2,043	840	138		1,065	
Prescott	39	418				418	
Quebec	20	277		277			
Other Ports	38	317		52		265	
Totals	323	4,667	840	467		3,360	
			BEARS' GREASE.				
		$	$	$	$	$	$
Coaticook		413				413	
Montreal		18	18				
Totals		431	18			413	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
			EGGS.				
	Dozens.	$	$	$	$	$	$
Clarenceville	31,375	4,206				4,206	
Coaticook	87,000	8,750				8,750	
Fort Erie	29,905	3,175				3,175	
Kingston	32,724	3,250				3,250	
Lacolle	20,845	2,684				2,684	
Montreal	373,660	46,328				46,328	
Philipsburgh	10,018	1,072				1,072	
St. Johns	159,016	21,327				21,327	
Other Ports	64,855	7,094		121		6,973	
Totals	809,398	97,886		121		97,765	
			HIDES.				
		$	$	$	$	$	$
Clifton		7,851				7,851	
Coaticook		1,929				1,929	
Fort Erie		21,710				21,710	
Kingston		24,120				24,120	
London		13,747				13,747	
Montreal		2,033				2,033	
Prescott		9,006				9,006	
Sarnia		4,914				4,014	
Stanley		3,271				3,271	
Toronto		3,081				3,081	
Windsor		6,315				6,315	
Other Ports		13,956		331		13,625	
Totals		111,933		331		111,602	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	SHEEPS' PELTS.—EXPORTED TO.				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries.
				North America.	West Indies.		
		$	$	$	$	$	$
Brockville		6,360				6,360	
Clifton		15,427				15,427	
Coaticook		22,724				22,724	
Fort Erie		6,917				6,917	
Guelph		3,383				3,383	
London		7,622				7,622	
Montreal		8,200				8,200	
Paris		4,108				4,108	
Prescott		3,250				3,250	
Stratford		3,823				3,823	
Stanley		11,752				11,752	
Toronto		16,146				16,146	
Other Ports		9,625				9,625	
Totals		119,337				119,337	
			HORNS AND HOOFS.				
		$	$	$	$	$	$
Clifton		241				241	
Montreal		696	696				
Quebec		120	120				
Other Ports		185				185	
Totals		1,242	816			426	

			BONES.				
		$	$	$	$	$	$
Montreal		2,800	2,800				
Quebec		280	280				
Windsor		18				18	
Totals		3,098	3,080			18	
			FEATHERS.				
	Lbs.	$	$	$	$	$	$
Chatham	56	20				20	
Dunnville	100	41				41	
Morrisburgh	110	55				55	
Stanley	400	201				201	
Other Ports	70	33				33	
Totals	736	350				350	
			LARD.				
	Barrels.	$	$	$	$	$	$
Kingston	7	98				98	
Montreal	7	130	130				
Prescott	4	79				79	
Quebec	20	425		425			
Other Ports	3	71				71	
Totals	41	803	130	425		248	

No. 12.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	PORK—EXPORTED TO				
			Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Cwt.	$	$	$	$	$	
Brantford	547	3,314				3,314	
Clifton	1,044	6,091				6,091	
Coaticook	6,240	49,971				49,971	
Cornwall	1,324	9,513				9,513	
Fort Erie	7,682	44,487				44,487	
London	9,578	54,834				54,834	
Montreal	4,200	29,426	10,690	7,175		11,431	130
Quebec	1,674	16,978		16,838			140
Other Ports	4,695	27,369		680		26,689	
Totals	36,984	241,983	10,690	24,693		206,330	270
TALLOW.							
	Barrels.	$	$	$	$	$	$
Montreal	123	2,952	2,952				
Quebec	3	74		74			
Russeltown	½	13				13	
Sarnia	40	1,039				1,039	
Windsor	1½	35				35	
Totals	168	4,113	3,952	74		1,087	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
TONGUES.							
	Kegs.	$	$	$	$	$	$
Coaticook	3	13				13	
Quebec	2	5	5				
Totals	5	18	5			13	
HONEY.							
	Lbs.	$	$	$	$	$	$
Amherstburgh	20	2				2	
Montreal	150	30		30			
Queenston	8	1				1	
Totals	178	33		30		3	
VENISON.							
		$	$	$	$	$	$
Clifton		182				182	
Coaticook		827				827	
Fort Erie		225				225	
Guelph		40				40	
Kingston		288				288	
Queenston		6				6	
Sault Ste. Marie		68				68	
Stratford		15				15	
Totals		1,651				1,651	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	WOOL.—EXPORTED TO Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Lbs.	$	$	$	$	$	$
Brantford	47,324	16,145				16,145	
Clifton	71,216	21,058				21,058	
Coaticook	403,386	103,855				103,855	
Cobourg	13,400	3,872				3,872	
Dover	15,478	4,473				4,473	
Fort Erie	306,256	46,281				46,281	
Hope	39,797	11,244				11,244	
Kingston	26,485	6,584				6,584	
London	205,733	45,622				45,622	
Morrisburgh	14,693	3,174				3,174	
Montreal	212,423	62,434				62,434	
Oakville	12,613	3,776				3,776	
Paris	31,864	9,338				9,338	
Picton	14,400	3,748				3,748	
Russeltown	10,836	3,159				3,159	
Stanley	60,072	17,003				17,003	
Toronto	41,521	11,507				11,507	
Other Ports	103,004	26,996		40		26,956	
Totals	1,630,531	400,272		40		400,232	
			FURS—Dressed.				
		$	$	$	$	$	$
Belleville		97				97	
Gananoque		60				60	
St. Johns		72				72	
Totals		229				229	
			FURS—Undressed.				
		$	$	$	$	$	$
Amherstburgh		1,578				1,578	
Chatham		4,584				4,584	
Coaticook		24,588	227			24,361	
London		2,350				2,350	
Montreal		103,776	70,565	300		32,911	
Sault Ste. Marie		72,019	72,019				
Three Rivers		3,607				3,607	
Windsor		7,238				7,238	
Other Ports		9,178	590	556		8,032	
Totals		228,918	143,401	856		84,661	
			BARLEY AND RYE.				
	Bushels.	$	$	$	$	$	$
Bath	57,344	36,461				36,461	
Belleville	163,400	107,855				107,855	
Brantford	29,300	17,487				17,487	
Brighton	74,121	48,069				48,069	
Chatham	34,820	18,439				18,439	
Côteau-du-Lac	15,673	10,089				10,089	
Credit	25,992	18,690				18,690	
Dover	21,046	11,690				11,690	
Fort Erie	23,619	15,047				15,047	
Hamilton	143,710	97,735				97,735	
Hemmingford	31,530	23,647				23,647	
Kingston	27,114	16,916				16,916	
Milford	23,300	13,660				13,660	
Montreal	31,820	20,495				20,495	
Napanee	72,743	48,383				48,383	
Oakville	43,424	30,901				30,901	
Picton	92,254	55,075				55,075	
St. Johns	627,580	399,497				399,497	
Stanley	23,548	13,516				13,516	
Toronto	54,632	38,583				38,583	
Wellington	20,968	14,783				14,783	
Other Ports	128,221	73,094		25		73,069	
Totals	1,766,249	1,130,112		25		1,130,087	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	BEANS.—EXPORTED TO Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Bushels.	$	$	$	$	$	$
Chatham	4,394	4,243				4,243	
Huntingdon	126	126				126	
Montreal	82	82				82	
Prescott	898	769				769	
Quebec	93	112		112			
Russeltown	190	190				190	
Stanstead	693	399				399	
Other Ports	146	161				161	
Totals	6,622	6,082		112		5,970	
			BRAN.				
	Cwt.	$	$	$	$	$	$
Brantford	1,036	1,653				1,653	
Clifton	1,040	634				634	
Coaticook	16,000	16,436				16,436	
Dalhousie	27,387	17,332				17,332	
Fort Erie	375	850				850	
Hamilton	5,305	4,280				4,280	
Morrisburgh	310	723				723	
Montreal	1,105	935	280			655	
Oakville	1,000	825				825	
Quebec	250	224		224			
Other Ports	316	296				296	
Totals	54,124	44,188	280	224		43,684	

PORTS.	Total Quantity.	Total Value.	FLOUR. Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Barrels	$	$	$	$	$	$
Brantford	14,613	79,386				79,386	
Clifton	31,783	170,141				170,141	
Coaticook	90,428	496,899	2,904			493,995	
Credit	6,456	35,729				35,729	
Darlington	1,072	5,946				5,946	
Dover	5,355	26,637				26,637	
Dundas	2,090	10,350				10,350	
Dunnville	2,016	9,644				9,644	
Fort Erie	12,784	65,767				65,767	
Goderich	1,856	8,172				8,172	
Guelph	8,390	41,300				41,300	
Hamilton	26,648	151,949				151,949	
Hope	643	3,830				3,830	
London	1,673	6,971				6,971	
Montreal	114,869	618,187	307,736	222,133		82,318	6,000
Newcastle	913	5,959				5,959	
Oakville	3,736	21,060				21,060	
Oshawa	5,952	39,612				39,612	
Paris	9,817	51,284				51,284	
Prescott	661	3,956				3,956	
Quebec	34,262	198,317	38,922	152,195			7,200
St. Johns	769	4,984				4,984	
Toronto	26,181	140,337				140,337	
Whitby	6,720	35,220				35,220	
Other Ports	5,923	30,497		1,386		29,111	
Totals	415,610	2,262,134	349,562	375,714		1,523,658	13,200
			HAY.				
	Tons.	$	$	$	$	$	$
Amherstburgh	311	2,643				2,643	
Clarenceville	8	80				80	
Coaticook	23	96				96	
Fort Erie	197	1,960				1,960	
Gananoque	21	107				107	
Sault Ste. Marie	32	370				370	
St. Johns	322	1,788				1,788	
Other Ports	30	214		12		202	
Totals	944	7,258		12		7,246	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	HOPS—EXPORTED TO: Great Britain.	British Colonies: North America.	British Colonies: West Indies.	United States.	Foreign Countries.
	lbs.	$	$	$	$	$	$
Amherstburgh	30	13				13	
Clifton	14,100	1,454				1,454	
Coaticook	37,170	2,790				2,790	
Dundee	7,600	458				458	
Montreal	230	92				92	
Russeltown	5,289	232				232	
Stanstead	4,167	119				119	
Totals	68,586	5,158				5,158	
			INDIAN CORN.				
	Bushels.	$	$	$	$	$	$
Amherstburgh	1,215	582				582	
Chatham	230	175				175	
Fort Erie	380	227				227	
Russeltown	240	254				254	
Windsor	741	411				411	
Other Ports	333	286				286	
Totals	3,139	1,935				1,935	
			MALT.				
	Bushels.	$	$	$	$	$	$
Coaticook	1,958	1,371				1,371	
Totals	1,958	1,371				1,371	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			MEAL.				
	Barrels.	$	$	$	$	$	$
Clifton	1,499	7,788				7,788	
Coaticook	1,967	10,895	1,030			9,865	
Guelph	454	3,220				3,220	
Montreal	3,110	15,906		1,493		14,413	
Prescott	202	1,213				1,213	
Quebec	775	4,731		4,731			
St. John's	3,177	16,359				16,359	
Other Ports	213	1,039		20		1,019	
Totals	11,397	61,151	1,030	6,244		53,877	
			OATS.				
	Bushels.	$	$	$	$	$	$
Clarenceville	50,268	20,859				20,859	
Clifton	28,051	9,632				9,632	
Coaticook	161,669	63,860				63,860	
Côteau-du-Lac	43,356	18,571				18,571	
Fort Erie	43,462	13,072				13,072	
Hamilton	71,550	20,613				20,613	
Hemmingford	47,744	18,770				18,770	
Lacolle	37,412	15,723				15,723	
London	31,146	9,672				9,672	
Montreal	211,023	84,173				84,173	
Philipsburgh	20,358	7,405				7,405	
Quebec	18,781	7,512		7,192	320		
St. Johns	1,625,892	710,248				710,248	
Stanley	92,895	30,510				30,510	
Toronto	33,766	18,744				18,744	
Other Ports	118,015	42,661	30	841		41,790	
Totals	2,635,388	1,092,025	30	8,033	320	1,083,642	

No. 12.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	PEAS.—EXPORTED TO Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
	Bushels.	$	$	$	$	$	$
Brighton	21,772	12,749				12,749	
Coaticook	25,189	18,904	14,268			4,636	
Dunnville	8,259	4,480				4,480	
Hamilton	19,881	12,095				12,095	
London	12,431	5,945				5,945	
Montreal	307,183	244,737	223,536	9,052		12,036	113
Picton	31,443	23,018				23,018	
Quebec	31,667	31,778	29,694	1,079	864		141
St. Johns	48,618	40,299				40,299	
Stanley	79,071	51,555				51,555	
Toronto	35,884	19,878				19,878	
Other Ports	69,465	45,095		43		45,052	
Totals	690,863	510,533	267,498	10,174	864	231,743	254
			BALSAM.				
		$	$	$	$	$	$
Coaticook		622				622	
Montreal		8,788				8,788	
Totals		9,410				9,410	

PORTS.	Total Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			FLAX SEED.				
	Bushels.	$	$	$	$	$	$
Coaticook	226	268				268	
Hamilton	781	1,461				1,461	
Montreal	292	318				318	
Quebec	3	3	3				
St. Johns	308	432				432	
Totals	1,610	2,482	3			2,479	
			OTHER SEEDS.				
	Bushels.	$	$	$	$	$	$
Brantford	4,716	3,135				3,135	
Clifton	2,030	4,708				4,708	
Coaticook	13,392	25,725				25,725	
Cornwall	6,268	9,768				9,768	
Fort Erie	4,468	11,526				11,526	
Kingston	3,035	7,423				7,423	
London	3,656	6,918				6,918	
Montreal	9,866	19,732				19,732	
Prescott	2,018	2,345				2,345	
Toronto	2,422	4,860				4,860	
Woodstock	13,590	3,913				3,913	
Other Ports	7,742	11,282		604		10,678	
Totals	73,203	111,335		604		110,731	
			MAPLE SUGAR.				
	Lbs.	$	$	$	$	$	$
Coaticook	3,648	216				216	
Montreal	5,800	464				464	
Quebec	3,610	324	50	274			
Sault Ste. Marie	1,753	142				142	
St. Johns	2,340	117				117	
Toronto	1,069	107				107	
Other Ports	1,997	235		10		225	
Totals	20,217	1,605	50	284		1,271	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
FRUIT—GREEN.							
	Barrels.	$	$	$	$	$	$
Amherst	128	262		262			
Chatham	146	208				208	
Fort Erie	200	294				294	
Montreal	515	2,702	2,349	314		21	15
Quebec	591	2,499	1,640	839			20
Windsor	485	969				969	
Other Ports	480	916				916	
Totals	2,545	7,850	3,989	1,415		2,411	35
VEGETABLES.							
		$	$	$	$	$	$
Coaticook		686				686	
Collingwood		287				287	
Goderich		272				272	
Kingsville		520				520	
Montreal		318	112	176		30	
Quebec		1,267	6	562	699		
Queenston		194				194	
Sarnia		204				204	
Saugeen		300				300	
Windsor		895				895	
Other Ports		725		22		703	
Totals		5,668	118	760	699	4,091	
TOBACCO.							
	Lbs.	$	$	$	$	$	$
Clifton	478	90				90	
Quebec	4,600	130	130				
St. Regis	60	12				12	
Windsor	23,645	1,047				1,047	
Totals	28,783	1,279	130			1,149	
WHEAT.							
	Bushels.	$	$	$	$	$	$
Bayfield	35,596	36,829				36,829	
Brantford	114,525	116,575				116,575	
Clifton	25,124	26,927				26,927	
Coaticook	34,179	37,677	350			37,327	
Cobourg	82,811	88,454				88,454	
Cramahe	27,463	28,269				28,269	
Credit	75,680	99,566				99,566	
Darlington	29,305	30,608				30,608	
Dover	25,328	22,766				22,766	
Fort Erie	109,472	109,370				109,370	
Goderich	32,694	30,837				30,837	
Hamilton	176,482	194,934				194,934	
Hope	88,448	96,091				96,091	
Kingston	32,507	32,626				32,626	
London	49,025	42,421				42,421	
Montreal	21,081	19,836	19,394			442	
Newcastle	117,664	119,716				119,716	
Oakville	127,684	152,523				152,523	
Stratford	23,466	19,694				19,694	
Stanley	42,747	37,407				37,407	
Toronto	440,914	487,763				487,763	
Whitby	187,630	193,280				193,280	
Other Ports	54,752	54,053		40		54,013	
Totals	1,954,577	2,078,222	19,744	40		2,058,438	

23 Victoria. Sessional Papers (No. 23). A. 1860.

23 Victoria. Sessional Papers (No. 23). A. 1860.

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	BOOKS—EXPORTED TO Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Clifton		1,146				1,146	
Coaticook		659	85			574	
Kingston		800				800	
Montreal		762	65	170		527	
Quebec		99	99				
Stanstead		200				200	
Woodstock		140				140	
Other Ports		60				60	
Totals		3,866	249	170		3,447	
			COTTON.				
		$	$	$	$	$	$
Chippawa		10				10	
Clifton		120				120	
Prescott		2				2	
St. Johns		70				70	
Toronto		63				63	
Wallaceburgh		60				60	
Totals		325				325	
			CANDLES.				
	Lbs.	$	$	$	$	$	$
Quebec	8,218	1,040		1,040			
Totals	8,218	1,040		1,040			
			FURS.				
		$	$	$	$	$	$
Coaticook		1,091				942	149
Quebec		8,249	8,216	33			
Sarnia		100				100	
Totals		9,440	8,216	33		1,042	149
			GLASS.				
		$	$	$	$	$	$
Coaticook		906				906	
St. Johns		18				18	
Totals		924				924	
			HARDWARE.				
		$	$	$	$	$	$
Clifton		5,167				5,167	
Hamilton		1,054				1,054	
Kingston		2,909				2,909	
Montreal		1,018	534	252		232	
Paris		617				617	
Quebec		2,809		2,809			
Woodstock		300				300	
Other Ports		747		27		561	159
Totals		14,621	534	3,088		10,840	159
			INDIA RUBBER.				
		$	$	$	$	$	$
Coaticook		52,742	17,586	11,090		9,161	14,905
Montreal		209,073	137,986			71,087	
Totals		261,815	155,572	11,090		80,248	14,905

No. 12.—GENERAL STATEMENT OF EXPORTS—*Continued.*

PORTS	To ty.	Total Value.	INDIAN BARK WORK—EXPORTED TO				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Coaticook		78		78			
Prescott		20	20				
Sault Ste. Marie		473				473	
St. Johns		10				10	
Totals		581	20	78		483	
			LEATHER.				
		$	$	$	$	$	$
Coaticook		274				274	
Kingston		349				349	
Montreal		1,657	1,400	257			
Quebec		1,012		1,012			
Queenston		507				507	
Russeltown		440				440	
Sarni		260				260	
Toronto		3,622				3,622	
Other Ports		463		63		400	
Totals		8,584	1,400	1,332		5,852	
			LINEN.				
		$	$	$	$	$	$
Quebec		87				87	
Totals		87				87	

PORTS	To ty.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
			MACHINERY.				
		$	$	$	$	$	$
Chippawa		2,000				2,000	
Clifton		1,245				1,245	
Coaticook		2,991				2,991	
Montreal		3,110	3,055			55	
Quebec		830	30	800			
St. Johns		2,550				2,550	
Other Ports		337				337	
Totals		13,063	3,085	800		9,178	
			MUSICAL INSTRUMENTS.				
		$	$	$	$	$	$
Chatham		200				200	
Clifton		46				46	
Fort Erie		100				100	
Kingston		150				150	
Montreal		500		200		300	
Totals		996		200		796	
			CARRIAGES.				
	Number.	$	$	$	$	$	$
Chatham	34	2,005				2,005	
Chippawa	6	655				655	
Coaticook	13	543		523		20	
Collingwood	5	475				475	
Gananoque	5	282				282	
Kingston	16	619				619	
Quebec	20	2,116	771	1,345			
Queenston	35	1,358				1,358	
Sarnia	20	1,705				1,705	
Stanstead	11	704				704	
Other Ports	70	2,484		170		2,314	
Totals	235	12,946	771	2,038		10,137	

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity	Total Value.	STARCH—EXPORTED TO				
			Great Britain.	BRITISH COLONIES.		United States.	Foreign Countries
				North America.	West Indies.		
Quebec	Lbs. 69	$ 7	$ 4	$ 3	$	$	$
Totals	69	7	4	3			
STRAW.							
Coaticook		$ 694	$	$	$	$ 694	$
Montreal		8,323				8,323	
St. Johns		245				245	
Other Ports		171				171	
Totals		9,433				9,433	
RAGS.							
Brantford		$ 537	$	$	$	$ 537	$
Brockville		864				864	
Chatham		1,062				1,062	
Clifton		1,086				1,086	
Coaticook		5,728				5,728	
Fort Erie		2,829				2,829	
Kingston		1,139				1,139	
Morrisburgh		1,284				1,284	
Montreal		4,251	378			3,870	
Russeltown		420				420	
St. Johns		407				407	
Other Ports		3,001				3,001	
Totals		22,701	378			22,323	

PORTS.	Total Quantity	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries
SOAP.							
Montreal	Lbs. 280	$ 28	$	$ 28	$	$	$
Quebec	86,472	6,064		6,064			
Totals	86,752	6,092		6,092			
SUGAR BOXES.							
Coaticook	Number. 56,900	$ 18,502	$	$	$	$ 18,502	$
Totals	56,900	18,502				18,502	
OIL CAKE.							
Montreal		$ 19,863	$ 19,863	$	$	$	$
Quebec		3,082	3,082				
Totals		22,945	22,945				
BISCUIT.							
Montreal	Cwt. 171	$ 819	$	$ 594	$	$	$ 225
New Carlisle	15	62		62			
Quebec	1,594	8,444		8,234			210
Totals	1,780	9,325		8,890			435

No. 12.—GENERAL STATEMENT OF EXPORTS.—*Continued.*

PORTS.	Total Quantity.	Total Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Foreign Countries.
			MANUFACTURES OF WOOD—EXPORTED TO				
		$	$	$	$	$	$
Brockville		393				393	
Chatham		669				669	
Clifton		683				683	
Coaticook		778	429			349	
Kingston		363				363	
Montreal		713	369	138		206	
New Carlisle		257		257			
Prescott		1,499				1,499	
Quebec		33,722	2,160	31,562			
Stanstead		429				429	
St. Johns		287				287	
Trout River		665				665	
Other Ports		1,012		180		832	
Totals		41,470	2,958	32,137		6,375	
			WOOLLENS.				
		$	$	$	$	$	$
Coaticook		110				40	70
Kingston		311				311	
Montreal		250				250	
Toronto		88				88	
Other Ports		96		20		76	
Totals		864		20		774	70
			GROUND PLASTER AND LIME.				
		$	$	$	$	$	$
Amherstburgh		516				516	
Coaticook		591				591	
Dunnville		3,014				3,014	
Georgeville		70				70	
Quebec		4		4			
Stanstead		40				40	
Totals		4,235		4		4,231	
			ALE, BEER AND CIDER.				
	Gallons.	$	$	$	$	$	$
Clifton	1,344	283				283	
Coaticook	564	128				128	
Dundee	1,080	183				183	
Kingston	15,386	3,417				3,417	
Montreal	916	188		43		145	
Prescott	2,173	1,062				1,062	
Quebec	2,906	713		713			
Windsor	710	209				209	
Other Ports	868	107				107	
Totals	25,947	6,290		756		5,534	
			WHISKEY.				
	Gallons.	$	$	$	$	$	$
Chippawa	640	160				160	
Frelighsburgh	450	225				225	
Montreal	2,750	1,403	1,320			83	
Quebec	887	846		846			
Sutton	1,[illegible]00	1,800				1,800	
Toronto	4,363	2,000	2,000				
Other Ports	2,032	1,031		574		428	29
Totals	12,972	7,465	3,320	1,420		2,696	29

No. 12.—GENERAL STATEMENT OF EXPORTS, &c.—*Continued.*

PORTS.	Total Quantity.	Total Value.	OTHER SPIRITS.—EXPORTED TO				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
	Gallons.	$	$	$	$	$	$
Clifton	75	157				157	
Dover	256	370		370			
Fort Erie	66	100				100	
Frelighsburgh	65	161				161	
Montreal	7,170	6,306	5,606			700	
St. Johns	686	1,155				1,155	
Windsor	385	735				735	
Other Ports	51	129				129	
Totals	8,754	9,113	5,606	370		3,137	
			VINEGAR.				
	Gallons.	$	$	$	$	$	$
Clifton	30	7				7	
Dalhousie	2,000	430				430	
Quebec	217	64		64			
Totals	2,247	501		64		437	
			GOLD.				
		$	$	$	$	$	$
Quebec		3,652	3,652				
Totals		3,652	3,652				

PORTS.	Total Quantity.	Total Value.	OTHER ARTICLES.				
			Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
Chatham		3,378				3,378	
Clifton		15,909				15,909	
Coaticook		10,388				8,053	2,335
Fort Erie		12,369				12,369	
Gananoque		3,558				3,558	
Guelph		3,675				3,675	
Kingston		6,435				6,435	
Montreal		7,320	90			7,230	
Paris		5,823				5,823	
Quebec		7,146	5,803	1,343			
Queenston		3,263				3,263	
Sarnia		6,446				6,446	
St. Johns		3,720				3,720	
Other Ports		21,293		115		21,178	
Totals		110,732	5,893	1,458		101,046	2,335

No. 13.—SUMMARY STATEMENT of the Quantity and Value of the Principal Articles of Canadian Produce and Manufacture, Exported during the year 1859, and indicating to what Country exported.

ARTICLES.	TOTAL EXPORTS.		TO WHAT COUNTRY EXPORTED.				
	Quantity.	Total Value.	Great Britain.	BRITISH COLONIES. North America.	BRITISH COLONIES. West Indies.	United States.	Foreign Countries.
THE MINE:		$	$	$	$	$	$
Copper .... Tons.	61	9,443	5,260			4,183	
Copper Ore........ "	3,403	310,686	235,141			105,545	
Iron Ore........ "	9,217	25,965	200			25,765	
Pig and Scrap Iron .... "	4,086	76,473				76,473	
Stone........		15,915				15,945	
Total, Produce of the Mine........		468,512	240,601			227,911	
THE FISHERIES:							
Fish.—Dried and Smoked .... Cwt.	143,010	438,489	65,710	51,472		716	320,591
Pickled .... Brls.	125,979	298,774	2,185	139,723	141	156,522	200
Fresh		19,730				19,730	
Oil .... Galls.	70,813	36,955	15,191	15,064		6,697	
Furs or Skins, the produce of Fish or Creatures living in the Sea		23,475	460	5,097		17,918	
Total, Produce of the Fisheries		817,423	83,519	211,356	144	201,583	320,791
THE FOREST:							
Ashes.—Pot........ Brls.	25,598	769,512	589,626	420		179,466	
Pearl .... "	12,221	337,759	294,194			43,565	
Timber.—Ash .... Tons.	4,313	24,067	23,819			236	12
Birch........ "	7,937	56,294	56,228			60	6
Elm .... "	26,278	200,840	200,787			39	14
Maple .... "	84	728	715			13	
Oak .... "	34,300	359,731	285,690	3,444		70,597	
White Pine .... "	395,694	2,249,006	2,152,952	210		95,844	
Red Pine .... "	43,643	363,567	361,937	42		1,588	
Tamarack........ "	2,185	11,382	9,049			2,333	
Walnut .... M. Feet.	1,307	25,719	3,851			21,868	
Basswood, Butternut and Hickory .... "	1,378	14,800	1,600			13,200	
Standard Staves........ Mille.	2,968	329,876	271,155	6,675		52,046	
Other Staves........ "	5,745	201,047	146,078	13,462	550	40,637	320
Battens		1,962	1,912			50	
Knees .... Pieces,	4,297	4,723	44			4,679	
Scantling		23,760	361	945		22,454	
Treenails		300	300				
Deals .... Stand. hund.	42,866	1,477,381	1,477,179				202
Deal Ends........ "	1,543	44,526	44,526				
Plank and Boards .... M. Feet.	314,096	2,690,119	4,137	8,751	66	2,676,447	718
Spars........ Pieces.	4,067	25,383	18,315	696		6,303	69
Masts........ "	1,024	92,714	87,103	80		5,531	
Handspikes .... "	6,517	1,569	1,553	16			
Lath and Lathwood .... Cords.	7,374	37,216	31,541	107		5,568	
Firewood .... "	36,013	42,187	128			42,059	
Shingles .... Mille.	22,664	36,157		6,450		29,707	
Railroad Ties .... Pieces.	117,347	23,861				23,861	
Oars .... Pairs.	11,520	17,188	15,925			1,254	9
Other Woods........		75,098	7,363	3,398	4,382	59,955	
Saw Logs........ Number.	121,671	125,490				125,490	
Total, Produce of the Forest		9,663,962	6,088,068	44,696	4,998	3,524,850	1,350
ANIMALS, & THEIR PRODUCE:							
Animals.—Horses........ Number.	9,187	778,787		130		778,657	
Horned Cattle........ "	34,857	925,473				925,073	400
Swine .... "	16,251	91,458				91,458	
Sheep .... "	76,378	174,793				174,693	100
Poultry........		44,322				44,322	

No. 13.—SUMMARY STATEMENT OF THE QUANTITY AND VALUE, &c.—*Continued.*

ARTICLES.	TOTAL EXPORTS.		TO WHAT COUNTRY EXPORTED.				
				BRITISH COLONIES.			
	Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
		$	$	$	$	$	$
ANIMALS, &c.—*Continued.*							
Produce of Animals—							
Beef .... Cwt.	3,235	23,333	9,826	2,521	....	10,983	....
Bacon and Hams .... "	684	7,339	1,443	126	....	5,770	....
Butter .... Lbs.	3,750,296	526,250	112,736	79,882	....	332,308	1,324
Beeswax .... "	2,781	783	....	....	....	783	....
Cheese .... Cwt.	323	4,667	840	467	....	3,360	....
Bear's Grease	....	431	18	....	....	413	....
Eggs .... Dozens.	809,398	97,886	....	121	....	97,765	....
Hides	....	111,933	....	331	....	111,602	....
Sheeps' Pelts	....	119,337	....	....	....	119,337	....
Horns and Hoofs	....	1,242	816	....	....	426	....
Bones	....	3,098	3,080	....	....	18	....
Feathers .... Lbs.	736	350	....	....	....	350	....
Lard .... Brls.	41	803	130	425	....	248	....
Pork .... Cwt.	36,984	241,983	10,690	24,693	....	206,330	270
Tallow .... Brls.	168	4,113	2,952	74	....	1,087	....
Tongues .... Kegs.	5	18	5	....	....	13	....
Honey .... Lbs.	178	33	....	30	....	3	....
Venison	....	1,651	....	....	....	1,651	....
Wool .... Lbs.	1,630,531	100,272	....	40	....	100,232	....
Furs.—Dressed	....	229	....	....	....	229	....
Undressed	....	228,918	143,401	856	....	84,661	....
Total, Animals and their Products	....	3,789,502	285,937	109,699	....	3,391,772	2,094

ARTICLES.	Quantity.	Total Value.	Great Britain.	North America.	West Indies.	United States.	Foreign Countries.
AGRICULTURAL PRODUCTS:							
Barley and Rye .... Bushels.	1,766,249	1,130,112	....	25	....	1,130,087	....
Beans .... "	6,622	6,082	....	112	....	5,970	....
Bran .... Cwt.	54,124	41,188	280	224	....	43,684	13,200
Flour .... Brls.	415,610	2,262,134	319,562	375,714	....	1,523,658	....
Hay .... Tons.	914	7,258	....	12	....	7,246	....
Hops	68,586	5,158	....	....	....	5,158	....
Indian Corn .... Bushels.	3,139	1,935	....	....	....	1,935	....
Malt .... "	1,958	1,371	....	....	....	1,371	....
Meal .... Brls.	11,397	61,151	1,020	6,244	....	53,877	....
Oats .... Bushels.	2,635,388	1,092,025	30	8,033	320	1,083,642	....
Peas .... "	690,863	510,533	267,498	10,174	861	231,743	251
Balsam	....	9,410	....	....	....	9,410	....
Flax Seed .... Bushels.	1,610	2,482	3	....	....	2,479	....
Other Seeds .... "	73,203	111,335	....	604	....	110,731	....
Maple Sugar .... Lbs.	20,217	1,605	50	284	....	1,271	....
Fruit, green .... Brls.	2,545	7,850	3,989	1,415	....	2,411	35
Vegetables	....	5,668	118	760	699	4,091	....
Tobacco .... Lbs.	28,783	1,279	130	....	....	1,149	....
Wheat .... Bushels.	1,954,577	2,078,222	19,744	40	....	2,058,438	....
Total, Agricultural Products	....	7,339,798	642,434	403,641	1,883	6,278,351	13,489
MANUFACTURES:							
Books	....	3,866	249	170	....	3,447	....
Cotton	....	325	....	....	....	325	....
Candles .... Lbs.	8,218	1,040	....	1,040	....	....	....
Furs	....	9,410	8,216	33	....	1,042	140
Glass	....	921	....	....	....	924	....
Hardware	....	11,621	531	3,088	....	10,840	159
India Rubber	....	201,815	155,572	11,090	....	80,218	14,905
Indian Barkwork	....	581	20	78	....	483	....
Leather	....	8,581	1,400	1,332	....	5,852	....
Linen	....	87	....	....	....	87	....
Machinery	....	13,063	3,085	800	....	9,178	....

No. 13.—SUMMARY STATEMENT OF THE QUANTITY AND VALUE, &c.—*Continued.*

ARTICLES.	TOTAL EXPORTS.		TO WHAT COUNTRY EXPORTED.				
	Quantity.	Value.	Great Britain.	British Colonies. North America.	British Colonies. West Indies.	United States.	Other Foreign Countries.
		$	$	$	$	$	$
MANUFACTURES.—*Continued.*							
Musical Instruments	....	996	....	200	....	796	....
Carriages .... Number.	235	12,946	771	2,038	....	10,137	....
Starch .... Lbs.	69	7	4	3	....	....	....
Straw	....	9,433	....	....	....	9,433	....
Rags	....	22,701	378	....	....	22,323	....
Soap .... Lbs.	86,752	6,092	....	6,092	....	....	....
Sugar Boxes .... No.	56,900	18,502	....	....	....	18,502	....
Oil Cake	....	22,945	22,945	....	....	....	....
Biscuit .... Cwt.	1,780	9,325	....	8,890	....	....	435
Wood	....	41,470	2,958	32,137	....	6,375	....
Woollens	....	864	....	20	....	774	70
Ground Plaster and Lime	....	4,235	....	4	....	4,231	....
Liquors—							
Ale, Beer, and Cider .... Galls.	25,917	6,290	....	756	....	5,534	....
Whisky .... "	12,972	7,465	3,320	1,420	....	2,696	29
Other Spirits .... "	8,754	9,113	5,606	370	....	3,137	....
Vinegar .... "	2,247	501	....	64	....	437	....
Total, Manufactures	....	487,231	205,058	69,625	....	196,801	15,747
COIN AND BULLION—Gold	....	3,652	3,652	....	....	....	....
OTHER ARTICLES	....	110,732	5,893	1,458	....	101,046	2,335

RECAPITULATION.

	Value.	Great Britain.	North America.	West Indies.	United States.	Other Foreign Countries.
Produce of the Mine	468,512	240,601	....	....	227,911	....
" Fisheries	817,423	83,549	211,356	144	201,583	320,791
" Forest	9,663,962	6,088,068	44,696	4,998	3,524,850	1,350
Animals and their Products	3,789,502	285,937	109,699	....	3,391,772	2,094
Agricultural Products	7,339,798	612,134	403,641	1,883	6,278,351	13,489
Manufactures	487,231	205,058	69,625	....	196,801	15,747
Coin and Bullion	3,652	3,652	....	....	....	....
Other Articles	110,732	5,893	1,458	....	101,046	2,335
	22,680,812	7,555,192	840,475	7,025	13,922,314	355,806
Add, for Ships built at Quebec during the year—12,399 Tons,—at $34 per Ton	421,566	421,566	....	....	....	....
Total Value of Exports, as reported	23,102,378	7,976,758	840,475	7,025	13,922,314	355,806

Value of Exports from Quebec	$5,881,290	
" " Montreal	3,044,762	
" " Gaspé	244,765	
" " New Carlisle	253,190	
" " Amherst	266,656	
" " Rimouski	58,982	
" " Isle Verte	35,906	
Total from Sea Ports	$ 9,785,551	
" Inland Ports as reported	13,316,827	
		23,102,378
Estimated Amount of Exports not reported at Inland Ports		1,664,603
Grand Total of Exports		$24,766,981

No. 14.—COMPARATIVE STATEMENT of the Quantity and Value of the Principal Articles of Canadian Produce and Manufacture, Exported during the years 1857, 1858 and 1859.

ARTICLES.		TOTAL EXPORTS. 1857. Quantity.	1857. Value.	1858. Quantity.	1858. Value.	1859. Quantity.	1859. Value.
THE MINE:			$		$		$
Copper	Tons.	3	629	2	713	61	9,443
Copper Ore	"	2,562	210,311	1,927	191,236	3,403	340,686
Iron Ore	"					9,217	25,965
Pig and Scrap Iron	"		29,366		109,265	4,086	76,473
Stone			16,160		13,609		15,945
Total, Produce of the Mine			286,469		314,823		468,512
THE FISHERIES.							
Fish—Dried and Smoked	Cwt.	95,762	281,914	128,224	376,951	143,010	438,189
Pickled	Brls.	71,413	209,440	120,433	279,404	125,979	298,771
Fresh			30,227		19,592		19,730
Oil	Galls.	31,950	18,532	85,911	38,936	70,813	36,955
Furs or Skins, the produce of Fish or creatures living in the Sea					3,413		23,175
Total, Produce of the Fisheries			540,113		718,296		817,423
THE FOREST:							
Ashes—Pot	Brls.	21,880	859,863	21,800	740,933	25,598	769,512
Pearl	"	7,576	287,993	6,041	188,826	12,221	337,759
Timber—Ash	Tons.	3,485	25,360	2,378	16,999	4,313	21,067
Birch	"	5,026	46,985	4,005	30,339	7,937	56,291
Elm	"	37,984	432,822	19,451	163,389	26,278	200,840
Maple	"	169	1,593	57	285	81	728
Oak	"	18,539	576,630	26,904	377,561	34,300	359,731
White Pine	"	500,781	2,821,320	344,981	1,811,340	395,694	2,249,006
Red Pine	"	61,323	526,458	53,143	374,079	43,643	363,567
Tamarack	"	1,571	28,471	995	5,110	2,185	11,382
Walnut	M. feet.	2,109	51,140	1,033	22,837	1,307	25,719
Basswood, Butternut and Hickory	"	1,229	15,462	1,649	20,121	1,378	11,800
Standard Staves	Mille.	3,253	518,384	2,369	398,847	2,968	329,876
Other Staves	"	4,117	174,771	4,130	170,379	5,745	201,047
Battens			4,276		897		1,962
Knees	Pieces.	569	466	2,397	3,470	4,297	4,723
Scantling			22,168		22,922		23,760
Treenails			140		202		300
Deals	Stand Hund.	51,250	1,955,377	47,537	1,675,918	42,866	1,477,381
Deal Ends	"	1,867	58,852	1,307	36,115	1,543	44,526
Plank and Boards	M. feet.	222,611	2,573,470	381,804	2,902,267	314,096	2,690,119
Spars	Pieces.	4,565	81,410	4,615	32,319	4,067	25,383
Masts	"	1,495	135,884	927	69,617	1,024	92,714
Handspikes	"	1,697	437	1,772	713	6,517	1,569
Lath and Lathwood	Cords.	9,614	60,825	8,521	31,230	7,374	37,216
Firewood	"	36,560	62,558	28,950	36,155	36,013	42,187
Shingles	Mille.	22,559	46,257	14,000	24,314	22,664	36,157
Sleepers	Pieces.	5,793	1,363				
Railroad Ties	"	111,197	18,025	285,082	39,524	117,347	23,861
Oars	Pairs.	5,801	6,582	6,016	11,405	11,520	17,188
Other Woods			35,726		25,367		75,098
Saw Logs	Num.	101,464	111,440	46,017	47,734	121,671	125,490
Total, Produce of the Forest			11,575,508		9,281,514		9,663,062
ANIMALS, AND THEIR PRODUCE:							
Animals—Horses	Number.	5,482	417,155	5,925	468,487	9,187	778,787
Horned Cattle	"	23,014	601,029	22,758	516,177	31,857	925,473
Swine	"	10,276	77,537	12,159	93,133	16,251	91,458
Sheep	"	11,614	33,209	38,326	83,951	76,378	174,703
Poultry			31,845		44,600		44,322
Produce of Animals—Beef	Cwt.	1,536	12,289	3,610	23,469	3,235	23,333
Bacon and Hams	"	135	1,622	472	5,014	681	7,339
Butter	Lbs.	1,638,112	287,819	3,721,200	480,712	3,750,296	526,250
Beeswax	"	209	54	2,978	571	2,781	783
Cheese	Cwt.	124	1,833	117	1,497	323	4,667
Bear's Grease			1,305		891		431
Eggs	Dozens.	698,479	101,991	623,525	66,860	809,398	97,886
Hides and Pelts			209,526		169,975		111,933
Horns and Hoofs			6,071		2,427		1,242
Bones			1,439		4,693		3,098
Feathers	Lbs.	486	158	991	414	736	350
Lard	Brls.	397	11,014	467	10,369	41	803
Pork	Cwt.	1,089	39,103	21,115	143,336	36,984	241,083
Tallow	Brls.	61	1,375	59	1,465	168	4,113
Tongues	Kegs.	28	110	23	158	5	18
Honey	Lbs.			645	86	178	33
Venison	Number.			258	1,679		1,651
Wool	Lbs.	1,275,011	270,756	1,545,412	312,798	1,630,531	400,272
Furs—dressed			154,879		639		229
do undressed					162,571		228,918
Total, Animals and their Products			2,262,119		2,625,978		3,789,502

No. 11.—COMPARATIVE STATEMENT of the Quantity and Value of the Principal Articles, &c.—*Continued*

ARTICLES.		TOTAL EXPORTS. 1857. Quantity.	1857. Value.	1858. Quantity.	1858. Value.	1859. Quantity.	1859. Value.
AGRICULTURAL PRODUCTS:			$		$		$
Barley and Rye	Bushels.	831,112	684,066	1,309,638	1,015,635	1,766,219	1,130,112
Beans	"	3,599	3,974	7,159	6,319	6,022	6,082
Bran	Cwt.	8,934	6,695	15,796	33,031	51,124	44,188
Flour	Barls.	713,949	1,537,612	634,576	3,065,810	115,610	2,262,134
Hay	Tons.	230	2,502	82	636	941	7,258
Hops	Lbs.	82,592	9,612	8,845	782	68,586	5,158
Indian Corn	Bushels.	65,312	51,689	21,547	13,224	3,139	1,935
Malt	"	21	43	465	423	1,058	1,371
Meal	Brls.	8,185	42,006	11,166	49,289	11,397	61,151
Oats	Bushels	866,860	360,815	1,911,710	753,486	2,635,388	1,092,025
Peas	"	220,726	190,688	579,244	492,582	690,863	510,533
Balsam			9,461		5,107		9,410
Flax	Cwt.			1,325	12,901		
Flax Seed	Bushels	4,397	11,050	1,685	2,344	1,610	2,482
Other Seeds	"	52,665	146,730	46,907	81,558	73,203	111,335
Maple Sugar	Lbs.	21,309	2,165	39,044	3,042	20,217	1,605
Fruit, green	Brls.	3,688	10,618	2,460	8,556	2,545	7,850
Vegetables			15,765		3,507		5,608
Tobacco	Lbs.	60,865	4,329	16,840	1,072	28,783	1,279
Wheat	Bushels.	2,762,454	2,789,975	2,437,679	2,355,096	1,954,577	2,078,222
Total, Agricultural Products			8,882,825		7,901,400		7,339,798
MANUFACTURES:							
Books					4,505		3,866
Cotton			2,162		276		325
Candles	Lbs.	6,676	1,138	8,427	1,246	8,218	1,010
Furs			6,258		1,130		9,440
Glass			122		286		924
Hardware			18,290		13,218		14,621
India Rubber			163,698		80,067		261,815
Indian Barkwork			409		351		581
Leather			4,044		4,664		8,584
Linen					436		87

ARTICLES.		1857. Quantity.	1857. Value.	1858. Quantity.	1858. Value.	1859. Quantity.	1859. Value.
Machinery			9,075		12,053		13,063
Musical Instruments			736		1,350		996
Carriages	Number.	105	7,035	219	10,693	235	12,946
Starch	Lbs.		76	1,484	148	69	7
Straw			8,039		11,358		9,433
Rags			15,641		12,401		22,701
Soap	Lbs.		2,281	16,824	1,321	86,752	6,092
Sugar Boxes	Number.		40,358	111,671	45,298	56,900	18,502
Oil Cake			16,169		15,593		22,945
Biscuit	Cwt.		11,711	1,226	5,600	1,780	9,325
Wood			33,049		50,126		41,470
Woollens			1,377		1,861		804
Ground Plaster and Lime			9,578		6,655		4,235
Liquors.—Ale, Beer, and Cider	Galls.	14,890	3,729	35,351	7,422	25,947	6,290
Whiskey	do	2,424	1,937	1,879	977	12,972	7,465
Other Spirits	do	14,625	41,626	18,297	33,056	8,754	9,113
Vinegar	do	613	280	1,302	285	2,247	501
Total, Manufactures			398,821		325,376		487,231
COIN AND BULLION:—Gold							3,652
OTHER ARTICLES			121,120		112,538		110,732

RECAPITULATION.	1857.	1858.	1859.
	$	$	$
Produce of the Mine	286,469	314,823	468,512
do do Fisheries	510,113	718,296	817,423
do do Forest	11,575,508	9,284,514	9,663,962
Animals and their Products	2,262,119	2,625,978	3,789,502
Agricultural Products	8,882,825	7,901,400	7,339,798
Manufactures	398,821	325,376	487,231
Coin and Bullion			3,652
Other Articles	121,120	112,538	110,732
Total Value of Exports	24,066,975	21,285,925	22,680,812
Value of Ships built at Quebec	1,383,444	743,640	421,566
Estimated Amount of Exports, short returned at Inland Ports	1,556,205	1,443,044	1,664,603
Grand Total of Exports	27,006,624	23,472,609	24,766,981

No. 15.—COMPARATIVE STATEMENT shewing the Value of the Principal Articles Exported from Canada Seaward, *via* the St. Lawrence, during the years 1858 and 1859.

ARTICLES.		1858.		1859.	
		Quantity.	Value.	Quantity.	Value.
			$		$
Ashes, Pot and Pearl	Bbls.	26,026	856,905	27,250	794,489
Butter	Cwt.	10,586	170,370	11,120	178,427
Copper Ore	Tons	38	3,130	47	8,010
Fish, Dried and Pickled		....	416,530	....	663,634
Fish Oil	Gallons.	54,919	26,900	63,212	30,748
Flour	Barrels.	243,067	1,066,823	145,729	759,182
Furs and Skins		....	69,950	....	85,817
Manufactures of India Rubber		....	....	....	137,986
Pork and Beef	Barrels.	3,068	42,230	3,988	44,948
Timber—Ash	Tons.	2,378	16,999	4,254	23,831
Birch	"	4,005	30,339	7,925	56,234
Deals	Standard Hundred.	47,537	1,675,918	44,327	1,521,911
Elm	Tons.	19,451	163,389	26,269	200,801
Lath	Cords.	5,942	22,960	4,826	31,648
Oak	Tons.	25,291	368,894	25,157	285,834
Plank and Boards	M. Feet.	1,538	11,948	1,328	13,672
White Pine	Tons.	333,960	1,776,018	372,392	2,153,162
Red Pine	"	53,143	374,079	43,339	361,979
Spars, Masts and Hand Spikes		....	91,766	....	107,832
Staves	Mille.	4,594	541,799	5,415	431,865
Wheat	Bushels.	739,180	688,581	55,450	53,360
Peas	"	392,095	363,971	321,712	264,522
Other Articles		....	204,274	....	190,204
Total Exports Seaward *via* St. Lawrence		....	8,983,773	....	8,400,096
RECAPITULATION OF IMPORTS AND EXPORTS *via* ST. LAWRENCE.					
Imports		....	10,768,161	....	11,472,754
Goods in Transitu for United States		....	20,916	....	76,314
Exports		....	8,983,773	....	8,400,096
Value of Ships built at Quebec		....	743,640	....	421,566
Total Value of Imports and Exports *via* St. Lawrence		....	20,522,490	....	20,370,730

No. 16.—A COMPARATIVE RETURN of the value of the Exports of the Domestic Produce and Manufactures, the value of Goods entered for Consumption, and the Amount of Duties Collected at each Port in Canada, during the years 1856, 1857, 1858 and 1859.

No.	PORTS.	1856.			1857.			1858.			1859.		
		Exports.	Imports.	Duty.	Exports.	Imports.	Duty.	Exports.	Imports.	Duty.	Exports.	Imports.	Duty.
		$	$	$ cts.	$	$	$ cts.	$	$	$ cts.		$	$ cts.
1	Amherst	82,953	34,214	1,369 82	140,432	35,239	1,722 80	252,493	49,994	2,839 38	266,656	54,803	3,821 82
2	Amherstburgh	57,143	57,246	5,666 38	61,524	89,719	6,007 97	31,589	60,323	4,610 31	52,578	56,963	5,121 77
3	Bath	109,597	21,830	2,608 97	62,974	12,283	1,217 67	62,039	15,088	722 57	37,640	6,098	569 86
4	Bayfield	253,711	7,093	452 13	98,999	3,128	304 45	99,630	2,982	341 49	37,777	3,460	53 90
5	Beauce	3,135	4,101	46 52	10,841	5 427	37 67	2,858	6,005	84 17	2,580	5,405	58 25
6	Belleville	342,771	305,843	35,450 05	265,616	203,515	21,704 98	592,239	169,428	15,015 51	289,726	189,794	18,231 32
7	Brantford	140,487	245,526	26,298 27	.....	382,073	31,042 48	.....	235,467	28,947 50	260,780	189,008	25,069 66
8	Brighton	38,005	8,706	905 43	11,170	5,781	509 60	13,309	4,514	284 03	78,644	8,100	520 93
9	Brockville	101,667	265,308	23,405 98	33,424	264,550	20,493 25	64,140	344,189	27,873 67	75,181	279,917	31,686 26
10	*Bruce	61,123	23,098	633 07	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	Burwell	368,909	64,957	7,115 52	370,904	76,081	5,974 70	670,706	42,922	5,040 04	208,773	44,990	2,920 45
12	Bytown	105,440	334,924	36,624 25	36,336	283,538	35,883 45	88,592	320,156	43,523 83	118,157	401,756	60,386 32
13	Chatham	105,298	174,344	19,878 97	93,534	186,375	17,337 63	101,233	125,037	14,932 63	156,749	167,214	11,629 78
14	Chippawa	227,886	226,609	6,739 68	123,841	226,430	2,883 18	65,517	88,785	1,723 09	46,671	148,414	2,496 02
15	Clarenceville	20,352	20,654	1,727 12	24,990	16,564	1,453 72	37,497	14,328	1,490 82	42,075	13,231	1,712 93
16	Clifton	1,001,674	714,847	45,803 02	502,645	409,543	19,619 68	332,109	272,813	17,269 01	322,796	306,624	27,285 06
17	Coaticook	1,338,540	171,335	11,326 65	1,844,902	146,798	11,469 50	1,184,634	183,986	12,721 32	1,487,447	245,970	17,541 63
18	Cobourg	391,444	291,311	29,227 25	267,098	285,692	29,474 83	170,005	181,867	19,494 21	351,563	236,761	24,675 59
19	Cornwall	15,806	20,881	2,674 82	26,470	36,387	1,595 97	22,842	40,105	2,118 51	55,022	33,821	2,135 60
20	Colborne	30	118,209	3,065 78	730	155,629	5,197 85	2,598	125,810	4,882 63	6,449	8,664	504 16
21	Collingwood	63,921	35,341	295 18	48,872	77,439	267 55	20,942	16,253	525 68	36,986	70,815	664 23
22	Côteau-du-Lac	17,565	3,632	425 78	3,766	1,756	256 85	14,316	2,138	169 63	30,760	3,839	185 03
23	Cramahe	70,242	44,774	3,333 00	67,797	37,146	2,215 70	46,955	12,996	1,135 82	68,188	19,642	1,114 38
24	Credit	364,964	8,946	994 95	209,700	7,191	733 80	100,498	4,093	127 44	173,272	11,886	887 21
25	Dalhousie	446,290	378,399	14,147 73	293,953	682,248	20,341 53	18,193	565,711	21,993 84	45,254	532,018	26,589 40
26	Darlington	54,920	80,717	8,063 78	16,025	60,525	6,918 72	22,819	30,605	2,636 78	48,088	32,728	2,697 38
27	*Dickenson's Landing	9,594	7,260	222 72	25,220	17,561	524 18	.....	.....	.....	.....	.....	.....
28	Dover	354,818	149,807	13,705 43	251,791	101,596	8,789 85	256,001	68,062	6,844 19	191,977	76,419	5,476 15
29	Dundas	202,898	190,694	19,125 38	107,222	147,450	14,657 18	34,756	89,627	10,630 18	50,287	79,258	9,949 22
30	Dundee	38,672	48,107	1,402 05	39,347	46,666	1,269 65	23,755	37,981	1,153 89	34,455	60,155	923 23
31	Dunnville	422,668	82,528	6,063 75	233,879	79,477	5,067 20	175,306	33,639	2,337 86	150,801	39,073	2,103 61
32	Elgin	.....	1,297	114 22	.....	186	25 17	.....	398	68 47	1,676	5,333	762 47
33	Fort Erie	157,417	149,354	10,794 73	525,828	181,279	10,791 63	773,529	112,625	8,699 40	558,648	212,781	10,025 34
34	Frelighsburgh	72,017	44,397	3,127 65	64,338	37,900	2,784 92	63,147	41,078	2,778 20	72,269	37,355	3,497 93
35	Gananoque	6,760	19,191	1,361 98	4,885	24,959	1,950 50	14,014	25,503	1,583 43	23,734	27,849	2,139 36
36	Gaspé	176,712	63,837	4,506 03	188,210	82,432	7,237 83	217,858	82,128	8,657 15	244,765	108,665	15,153 03
37	Georgeville	22,697	7,096	735 93	24,949	8,683	756 20	33,777	10,590	1,369 18	98,603	13,664	2,318 31
38	Goderich	65,645	107,043	10,129 48	32,315	95,416	6,056 55	44,356	64,922	4,800 20	42,243	80,663	3,963 12
39	*Grafton	30,192	547	65 87	1,912	1,181	105 43	.....	434	50 08	.....	.....	.....
40	Guelph	.....	.....	.....	6,862	66,679	7,734 53	13,658	97,126	12,896 59	66,478	136,487	18,883 69
41	Hamilton	1,785,505	5,400,026	621,780 63	1,145,547	3,693,091	416,933 17	962,576	2,100,801	260,634 62	688,523	2,228,753	349,445 95
42	Hemmingford	45,213	18,839	2,290 00	28,820	18,790	2,626 18	40,675	17,662	2,518 94	47,695	19,896	2,878 11
43	Hope	203,292	237,614	22,522 73	167,052	336,675	18,446 70	269,035	91,103	7,796 11	251,722	106,497	12,205 20
44	Huntingdon	4,441	6,008	195 75	13,623	3,352	79 27	5,332	5,838	259 12	6,583	16,133	402 58
45	Isle Verte	85,692	.....	.....	45,762	.....	.....	47,668	.....	.....	35,906	.....	.....
46	Kingston	485,546	2,288,586	113,539 10	366,610	2,852,464	105,811 02	378,071	1,754,794	94,757 56	445,931	1,378,380	97,792 07
47	Kingsville	11,116	4,101	461 45	18,852	4,635	613 65	3,633	4,437	455 00	7,524	5,861	444 14
48	Lacolle	55,804	14,563	641 57	27,596	9,744	645 67	43,447	9,874	739 91	83,596	8,375	779 00
49	London	301,749	1,169,001	144,656 92	196,171	842,281	104,599 35	289,811	589,954	87,885 00	410,812	734,589	109,976 95
50	Maitland	1,880	7,855	189 70	864	9,812	106 50	792	21,907	152 54	15,197	29,992	110 14
51	Morrisburgh	56,481	33,337	2,264 35	28,114	24,667	1,535 23	25,118	31,481	1,345 48	40,189	31,300	1,147 89
52	Milford	38,621	2,500	87 10	30,370	2,095	134 45	29,706	1,854	199 90	23,654	3,530	111 84
53	Montreal	3,825,566	16,265,408	1,878,964 38	2,917,340	15,524,528	1,848,616 33	3,422,940	12,254,071	1,673,841 91	3,044,762	15,553,571	2,336,239 74
54	Napanee	93,627	41,657	4,366 17	90,520	26,442	2,661 18	139,032	24,899	2,737 70	122,359	42,890	3,995 77
55	New Castle	157,508	45,669	5,118 53	62,677	32,709	4,192 63	43,825	16,403	1,768 02	129,853	20,139	2,618 81
56	Niagara	90	129,193	8,170 12	4,220	76,026	6,119 07	.....	76,446	8,200 11	.....	65,820	5,025 16
57	New Carlisle	145,864	118,233	10,112 18	181,419	117,879	9,482 10	221,071	92,828	9,088 70	253,190	126,924	12,600 77
58	Oakville	464,165	99,704	9,938 68	134,727	51,057	5,266 48	182,011	32,088	3,874 71	225,520	17,256	2,194 63
59	Oshawa	95,505	54,320	5,047 02	76,540	45,132	4,880 42	50,748	32,214	2,656 65	47,257	69,559	6,330 57
60	Owen's Sound	1,553	16,992	1,442 80	20,108	9,574	550 15	1,738	9,838	1,077 50	1,714	14,658	1,425 50
61	Paris	115,858	191,575	18,804 70	109,784	177,198	21,836 32	115,776	35,302	3,577 82	85,848	43,569	2,643 53
62	Penetanguishene	5,721	573	36 28	14,550	410	.....	17,191	1,032	66 55	15,827	885	80 65
63	Philipsburgh	102,938	91,634	3,115 15	75,230	62,067	2,422 67	118,661	90,108	2,465 13	110,171	66,607	3,408 75
64	Picton	101,661	73,614	9,086 47	78,619	75,711	10,220 07	94,767	45,475	5,543 93	111,101	58,827	6,470 78
65	Potton	.....	11,161	344 33	.....	11,993	326 60	3,854	13,310	366 06	13,089	13,960	730 89
66	Prescott	400,594	671,575	29,198 40	410,300	476,422	31,090 60	149,134	471,062	22,451 52	216,189	491,959	19,070 31
67	Quebec	8,193,196	3,486,393	369,908 68	9,452,316	3,689,633	352,149 77	6,252,184	2,783,150	353,092 90	5,881,290	3,003,752	438,924 18
68	Queenston	17,802	101,766	13,384 70	15,752	85,665	6,693 10	18,996	47,214	7,669 00	38,609	49,436	7,047 72
69	Rimouski	75,802	.....	.....	75,299	.....	.....	71,000	.....	.....	58,982	.....	.....
70	*Rivière-aux-Raisins	3,519	934	117 55	700	48	7 12	.....	.....	.....	.....	.....	.....
71	Rondeau	65,451	5,986	672 98	24,925	498	4 58	23,150	2,148	265 29	16,579	1,528	74 03
72	Rowan	165,290	45,863	3,421 53	158,661	22,321	1,519 07	99,099	14,353	1,517 87	116,971	22,947	1,229 92
73	Russeltown	40,640	4,743	370 92	51,254	4,484	469 66	54,476	6,367	445 00	42,248	10,566	805 86
74	Sarnia	19,677	152,510	10,792 08	21,650	197,718	9,045 20	13,311	212,742	12,043 94	144,682	210,024	9,205 59
75	Sault Ste. Marie	58,114	19,020	2,279 65	275,340	41,622	2,660 47	255,821	47,756	4,513 66	420,094	60,154	6,376 29
76	Saugeen	303	17,851	1,487 27	1,628	7,602	602 18	2,191	3,144	142 97	9,348	5,766	97 57
77	Stanstead	224,865	53,969	2,997 05	149,487	52,447	3,302 62	161,085	58,301	5,250 32	185,292	68,590	6,628 33
78	St. Johns	1,031,343	59,138	1,971 78	1,059,415	75,938	2,377 53	1,327,393	66,139	3,888 28	1,855,730	201,078	4,004 12
79	Stratford	35,592	2,200	247 45	57,096	68,265	6,320 92	50,922	67,809	7,888 93	70,414	68,366	8,164 92
80	St. Regis	17,370	34,423	662 02	15,854	30,844	351 77	5,566	32,519	182 91	19,902	29,133	185 26
81	Stanley	271,882	211,686	18,088 58	125,596	92,821	6,224 58	140,045	81,232	5,830 78	270,616	97,624	5,077 50
82	Sutton	61,540	10,632	1,008 92	22,485	12,620	985 85	12,140	11,758	1,071 82	32,700	12,685	1,535 64
83	Three Rivers	96,023	6,349	800 42	142,517	8,401	855 20	28,297	10,234	1,089 27	18,181	10,883	1,150 61
84	Trout Rivers	43,979	8,798	891 79	25,136	6,011	644 03	12,855	10,988	1,008 12	20,841	12,688	806 08
85	Toronto	2,205,333	6,954,629	780,809 75	653,667	5,085,459	581,000 68	637,178	3,768,934	461,148 26	905,477	4,019,207	588,651 54
86	Trenton	218,082	11,315	1,037 72	240,196	13,967	1,428 18	118,678	17,197	1,536 83	144,737	10,736	994 10
87	Wallaceburgh	20,003	21,171	1,667 12	69,017	36,146	2,098 27	26,411	36,470	2,155 95	85,780	38,593	1,896 21
88	Wellington	130,551	6,242	707 03	41,428	5,547	365 12	55,152	3,492	154 14	23,349	3,362	289 20
89	Whitby	592,330	95,588	9,736 68	293,482	62,550	6,263 82	176,422	27,559	2,797 66	286,152	43,055	3,753 44
90	Windsor	107,386	629,891	22,597 99	73,399	683,324	19,794 93	148,878	313,930	14,487 20	164,002	426,356	22,562 53
91	Woodstock	182,091	115,549	11,212 59	35,403	79,391	8,274 37	13,793	50,602	6,375 21	20,442	49,079	6,501 35
		29,808,117	43,584,387	4,508,882 08	25,450,419	39,430,598	3,925,051, 18	22,029,565	29,078,527	3,381,389 51	23,102,378	33,555,161	4.437,846 12
	Estimated Amount of Exports short returned at Inland Ports	2,238,900	.....	.....	1,556,205	.....	.....	1,443,044	.....	.....	1,664,603		
	Totals	32,047,017	43,584,387	4,508,882 08	27,006,624	39,430,598	3,925,051 18	23,472,609	29,078,527	3,381,389 51	$24,766,981	$33,555,161	4,437,846 12

NOTE.—Ports thus [*] Marked have been discontinued as Ports of Entry, and their returns are included in the Returns of the Ports to which they are attached.

No. 17.—STATISTICAL VIEW of the Commerce of Canada, exhibiting the Value of Exports to and Imports from Great Britain, her Colonies, and foreign Countries, together with the Tonnage of Vessels arriving and departing during the year 1859, including in such Tonnage the Vessels engaged in the Inland Trade.

	COMMERCE.		SHIPPING.					
			Tonnage of British Vessels.		Tonnage of Foreign Vessels.		TOTAL.	
	Value of Exports.	Value of Imports.	Entered Inwards.	Cleared Outwards.	Entered Inwards.	Cleared Outwards.	Entered Inwards.	Cleared Outwards.
	$	$						
Great Britain	7,976,758	14,786,084						
North American Colonies	810,475	381,755						
British West Indies	7,025	533	1,778,459	1,685,670	2,491,825	2,359,609	4,273,284	4,045,279
United States of America	13,922,314	17,592,916						
Other Foreign Countries	355,806	793,873						
Totals	23,102,378	33,555,161						

Note.—For Tonnage of Sea-going Vessels Inwards and Outwards, included in this Table, see Table Nos. 23, 25 and 26.

No. 18.—COMPARATIVE STATEMENT of the Value of Imports and Exports of Canada, during the years 1858 and 1859.

	Exports.	Imports.	Total Imports and Exports	
	$	$	$	
1858	23,472,609	29,078,527	52,551,136	
1859	24,766,981	33,555,161	58,322,142	
Increase in 1859			5,771,006	or 11 per cent.

No. 19.—COMPARATIVE STATEMENT of Excise Duties collected on Proof Spirits Distilled in the Province of Canada, in the years 1856, 1857, 1858, and 1859, with the number of Stills, and amount of Revenue derived therefrom.

	Number of Stills.				Number of Gallons Manufactured.			
	1856.	1857.	1858.	1859.	1856.	1857.	1858.	1859.
CANADA EAST	6	10	10	14	818,766	936,821	864,696	1,059,063
CANADA WEST	107	94	110	95	2,346,057	2,218,732	2,543,701	2,249,035
Totals	113	104	120	109	3,164,823	3,155,556	3,408,397	3,308,098

REVENUE COLLECTED

	1856.			1857.			1858.			1859.		
	Duty on Stills.	Duty on Spirits.	Total Duty.	Duty on Stills.	Duty on Spirits.	Total Duty.	Duty on Stills.	Duty on Spirits.	Total Duty.	Duty on Stills.	Duty on Spirits.	Total Duty.
	$	$ cts.	$ cts.	$	$ cts.	$ cts.	$	$ cts.	$ cts.	$	$ cts.	$ cts.
Canada East	240	11,395 73	11,635 73	400	23,420 58	23,820 58	400	25,497 48	25,897 48	560	63,543 75	64,103 75
Canada West	1,280	50,200 25	51,480 25	3,760	55,468 30	59,228 30	1,400	96,614 56	101,014 56	3,800	134,942 12	138,742 12
Totals	4,520	64,595 98	69,115 98	4,160	78,888 88	83,018 88	4,800	122,142 01	126,912 04	4,360	198,485 87	202,845 87

No. 20.—RETURN of the Amount of Excise Duties collected on Malt Liquors brewed in the Province of Canada, with the Number of Licenses Issued, and Revenue derived therefrom, during the year 1859.

	Number of Licenses issued.	Number of Gallons Brewed.	Duty Collected.		
			For Licenses.	On Malt Liquors.	Total.
			$	$ cts.	$ cts.
Canada East	24	1,365,597	240	13,655 97	13,895 97
Canada West	141	2,201,257	1,410	22,012 57	23,422 57
Totals	165	3,566,854	1,650	35,668 54	37,318 54

RECAPITULATION.

Amount of Duties from Distilleris in 1859	$ 202,845 87
Do do Breweries in 1859	37,318 54
Total Excise in 1859	$ 240,164 41

No. 20½.—STATEMENT of the Description and quantity of Grain, and other substances used and Spirits and Malt Liquors manufactured in the Province of Canada, for the year ending 1859.

	No. of Distilleries.	FOR DISTILLATION.											Total quantity of Grain, &c.	Proof Spirits Distilled.	FOR BREWING.		
		Malt	Wheat	Barley	Rye	Indian Corn	Peas	Buck-wheat	Mill feed	Oats	Potatoes	Molasses or other substances.			Number of Brewers.	Total. Quantity of Malt.	Total. Malt Liquors
		Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bshls.	Bushels.	Bushels.	Bushels.	Bushels.	Gallons.	Bushels.	Wine Gallons.		Bushels.	Wine Gallons.
Canada West...	93	34,507	21,698	10,952	133,273	363,443	1,880	1,317	63,188	20,891	25	1,714	551,175	2,035,378	128	200,237	2,053,970
Canada East...	5	78,178	201	36,695	13,352	119,413	....	215	269	269,094	....	36,052	517,416	1,090,705	22	117,690	1,349,526
	98	112,685	21,899	47,647	146,625	482,856	1,880	1,532	63,457	289,985	25	37,766	1,068,591	3,126,083	150	317,927	3,403,496

No. 21.—COMPARATIVE STATEMENT of the Gross and Net Revenue received from Customs for the years 1855, 1856, 1857, 1858 and 1859.

	1855.	1856.	1857.	1858.	1859.
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Gross Receipt of Duties	(1) 3,527,098 05	(2) 4,510,128 15	(3) 3,927,208 77	(4) 3,383,290 93	(5) 4,439,967 22
Charges for Collection	249,957 70	289,946 38	303,685 95	341,863 37	314,943 33
	3,277,140 35	4,220,181 77	3,623,522 82	3,041,427 56	4,125,023 89
Less Return Duties and Balances	21,862 10	104,559 94	27,767 99	15,133 17	1,511 95
Net Revenue of Customs Duties	3,255,278 25	4,115,621 83	3,595,754 83	3,026,294 39	4,123,511 94

Note.—(1) In this is included the sum of $1,315 57 cts., being amount of Warehouse Account at Quebec and Montreal.
(2) do do $1,246 06 cts. do do do
(3) do do $2,157 59 cts. do do do Montreal and Toronto.
(4) do do $1,901 42 cts. do do do do do
(5) do do $2,121 10 cts. do do do do do

No. 22.—STATEMENT of British and Foreign Vessels entered Inwards, from Sea, with Cargoes or in Ballast, at the Ports of Quebec, Montreal, Amherst, New Carlisle, Gaspé, Rimouski, and Isle Verte, during the year 1859.

PORT OF QUEBEC.

Countries From which they entered.	With Cargoes.						In Ballast.					
	British.			Foreign.			British.			Foreign.		
	No. of Vessels.	Tons.	Men.	No. of Vessels.	Tons.	Men.	No. of Vessels.	Tons.	Men.	No. of Vessels.	Tons.	Men.
United Kingdom	321	205,705	7,661	6	2,369	75	237	140,982	4,197	23	9,769	302
Nova Scotia	37	3,723	263	1	610	17	16	6,514	293			
New Brunswick	26	2,725	262				10	877	78			
Newfoundland	13	1,421	70				33	6,512	247	1	442	15
Prince Edward Island	1	34	3				1	280	6			
St. Pierre, Miquelon				1	205	13						
Gibraltar							18	6,015	199	1	507	14
British West Indies							1	688	18			
Danish West Indies							1	942	22			
United States	3	3,206	66	5	4,400	95	29	23,164	530	28	20,601	507
France	6	1,800	61	3	1,046	34	3	999	38	2	589	19
Sicily	1	154	7									
Spain	4	1,668	56				38	14,593	446	3	1,271	37
Portugal	6	1,637	56	1	180	10	3	1,141	40	1	749	16
Sweden										2	867	28
Belgium	1	353	12	4	1,434	51						
Italy							3	1,577	41	9	5,191	143
Hamburgh				6	2,682	95						
Bremen				1	393	13						
Norway										34	15,640	479
Prussia										1	450	13
Malta							1	541	16			
Ascension							1	853	20			
Jersey	1	43	3									
South America							12	9,481	235			
Africa							10	3,931	124			
Total	420	222,469	8,520	28	13,319	403	417	219,120	6,550	105	56,076	1,573

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PORT OF MONTREAL.

United Kingdom	92	72,624	3,818	2	665	19						
Nova Scotia	44	4,087	199									
New Brunswick	7	437	28									
Newfoundland	6	689	34	1	205	13	1	120	7			
Esquimaux Bay—Mingan	8	537	36									
Lower Ports—Canada	5	262	20				8	724	36			
Spanish West Indies—Cuba	2	253	13	1	185	6						
United States	2	280	11									
France	3	661	21	3	740	27						
Spain	1	166	8									
Portugal				1	180	9						
Belgium	1	353	10	4	1,458	50						
China—Shanghaie	1	693	28									
Total	172	81,042	4,226	12	3,433	124	9	844	43			

PORT OF AMHERST, C. E.

United Kingdom	3	305	40									
Nova Scotia	107	4,306	538				140	5,427	855	1	65	13
New Brunswick	4	233	21				14	850	86			
Newfoundland	1	26	3									
Prince Edward Island	17	455	72				10	283	47			
United States	2	122	9	12	900	80	6	366	27	56	3,771	339
St. Pierre, Miquelon	1	35	4									
Total	135	5,482	687	12	900	80	170	6,926	1,015	57	3,836	352

No. 22.—STATEMENT of British and Foreign Vessels entered Inwards, from Sea, &c.—*Continued.*

PORT OF NEW CARLISLE.

Countries From which they entered.	With Cargoes.						In Ballast.					
	British.			Foreign.			British.			Foreign.		
	No. of Vessels.	Tons.	Men.	No. of Vessels.	Tons.	Men.	No. of Vessels.	Tons.	Men.	No. of Vessels.	Tons.	Men.
United Kingdom	14	2,114	124				2	547	18	1	413	11
Nova Scotia	12	1,436	136				6	1,040	35			
New Brunswick	32	1,200	118	1	83	4	10	311	40			
Newfoundland	3	238	13				12	1,276	60			
Prince Edward Island	1	229	9				1	60	3			
Labrador	3	320	24									
South America							3	821	33			
United States	6	691	37				4	1,408	44			
Portugal	1	76	5									
Total	72	6,394	466	1	83	4	38	5,963	233	1	413	11

PORT OF GASPÉ.

Countries	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men
United Kingdom	20	2,382	153				2	132	9			
Nova Scotia	5	232	21				1	67	4			
New Brunswick							3	344	35			
Newfoundland							5	432	28			
United States	2	306	16	1	70	6						
France	1	102	6									
Spain	9	985	58									
Portugal	1	76	5									
Total	38	4,083	259	1	70	6	11	975	76			

PORT OF RIMOUSKI.

Countries	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men
United Kingdom							1	732	22			
United States										4	4,735	98
Norway										3	1,276	37
Total							1	732	22	7	6,011	135

PORT OF ISLE VERTE.

Countries	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men	No. of Vessels	Tons	Men
United Kingdom							2	691	26	1	351	13
Nova Scotia							1	311	14			
Portugal							1	973	27			
Norway										3	1,165	39
Total							4	1,975	67	4	1,516	52

No. 23.—RETURN of the Number and Tonnage of Vessels which arrived at and departed in the year 1859, distinguishing the

PORT OF QUEBEC.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels.	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	837	441,589	British	905	465,850
United States	18	16,224	United States	31	20,114
Norwegian	76	34,251	Norwegian	76	34,251
Prussian	16	7,640	Prussian	16	7,640
Swedish	1	327	Swedish	1	327
French	1	205	French	1	205
Hamburgh	7	4,057	Hamburgh	7	4,057
Bremen	6	3,944	Bremen	6	3,944
Austrian	3	1,284	Austrian	3	1,284
Portugal	1	180	Portugal	1	180
Hanoverian	1	219	Hanoverian	1	219
Oldenburg	1	550	Oldenburg	1	550
Mecklenburg	2	514	Mecklenburg	2	514
Total	970	510,984	Total	1,051	539,135

PORT OF MONTREAL.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels.	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	181	81,886	British	127	61,278
United States	3	850	United States	2	788
Norwegian	2	681	France	1	205
Prussian	1	377	Portugal	1	180
Netherlands	2	443			
Austria	2	697			
France	1	205			
Portugal	1	180			
Total	193	85,319	Total	131	62,451

PORT OF AMHERST, C. E.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	305	12,408	British	226	9,282
United States	69	4,736	United States	56	3,916
Total	374	17,144	Total	282	13,198

PORT OF NEW CARLISLE.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels.	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	110	12,357	British	93	10,805
United States	1	83	Norwegian	1	412
Norwegian	1	413			
Total	112	12,853	Total	94	11,217

from Quebec, Montreal, Amherst, New Carlisle, Gaspé, Rimouski and Isle Verte, by Sea, Countries to which they belonged.

PORT OF GASPE.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels.	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	49	5,058	British	43	4,266
United States	1	70	United States	1	70
Total	50	5,128	Total	44	4,336

PORT OF RIMOUSKI.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels.	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	1	732	British	1	732
United States	4	4,735	United States	4	4,735
Norwegian	3	1,276	Norwegian	3	1,276
Total	8	6,743	Total	8	6,743

PORT OF ISLE VERTE.

ARRIVED.			DEPARTED.		
Under what Colours.	No. of Vessels.	Tonnage.	Under what Colours.	No. of Vessels.	Tonnage.
British	4	1,975	British	4	1,975
Norwegian	4	1,516	Norwegian	4	1,516
Total	8	3,491	Total	8	3,491

RECAPITULATION.

PORTS.	VESSELS ARRIVED.						VESSELS DEPARTED.					
	British.		Foreign.		Total.		British.		Foreign.		Total.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Quebec	837	441,589	133	69,395	970	510,984	905	465,850	146	73,285	1,051	539,135
Montreal	181	81,886	12	3,433	193	85,319	127	61,278	4	1,173	131	62,451
Amherst, C. E.	305	12,408	69	4,736	374	17,144	226	9,282	56	3,916	282	13,198
New Carlisle	110	12,357	2	496	112	12,853	93	10,805	1	412	94	11,217
Gaspé	49	5,058	1	70	50	5,128	43	4,266	1	70	44	4,336
Rimouski	1	732	7	6,011	8	6,743	1	732	7	6,011	8	6,743
Isle Verte	4	1,975	4	1,516	8	3,491	4	1,975	4	1,516	8	3,491
Totals	1,487	556,005	228	85,657	1,715	641,662	1,399	554,188	219	86,383	1,618	640,571

No. 24.—STATEMENT of British and Foreign Vessels cleared Outwards, for Sea and Seaward, during the year 1859, from the Ports of Quebec, Montreal, Amherst, New Carlisle, Gaspé, Rimouski and Isle Verte.

PORT OF QUEBEC.

Countries for which they cleared	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United Kingdom	775	453,612	14,779	139	71,663	2,002
United States	....	....	....	2	457	14
Portugal	....	....	....	1	180	9
France	....	....	....	1	297	10
Hamburgh	....	....	....	1	327	9
British West Indies	2	256	12	....	....	....
Nova Scotia	27	3,260	351	....	....	....
New Brunswick	55	4,612	393	....	....	....
Newfoundland	36	2,840	177	....	....	....
Prince Edward Island	1	70	4	....	....	....
St. Pierre, Miquelon	....	....	....	1	205	13
Total	896	464,650	15,716	145	73,129	2,057
In ballast { United States	....		....	1	156	7
In ballast { Nova Scotia	8	1,097	46	....	....	....
In ballast { New Brunswick	1	103	8	....	....	....
Total	905	465,850	15,770	146	73,285	2,064

PORT OF MONTREAL.

Countries for which they cleared.	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United Kingdom	56	55,045	3,223	....	....	....
United States	....	....	....	2	788	20
Portugal	....	....	....	1	180	9
Nova Scotia	25	2,279	133	....	....	....
New Brunswick	7	387	25	....	....	....
Newfoundland	27	2,868	154	1	205	13
Lower Ports—Canada	12	699	39	....	....	....
Total	127	61,278	3,574	4	1,173	42

PORT OF AMHERST.

Countries for which they cleared.	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United States	13	734	63	54	3,725	327
St. Pierre. Miquelon	1	35	4	....	....	....
Nova Scotia	160	6,200	858	1	65	13
New Brunswick	15	934	101	....	....	....
Newfoundland	3	175	26	....	....	....
Prince Edward Island	21	586	98	....	....	....
Total	213	8,664	1,150	55	3,790	340

PORT OF NEW CARLISLE.

Countries for which they cleared.	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United Kingdom	17	4,316	160	1	412	11
United States	7	679	44	....	....	....
Portugal	1	71	7	....	....	....
Spain	3	313	23	....	....	....
Naples	3	600	34	....	....	....
Italy	1	99	7	....	....	....
Nova Scotia	14	844	59	....	....	....
New Brunswick	13	664	57	....	....	....
Newfoundland	15	1,305	76	....	....	....
Labrador	3	325	25	....	....	....
South America	5	1,168	59	....	....	....
Total	82	10,384	551	1	412	11

PORT OF GASPE.

Countries for which they cleared.	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United Kingdom	6	838	49	....	....	....
United States	....	....	....	1	70	6
Portugal	1	97	7	....	....	....
Spain	14	1,169	83	....	....	....
Naples	7	751	53	....	....	....
Roman States	3	391	23	....	....	....
Nova Scotia	7	339	28	....	....	....
New Brunswick	1	237	26	....	....	....
Newfoundland	2	193	16	....	....	....
Brazil	2	251	14	....	....	....
Total	43	4,266	299	1	70	6

PORT OF RIMOUSKI.

Countries for which they cleared.	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United Kingdom	1	732	22	....	....	....
United States	....	....	....	4	4,735	98
Norway	....	....	....	3	1,276	37
Total	1	732	22	7	6,011	135

PORT OF ISLE VERTE.

Countries for which they cleared.	With Cargoes.					
	British.			Foreign.		
	No.	Tons.	Men.	No.	Tons.	Men.
United Kingdom	4	1,975	67	4	1,516	51
Total	4	1,975	67	4	1,516	51

No. 25.—SHIPS INWARDS.—STATEMENT of the Number of Vessels entered Inwards from Sea, at the undermentioned Ports, shewing their Tonnage, number of Men employed, and the Countries from whence they came, during the year 1859, and the two preceding years.

PORTS.	TOTAL.			Great Britain.		British Colonies.		United States.		Other Foreign Countries.	
	No.	Tons.	Men.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Quebec	970	510,984	17,046	587	358,825	162	31,815	65	51,371	156	68,973
Montreal	193	85,319	4,393	92	72,624	79	6,856	2	280	20	5,559
Amherst	374	17,144	2,134	3	305	294	11,645	76	5,159	1	35
New Carlisle	112	12,853	714	16	2,661	81	7,113	11	2,182	4	897
Gaspé	50	5,128	367	22	2,514	14	1,075	3	376	11	1,163
Rimouski	8	6,743	157	1	732	......	......	7	6,011	......	......
Isle Verte	8	3,491	118	3	1,042	1	311	......	......	4	2,138
Total, 1859	1,715	641,662	24,929	724	438,703	631	58,815	164	65,379	196	78,765
1858	1,657	613,813	22,537	820	475,451	576	51,155	66	12,557	195	74,650
1857	2,047	748,425	30,490	896	477,263	491	63,237	348	88,902	312	110,023

No. 26.—SHIPS OUTWARDS.—STATEMENT of the Number of Vessels entered Outwards for Sea, at the undermentioned Ports, shewing their Tonnage, number of Men employed, and to what Country cleared, for the year 1859, and the two preceding years.

PORTS.	TOTAL.			Great Britain.		British Colonies.		United States.		Other Foreign Countries.	
	No.	Tons.	Men.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Quebec	1,051	539,135	17,834	914	525,275	130	12,238	3	613	4	1,009
Montreal	131	62,451	3,616	56	55,045	71	6,233	2	788	2	385
Amherst	282	13,198	1,555	.....	.....	214	8,704	67	4,459	1	35
New Carlisle	94	11,217	599	18	4,728	61	4,727	7	679	8	1,083
Gaspé	44	4,336	305	6	838	10	769	1	70	27	2,659
Rimouski	8	6,743	157	1	732	.....	.....	7	6,011	.....	.....
Isle Verte	8	3,491	118	8	3,491	.....	.....	.....	.....	.....	.....
Total 1859	1,618	640,571	24,184	1,003	590,109	486	32,671	87	12,620	42	5,171
1858	1,662	632,046	22,705	1,027	572,601	531	41,966	62	9,350	42	8,129
1857	1,848	731,367	23,541	1,317	683,681	429	28,513	67	13,479	35	5,694

No. 27.—STATEMENT of the Canadian and American Tonnage, Inwards and Outwards, at the undermentioned Ports, shewing the Intercourse (exclusive of ferryage) by Inland Navigation between Canada and the United States, during the year 1859.

PORTS.	INWARDS.								OUTWARDS.							
	CANADIAN.				AMERICAN.				CANADIAN.				AMERICAN.			
	Steam.		Sail.		Steam.		Sail.		Steam.		Sail.		Steam.		Sail.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Amherst			8	488			68	4,671			13	734			56	3,916
Amherstburgh			68	3,767	287	76,930	283	14,573			68	3,767	287	76,930	283	14,573
Bath			32	3,056			4	431			21	1,708			4	272
Bayfield	5	653	14	1,221			4	243	5	653	14	1,221			4	243
Belleville	43	8,862	118	9,295			56	5,313	35	7,344	127	9,896	2	219	60	5,696
Brighton	3	420	80	4,931	2	140	14	779			79	4,568	2	140	13	772
Brockville	48	4,967	12	338	467	334,998	32	2,271	48	4,967	12	338	467	334,998	32	2,271
Burwell			111	12,565	40	14,596	196	27,392			107	12,030	40	14,596	191	26,720
Bytown	24	1,470	213	14,896					24	1,470	213	14,896				
Chatham	19	1,012	102	12,957	135	25,100	92	14,701	19	1,012	102	12,957	135	25,100	92	14,701
Chippawa			75	6,878	340	79,417	47	2,272			57	4,721	347	56,259	34	1,447
Clarenceville			68	4,500	51	2,600	170	6,851			68	4,500	51	2,600	170	6,851
Cobourg	148	46,846	151	21,676			46	5,749	148	46,846	152	22,471			49	6,288
Colborne			39	5,446	19	7,148	63	17,823			14	1,289			7	1,154
Collingwood	1	185			82	56,345	1	339	1	185			81	55,665	1	339
Cornwall	260	20,105	4	160			1	20	260	20,105	4	160			1	20
Côteau-du-Lac	3	252					10	624	3	252					10	624
Cramahe	89	35,280	40	3,319			10	713	89	35,280	38	3,325			10	814
Credit	2	600	3	420			5	810	10	3,500	14	2,746			5	810
Dalhousie	20	7,762	41	8,050	44	15,471	33	7,864	20	3,430	42	6,733	1	352	28	6,144
Darlington	37	12,320	12	1,723			6	693	36	12,220	10	1,525			6	693
Dover			153	12,556	40	15,477	43	3,950			142	11,808	39	15,081	42	3,347
Dundas	1	169	45	5,694	1	80	1	205	1	169	44	5,529	1	80	1	205
Dunnville	69	3,720	108	11,838	4	390	32	4,624	67	3,612	101	11,128	4	390	32	4,624
Fort Erie					342	402,000	5	500					342	402,000	5	500
Gananoque	13	2,052	147	2,299			16	260			162	3,456			23	445
Gaspé			2	306			1	70							1	70
Georgeville	118	9,558							118	9,558						
Goderich	108	17,466	75	2,771			2	302	108	17,466	75	2,771			2	302
Hamilton	46	8,399	203	26,523			40	7,875	46	8,399	194	25,229			40	7,875
Hope	133	47,785	169	17,416			20	4,106	93	41,600	161	13,373			23	2,589
Kingston	748	101,282	186	24,399	208	205,453	106	17,660	748	101,282	186	24,339	208	205,453	106	17,660
Kingsville			40	1,149	10	2,600	15	692			38	778	10	2,600	15	692
Lacolle															6	170
Maitland	1	37					11	1,047	1	37					11	1,047
Milford			61	2,480	3	180	8	477			57	1,915	3	180	7	393
Montreal	257	36,901	14	2,307			21	5,996	2	456	1	244			6	1,484
Morrisburgh	80	8,613					15	345							1	50
Napanee	15	3,185	57	5,734	1	90	20	4,197	4	828	73	6,659			30	4,497
New Carlisle			10	1,099			1	83			7	679				
Newcastle	32	10,994	25	1,708			2	231	12	2,303	33	2,503			4	462
Niagara	355	151,264	23	2,600	94	51,840	20	670	355	151,264	23	2,600	94	51,840	20	670
Oakville	10	1,896	45	6,913			3	236	6	1,099	51	7,153			3	236
Oshawa	35	12,873	18	1,751					35	12,873	18	1,751				
Owen's Sound	1	250	2	175			6	312			3	238			1	100
Penetanguishene					1	850	10	2,950					1	850	10	2,950
Philipsburgh			27	2,005	15	525	142	7,309			26	1,960	14	480	142	7,309
Picton	39	7,563	54	3,992	1	80	9	795	27	5,393	45	2,421			5	593
Prescott	464	42,544			748	268,044	236	11,932	464	42,544			748	268,044	236	11,932
Quebec			3	262	2	245	24	5,355			5	517	1	89	8	1,100
Queenston	1	414	4	456			2	228	1	414	4	456			2	228
Rimouski			1	732			7	6,001			1	732			7	6,001
Rondeau			6	1,036			18	3,034			4	678			19	3,169
Rowan			76	6,642	22	3,036	48	5,347			80	6,871	22	3,036	50	5,448
Saint Johns	74	2,171	699	48,243	164	17,009	358	19,436	72	2,200	673	54,397	162	15,745	508	28,408
Saint Regis	5	1,943	48	4,366			1	44	5	1,943	48	4,366			1	44
Sarnia	48	7,960	59	10,898	609	119,980	132	8,795	48	7,960	59	10,898	609	119,980	132	8,795
Saugeen			29	1,024	55	2,309					28	994	55	2,309		
Sault Ste. Marie					23	17,926	10	1,128					23	17,926	10	1,128
Stanley	21	3,809	83	10,835	82	33,681	98	11,343	21	3,809	83	10,835	82	33,681	98	11,343
Three Rivers							1	50			8	744			1	50
Toronto	561	163,706	330	41,381	270	226,239	142	21,474	561	163,706	330	41,381	270	226,239	142	21,474
Wallaceburgh	12	844	274	20,417	521	102,395	270	20,799			173	10,588	275	35,282	195	21,331
Wellington	3	900	12	579			16	412	3	900	12	579			16	412
Whitby	78	23,450	80	9,789			25	3,350	77	23,150	76	9,189			25	3,360
Windsor			54	1,909	161	22,686	73	5,556			54	1,909	161	22,686	73	5,556
Totals	4,030	812,482	4,413	409,972	4,844	2,105,860	3,160	303,308	3,573	740,229	4,233	391,253	4,537	1,990,830	3,115	282,390

RECAPITULATION.

	INWARDS.		OUTWARDS.		TOTALS.	
	Canadian.	American.	Canadian.	American.	Inwards.	Outwards.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
STEAM	812,482	2,105,860	740,229	1,990,830	2,918,342	2,731,059
SAIL	409,972	303,308	391,253	282,306	713,280	673,649
Total	1,222,454	2,409,168	1,131,482	2,273,226	3,631,622	3,404,708

INWARDS AND OUTWARDS.

Canadian Steam	1,552,711	
Canadian Sail	801,225	2,353,936
American Steam	4,096,690	
American Sail	585,704	4,682,394
Inwards and Outwards, as per above Table No. 28		7,036,330
ADD do do of Sea-going Vessels—See Tables No. 23, 25 and 26		1,282,233
Total ... Tons		8,318,563

23 Victoria. Sessional Papers (No. 23). A. 1860.

No. 28.—STATEMENT showing the Number and Tonnage of Steamers and Sailing Vessels Built and Registered, and also of Steamers and Vessels not Registered, at the undermentioned Ports in Canada, during the year 1859.

PORTS.	BUILT.						REGISTERED.						BELONGING TO PORT NOT REGISTERED.					
	Steam.		Sail.		Total.		Steam.		Sail.		Total.		Steam.		Sail.		Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tons.	No.	Tonnage.	No.	Tonnage.	No.	Tons.	No.	Tonnage.	No.	Tonnage.	No.	Tons.
Amherst			4	173	4	173			4	173	4	173						
Belleville	1	68			1	68	2	275	2	184	4	459						
Brighton									2	126	2	126			4	254	4	254
Burwell									4	468	4	468			1	47	1	47
Bytown													4	483			4	483
Clarenceville			2	150	2	150							1	50			1	50
Cobourg									4	586	4	586			6	911	6	911
Cramahe															3	198	3	198
Dalhousie			1	365	1	365			10	2,448	10	2,448	1	560	5	1,140	6	1,700
Darlington													1	100	2	198	3	298
Gaspé			4	237	4	237			6	376	6	376			1	45	1	45
Hamilton	1	76			1	76							3	398	2	320	5	718
Hope			1	140	1	140	2	87	10	1,480	12	1,567			3	305	3	305
Kingston									1	249	1	249	9	3508	12	3,027	21	6,535
Kingsville			2	94	2	94			2	94	2	94						
Milford									5	285	5	285						
Montreal	1	31	1	73	2	104	7	704	13	1,458	20	2,162						
New Carlisle			5	330	5	330			24	1,506	24	1,506			2	34	2	34
Newcastle															1	63	1	63
Oakville															9	1,467	9	1,467
Penetanguishene															3	58	3	58
Philipsburgh															2	140	2	140
Picton															3	173	3	173
Quebec	3	285	39	14,760	42	15,045	3	285	39	14,760	42	15,045						
Rowan			2	79	2	79			2	79	2	79						
Three Rivers							1	48			1	48	1	18			1	18
Wallaceburgh			2	175	2	175			8	379	8	379	1	81	5	209	6	290
Whitby									1	218	1	218			4	445	4	445
Totals	6	460	63	16,576	69	17,036	15	1309	137	24,869	152	26,268	21	5198	68	9,034	89	14,232

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CANALS.

IMPORTS AND EXPORTS.

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INDEX in Detail of the Imports and Exports of the Province of Canada, for the year 1859.

INDEX—*Continued.*

INDEX—*Continued.*

INDEX—*Continued.*

INDEX—*Continued.*

INDEX—*Continued.*

INDEX—*Continued.*

GEOLOGICAL SURVEY

OF

CANADA.

REPORT OF PROGRESS

FOR THE YEAR 1858.

Montreal:
PRINTED BY JOHN LOVELL, AT THE CANADA DIRECTORY OFFICE,
ST. NICHOLAS STREET.
1860.

GEOLOGICAL SURVEY OF CANADA.

MONTREAL, 1st *May*, 1859.

SIR,

I have the honor to request that you will do me the favor to present to His Excellency the Governor-General, the accompanying Report, shewing the progress made in the Geological Survey in the year 1858.

I have the honor to be,

Sir,

Your most obedient servant,

W. E. LOGAN,

Provincial Geologist.

To the Hon. C. Alleyn, M.P.P.,

Provincial Secretary,

&c., &c., &c.

TO HIS EXCELLENCY

SIR EDMUND WALKER HEAD, BART.,

ONE OF HER MAJESTY'S MOST HONORABLE PRIVY COUNCIL,

Governor-General of British North America,

AND

GOVERNOR-GENERAL AND GOVERNOR-IN-CHIEF

IN AND OVER

THE PROVINCES OF CANADA, NOVA SCOTIA, NEW BRUNSWICK, AND THE ISLAND OF PRINCE EDWARD,

AND VICE-ADMIRAL OF THE SAME.

MONTREAL, 1*st May*, 1859.

MAY IT PLEASE YOUR EXCELLENCY:

I have the honor to present to Your Excellency a Report of the progress made in the Geological Survey of the Province during the year 1858, and I accompany it with Reports from those associated with me in the investigation.

From these it will be observed, that the time of Mr. Murray was occupied in a farther examination of the physical structure of the copper-bearing rocks on the north shore of Lake Huron; and that of Mr. Richardson in a continuation of his previous season's investigation, on the south side of the St. Lawrence, in the vicinity of the Shickshock Mountains, as well as higher up the river, between Matanne and Rivière du Loup, extending in one part as far south as the Ristigouche.

One of the recommendations embraced in the Report of the Select Committee on the Geological Survey appointed by the House of Assembly in 1854, was the publication of figures and descriptions of such new organic forms as might be discovered in the rocks of Canada. In compliance with this, it was determined that the publication of those descriptions should appear in parts, each of which, consisting of about ten plates, with accompanying text, should be a monograph on the subject to which it related. Before the appointment of Mr. Billings as palæontologist to the Survey, the first of these decades was confided to Mr. Salter, palæontologist to the Geological Survey of the United Kingdom, and the second to Professor James Hall of Albany, so well known for his researches in American palæontology. The preparation and publication of a third number, in the earlier part of the year, constituted a part of the labors of Mr. Billings, who subsequently devoted his attention to the study of the corals of the Devonian series of rocks, descriptions of which were so much required for the proper understanding of the geology of Western Canada. The results of this part of his investigations having already been published in the Canadian Journal, and the attention of Mr. Billings being engaged in the examination of the remaining fossils of the same series of rocks, his Report on the subject is reserved until the whole of the species known to characterise the Canadian portion of the series can be described together.

Mr. Hunt's Report contains a series of descriptions and analyses of the intrusive rocks of the district of Montreal, including various trachytes, dolerites, diorites and porphyries. To these succeed analyses of some of the metamorphic Silurian rocks and their associated minerals, followed by an account of the researches on the origin and formation of dolomite, commenced in the Report of the previous year and now brought to a conclusion. This investigation I may here remark, while explaining in a new and simple manner the origin of magnesian rocks, also throws light upon the formation of gypsums and many limestones.

The personal explorations which I have to report to Your Excellency relate to a farther examination of the physical structure of the Laurentian series of rocks, prosecuted chiefly on the River Rouge, which joins the Ottawa in the township of Grenville. In farther following the outcrop of one of the bands of crystalline limestone in this series, (the distribution of which bands was partially described in the Report of 1856,) it was found to strike upon the Rouge, and an ascent of the river beyond the range of present settlement became necessary in continuing the investigation. That part of the stream which is above the area at present laid out in townships was measured, the bearings being determined by a theodolite worked by the limb, and the distances by a micrometer telescope. The length thus measured on the main stream did not exceed about twenty miles but I now regret that I did not measure the river all the way from its mouth, for the purpose of ascertaining the relation of the range lines in the townships of Harrington and Grenville. Some of these lines, though all represented on the original plans as nearly equidistant, are in reality so irregular as to render it very difficult to represent the distribution of the rocks with truth without such measurement.*

In addition to the twenty miles on the main stream, the position and form of thirty-two tributary lakes of various sizes were determined, the largest of them being upward of six miles in length.

The highest point attained on the river was the Iroquois Chute, about fifty miles from the mouth, and five above a farm cleared by Messrs. Hamilton Brothers, for the convenience of their operations on the river connected with their trade in timber. The farm consists of about 300 acres of land of good quality, producing excellent oats and potatoes, and is the lowest of three of a similar character possessed by the firm, at intervals of twenty miles from one another, on the river. To Mr. Houston, the agent in charge of the farm, I was kindly favored by Messrs. Hamilton Brothers with a letter authorising him to supply my party with whatever provisions we might require, at the same time requesting him to aid us in our objects in whatever way he could, and I have to express my obligations to both the firm and their agent, for the ready attention with which our wants were met.

In my explorations of the Rouge and the neighbouring country, I have been aided by Mr. James Lowe, formerly an artizan, and now settled as a farmer in the township of Grenville, who possessing great skill as a woodsman, has shewn much aptitude in geological field-work; to his zeal I am indebted for a considerable portion of the detailed results which I have now to present in regard to the distribution of the crystalline limestones.

Considering that the exploration would afford an opportunity to a properly qualified person to collect objects of recent natural history without interfering with the main purposes in view, I induced my friend Mr. W. M. S. D'Urban to

* A re-survey of four of the ranges of Grenville having some years ago been made by order of the Crown Land Department, it is chiefly in Harrington that the difficulties exist.

accompany me. His attainments in natural history are well known, and to his industry we are indebted for a very illustrative collection of the fauna and flora of the district examined. Mr. R. Bell, who accompanied Mr. Richardson, was instructed to attend to a similar collection over the ground investigated by the latter, and classified catalogues of the specimens obtained over both areas, prepared by Mr. D'Urban and Mr. Bell, are introduced into the Report as an Appendix. Of Coleoptera upwards of 500 species have now been procured in the two areas in question, and in the neighbourhood of Ottawa and Montreal, and constituting the first known Canadian collection of this order, that has been properly named, they will form a nucleus around which to arrange such additions as may be hereafter obtained. In naming the Coleoptera, we are indebted to Dr. J. L. Leconte of Philadelphia, who is considered the first authority on the subject in America; while we have to express our obligations to Dr. Isaac Lea and Mr. W. G. Binney, both of Philadelphia, for their assistance, the former in naming the fresh-water and the latter the land shells.

We are also indebted to Dr. J. W. Dawson, Principal of M'Gill College, for his aid in determining many of the fishes and reptiles; to Col. Munro, of the 39th Regiment, in naming the grasses; and to Mr. G. Barnston, of the Hudson Bay Company, in determining several other species of plants.

LAURENTIAN LIMESTONES.

In the Report of Progress for 1856, a description was given of the distribution of certain bands of crystalline limestone, belonging to the Laurentian formation, in the townships of Grenville, Harrington, Wentworth, Chatham, Chatham Gore, and Morin, and the seigniories of Argenteuil and Mille Isles. The number of these bands was supposed to be three. The lowest one was traced from the Ottawa, near the village of Grenville, to the vicinity of Lachute, the two points being distant from one another about eighteen miles in a straight line, while the linear outcrop of the band, followed in all its windings, was eighty miles. What was supposed to be the middle band, was traced from the fifth lot of the fifth range of Chatham Gore to the first lot of the fourth range of Wentworth, a distance of two miles; and the highest band, from the fourteenth lot of the southeast range of the St. Gabriel concession of Mille Isles to the fortieth lot of the first range of Morin, a distance of about four and a half miles.

As will be presently explained, the first and second bands mentioned have been found to join one another, and thus to be only parts of the same sheet; so that the calcareous exposures described in the Report of 1856, would appear to belong in reality to no more than two bands, the Morin and Mille Isles band being considered the upper one.

In the Report of 1856, it was stated as a probability, that the Morin exposures, and certain others at St. Jérôme and in the township of Rawdon, would be found to belong to one calcareous sheet. Nothing has been ascertained to contradict this supposition, but it cannot yet be proved that the Morin and St. Jérôme exposures will have any continuous outcrop connection. In tracing out the Morin band, Mr. Lowe has ascertained that from the fortieth it attains the middle of the fifty-eighth lot of the first range, where it turns upon a synclinal axis with a bearing nearly coincident with that of the range, and that at the exit of a lake in the thirty-sixth lot of the S. W. range of the Ste. Angélique concession of Mille Isles, it makes a similar turn on a parallel synclinal axis, about a mile to the southward; where the sheet folds over the intermediate anticlinal, the calcareous rock shews a wide exposure in the south-west end of the St. Gabriel concession, and it is there accompanied with an equal spread of fine agricultural surface. From the south or lower end of the lake just mentioned, the band pursues a nearly due east course and crosses both ranges of the Ste. Angélique concession obliquely, traversing the concession road on the twenty-eighth and twenty-ninth lots, and following a branch of the Gagnon River into the Ste. Marguerite concession. This concession also it crosses obliquely, in the range of two small lakes lying between the eighteenth and fifth lots, but upon the fourth lot it presents a synclinal spur extending to the westward of south nearly across the concession upon the River Gagnon. It ascends this river and passing out of Ste. Marguerite on the second lot, it enters into the Ste. Elmire concession, and runs across seven of its lots from the fifty-fourth to the forty-eighth, touching the north range of St. Godefroy and reaching Lake Godefroy. It has not yet been traced farther, but another lake occurs a little farther on in St. Godefroy, and two smaller sheets of water still beyond; the more eastern of which, from the south end of the lake of Ste. Angélique, is nine miles; all of these lakes lie in the due east bearing of the limestone, and it appears probable the band will pass through the whole. Including St. Godefroy, the unexamined part to the most eastern lake is about three miles, and beyond this it cannot yet be suggested what course the band may assume.

From the easternmost exposures of the supposed middle band of 1856, in the fifth lot of the fifth range of Chatham Gore, the outcrop has been found to make a turn southward, and crossing into the fourth range on the same lot, to join the band traced from Grenville about the middle of the lot. From the westernmost exposures in the first lot of the fourth range of Wentworth, the outcrop proceeds obliquely into the second lot, whence it passes into the second and third lots of the third range, in the latter of which, the property of Mr. Mann, it joins the Grenville band at the western end of a small lake to which allusion was made. Thus it appears that the supposed middle band is only a part of the Grenville band, deriving its position from an undulation.

In describing the distribution of the Grenville band in the Report of 1856, it was stated (p. 22) that though no continuous exposures were met with between the fourteenth lot of the tenth range and the twenty-second and twenty-third lots near the line between the tenth and eleventh ranges of Chatham, a probability existed of an outcrop connection between the two positions. It has since been ascertained that between them two synclinal spurs point to one another, but that they do not join. From the thirteenth and fourteenth lots of the tenth range, the outcrop proceeds by the thirteenth lot across the eleventh range, and gaining the fourteenth lot in the twelfth range, it crosses the town line from that lot, and enters Wentworth upon the twelfth lot of the first range. It here supports a small lake which receives the waters of Lake Louisa, and following the upward direction of the channel connecting them, it enters Lake Louisa in the east bay. By this bay it proceeds northward, forming a point on the west side in the thirteenth lot, and farther on it underlies an area composing the point which divides the east and west bays, on which point Mr. Robertson has cleared a farm. The connected distribution under the waters of the lake is not quite certain; but on the one hand a calcareous spur appears to lie under the west bay, coming partially on the south-eastern side of the bay in the sixteenth lot of the first range, and from this lot crossing into Chatham and terminating near the front of the nineteenth lot of the twelfth range; while on the other hand, the whole of an island which appears to be at the rear of the twelfth lot of the second range of Wentworth, and part of another to the eastward, consist of limestone. Both the spur and the islands are supposed to be in one and the same synclinal form, and calcareous exposures which are met with along the margin of the lake, running obliquely across the lots from the residence of Mr. Case on the sixteenth, to the thirteenth lot of the second range, are probably on the north-west side of another synclinal. It is not yet ascertained how the band leaves the lake, but it may be by the valley of the main inlet on the north side, the mouth of which is in the thirteenth lot of the third range.

From the marginal exposures on the sixteenth lot of the second range, near the residence of Mr. Case, a valley runs obliquely across the lots to the calcareous area which was described in the Report of 1856, as extending along the West Branch of the North River, from the twenty-second lot of the second range of Wentworth to the twenty-third lot of the tenth range of Chatham. On the line between the two townships this area occupies the breadth of two lots, which is wider than was supposed, and in Chatham it presents a synclinal form around a mass of gneiss, which overlies the limestone on the line between the twenty-second and twenty-third lots. On the eastern rim it displays a spur which runs eastward nearly across the middle of the twenty first lot, and it is this spur which points to the corresponding one, as already mentioned, on the fourteenth lot of the tenth range. In the valley between the West Branch and Lake Louisa, the east rim presents another spur projected eastward from the main area at least half a mile, and this spur appears to correspond with that including the calcareous exposures near the house of Mr. Case. Whether a synclinal calcareous belt is continuous beneath the valley is uncertain; the interval between the nearest known exposures is over three-quarters of a mile.

The calcareous area on this part of the West Branch is the extremity of a trough, one side of which has been found to run along the front of the second range of Wentworth, from the twenty-second to about the twenty-fifth lot, underlying two small lakes in the distance; it then appears to turn northward through a great marsh across this range into the next, entering it on the twenty-sixth lot, and though no calcareous exposures were here seen, the gneiss bounding the marsh which it is supposed to underlie is conspicuously displayed. From this the band seems to sweep north-westward, and touching three small lakes in the distance of about a mile, it reaches a larger one, called from its shape Spectacles Lake, on the town line between Wentworth and Harrington. The southern end of this lake is divided into two deep bays, the eastern of which is on the third range of Wentworth, and the western on the second and third ranges of Harrington. The point between the bays is composed of limestone, and so is an opposite point between two deep bays in the north or lower end of the lake, in the eastward one of which is the discharging stream, very near the town line, on the twenty-eighth lot of the fourth range of Wentworth. The eastern side of the band follows the course of the out-flowing stream, running obliquely across the fifth range, and on the line between the fifth and sixth ranges it passes close by the post between the twenty-fifth and twenty-sixth lots; it then passes eastward of a small sheet of water to the eastern extremity of Gate Lake. At the exit from Spectacles Lake the band has a breadth of about one-eighth of a mile, and the western side passes between fifty and sixty yards to the eastward of the post between the third and fourth ranges of Harrington on the town line. Before reaching the fifth range of Wentworth, which is about twelve chains farther northward, the west side begins to diverge. It enters a small lake on the town line, leaving it near the same line on the north side, and turning northwestward into Harrington, where it approaches to within ten chains of the fifth range on the line between the first and second lots.

On the other side of the trough the calcareous band proceeding from the West Branch River on the twenty-third lot of the tenth range of Wentworth, appears to come in a short distance against the intrusive syenite of that part, and masses of the limestone confusedly associated with gneiss and trap are met with, entangled in the syenite and surrounded by it, on the twenty-fourth lot in the rear of the eleventh and front of the twelfth ranges. The band becomes freed from the syenite in a small lake in the rear of the eleventh range, on the line between the twenty-sixth and twenty-seventh lots; and from this position it runs obliquely across the twenty-seventh lot and the one beyond, the south or under side of the band, with massive coarse grained porphyroid gneiss beneath, presenting a synclinal point towards the front of the latter lot. From this lot the band passes into the township of Grenville, and joins the exposures which were described in the Report of 1856 as existing near Mr. Dolan's, in the first, second and third lots of the tenth range. In this range the band still farther crosses the lots south of and parallel with Long Lake, which is in the rear of the range. It passes into the twelfth range on the eighth and ninth lots, and leaves it on the tenth, entering Harrington on the sixth lot of the first range. On this numbered lot it traverses three of the Harrington ranges, displaying on each side of it, a bold hill of porphyroid gneiss, that on the west being called Slavery Mountain. In this part the band appears to have a pretty uniform breadth of between 800 and 900 yards, and it is interstratified with a bed of gneiss nearer the top than the bottom, which presents a prominent ridge nearly the whole way. A stream, issuing from a small lake in the front of the eleventh range of Grenville, finds a channel on the band to the middle of the seventh lot of the fourth range of Harrington; here it joins the brook issuing from Gate Lake, but it is not quite certain how near the confluence of the streams the west or under side of the limestone band we have been following, joins the calcareous mass described in the Report of 1856 as passing eastward to Gate Lake; there is some reason to think it will be on the east side of the sixth lot. The upper side of the band, on reaching the fourth range bends to the eastward, and then proceeds in a moderate curve to within ten chains of the fifth range on the line between the first and second lots, the position to which it was traced from the other side of the trough.

By this modification of the distribution of the limestone as given in the Report of 1856, a great addition is made to that part lying in Harrington and Wentworth in the neighbourhood of Gate, and Sixteen Island Lakes, a large portion of which supports a surface well adapted for the purposes of agriculture. The best present access to this agricultural tract is by the road which runs along the east margin of the calcareous outcrop on the west side of the trough. The site of this road is judiciously chosen, for while the calcareous valley affords a pretty even grade, it gives also much land capable of settlement along the line, and will thus facilitate the keeping of the road in repair. Some years since a road was opened by the Government to the limestone land in the north-west part of Wentworth, from the settlement on the West Branch River in the front of the township. But a line having been chosen as near to a straight one as practicable over the rugged surface of the gneiss, it happens that while the grades are difficult, there is little land fit for settlement along the road. The road, in consequence, is little used; a second growth of timber will very probably be allowed to spring up on it, and the expense of opening it will be entirely thrown away. If a road is required on the west side of Wentworth, it is probable that a better line might be obtained along the limestone on the east side of the trough; in general throughout the Laurentian region, the bands of limestone will be found to afford the best guide for the lines of roads.

The calcareous area which lies between the Big Lake of Harrington (Lac Erable or Maple Lake as it is called on the map of the Crown Land Office) was described in the Report of 1856 as having the form of a trough, and it has just been shewn that the area south of this, from the fourth range of Harrington to the north-west corner of Chatham is of the same geological shape. The limestone running across the lots from east to west, must therefore be an anticlinal, with an axis bearing east and west nearly. In conformity with this the underlying gneiss presents a spur running in upon the east end of Gate Lake, and were it not for an accumulation of drift, the gneiss of Slavery Mountain would probably shew a similar opposite spur in the fourth range of Harrington.

Immediately west of Gate Lake, the breadth of the limestone is little short of two miles, and it presents an equal breadth approaching Sixteen Island Lake; but between these two positions the anticlinal spur of gneiss on Gate Lake reduces the breadth to less than a mile. On the north side of this spur the base of the limestone, leaving Gate Lake, sweeps along in a sinuous line from the twenty-sixth to the twentieth lot of Wentworth, passing at the same time from the front to the rear of the seventh range. A stream, tributary to Gate Lake, accompanies it at a moderate but variable distance the whole way. This issues from a small lake, which is one of a chain of lakes that with their connecting streams occupy a valley running to the rear of Wentworth on the twentieth lot, but trenching a little occasionally on the adjacent lots on each side. Entering Montcalm near the south-east corner, the valley crosses the first range of the township, gradually bearing more to the westward of north, and in the second range it comes upon the head of Sixteen Island Lake, to which lake that portion of its waters flowing in the most southern range of Montcalm and the most northern one of Wentworth, is tributary.

Crossing the line between Harrington and Wentworth, about the middle of the seventh range of the latter, the summit of the limestone proceeds in a curve to the middle of the eighth range on the line between the twenty-fifth and twenty-sixth lots. It here reaches the exit of a lake tributary to Gate Lake. The lake is about a mile in length, and by short channels receives on the east the waters of Long or Eagle Nest Lake, lying chiefly in the twenty-second lot; and on the north those of Sixteen Island Lake, which extends upwards of three miles in a direction east of north to the second range of Montcalm, where its head has already been indicated. These three lakes lie in one geographical depression, which narrows considerably at the foot of Sixteen Island Lake, and is separated from the eastern valley, previously mentioned, by a bold mountain mass of hornblendic gneiss, of which the lamination is so seldom apparent, that it might be mistaken for an intrusive rock. The southern limit of this mass of gneiss is at the rear of the seventh range of Wentworth, where it divides the limestone into two parts; one of which, with an average breadth of about 200 yards, paves the bottom of the eastern valley, while the other from a breadth of about a mile and a half between the southern extremity of Eagle Nest Lake and of that to which it is tributary, gradually tapers to a breadth of about 250 yards where it enters the southern end of Sixteen Island Lake.

From this distribution it is plain that the gneiss between the valleys is of a synclinal form, and that the limestone on its west side folds over an anticlinal axis, which runs through the length of Sixteen Island Lake. The widest part of this lake, occurring about the middle of the eleventh range of Wentworth, measures about a mile; and from the distribution of the calcareous exposures on various islands, and on two localites on the eastern shore, it appears probable that the limestone either spreads out very much on the bottom of the lake, or splits into two bands, which re-unite before reaching the upper extremity. Approaching this extremity the calcareous rock is seen crossing a point projecting from the eastern shore in the first range of Montcalm, and on this shore, in the rear of the range, it finally enters upon the land, and proceeds to the front of the next range, there joining the limestone of the eastern valley.

In the first range of Montcalm, the eastern valley shews some good agricultural land, which is continued for some distance in a prolongation of the depression across the second range. In the rear of the range the waters are still tributary to Sixteen Island Lake, but on the third range they fall northward, and the valley comes upon Balsam Lake. Between these lakes, the calcareous rock was traced with great difficulty; several exposures however, occurring at intervals the whole way, were ultimately met with, and these seemed to indicate that the band, before entering Balsam Lake, diminishes considerably in thickness. In an exposure about two-thirds of the way across the second range, where the dip was *N. 80 W. > 45°, and gneiss, belonging apparently to the mountain masses bounding the valley, was visible close on the opposite sides of the band, the breadth did not exceed twenty yards, which would give a thickness of little more than forty feet. In different parts of the valley, however, much pyroxenic rock was observed on the east side, and garnet-studded gneiss on the west; these may perhaps replace a part of the limestone.

Balsam Lake, with a length exceeding two miles and a bearing somewhat west of north, presents a large island in the middle, which nearly fills its breadth. The limestone, in addition to being observed at the opposite ends of the lake in the third and fifth ranges, was found composing opposite points in two of the narrowest straits in the fourth range, and these indicated an increase of breadth in this range to about 130 yards. But it leaves the lake with apparently about half that measure, and enters a marsh; through this the stream discharging the lake gradually turns to the west, and then to the south of west after reaching the middle of the fifth range; and no calcareous exposures were observed for about a mile and a quarter, until reaching the twenty-second lot, where the marsh terminates. The limestone quits the marsh with about the same breadth it shewed on entering it; but in its continuation down the valley, obliquely across the ranges for the next three miles and a half, it gradually widens, and on reaching Round or Sugar-Bush Lake, a breadth exceeding 1000 yards is displayed, embracing the chief part of the northern and eastern shores. In these three and a half miles, the exposures are numerous, and the band is conspicuously bounded by mountain masses of gneiss on each side. One of these masses rises on the south side of Round Lake and stops the farther progress of the limestone in that direction, only a few yards of calcareous rock having been found there skirting the margin of the lake; and as the gneiss appears also for some distance down the west side, the north-west corner would seem the only part by which the calcareous band can continue its course. Beyond the lake however in that direction, a considerable space is covered by drift or marsh, and for three miles and a half the outcrop connection of the band will have to be proved without the aid of any exposures of the rock composing it.

Round Lake, with a length of about 1600 yards, and a breadth of between 700 and 800, stretches across nearly five lots from the fifth to the ninth of the second range. It is about half a mile to the north-east of Bevan's Lake, from which it is separated by the mass of gneiss on its south and west sides. Bevan's Lake is underlaid by limestone, and it will be convenient here to shew the relation which this limestone bears to that of Round Lake.

It was explained in the Report of 1856, that the limestone which issues northward from Slavery Lake valley, and turns on the one hand eastward to Gate Lake, proceeds on the other a little eastward of north by the east side of Big Lake to its exit, displaying a breadth of nearly a mile and half, which is partly covered by the lake. From the north end of Big Lake, turning a little to the westward of north, the limestone accompanies the discharging stream in a deep valley to Bevan's Lake, crossing the town line between Harrington and Montcalm, with a breadth of nearly half a mile on the ninth and tenth lots of the former, and the

* The bearings in this Report are magnetic, the variation being 10° west of true north.

fourth, fifth, sixth and seventh of the latter. A synclinal spur however returns to the town line on the second lot of Montcalm, shewing two minute undulations.

Bevan's Lake, with a length of about two miles and half, and an average breadth of less than half a mile, lies diagonally across the town line of Montcalm and Arundel, in a bearing nearly north and south, and stretches from the first range of the former to the third of the latter. The limestone which constitutes its bottom, occupies probably about three-fourths of its length. Whether it has any immediate outcrop connection with the limestone of Round Lake is uncertain; but from the outcrop connection traced the other way by the circuit of Gate, Sixteen Island and Balsam Lakes, it is plain that in Bevan's Lake and Round Lake those sides of the calcareous area which approach nearest to one another, are equivalent, being in each case the summit of the band, and that the two areas are on the opposite sides of a synclinal form. But should they join, it will be seen that they must again immediately separate; for the gneiss underlying the limestone comes in an anticlinal spur to the shore of Bevan's Lake, on the left side, towards the southern end, and is again flanked by the limestone to the westward. Thus the calcareous band, leaving Bevan's Lake on the adjoining parts of the first and second ranges of Arundel, runs south across the former and the last ranges of Harrington, enclosing a small lake on the town line and another called Crooked Lake farther on near the house of Mr. Bigros, where exposures are seen on the road to Fitzallan. Matilda brook, discharging Crooked Lake into Bevan's Lake, runs on the limestone all the way. South of Crooked Lake, towards the rear of the tenth range of Harrington, the band turns with a sharp point on a synclinal axis, and enters a valley which runs westward on the eleventh range, and which in the distance of about three miles comes upon the River Rouge immediately below the Dog Rapid. The valley is well bounded on both sides by mountains of gneiss, but it has not yet been sufficiently examined to determine its sinuosities with accuracy, except on the north side; nor have any exposures of the calcareous rock been met with in it, being apparently deeply covered with drift. At the Dog Rapid, however, an exposure occurs, which there is little doubt belongs to the band, and the strike would appear to indicate that it takes a turn northward.

Round Lake is discharged from its north-west corner into the lower half of Bevan's Lake, and the waters of this lake, issuing from its northern extremity, are conveyed to the Rouge, near Fitzallan, by a brook which meanders along the third range of Arundel. Not far from the exit of Bevan's Lake a tributary stream joins the north side. This tributary issues from Bark Lake, the upper end of which is on the line between the sixth and seventh ranges of Montcalm, and the lower on the sixth range of Arundel. The extremes are about three miles and a half apart in a straight line, but a deep sinus in the general form, carries the most southern part to the front of the sixth range of Arundel, and gives to the lake a length of six miles. The shores are conspicuously indented with bays; one of which, about a mile in depth, terminates in the fifth range of Arundel. From the east side of this bay, a range of gneiss extends in a nearly straight line to the calcareous exposures within 200 yards of the north shore of Round Lake. The same rock constitutes the promontory which lies between this bay and the exit of Bark Lake, and it is seen in long stretches of the shore in so many other parts, as to leave little doubt that the lake is altogether surrounded by it. From the exit of Bark Lake it extends westward along the front of the sixth range of Arundel to within three-quarters of a mile of the River Rouge, and southward in the rear of the eastern river lots to the front of the fifth range. It is thus evident the limestone of Round Lake cannot pass north of the sixth range of Arundel before approaching pretty near to the Rouge.

From the range of gneiss between Bark and Round Lakes, there extends to the Rouge a horizontal area which occupies nearly the full breadth of the third and fourth ranges. Much of it is occupied by swamp, and the general uniformity of its level is indicated by the fact that the waters of the Rouge, during the freshets of the spring, are poured up into Bevan's Lake and Round Lake, and for some distance up the brook discharging Bark Lake; so that occasionally saw-logs sent down the Rouge by Messrs. Hamilton Brothers have been floated into the two first-mentioned lakes. The first and second ranges of Arundel, from the Matilda brook limestone to the Rouge, are largely occupied by gneiss, and the only probable direction for the course of the limestone of Round Lake is therefore through the flat land of the third and fourth ranges. No evidence has been obtained to prove what sinuosities the outcrop may assume under this area; but where the line between the two ranges in question, comes upon the Rouge, a calcareous exposure is met with which must belong to the band. This occurs at the Island Chute, where there exists a great bend in the river about half a mile above the house of Mr. Thompson, the postmaster. The limestone is flanked, immediately on the west, by a mass of gneiss, which occupies the left bank of the Rouge for about six hundred yards, and extending into the bed of the stream, produces the rapid which succeeds the Chute. Gneiss occurs also on the opposite side of the river, about three hundred yards removed from the margin, shewing a breadth of about two hundred yards across the measures. It occurs again about half a mile more westward on the west side of the brook discharging Otter Lake, and then gradually rises into the mountain range which flanks the Rouge at a variable distance in this neighbourhood. Otter Lake is situated on the west side of the Rouge, in the fourth and fifth ranges of the township. It is wholly surrounded by mountain masses of gneiss; that on the east side coming close on the Rouge, where its strike is south for a considerable distance, bearing exactly for the gneiss flanking the limestone at the Island Chute. I am thus inclined to think this calcareous exposure exhibits the base of the band.

What the distribution of the outcrop may be between the Island Chute and the Dog Rapid, which are about four miles apart, has yet to be determined; but it is probable that somewhere below the mouth of Bevan's brook the band will, by the effect of undulation, cross to the west side of the Rouge, and pass southward on that side by the valley in which a winter road has been established by Messrs. Hamilton Brothers. To the west of this road the gneiss rises up boldly, and near the town line between Arundel and Harrington, presents a bare bluff point of rock, about three-quarters of a mile from the river. From this bluff a ridge runs to the south-eastward, approaching the river to about half a mile opposite the Dog Rapid. But between this ridge and the river there is a great accumulation of drift, with a rapidly sloping surface, which wholly covers up the limestone.

A deep covering of drift prevails also above the Island Chute, extending along the valley of the river up to the Devil's Rapids, the distance between the two places being about three and a half miles. On the east side this detrital matter forms a plain about three-quarters of a mile wide nearly the whole way, but upon the west, as has already been stated, the mountain flank running north comes close upon the stream for about a mile along the valley above the Island Chute. Beyond this the river gradually separates from the mountain flank, which still runs northward for about another mile. The slope of the higher ground then turns more eastward and gradually approaches the river, and in this way the plain on the west side assumes a rude triangular shape, the apex of the triangle being about three quarters of a mile distant from the river on the line between the fifth and sixth ranges of the township. In this triangle a synclinal spur may project northward from the limestone, the west side of which would come close upon the mountain flank in the fourth and fifth ranges. No calcareous rock was met with in a position to prove this, but the probability of it is supported by the fact that in the rear of the river lots, on the west side, toward the south part of the seventh range, the extremity of a calcareous trough opening northward occurs, which would correspond with such a structural form, and to this more northern calcareous area I shall now proceed to draw attention.

The rocky ridge on the west side of the Rouge in this part, called by the Indians *Kokoko Pikwatina* or Cuckoo Mountain, separates the sources of several small streams which flow down the eastern slope between the Island Chute and the Devil's Rapids from those of others which join the river below the former and above the latter. One of the eastern rills however has its origin in a small lake, which is situated at a pretty high level in the hills on the west side of the crest. The lower end of the lake occurs on the twenty-third lot of the seventh range precisely on the line of the crest, a deep notch in which permits the escape of the water. An exposure of calcareous rock occurs immediately at the exit, and while the bottom of the lake is composed of limestone, the shore on three sides consists chiefly of the more rugged gneiss. The edge of the limestone turns south-westward from the south-west side of the lake, and immediately beyond the lake this end of the trough, to which the limestone belongs, has a breadth of about 600 yards. Proceeding northward, the trough gradually widens, presenting on the west side a low smooth rim from which waters tributary to the Rouge, flow south on one hand and north on the other. While the sides separate the surface gradually falls, and about two miles and a half from the extremity, the trough meets with the Rouge, which in the upward bearing of the valley, makes a sweep to the north-westward, on reaching the town line between Arundel and Desalaberry, at the clearing of Mr. McIntyre, about a mile and a half above the Devil's Rapids. In this sweep the river passes through a breach in the strata of Cuckoo Mountain, the continuation of which on the left side of the river, separates the valley of the Rouge from that in which its tributary, the Devil's River, winds its very tortuous course. As we ascend the Rouge, the eastern limit of the limestone occurs just above a smooth ice-rounded bluff of gneiss on the left bank, called the Dog Rock, while the western one is seen in a range of hills whose flank runs for some distance along the line bounding the west side of Arundel and Desalaberry, the breadth between the limits being about a mile, which the river crosses obliquely, attaining the western side of the trough in the vicinity of the Huckleberry Chute.

At the Huckleberry Chute, the Rouge, which from the Island Chute upwards has a breadth of from one hundred to one hundred and fifty yards, becomes compressed into the space of twenty yards; but after making its leap, in which there is a descent of fifteen feet, it immediately expands into a pool three hundred yards wide, and on the upper side of this there is a considerable exposure of rock. In this it is perceived that the limestone is interstratified with bands consisting chiefly of quartz, but mixed or studded in various proportions with feldspar, pyroxene, hornblende, and occasionally with garnets, and a mass of this description, with a gneissoid character and a thickness of some importance, runs obliquely across the channel, where the water is precipitated from the higher level into the pool. The limestone is much charged with graphite, and from this mineral is derived the Indian name of the place—*Aboujnoumeneci Pawitik*—or Blacklead Fall. The same Indian appellation, derived from the name of the fall, is given to the mountain of gneiss which bounds the limestone on the right bank below the pool, though there is little or no graphite in the strata composing it.

From the extremity, in the seventh range of Arundel, the general bearing of this calcareous trough for eight miles is very nearly north. It makes however a slight bend to the eastward, at the distance of two miles, where it crosses the line between Arundel and Desalaberry; and a slight bend to the westward, at the distance of six miles, where it leaves the western boundary of Desalaberry. In these eight miles the average breadth is about one mile; but through the influence of small longitudinal undulations, aided by transverse depressions and elevations of the strata, it in one place widens to the breadth of two miles, and in another narrows to one of half a mile. The longitudinal plications occur on both sides of the trough as well as in the centre, and the number and intensity of them shew a wonderfully corrugated condition of the strata.

The expansion to the breadth of two miles occurs immediately opposite to Huckleberry Chute, by a sudden turn to the west of the rim on the west side, which in its progress presents two small projections to the south, resulting from two small parallel undulations. About a mile farther north the rim returns by a corresponding opposite course round the extremity of the more western of these small synclinal forms, and the normal breadth is here restored by a fold which occurs farther south over an anticlinal axis on the east side. Beyond this northward another anticlinal fold on the east side narrows the calcareous area to half a mile; but the area immediately expands again to the average breadth by opposite turns of the rim over the same anticlinals. Where the gneiss comes from beneath the limestone on the anticlinal axes, there is in every instance, a bold mountain mass of the rock. From the position where the trough leaves the western town line of Desalaberry to the Silver Mountain, which is two miles farther up on the eastern side, the breadth of the trough is very uniform; but a ridge of the subjacent gneiss rises boldly up through the limestone towards the western side, and continuing the whole distance, presents several conical peaks; one of these standing on a base of a little over 250 yards across the measures, attains a height of about 700 feet above the river. The first view of this hill was obtained at Mr. McIntyre's farm at a distance of about five miles, and from its shape it went among us by the name of the Cone.

In the next mile northward the east side of the trough bends a little to the eastward, and the breadth increases to a mile and a half, but is immediately diminished again to less than a mile by a sudden turn on the west side, which shews two parallel anticlinal axes over which in succession the limestone folds, sending corresponding synclinal spurs northward. The more western of the anticlinals is a continuation of the form in which the gneiss penetrates through the limestone farther south, and as in that case it displays a ridge, but not of so marked a character. On the more eastern axis however a conspicuous mountain mass of gneiss presents a height nearly equal to that of the Cone.

This hill, as seen endwise from the summit of Silver Mountain, presents a bold and striking figure in the landscape. The calcareous plain stretching across the picture in front, running up the synclinal valley on the west, and occupying the banks of the Rouge for many miles up, gives to the hill an isolated aspect. It rises like a gigantic bee-hive from the horizontal surface of the plain, and this would suggest for it an appropriate name.

The Silver Mountain, which consists of porphyroid gneiss, has two summits, divided from one another by a shallow valley in which there is a small lake. The more eastern top, which is at the same time the more southern, has a height about equal to that of the Hive. Each of these summits appears to be on an anticlinal axis. At the base of the mountain there is a portage, occasionally resorted to by those ascending and descending the river in light canoes, for the purpose of saving the time that would be spent in navigating a great bend in the Rouge. It is from the upper end of this portage that the eastern side of the calcareous trough begins to assume a little more easting in its course. This easting it maintains for about two miles and a half, and the effect of the Silver Mountain anticlinals on the calcareous rim is very distinctly seen as we proceed along, as well as the effect of three additional forms of the same character occurring in the distance.

The breadth across the whole of these five anticlinals in a straight east line would scarcely exceed a mile and a quarter, which would give a quarter of a mile as the average distance between each two.

Towards the east side of the calcareous area in this part there is a small crescent-shaped lake, deriving its form from the influence of the undulations on the distribution of the strata, and the breadth of the general trough on a line crossing this lake and running west to the flank of the ridge connected with the Hive, is about a mile and three-quarters. The whole length of the trough in a straight line from its southern extremity up to this point, is a little over ten miles; in these ten miles there appears to be no superior rock resting on the limestone. But here the point of a synclinal mass of gneiss presents itself in about the middle of the trough, and immediately rises into a hill which rather exceeds the Hive and the Cone in height, and reposing on the limestone divides it into two bands. Of these, the one on the right, looking towards the gneiss, continues to run northward, in which bearing it has been traced for two miles from Crescent lake, while that on the left gradually rounds to the west.

In the first two miles the westing is but slight, and the band is confined to the valley of the main river; but in the succeeding two, turning up the valley of a tributary called George's Creek, the bearing becomes nearly due west. In these two miles the limestone encloses a small expansion of George's Creek called Lake Simon, and strikes the outlet of another small lake beyond. The outlet of this lake occurs at its north-eastern extremity; the main inlet is at the opposite end, where it contributes the waters of a considerable sheet, called the Lake of Three Mountains, by a short channel running across the stratification. Within about 150 yards of the outlet of the small lake, there is a tributary on the north-west side, through which run the waters of another small lake not quite half a mile to the north, and it is up the valley of this tributary that the limestone proceeds in its farther progress. This latter small lake presents two straight diverging limbs, the one bearing a little east of north from the outlet for about three hundred yards with the stratification, and the other east, at right angles across the measures nearly. The limestone underlies the northward-bearing limb, and at the north end of it enters the valley of a small brook, up which it has been traced running N. 20 E. for nearly a mile.

The breadth of the band at this point cannot be made out to be greater than one hundred yards; the dip is eastward at an angle of between seventy and eighty degrees, giving a thickness of nearly 300 feet. At Lake Simon the breadth is about two hundred yards, and it gradually increases descending George's Creek; but where the band leaves the valley of the creek and enters on that of the main river, the upper part of the limestone and the base of the gneiss are concealed by drift. On George's Creek and its tributary lakes the limestone is immediately overlaid by garnet-studded gneiss, which occasionally holds much hornblende, and near the outlet of the small lake between the Lake of Three Mountains and Lake Simon, this mineral, in a considerable thickness of the strata, is in sufficient abundance to entitle the mass to the name of hornblende rock. The eastern band of the limestone, north of Crescent lake, displays a breadth of about 500 yards, and garnet-studded gneiss is exhibited resting on it as conspicuously as on the western band.

A portion of the breadth of the eastern band is perhaps due to undulations in the strata. The effect of some of those, which have already been alluded to, is easily discernable in the modifications they produce in the distribution of that part of the base of the overlying gneiss which is north-west of Crescent lake; and the effect produced on the west band by the Hive anticlinal, and the one immediately west of it is conspicuous, while the courses of the axes are somewhat remarkable.

These axes, running north-west for a considerable distance and then north, are traceable to that part of the band which includes Lake Simon, each producing a northern projection in the band, the one above and the other below the lake. On the more western one the limestone, after plunging beneath the gneiss, breaks through it again about 850 yards farther north, and there displays a lenticular area on the crown of the anticlinal, running for nearly a mile and three-quarters to the north-east; thus shewing a change of ninety degrees in the bearing of the axis, with but a short radius to the sweep. The lenticular area is surrounded by a rim composed in general of gneiss and quartzite studded with garnets, but on the north-west side, the garnets, of a pink color, are disseminated in a pure white crystalline orthoclase feldspar, producing a rock of striking beauty. A strip of garnet-studded rock runs for some distance along the middle of the lenticular area. The more eastern axis takes a similar turn, but the limestone, after sinking beneath the gneiss near Lake Simon, does not give so sure an indication of the bearing farther to the north-westward. There is an isolated calcareous exposure at the distance of about three quarters of a mile; another at the distance of about two miles, and a third at three miles and a half. It is not certain, however, that they are all on the same anticlinal axis. In the third there is a mere trace of the limestone, but a very distinct exposure of the garnet-studded rock, and a very beautiful display of the anticlinal fold in a low cliff at the spot, in which the north-western side shews an overturn dip.

Between these exposures and the Rouge there rises a mountain ridge of hornblendic gneiss, running north-east and south-west with the strike for about two miles; it is divided into three conspicuous tops, and has in consequence received from the Indians the name of *Kan Soutana,* or the Three Mountains. The south-eastern flank of the ridge slopes sharply down to a triangular drift-covered plain, in which the Rouge meanders in a very serpentining course. The side of the plain which runs along the flank of the Three Mountains, extends across the Rouge to the north-east, and reaches Lake Simon on the south-west, the distance from one end of the line to the other being about four miles and a half. On the east side it is bounded by a continuation of the range of hills, which limits, in that direction, the eastern band of limestone, the length of the line being two miles; and on the south its measure, from the eastern limit of the eastern band of limestone to Lake Simon, is four miles. The most prominent part of the southern boundary is the mountain of gneiss which lies between the east and west bands of limestone near their junction; I have called it the Portage Mountain. Its summit stands nearly west of the exit of Crescent Lake, and the ridge running north dies in the plain at about the distance of a mile, where the stream which empties Crescent Lake, after flowing northward along the eastern limestone valley, turns west and then south for a short distance to meet the Rouge.

The exit of the brook is close by the south end of what is called the Horse-Shoe Portage, a part of Messrs. Hamilton Brothers' winter road, by which several great bends in the river (on the ice covering which the road chiefly runs,) are avoided. The portage is upwards of a mile and a quarter long, and derives its name from the occurrence on it of a narrow horse-shoe lake, which indicates an ancient channel of the river; similar ancient channels are indicated in many parts of the plain by long, narrow, winding swamps, with high, precipitous banks of clay, sand and gravel.

The plain extends from the south side of the triangle over the surface of the bands of limestone in two spurs, and including as much of these as can be seen at once from the higher parts of the Three Mountains, the whole area comprehends about five square miles. It is upon this plain that Messrs. Hamilton Brothers have their lowest farm, the chief part of it being on the right bank of the river.

Excepting close upon the boundaries of the plain, no exposure of rock was met with in any part, and we were not able, in consequence, to determine with precision the unbroken outcrop continuance of the eastern band of limestone farther than has been indicated, while the want of time prevented the farther pursuit of the western one.

The calcareous exposures, which are supposed to indicate the north-western prolongation of the Hive anticlinal, are met with in a valley which runs parallel with the ridge of the Three Mountains on its north-west side, and with the exception of the garnet-studded rock, the hornblendic gneiss of this ridge appears to be the first great mass that rests upon the limestone. The strike of the ridge seems to be regular, and the dip, which is pretty uniform, is S. 45 E. $< 55^{\circ}$. The breadth from the valley behind to the front is about 600 yards, which would give a thickness of about 1500 feet. The rock which succeeds is a mass of nearly pure quartz, in some parts obscurely granular, and in others almost vitreous; a large portion of it is white. It was met with in two positions, at the distance of two miles from one another, and appeared to have a thickness of about 600 feet. One of the exposures was in front of the highest top of the Three Mountains, where the quartz was overlaid by about one thousand feet of gneiss, and the other an isolated hill to the north-eastward, to which we gave the name of the Quartz Mountain. The strike in the latter locality indicates a turn more northward in the stratification, and the gneiss beneath, where seen near what is called the upper clearing, runs parallel with the altered strike, and crosses the Rouge about a mile above Quartz Mountain. Where it does so, the distance between the beds exposed and the nearest exhibition of the gneiss which underlies the eastern band of limestone, is about half a mile, and the space displays a flat-surfaced accumulation of drift.

According to the stratigraphical position above given to the band of quartz and the gneiss beneath it, the strata of the synclinal gneiss in Portage Mountain, would be equivalent to those of the Three Mountains, and the distribution of the quartz band under the drift would conform in some degree with the triangular shape of the plain. But the quartz band where seen, being on the west side of the main synclinal axis, if it passed northward on that side through the half-mile drift-covered space, would have to return again on the east side of the axis under the same space. In this space however there is not room for the limestone, the garnet-studded rock, the gneiss, and the double band of quartz; the quartz therefore must come to a synclinal point before reaching this space. The bearing of the axis of the synclinal gneiss in Portage Mountain is west of north for upwards of a mile and a half, and to reach the position where the quartz band must turn on it, it must assume a north-east bearing for some distance, and in doing so would preserve in some degree a parallelism with the minor synclinals on the west side of the general trough.

From the position where the strata of the Three Mountains cross the Rouge, the upward course of the river, with the exception of one serpentine curve in the first mile, is nearly straight to the Iroquois Chute, the distance above the curve being about two miles and a half. The strike of the gneiss supposed to underlie the limestone, would bring near it the left bank of the river just above the curve, from which it appears to run parallel with the course of the stream up to the Chute, the gneiss in many places touching the bank. About 600 yards below the Chute a tributary joins the river on the left side, from the mouth of which there is a portage to Trembling Lake. Below the mouth of this brook there is a considerable exposure of gneiss on the left bank, and limestone is seen touching it at the margin of the stream for some distance down. This there is not much doubt is the base of the eastern band, which probably occupies the bed and the eft bank of the river in the straight part.

On the portage to Trembling Lake there are several small sheets of water. The general bearing of the path to the first of these is about east, and almost exactly across the measures, and the distance in a straight line is a little under three-quarters of a mile. The rock which is exposed on or near the path for the chief part of the distance is gneiss, but about half-way there is a thick bed of white quartzite studded with garnets. The dip appears to be regular and the angle high, and the total thickness on the portage would be about 3500 feet. The first lake is a small one, being but three-quarters of a mile in length and between 200 and 300 yards wide; the bearing is very nearly parallel with the nearest part of the Rouge. The second lake, the Indian name for which is *Kasagawigamog*, or Long Lake, has exactly the same general bearing as the first one. The sides are straight and parallel with one another; they are about four hundred yards apart, and run very nearly in the strike of the strata, while the length of the lake is a mile and three-quarters. A small tributary lake falls in on the north by a connecting channel which is only a few yards long; this small lake is in the strike of the first lake, with an interval of less than a mile between them. Between the proximate sides of the first and second lakes, the shortest distance is not over 150 yards, and between the two lakes there is a water-shed, the first falling into the Rouge, while the second is a tributary of Trembling Lake, its waters passing however through an intermediate lake. On the east side of Long Lake, towards the south end, there is a narrow entrance to a long bay which is parallel with the main body of the lake, and on the west side of this, towards the south end, is the outlet. Through the first and second lakes there runs a group of three bands of limestone, the middle one being much the largest and occupying nearly the breadth of Long Lake. Of the two bands of gneiss which divide the calcareous bands, the western one is the larger. The position of the gneiss is indicated by the separation between the first and second lakes, and between the main body of the second lake and the south-eastern bay. Other beds of gneiss are interstratified in the limestone, but they are not of much importance. The total breadth of this belt of strata is about half a mile, and the thickness is supposed to be about 2500 feet.

The lake into which Long Lake is discharged, stands at a short distance to the south-east. Its Indian name is *Misámiko Sákaigan*, or Great Beaver Lake. It has an irregular form, but may be compared to a rude triangle with the apex to the north, the base on the south side being about three-quarters of a mile, and the altitude over half a mile. From the base a deep bay runs southward, and from the vicinity of the apex a long, narrow bay runs eastward to the outlet. A small stream falls in at the apex of the triangle, which is about a quarter of a mile eastward of the main inlet. This small stream appears to mark the eastern limit of the calcareous belt, which is farther traceable by an island of gneiss standing about half way along the eastern side of the triangle and the east side of the southern bay. This is composed of gneiss, while limestone appears in the bight of the bay. The western limit of the belt appears to reach a bold precipice of gneiss, terminating northward in a bluff point. This bluff is situated south of the western corner of the lake, and as it stands exactly in the bearing of Long Lake, it is probable that the calcareous belt, after leaving Long Lake and before reaching Great Beaver Lake, turns on an anticlinal, the axis of which would run through the bluff. The width of the whole belt still continues to be nearly half a mile.

Great Beaver Lake flows into Trembling Lake on the west side, not quite half a mile from its northern extremity, by a stream which is under a quarter of a mile in length, running across the measures. Trembling Lake has a length of six miles and a quarter, with a bearing a little south of east, and a breadth of between a half and three quarters of a mile. It runs very nearly with the stratification, and in a general way parallel with the Rouge. On the west side it has several promontories and bays, the most conspicuous of the promontories being about two miles and a half down the lake. The east side of the lake is nearly straight, but displays a sudden turn about a mile from the northern end, by which the breadth is reduced from its average measure to about a quarter of a mile. At this turn the main tributary stream comes in from the north. The outlet is close to the southern extremity of the lake on the west side, where the water is precipitated immediately from the surface of the lake, over garnet-studded gneiss, in a fall of twenty-nine feet.

A band of limestone, with a breadth of about 600 yards comes upon the east side of the lake from the north by the valley of the main tributary, of which the position has just been given. In its progress southward the limestone composes several islands, one of them being the largest in the lake, and it is displayed, below this island, in a white rock which comes above the surface of the lake, and from its shape, has been called by the Indians *Kikalúna Gwúbik*, or Lizard Rock. A little lower down it composes also the chief part of the most conspicuous promontory on the west side, but it is not seen again until reaching the outlet of the lake, where it occurs in a precipice facing the fall, its strike being southward and down the river. Garnet-studded rock occurs along the eastern side of the band, on one or two points of the main shore, and on several islands, and not having been observed immediately on the western side, the garnet-studded rock of the fall is supposed to indicate that the whole breadth of the band must be to the west of it. But no examination having yet been made at the outlet, beyond the immediate border of the lake, this must for the present remain conjectural.

On the eastern side of the lake there rises up a vast mass of coarse-grained porphyroid orthoclase gneiss, constituting what is called the Trembling Mountain. Its Indian name is *Manitouge Sootana*, the translation of which would be the Spirits' Mountain, or Devil's Mountain. The Indians assert that low, rumbling noises frequently proceed from it, and that it has sometimes been felt to shake by those who have been accidentally upon it. If this were true, it would in that respect resemble the country in the neighbourhood of Cromarty, in Scotland; but whether it be true or not, the belief of the Indians in the fact has established for it its English name. While I was in its neighbourhood, it seemed to me to be perfectly quiet and steady. The base of the mountain occupies a large portion of the township of Grandison. The highest point seen from the lake, as measured trigonometrically, is 1713 feet over its surface, or about 2061 feet above Lake St. Peter, between Montreal and Quebec, and it appears to be the loftiest summit for a considerable distance in the surrounding country.

The eastern limit of Grandison crosses Trembling Lake obliquely at the distance of about two miles from the southern extremity, and an old timber road, which is used as a portage, starts from the vicinity of the position where the town line intersects the western margin of the lake. The road leads to the Rouge in the plain of the Three Mountains, the distance in a straight line being about four miles. Less than half-way there occurs a sheet of water, known to the lumberers under the name of Lake Sam. It has a length of about a mile and three-quarters, with the average breadth of about one-quarter of a mile. Its longitudinal bearing is S. 30 E., and it is very nearly parallel with Trembling Lake. The strike of the strata on its banks however appears to be about S. 20 W., and a band of white quartzite about 150 feet thick, interstratified with hornblendic gneiss, was traced with this bearing for three-quarters of a mile into Lake Sam, crossing it very near the town line. A band of limestone comes upon the lake at its north-west corner; the exposures ascertained were not sufficient to determine its exact breadth, but nothing was found to contradict the supposition that it might equal that of the band of Long Lake and Great Beaver Lake. No calcareous exposures were met with on the western side of the lake, but from the relative positions of the bed of quartzite and the limestone, which were separated by about thirty chains of gneiss, it is probable that the east side of the calcareous band would strike the western bank about midway between its extremes.

The interval between the supposed west side of this Sam Lake band, and the gneiss bounding the eastern side of the Grenville limestone on the plain of the Three Mountains, is about the same as that between the Great Beaver Lake band and the Rouge, while the distance between the lakes is not much more than four miles. It would thus appear almost certain that there is a direct outcrop connection between the calcareous rocks of the two lakes, and that the band would pass by the western foot of a sharp-pointed hill, to which we gave the name of the Hay Stack, the summit of which is removed nearly a mile from the Trembling Lake limestone, where it forms the conspicuous promontory below the Lizard Rock.

Allusion has been made to a lake deriving its name from the Three Mountains, which is situated on the west side of the Rouge, and discharges into Lake Simon through another small lake. The outlet of the Lake of Three Mountains is on its north-eastern side, about midway from its extremes, which are a little over three miles apart in the bearing N. 55 W. and S. 55 E. At its north-eastern extremity it is joined by a brook, which brings it the tribute of two small lakes in the same general bearing. Into the upper one of these flow the waters of three small lakes, lying in a valley nearly transverse to the previous bearing. Looking to the westward, one of these is on the right hand and the other two on the left. The brook, which issues from the lowest and largest of these five lakes, is joined on the left bank, about half way to the Lake of Three Mountains, by a tributary which comes from the eastward of north from a long, narrow marsh. On the south-westward side of the Lake of Three Mountains, about half a mile eastward of a small bay which is opposite the outlet, the lake is joined by a brook, which issues from Green Lake. This lake is upwards of two miles in length, and the lower half runs parallel with the lake of Three Mountains, while the upper half, which extends beyond that lake, takes a turn upwards of twenty degrees more to the south. At the upper end Green Lake is joined by a tributary which empties a small lake in the same valley, about half a mile further southward.

From this small lake a calcareous belt, interstratified with two heavy bands of garnet-studded quartzite and hornblende slate, has been traced to the western end of Green Lake, occupying a considerable portion of the ground between the lower half of this lake and the lake of the Three Mountains. Farther on the belt embraces two small lakes, in the same valley as Green Lake, which partially overlap one another, the waters of one of them flowing eastward to join the discharging stream of Green Lake, and the other northward to join the lake of Three Mountains. On the Lake of Three Mountains the valley is represented by the channel which lies between the main shore, on the south-west side, and the only large island of the lake. The limestone is seen in this part of the lake, and exposures are met with a few hundred yards inland from the lake. The belt occupies nearly all the space between the north-western end of the Lake of Three Mountains and the next lake to the westward, and turns up the valley of the tributary which falls in on the left side of the connecting stream. In this valley the heaviest bed of limestone of the belt keeps in the channel of the brook, which is pretty straight, and reaches the long, narrow marsh which has been mentioned, the upward bearing of which is N. 30 E.

At the north-western head of the Lake of Three Mountains, about ten chains up the brook which falls in there, a rock occurs on the east side of the calcareous belt, composed of masses of pure white albite, several feet in diameter, and shewing large striated cleavage surfaces; inclosed in it are masses of translucent quartz, some of them a foot in diameter, and large crystals of greenish-brown and black mica. The rock may be intrusive, but it is in contact with micaceous gneiss, and there may be limestone on the east of it, as there certainly is on the west, beyond which garnet-studded gneiss is seen, the feldspar of some of which is albite. The gneiss forms a pretty thick band; limestone occurs on the west side of it; garnet-studded quartzite follows, interstratified with one or two thin calcareous beds, and hornblendic gneiss limits the whole, the breadth of the belt being about 450 yards; it will be observed that as far as traced, about eight miles, the band maintains a course parallel in a general way to the curves presented by the Grenville band, on the west side of the trough, from a position opposite the Silver Mountain to that at which its investigation ceased.

The valley in which occur the two lakes next west of the Lake of Three Mountains, lies across the measures, and displays bold hills of gneiss on each side. The three small lakes farther on, which supply these two, occupy a valley coinciding with the strike. In it another band of limestone occurs, running parallel with the previous one as far as traced, the distance however scarcely exceeding two miles. The band appears to be interstratified with one or two layers of gneiss, and the breadth including these, is about three hundred and fifty yards.

The two outside calcareous zones on the western side of the general trough, are of course considered to be equivalent to those on the eastern, and the bearing presented by the whole three bands on the opposite sides, as the investigation now stands, are such as would bring each pair of equivalents to a junction northwards, unless they become deflected by the influence of undulations. There appears to be some probability that the opposite sides of the uppermost deposit will meet somewhere in the vicinity of the Iroquois Chute, but nothing can be said in respect to the farther distribution of the inferior two without additional exploration.

Within the trough, connected with that part of the distribution of the Grenville band which runs from Sixteen-Island Lake, and passing through Balsam Lake follows its discharging stream to Round Lake, there are three small lakes that require to be noticed. One of these, called Proctor's Lake, is situated on the thirty-first lot of Montcalm, on the line between the second and third ranges. The stream discharging it is at the southern end, and it has been traced to the front of the thirty-second lot of the second range, whence it is supposed to run into Sixteen-Island Lake. Another of the lakes crosses about the middle of the twenty-sixth, twenty-seventh and twenty-eighth lots of the fourth range. A stream flows into it on the south side, on the twenty-eighth lot, and the upward bearing of the valley points towards Proctor's Lake. The outlet is at the west end, and the discharging stream flows into Little Black Lake, which is on the twenty-first and twenty-second lots of the same range, and constitutes the last of the three lakes. Its discharging stream joins a small expansion of the Balsam Lake brook, in the same range.

A band of calcareous rock, varying in thickness from ten to fifteen feet, was traced through the three lakes mentioned, from a position on the discharging stream of Proctor's Lake, about a quarter of a mile from the front of the thirty-second lot of the second range. Its course, as far as traced, bears a general parallelism with that of the neighbouring main calcareous band, from which its nearest transverse distance is between thirty and forty chains, giving a vertical thickness of about 1500 feet. The difficulty of following so small a bed through the tangled forest induced us to relinquish the search for it at the outlet of Little

Balsam Lake; but the existence of two or three lakes, further south than Proctor's Lake, in nearly the same relation with respect to Sixteen-Island Lake that Proctor's Lake bears to Balsam Lake, makes them probable positions in which to meet with it.

Though this bed overlies the main Grenville band, it is not supposed to be equivalent to that of Morin, but to be a deposit intermediate between the two, and a great way beneath the Morin rock. If this be the true sequence, it will follow that the Grenville band, with the Proctor's Lake bed above it, should be repeated between Montcalm and Morin, on the east side of an anticlinal axis that must run in a direct line east of north through Howard. There is not much doubt that the repetition of the Grenville band will be found in a northern continuation of the limestone of Lake Louisa; one traverse, however, which has been made between Montcalm and Morin, by the town line common to Howard and Wentworth, has not been successful in detecting any calcareous exposures; but several drift-covered gaps were met with sufficiently wide to permit the outcrop to pass without being observed.

From what has been said, it will be observed that in the present state of the investigation, without counting the Proctor's Lake bed, which is too small for separate consideration, there appears to be a sequence of four important bands of crystalline limestone in the Laurentian area examined. The wrinkled condition of the strata however is such that in a space of not more than fifty miles by twenty, one of the bands exhibits an outcrop exceeding 200 miles in length, and this renders it very difficult to determine with precision the volume of rock in which the four calcareous bands are enclosed; but according to the best estimate I have been able to make, it appears to me that the following would be an approximation to the thickness of the various constituent parts of the mass, arranged in ascending order:—

1. Gneiss composing the Trembling Mountain. Though the mass has not been especially examined, nor any geographical position shewing its inferior limit ascertained, yet the general aspect of the mountain induces the supposition that it must be of great thickness, and it is presumed that it will exceed the volume here given.............	5000
2. Crystalline limestone of Trembling Lake....................................	1500
3. Gneiss between the limestone of Trembling Lake and that of Great Beaver Lake..	4000
4. Crystalline limestone of Great Beaver Lake and Green Lake, including two bands of interstratified garnet-studded rock and hornblendic gneiss, which may equal half the amount....................................	2500
5. Gneiss intermediate between the limestone of Great Beaver Lake and Long Lake, and the Grenville limestone on the Rouge at the Iroquois portage, the lower part having several bands of garnet-studded gneiss and quartzite, and the upper part much coarse grained porphyroid gneiss....................................	3500
6. Crystalline limestone of Grenville, in some parts interstratified with a band of gneiss. The thickness appears to vary from about 1500 feet to 60 feet, and may be estimated at about.	750
7. Gneiss intermediate between the limestone of Grenville and that of Morin. This would include the rock of the Three Mountains, the limestone of Proctor's Lake, the quartzite of Quartz Mountain, and the gneiss which overlies it. The nearest geographical approach of the two bands that has been ascertained is about two miles, and the present estimate of their stratigraphical separation is not perhaps extravagant............	5000
8. Crystalline limestone of Morin....................................	500
	22750

DRIFT.

The more recent deposits observed on the banks of the Rouge, where they were undisturbed by fluviatile action, were clay in the lower part of the river, and sand and gravel in the higher. An undisturbed deposit of clay is seen on the left bank of the river, on the fourth range of Grenville, in a high cliff, where the clay fills up the inequalities of the round-backed gneiss rocks on which it rests. The height of the cliff was not measured, but it may be about 125 feet. The clay appears to reach from the top of the cliff to the level of the river, which is here about 280 feet above Lake St. Peter, while the smooth worn gneiss protrudes through it in different parts.

In the rear of Grenville and front of Harrington, not very far removed to the eastward of the Rouge, there spreads out a flat surface of several hundred acres in extent, which is underlaid by clay. A brook, called the Big Gulley Creek, runs through it on the twenty-sixth lot of the eleventh range of Grenville. The ravine in which it makes its way is in different parts probably from 140 to 150 feet in depth, and it shews on each side an evenly stratified argillaceous mass of a blue color, which would be an excellent material for the manufacture of common bricks. Between the western margin of this plain and the river there is interposed a low ridge of Laurentian strata, so that a comparison of levels does not immediately strike the eye; but judging from the relation of the brook and the river, it appears probable that the height of the plain would be about 500 feet over Lake St. Peter.

The Devil's River winds in a very tortuous course through a narrow drift-plain, which occupies about three miles of the lowest part of its valley. The banks of the river are from ten to twenty feet in height, and where these have been broken down by the recent erosion of the stream, they uniformly display yellow sand, sometimes deeply stained with peroxyd of iron. The height of the plain over Lake St. Peter would be about 550 feet.

The plain of the Three Mountains has been much broken up and modified by the action of the Rouge. Many facts exist to shew that the river has very frequently changed its course, and has mixed up with the debris of the original plain, material brought from a distance by the stream. Some parts however of the ancient plain still remain; these shew an elevation of about thirty feet above the ordinary summer level of the river, which would give them a height of about 585 feet over Lake St. Peter. They consist in general of sand or fine gravel at the top, with clay interstratified towards the lower part, but the sand greatly predominates. The coarser material of the drift appeared to be all derived from Laurentian rocks.

The surface of these rocks, in almost all the parts examined, presented rounded forms, and parallel grooves resulting from glacial action, were observed in several places. The following is a list of the positions and of the bearings of the grooves:—

1. On the left side of the Rouge, at a very sharp turn, about three-quarters of a mile in a straight line down the east side of the valley from the lower end of the Horse-shoe portage, and about half a mile above the position where the limestone divides into two bands between the Crescent Lake and the Hive ridge	S. 12 E.
2. On the right bank of the Rouge, a mile and a quarter up the valley in a straight line above Huckleberry Fall	S. 5 W. & S.
3. On the left bank of the Rouge at the Dog Rock, lot 31, range 1, of Desalaberry	S. 30 E.
4. On the left bank of the Rouge, lot 13, range 3, of Arundel	S. 10 W.
5. On the left bank of the Rouge, just below the Island Chute, lot 18, range 3, of Arundel	S. 20 E.
6. On the right bank of the Rouge, at the head of the Dog Rapid, lot 22, range 10, of Harrington	S. 25 W.
7. On the left bank of the Rouge, at the head of the Mountain Chute, north half of lot 17, range 4, of Harrington	S. 7 W.
8. On the left bank of the Rouge, about thirteen chains below the mouth of a brook near the town line between Harrington and Grenville	S. 15 W.
9. On the east side of Trembling Lake, half a mile below the east town line of Grandison	S. 25 E.

10. On the front of lot 8, range 6, of Grenville .... S. 10 W., S. 20 W.
11. On the road between lots 2 and 3, middle of range 6, of Grenville. S. 7 W.
12. On the road between lots 2 and 3, middle of range 5, of Grenville. S. 5 W.
13. On the middle of lot 9, range 4, of Grenville.......................... S. 13 E.
14. On a promontory, east side of Lake Louisa, about middle of lot 12, range 2, of Wentworth.. S. 20 W.

The bearing of the grooves in the first position coincides with that preserved by the valley on the side of which they occur, for a mile above and a mile below them. Between it and the second position there are three gentle turns in the valley of the river, in the upper two of which, the one south and the other east of south, no grooves were observed, while the remaining one was marked by the grooves of the second locality.

The rock prevailing at the second locality is crystalline limestone, but it is interstratified with beds and irregular masses of quartzite, and the strata are tilted up to an angle of sixty degrees. The general surfaces of the exposures have rounded forms, coming down to the margin of the river and sinking beneath the water, but the parallel grooves appear only on the upturned edges of the quartzite, which stands out boldly and sharply from the limestone, six or nine inches. No doubt when the grooves were formed, the limestone and the quartzite presented a uniformly smooth surface, but the softer and more soluble material has since been worn or dissolved away, while the other remains without apparent change. If any estimate could be made, shewing the rate at which the limestone has been destroyed, it would be a means of establishing the time at which the grooves were formed. The effect of the water of the river on the limestone might perhaps be ascertained by experiments, but it would be difficult to determine how long or how much the surface may have been protected from solution by a covering of drift before the river ran over the beds. The bearings of the grooves coincide with the course of the valley for two miles and a half, partly above and partly below the locality.

The third locality occurs where the valley of the Rouge, after having followed the bearing of the calcareous trough in which it flows from the Hive Mountain to the Huckleberry Chute, breaks through the gneiss hills bounding the limestone eastward, to assume again a bearing west of south farther on; the grooves at the third locality in some measure coincide in direction with the change in the valley, as they do farther on at the fourth locality, where the valley changes again. The valley maintains the bearing of the grooves of the fourth locality for between two and three miles, and is then deflected to the south and a little to the east of it, though not so much to the east as the bearing of the grooves at the fifth position, which would be a continuation and augmentation of the deflection. The grooves however here coincide with the strike of the limestone and the gneiss on the west of it, and it is difficult to say how deep a valley may be worn in the limestone farther on, as it becomes immediately covered up with drift.

The bearings of the grooves in the sixth and seventh localities accord in a general way with the direction of the valley. At the spot where the seventh occurs however the flow of the water is nearly at a right angle to the grooves; for at this spot the river makes a sudden turn to the west, toward a deep narrow gorge in the gneiss through which it rushes to form the Mountain Rapids; while a depression continues on to the southward in the bearing of the grooves over a limestone trough bounded on each side by bold ridges of gneiss; the ridge on the west being a continuation of the gneiss of the gorge and the Mountain Rapids. The grooves of the eighth locality are in the direction of the valley which the river attains after leaving the Mountain Rapids.

The grooves on Trembling Lake, in the ninth position, coincide with the direction of the valley of the lake and the flank of the Trembling Mountain which limits it on the east.

The tenth locality is in a valley of limestone, the bearing of which, coming from the north, coincides with that of the grooves, though the valley assumes more westing a little farther on while crossing a mass of intrusive syenite, but no grooves were observed where the change occurs. The eleventh locality is also in a valley of limestone, forming the termination of a trough, and shewing a depression out towards the Silurian plain to the southward. The bearing of the grooves agrees with that of the valley.

The twelfth and thirteenth positions are on surfaces of intrusive syenite, where the bottom of a depression gradually descends to the Silurian plain to the southward. The bearing of the depression coincides with that of the grooves.

In the fourteenth locality, that of Lake Louisa, the bearing of the grooves coincides with that of the depression containing the lake, and particularly with the direction of the east bay and the limestone valley running southward from the exit.

It would thus appear that in every one of the above instances, which are all that were observed, the grooves have such a relation to the valleys in which they occur, that the limits of the valleys appear to have guided the direction of the moving masses producing them.

The Rouge appears to bring to the Ottawa a considerable supply of sand, and it is probable that the great sand bank which occurs in the bay above the village of Grenville derives a large portion of its material from that source. In the navigable parts of the tributary great banks of sand appear above the surface of the water when the stream is at its lowest level, and these are known to be considerably modified in shape after every freshet, the sand being gradually shifted farther and farther down the valley. The sands are no doubt derived from the deposits accumulated in the upper part of the drift, and the instances met with of newly broken banks and ancient river channels afford numerous proofs of the erosive forces in operation.

The remains of ancient channels sometimes appeared in the shape of narrow crescent or horse-shoe lakes, close upon the margin of the existing stream. These are formed by the curves at the upper and lower extremities of a circular sweep in the river gradually wearing into one another and producing a shorter and therefore more sloping channel for the water. The stream flowing through this new channel leaves still water in the previous circular sweep, and the eddies formed at the extremities of this permit an accumulation of sand or silt, which ultimately closes them up and converts the part thus cut off into a lake of the form in question.

One of these was observed near the mouth of the Devil's River. The breadth clearly indicated that it was once a part of this tributary which had been cut off by a change in the channel of the main stream. Another was the Horse-Shoe Lake, giving a name to the portage in the plain of the Three Mountains. This lake, in the line of the curve, is three-quarters of a mile long, and from sixty to ninety yards wide, which is about the breadth of the present sweep in the neighbourhood. The lake shews an interference with an older channel, now filled up by a serpentining tamarack swamp of several miles in length. This also presents a breadth of about the same measure as that of the river, and in some places it lies between banks of thirty feet in height, composed of the original drift, while in others it has cut through still more ancient channels by which the original drift had been broken down. The best part of the farm of the Three Mountains appear to be a portion of the plain which has been modified by the action of the river. It consists of an area on each side of the stream of considerable breadth, on a level some fifteen feet lower than the original drift-plain by which it is bounded. Pines of large dimensions appear to have been abundant on the surface of the original drift-plain of the Three Mountains, much of which has been destroyed by fire; but, on the parts modified by fluviatile action, maple and trees of other descriptions occur indicating a better soil.

Economic Materials.

The minerals of economic value to be sought for as belonging to the Laurentian series of rocks, have been alluded to in different previous Reports. Most of these minerals are associated with the crystalline limestones of the series, and several of the localities in which some of them were met with in the more southern part of the area to which the geological description in this Report refers, were noticed in the Report of 1856. In the more northern part, the limestone itself constitutes the mineral of chief importance, more particularly in respect to its relation to the land capable of settlement which almost always accompanies it, but the localities in which it is to be met with in the area in question have already been noticed in sufficient detail in what precedes. A few more localities of Laurentian economic minerals, however, have been ascertained in some parts of the country heretofore partially examined, and the practical test of mining has been applied in others to deposits which have been mentioned in former Reports. To these, as well as to minerals connected with the area of my personal explorations, it may be proper to draw attention.

Magnetic oxyd of iron.—One of the economic minerals associated with the Laurentian limestones is magnetic oxyd of iron, but the number and sequence of these calcareous bands being still a subject of investigation, it may be for some time doubtful whether the iron ore characterises one or several of them, and how those holding the ore may be related in sequence to the rest. Of the four bands of which the sequence has been ascertained, the upper and the two lower ones have not been followed sufficiently far to give much significance to the fact that they have not afforded any indications of the ore. But the Grenville band, of which the examination has been so much more extended, cannot as yet be said to give much promise of the mineral. Indications of it however were observed by Mr. Lowe, on the south side of Gate Lake, in the twenty-sixth lot, of the sixth range of Wentworth. Here according to his description two sets of beds, about a hundred yards apart, were traced for half a mile on the strike, which was N. 20 E. The ore ran in straggling layers of an inch or so in thickness, of which several in each set continued for short and irregular distances parallel to one another, often breaking into a succession of bunches or lumps of the size of musket balls. The ore was held in gneiss interstratified in the limestone, and many spots and crystals of the oxyd of iron marked the whole of the rock. In some parts of the farther extension of this band of limestone, the ore may possibly increase in quantity sufficiently to become available.

The great difference in bulk between the articles which in the course of trade are brought down the valley of the St. Lawrence, and those returned, produces a competition for back freight, which reduces it to a minimum rate; and one of the results is a growing inquiry for various crude materials to be obtained on the route, which can with advantage be applied to useful purposes at certain distant places; but the required value of the materials is so low that they cannotbear a heavy charge for carriage. Among these materials is to be enumerated the magnetic oxyd of iron. When this ore, with a produce of between sixty and seventy per cent. of pure metal, can be laid down at the smelting establishments of Pittsburgh, and other places at a price not exceeding about five or six dollars the ton, a ready sale may be found for a considerable quantity; and a trade is in consequence gradually springing up between some of the iron-smelting localities of Pennsylvania, and shipping ports on the route which are favorably situated in respect to deposits of the mineral. The ore has been sent to Pennsylvania from Lake Champlain, but a more convenient position for export is Kingston on Lake Ontario, to which there is an easy access by the Rideau Canal, from some of the most important of the Canadian deposits. The first Canadian exports of the ore from Kingston, were the produce of the great deposit in Hull, from which since 1855, about 8000 tons have been forwarded; but during the last season about 2000 tons were mined and exported from the still more favorably situated deposit of South Crosby near Newboro, on the Rideau Canal. A stock of the ore is held constantly ready at Kingston, and the price at which it is placed on board of lake craft there, is I am informed $2¼ the ton.*

Galena.—This ore of lead is another of the minerals that are to be looked for in connection with the limestones of the Laurentian series; but as in the case of the magnetic oxyd of iron, it is not yet determined whether it specially characterises one or more of the bands. None of it was met with in the calcareous exposures in the district of the Rouge, but I have been informed by Mr. McFarlane, formerly connected with the smelting forges of St. Maurice, that several veins holding galena have recently been discovered in the township of Bedford, not very far removed from those lodes which have already been described by Mr. Murray, in the twenty-first lot and near the line between the eighteenth and nineteenth lots of the eighth range of the township.†

In the Report of 1851–2, Mr. Murray makes mention of the occurrence on the second lot of the eighth range of Lansdowne of a vein composed of galena disseminated in a gangue of heavy spar and calc spar, which had been unsuccessfully tried as a lead mine. Subsequent to his visit to the locality a lode was discovered on the third lot of the same range, from which specimens were obtained in 1855 for the Paris Exhibition. A trial shaft had been sunk on it to the

* The Newboro iron-ore bed, which has a breadth of about 200 feet and is situated in the twenty-sixth and twenty-seventh lots of the sixth range of South Crosby, on Mud Lake on the Rideau Canal, has been described in a previous Report. The trade in the ore has naturally excited a keen search for other deposits in favorable positions, and Messrs. G. Chaffey and Brothers, who mine the South Crosby ore, have informed me that this search has been rewarded by the discovery of the continuation of the ore bed across the first and second lots of the sixth range of North Crosby. They have also informed me that a deposit of ore has been met with on Black Lake in the eighth lot of the fourth range of Bedford, and another one on the sixth lot of the third range. These may be a continuation of the bed which has been described by Mr. Murray in a previous Report as existing on the twenty-first lot of the ninth range of the same township.

The ore bed of Hull was opened and mined by Messrs. Forsyth and Co., iron smelters of Pittsburgh. Their chief object in the enterprise appears to have been the supply of the ores to their own smelting works. The ore was transported from Hull through the Rideau Canal to Kingston, and stocked there ready for shipment by lake craft to Cleveland. But the Newboro bed being much nearer to Kingston, and more favorably situated for loading into canal barges, the ore from it can be placed at the shipping port at a lower cost; and Messrs. Forsyth & Co., now taking their supply from Messrs. G. Chaffey and Brothers, have ceased for the present their operations at Hull. Messrs. G. Chaffey and Brothers, I understand have this season exported about 4000 tons of the Newboro ore, making with last year's export 6000 tons, and from the deposit and that of Hull, I am informed that there have been shipped from Kingston, up to the present time (December 1859,) about 15,000 tons.

† Mr. Weston Hunt of Quebec, who is the proprietor of the lodes described by Mr. Murray, and I believe of the newly discovered lodes, has favored me with specimens from the latter. He informs me that the reappear to be five new lodes, running nearly parallel to one another in a bearing approaching N.W. and S.E. and all comprehended in a breadth of a little over a quarter of a mile. According to his information they are upon the nineteenth lot of the seventh range of the township, and would be less than the length of a lot to the westward of the lodes in the same numbered lot mentioned by Mr. Murray. One of the masses presented to me by Mr. Hunt, weighs twenty-eight pounds, and shews a breadth across the vein of five inches of pure galena, which is associated with sulphate of barytes or heavy spar and calc spar.

depth it was said of fifty feet, and a sufficient quantity of ore obtained to pay the expense of sinking. The specimens procured by me, and the mass of ore exhibited to me, shewed a thickness of between two and three inches of pure galena associated with calc-spar. I was informed that other lodes existed in the neighbourhood, but their position was kept secret. The two which had been tested are parallel to one another, with a bearing approaching to N.W. and S.E.

The bearings given by Mr. Murray to the three lodes examined by him in Bedford are N. 15 W., N. 32 W., and N. 85 W., the last being the course of the lode traced and tested farthest. The distance between the Bedford and Lansdowne lodes is not much over twenty miles, and considering the differences that may be allowed for the gentle windings which usually exist in the courses of metalliferous veins, it appears not at all improbable that the lodes of the two localities may be identical, or belong to one group, the bearing of the two positions being about N. 68 W. and S. 68 E. of one another. If a line from the Bedford to the Lansdowne lodes were continued twenty-five miles farther it would cross the St. Lawrence and strike Rossie in Lawrence County, New York, where a group of well known veins of lead ore exists, some of which, though just now abandoned, are not supposed to be exhausted, and two of which are known at one period to have yielded a great quantity of ore.

The rock cut by the lodes at Rossie is of the Laurentian series, but a line between Rossie and Lansdowne would intersect the outcrop of the Potsdam sandstone which lies between Rossie and the St. Lawrence. It has been ascertained that a vein of lead ore cuts through this sandstone at Redwood, which would not be far from the position of the line to Lansdowne. It is thus not improbable that there is a group of lead lodes running from Rossie to Bedford, and this metalliferous line appears well worthy the attention of explorers in search of lead ores. The dislocations in which the lodes exist are of course thus proved to be of a more recent age than the Potsdam sandstone, but this by no means establishes that the older rock may not be the source of the metal.

In 1853 Mr. Richardson ascertained the existence of a vein of galena on the third lot of the sixth range of Ramsay belonging to Mr. J. McLean; an analysis of the ore was reported by the chemist of the Survey, and specimens of it were shewn in Montreal as part of the contribution intended for the Paris Exhibition in 1855. The subsequent exhibition of specimens from the same locality in the Museum of the Survey has led to a practical trial of the vein during the last summer. A shaft of five fathoms in depth has been sunk on the lode, and about seventy-five fathoms in the plane of it having been excavated, they have yielded about twenty-six tons of galena containing eighty per cent. of pure lead. The bearing of the lode is from N. 45 W. to N. 50 W., its underlie being to the north-east. The breadth varies from two and a-half to five feet, and the ore-bearing part from eight inches to occasionally two feet. Judging by the eye, the produce of the lode in galena of eighty per cent. may vary from nearly dead ground in some places to as much as nearly two tons to the fathom in others. The rock which the vein intersects is an arenaceous limestone, the fossils of which prove it to belong to that division of the Lower Silurian series which is known as the Calciferous sandrock. In the bearing of the lode the base of this formation crops out about a mile from the shaft, and it is succeeded by the Potsdam sandstone, which prevails for three quarters of a mile farther, beyond which the gneiss and limestone of the Laurentian series present themselves.*

* Founding his opinion on lithological characters and stratigraphical sequence Professor Hall is I believe disposed to regard the lead-bearing rock of Missouri as of the age of the Calciferous formation, but the want of fossils in the Missouri rock must of course render the identification somewhat uncertain. The Ramsay rock is undoubtedly the Calciferous, but whether the Missouri be so or not, the masses of

Sulphurets of Copper.—In the Report of 1851–2 the pyritous sulphuret of copper was mentioned by Mr. Murray as occurring in the Laurentian series in small quantity in a vein of calc spar, on which an unsuccessful trial shaft was sunk on the twenty-fourth lot of the tenth range of Bastard. He alludes also to its occurrence in loose masses of several pounds weight on Gananoque Lake in the same neighbourhood. One of the masses brought to the Museum weighs between seven and eight pounds. It is of great purity and contains upwards of thirty per cent. of copper. No rock is attached to it, and the only foreign substance associated with it is hydrated peroxyd of iron in leaves as thin as paper, which run in what appear to be natural joints, while the masses are quite free from green carbonate. The source of the masses was not discovered.

In the same Report Mr. Murray mentions the occurrence of specks of copper pyrites as characterising a six-inch bed of magnetic oxyd of iron interstratified in gneiss on the seventh lot of the second range of Escott, the property of Mr. W. Way. Subsequent to Mr. Murray's visit a cutting having been made for the convenience of the Grand Trunk Railroad at the spot, the bed became more exposed. The sub-contractors engaged in the excavation collected the iron ore as they proceeded in their work, with the view of selling it, but threw aside considerable masses of another mineral which they conceived to be iron pyrites. On presenting some of the specimens however to the Museum of the Survey in 1857, they were made aware that the rejected mineral was copper pyrites. The masses obtained so strongly resemble those from Lake Gananoque that it appears probable the two come from similarly characterised deposits. In the Escott bed six or eight inches in thickness were nearly pure copper pyrites, in which thin leaves of hydrated peroxyd of iron ran in cracks or joints, while green carbonate was absent. In some parts calc spar was present in short thin veins and small specks, and iron pyrites was disseminated in others, increasing in quantity as it approached the north-west side, into which the copper ore appeared occasionally to run in small strings for short distances. The magnetic oxyd of iron occupied about six inches of what was considered the under part of the bed, while the greatest width of the cupriferous portion was about ten inches. This por. on

galena which occur in it as well as those of Wisconsin, the rock of which from fossil evidence is considered to be of the Hudson River formation, are not the same in their mode of occurrence as those of Ramsay. The Wisconsin and Missouri masses, though considerable, never run deep. As described by Mr. Whitney, they do not occur in true veins, but fill up fissures, druses or vertical and horizontal caverns, which do not owe their existence to dislocations, and are confined in vertical range to a certain set of strata of no very great thickness. The Ramsay ore on the contrary occurs in a true vein, filling a crack connected with a dislocation, and on a late visit to the mine, I had an opportunity of observing a clear evidence of this in one of the walls of the lode, (both of which are well defined,) in the parallel grooves occasioned by the grinding of the terminal edges of the strata on the opposite sides of the crack when the displacement happened. Whatever quantity of ore the lode may carry with it there is little doubt of its great depth, a depth to which indeed no certain limit can be placed. In addition to the Calciferous sandrock the lode will intersect the Potsdam sandstone and the Laurentian series beneath, and in this respect resemble the Rossie lodes. Little hesitation can be felt in pronouncing it to be a lode of the same age as these, and the interesting fact is now for the first time shewn that not only these lodes, but probably all the yet known lead veins of the Laurentian rocks, are newer than at least the Calciferous formation, and possibly than some of the formations above it, thus extending considerably the area in which such veins may be looked for.

There appear to be indications of other lodes with nearly the same bearing as the one opened at Ramsay, not far removed from it, and it may belong to a group, which running parallel with the Bedford and Rossie group, would be about forty miles distant from it to the north-east.—Additional excavations have been made on the Ramsay lode during the last summer (1859) and the company who have mined it have erected a smelting furnace and reduced a large portion of the ore obtained. A ten horse-power engine is used to give blast to the furnace and pump the water from the mine. The shaft has been sunk to the depth of seven and a-half fathoms, but a considerable spring of water having been struck, it will require a much more powerful engine to make an effectual trial on the lode, of which it appears to me well worthy.

appeared to be of a lenticular form, extending not much more than twelve feet continuously in the run of the bed. I understand that between eighteen and twenty tons of the copper ore were obtained, but after this bunch became exhausted I believe no excavation was made through the dead ground in search of a farther quantity. On testing the iron pyrites, Mr. Hunt has detected in it traces of cobalt, and as cobalt and nickel very generally accompany one another, the latter may very reasonably be expected in this deposit.

By British practical miners, copper ore when occurring in beds seems generally to be considered less certain than when found in well defined lodes. Yet it is in the stratification that the ore is obtained in the copper slates of Germany, which have been profitably worked for a great length of time; and the copper deposit of Fahlun in Sweden, which has been mined for hundreds of years, is supposed to be subordinate to the strata. The prodigious mounds of copper slag accumulated by the Romans at Rio Tinto in Andalusia in Spain, from the smelting of the ore of that neighbourhood, show that its mines must have been productive for many centuries, and I believe they still continue to yield a profitable result; the copper ores there, are disseminated in a thick bed of iron pyrites. Interstratified deposits have yielded the copper ores which have for many years been shipped in such abundance from Cuba to Swansea; and from Sir Roderick Murchison's description of the copper mines of the Ural Mountains, it is evident that the ores there occur in deposits of a similar character.

In the Reports of the explorations made by the Survey on the south side of the St. Lawrence in 1847 and 1849 it was stated that indications of the pyritous and variegated sulphurets of copper were observed in many localities, usually in the vicinity of certain bands of dolomite, serpentine, soapstone and other magnesian rocks, which in various forms characterise a group of strata lying at the top of the Hudson River formation, and intermediate between what have occasionally been called the Richelieu shales, and the Sillery sandstones. They are equivalent to the rocks of Quebec and Point Levi, and affected by undulations, range through the country between Cape Rosier and Lake Champlain in a very irregular manner, being distributed in long narrow synclinal forms, which carry their outcrops in stretches backward and forward in a general north-east and south-west direction, bending however in some parts towards north and south, and in others towards east and west. Proceeding from the St. Lawrence in a south-east direction the formation is thus found to be repeated a great many times in a transverse distance, which opposite to Quebec would equal nearly fifty miles, whilst at each repetition, the strata, which on the north-east are of a sedimentary nature and show characteristic fossils, become more and more crystalline, and ultimately lose all traces of their organic contents.

When the indications of copper ore in these rocks could be traced continuously to any distance, they in every instance that came under my observation, preserved a direction coinciding with the stratification. In three instances the quantity of ore appeared sufficient to justify the recommendation of crop trials, one being in Upton, another in Ascott, and a third in Inverness. In the first, which occurred on the fifty-first lot of the twenty-first range of the township mentioned, the copper ore, consisting of pure pyrites, was in a mass of greyish-white, and reddish-grey, compact, sub-crystalline, yellowish-weathering limestone, which it intersected in reticulating veins of from one quarter of an inch to an inch in thickness, always inclosed between walls of highly crystalline calc spar, associated occasionally with a little quartz. These reticulating veins constituted bunches, and several of these bunches could be traced in succession in the strike of the limestone. These reticulating veins of copper pyrites did not differ essentially in their arrangement from the thin veins of quartz, which very frequently, and thin veins of titaniferous, specular and magnetic iron ores which less often have been found intersecting the magnesian limestones of this formation in various places, and I presume must be regarded as veins of segregation, filling up fissures which do not pass beyond the limits of the limestone.

A bed of breccia or conglomerate, of which both the fragments and the matrix are calcareous, appears to overlie the greyish-white limestone, and like it is marked by copper pyrites. A reddish-grey limestone quarried in the neighbourhood is supposed to underlie the greyish-white rock, though not seen in contact with it. This towards the top was interstratified with yellowish-white beds, and towards the bottom with red shale; no copper ore was observed in the reddish-grey limestone. The breadth across the whole of the beds may be about a quarter of a mile. The general dip is toward the south-east, and the inclination varies from ten to twenty-seven degrees, but the data are not sufficiently clear to establish the total thickness.

In one of the Reports in question it was indicated that this band of limestone appeared to hold a course from its position in Upton, through the northern portion of Acton, into Wickham, where on the twenty-sixth lot of the last range of the township, it was again marked by the occurrence of copper ore. The bearing of the band in this course would approach to north-east, and about ten miles south-eastward from it another range of calcareous exposures exists in a nearly parallel course, one of the exposures occurring on the thirty-eighth lot of the seventh range of Acton, and another on the eighteenth lot of the ninth range of Wickham, where additional indications of copper ore exist. A third north-eastward run of the same description of limestone extends from the thirty-second lot of the third range of Acton to the fourteenth lot of the tenth range of Wickham, and on both these lots the rock is again marked by copper ore, as well as on the thirty-second lot of the fifth range of Acton, which is intermediate between the other two positions. All these calcareous ranges it was there explained, most probably belong to one and the same band, the first and third being on the opposite sides of a trough-like form which stretches from the neighbourhood of the St. Francis River to Farnham, while the second is due to an anticlinal axis which divides this general trough into two subordinate synclinal parts. Other synclinals present themselves further to the south-eastward, a general description of which was given in the Reports.

The existence of the copper ore on the thirty-second lot of the third range of Acton was I believe, discovered by Mr. H. P. Merrill, and at the request of Mr. Cushing, the proprietor of the land, Mr. Hunt visited the locality in August last. As then seen, before any excavation had been made, the surface presented an accumulation of blocks of copper ore, evidently in place, and covering an area of about sixteen paces in length by ten paces in width. These masses consisted of variegated sulphuret of copper, intermingled with limestone and a silicious matter, without any thing like vein-stone, and evidently constituted a bed subordinate to the limestone, whose strike was about N. E., with a dip to the north-west at an angle of about forty degrees. In continuation of this bed for about seventy paces in either direction, the limestone was observed to hold little patches and seams of variegated ore and yellow pyrites, with stains of the blue and green carbonates of copper. The limestones in the immediate vicinity presented several veins of quartz crossing the strike, but containing only traces of copper.

During Mr. Hunt's visit, a small amount of excavation was made with pick and shovel, and a farther extent of work has been done since, but though this has not added materially to the information at first obtained, there can be no doubt, even should the limits of the deposit extend no farther than those above indicated, that there is here an unusually rich bunch of copper ore*.

In the other two instances in which crop trials were recommended the gangue was opaque white quartz from one to two feet in thickness, in which was disseminated the pyritous sulphuret in Ascott and the variegated sulphuret in Inverness. The rock in both cases was described as chloritic and talcose slate.

Subsequent explorations in the townships of Inverness and Leeds by different individuals have led to the disclosure of a considerable number of localities marked by cupriferous indications; several of them have been tested in various degrees by the Megantic Mining Company and others, by shafts and excavations of moderate depths, and at the present time an efficient trial is in progress at Harvey's Hill in Leeds, by the English and Canadian MiningCompany,

* During the present year (1859,) Mr. Cushing has made an arrangement for the working of the copper ore on his property, and under it Mr. Louis Sleeper of Quebec, (who has heretofore been engaged in mineral explorations in the county of Megantic, and in testing for different mining companies by trial-shafts and other excavations, various quartz courses marked by copper ore in the townships of Inverness and Leeds,) commenced mining the Acton copper ore on the 23rd of September last. After several weeks had been spent in the excavations, I had an opportunity of visiting the mine and of spending several days in the examination of the facts observable in the natural exposures of rock in the neighbourhood, as well as those brought to light by the excavations.

The mine is just half a mile to the south of the Acton station of the Grand Trunk Railway. The road to it is over a marshy piece of ground, and it is crossed by one or two low mounds of yellow sand. At the end of the road, a hill rises to the height of about 105 feet above the marsh, and descends to a marsh on the other side. It stands on a base of a quarter of a mile in width, and for nearly one half the distance is composed of a sub-crystalline magnesian limestone dipping to the N.W. with an inclination varying from thirty to forty degrees. The limestone is light grey in fresh fractures, and weathers to a dull pale yellowish tint on the exterior. It is in some parts studded with concretionary nodules consisting of concentric layers of carbonate of lime with a transverse fibrous structure. The exterior of these is of a botryoidal form, and the layers are in some places partially replaced by chert preserving the fibrous structure. These nodules very much resemble corals, but they also resemble some concretionary forms of travertine, and the occasional intercalation of magnesian layers in the nodules makes it probable they are the latter. As stated by Mr. Hunt the limestone of the hill is intersected by several small veins of quartz, and one of them, more conspicuous than the rest, carries traces of the yellow sulphuret of copper and of galena. The mass of limestone visible, extending a short distance beyond the summit of the hill, has a thickness of about 270 feet. It is divided into heavy beds, in which irregular masses of chert are disseminated in unequal quantities in different places, being most abundant towards the bottom.

The summit of the limestone from the north-eastern corner of the lot proceeds south-westward for about thirty chains, and in the succeeding 300 yards turns gradually south and ultimately a little to the east of south, before becoming concealed. In the other direction, after running some distance, it sinks beneath a marsh on the thirty-first lot of the third range, and again makes its appearance on the rail road, which it crosses about three-quarters of a mile to the east of the Acton station, meeting and crossing the Black River about 220 yards north of it.

The rock underlying the limestone is concealed, but that which immediately overlies it at the mine, appears from partial exposures to be a lavender-grey shale or slate with a cleavage independent of the bedding. In this slate there appear to be irregularly distributed large masses of a harder rock, which is internally of a light olive-green, uniformly and finely speckled with darker green spots, looking like serpentine, many of which are surrounded with a bluish-grey film. The rock under atmospheric influences becomes light yellowish-brown on the surface, and in its weathering strongly resembles some of the serpentines of the Eastern Townships. Some of the masses measure fifty yards in length by twenty in breadth, and on the north side of the rail road there is one of twice those dimensions, apparently sunk into the top of the limestone. Thin layers of the rock occasionally appear to be interstratified evenly among the slates. In thick masses spots of calc spar are sometimes disseminated, giving the rock a cellular and somewhat trappean aspect, but there is no evidence that it is intrusive, and it occasionally assumes the character of a sandstone with small quartz pebbles running in the direction of the beds. In the speckled part of the rock very thin partitions of the same color and hardness as the darker green spots run in several directions. These partitions on analysis prove to be a ferruginous chlorite, and the whole rock may be described as a hydrous silicate of alumina with much iron and magnesia.

These slates and harder masses have a thickness of about eighty-five feet. They are succeeded by isolated masses of limestone of various sizes and somewhat rounded or lenticular forms, some of them attaining magnitudes of thirty yards in length by twenty in breadth, and even eighty yards in length by ten in breadth. As seen on the surface they present a succession of protruding lumps, which run in a line parallel with the summit of the limestone, turning with it to the southward at the south-western part of the exposures. These calcareous masses consist of grey limestone made up of irregular and who are pushing their work with considerable vigor, under the management of Mr. Herbert Williams. At Harvey's Hill, there occur on the seventeenth lot of the fifteenth range of the township nine courses composed chiefly of quartz with various proportions of bitter spar, chlorite and calc spar, and all holding in greater or less quantities the pyritous, variegated or vitreous sulphurets of copper. The width of these courses varies from a few inches up to seven feet in the thickest part of some of them. In the trials on the surface, some of them after yielding quantities of copper ore that seemed encouraging, have gradually thinned both horizontally and vertically, and disappeared. To prove their character more thoroughly in a downward direction an adit is now being driven on the north side of the hill at a level which is thirty-seven fathoms below the summit. This will intersect

apparently broken beds and rounded forms, and hold irregular and ragged pieces of chert in more or less abundance, with strings and spots of calc spar. The serpentine-like rock sometimes appears to surround these calcareous masses.

The copper ore appears to occupy a position immediately near the isolated masses of limestone, and very little of it to penetrate into the serpentine-like rock or the slate. Indications of it occur on both sides of the calcareous masses and in some places can be traced as if surrounding them; but the chief part appears to be beneath them and intermediate between them and the slates and serpentine-like rock. The ore consists of the pyritous, variegated and vitreous sulphurets of copper, the second species being the most abundant and the third more abundant than the first. The green carbonate also occurs, but it must be regarded as a secondary product formed at the surface and in cracks. The chief excavation has been made in a cross-cut running S. 45 E., which is at right angles to the strike. The depth excavated is from four to eight feet, and the following is the succession of masses met with in the cross-cut, given in a descending order and reduced to vertical thickness from horizontal measurement.

	Feet.
1. Limestone; this may be a boulder deeply sunk in the soil, but it is supposed to be in place and to belong to one of the isolated masses of the stratification	3
Concealed	3
Limestone in place, belonging to one of the isolated masses; small irregular spots of the pyritous sulphuret of copper occur in the rock; this is probably part of the same mass as the first three feet, and the concealed three feet would also be a part, making the whole 8 feet	2
2. Variegated sulphuret of copper enclosing numerous angular fragments of limestone in irregular aggregations; this mass dipped with the stratification, but thinned out and terminated downwards	2
3. Limestone broken into various sized angular fragments by a number of reticulating cracks of from one quarter of an inch to three inches in width, and filled with variegated sulphuret of copper, with spots of white crystalline calc spar and occasional crystals of transparent quartz	15
4. Breccia or conglomerate with a paste composed of variegated and vitreous sulphurets of copper mingled with fine grained silicious matter, enclosing fragments of limestone, some angular and some rounded; some of them almost wholly calcareous and others largely silicious. The sulphurets of copper run in parallel clouded streaks, the clouded character being occasioned by the presence of more or less silicious matter mingled with the steel-grey and the purple of the two sulphurets	4
5. Limestone	2
6. Copper breccia or conglomerate of the same characters as before	4
7. Limestone	3
8. Slate with traces of copper (green carbonate on the surface)	12
9. Serpentine-like rock	14
10. Slate with traces of copper (green carbonate on the surface)	4
11. Concealed to the limestone	25
	93 ft.

The thickness of fifteen feet given to the brecciated limestone of No. 3 is deduced from a horizontal measurement of ten yards across the strike and a supposed slope of thirty degrees, which is about the dip of the bed and of the strata where it can be made out in the vicinity. But no clear indication of bedding is visible in the body of the breccia, and as the excavation across it is yet only two feet deept it may hereafter be proved that by some irregularity the slope is less than thirty degrees; in tha, case the thickness would have to be reduced in proportion to the diminution of the slope. If the slope should be eighteen degrees the thickness will be ten feet.

The two breccia or conglomerate beds numbered 4 and 6 contain the great body of the copper ore. On the strike these beds are exposed for about eight yards to the south-west. There is then nearly the whole of the courses, and until it is completed it would be premature to pronounce any positive opinion upon the success of the enterprise.

The rock of the hill is such as has usually been called talcose slate; but though unctuous to the touch, analyses by Mr. Hunt of slates of a similar character in other parts in the vicinity of Harvey's Hill, have shewn that instead of magnesian they are aluminous, and that they should rather be designated micaceous, or as he has called them from their lustre nacreous slates. They are in general whitish or light grey, and are often thickly studded with chloritoid. These slates are interstratified with bands of a darker color, more resembling clay slates, and the darker appears to prevail over the lighter color at the mouth of the adit. The dip of the strata appears to be from N. 10 W. to N. 65 W. with an average slope of between fifteen and nineteen degrees. The bearings of eight of the quartz courses are from N. 15 E. to N. 35 E. while one of them runs N. 75 W. They all underlie to the westward at angles varying from fifty to nearly ninety degrees, and it would thus appear that none of them coincide with the strata either in dip or strike.*

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an interruption by the presence of a wall of the serpentine-like rock, which crosses the strike in the shape of a slender wedge coming to a point north-westwardly and gradually spreading out into the strata in an opposite direction. A farther quantity of copper conglomerate, however, exists on the opposite side of this wedge-shaped wall. The condition of the rock to the north-east of the cross-cut has not yet been sufficiently ascertained to give any description of it except from an excavation at the distance of about forty-five yards. Here a mass of ore has been mined for about two fathoms on the strike, commencing with a breadth of nine feet, and irregularly diminishing to the north-westward. Beyond the excavation it appears to diminish farther and probably thins out. On the north-west side this mass was limited by limestone belonging to the line of isolated masses, and on the south-east by a mass of the serpentine-like rock, the face of which stands in a nearly vertical attitude.

In costeening pits, which have been carried across the strike of the upper part of the ore, at distances of about eighty yards on one side of the cross-cut and 110 yards on the other, indications of ore continue to exist in the stains of green carbonate and small masses of the sulphurets, but the work done is not sufficient to give facts that bear upon the mode in which the ore is connected with the rock.

In so far as the facts ascertained by the present condition of the excavations enable an opinion to be formed, it appears to me probable that the copper ore mingled with silicious matter constitutes the paste of a breccia or conglomerate, the fragments of which have been accumulated in a depression in the surface of the argillaceous and silico-magnesian sediments forming the slates and their associated harder masses, while the sulphurets of copper have been deposited from springs bringing the metal in solution from some more ancient formation. The whole conditions of the case appears to bear a striking resemblance to those of the copper deposits of the Urals as described by Sir Roderick Murchison, except that in Russia the ores are carbonates instead of sulphurets.

However this may be, there is no doubt the mass of ore is a very important one; already, after but nine weeks work, not far from 300 tons have been housed, supposed to contain about thirty per cent. of pure metal. The value of this quantity would be about $45,000, while exclusive of lordship, the mining expenses, and those necessary to carry the ore to a market, will be comparatively small. The quantity of ore excavated appears to have produced but a moderate impression on the total mass in sight.

Whether such another bunch of copper ore will be met with associated with the limestones it is impossible to say; but even should one exist, it would perhaps be too much to expect that it would be found immediately at the surface.

Many of the facts connected with the mode in which the copper ore of the conglomerate is related to the fragments, were ascertained by slitting a slab of the rock by means of a lapidary's wheel and polishing the surface. The same test has been applied to a block of the Upton conglomerate, and it is found that there is some analogy in the two cases, except that the Upton ore is altogether pyritous sulphuret, and much more thinly distributed among the fragments. While large blocks of the Acton conglomerate give thirty per cent and upwards of pure metal, the best blocks obtained by me from the conglomerate of Upton do not yield more than five per cent. But this if the quantity of rock with such a percentage were large and the masses not too widely scattered, would constitute a valuable mine. It would, however, require a careful crop trial to determine whether the quantity is available.

* On a recent visit to the Harvey's Hill mine, I was informed by Mr. Williams that after sinking on the incline N. 80 E. $<75^{\circ}$, on Fremont's lode near the top of the hill for forty-five feet, the underlie changed to S. 80 W. $<75^{\circ}$ and the shaft being then sunk vertically for seventy-five feet more, a bed of three inches, holding disseminated copper ore, was met with at the depth of twenty-five feet, and

Mica.—In the area of my personal explorations, no addition were made to the three localities shewing economic quantities of this mineral, mentioned in the Report of 1856, and allusion is made to the mineral on the present occasion for the purpose of stating that the exhibition of Canadian mica at Paris in 1855, has induced nquiries in regard to it, on the part of Mr. E. Goddier, No. 34, Rue du Faubourg St. Martin, Paris, who has informed me by letter, that for the purpose of several applications of mica, for which he holds patents, he could use about

another of six inches of the same character fifteen feet farther down, the latter constituting the top of a six-feet bed of soapstone. In this an opening was made for thirty feet each way in the slope of the bed, which met Fremont's lode in the rise, and continued beyond it. At the bottom of the incline a level was driven in the bed for nearly thirty-two feet. The copper ore was continuous the whole of the distances, and may be said to have thus been proved over an area of nearly 2000 square feet in the plane of the bed.

The shaft being full of water at the time of my visit, I had not an opportunity of inspecting the work; but descending another shaft at a distance of about ten chains from the last, in a direction which is nearly in the dip of the strata, I examined what there is little doubt must be another bed. This occurs at a depth of ninety feet from the surface, and allowing for the fall in the surface between the two shafts, its position would be very nearly twenty fathoms above the upper bed in Fremont's shaft. An opening has been made in the bed of about seventy feet in length by twelve feet in width, partially on the strike, but gradually turning up to the full rise of the strata. In this opening the thickness of the bed, as measured by myself, varies from nineteen to thirty inches. The rock is a nacreous slate, and the copper ore is distributed in the bed in patches generally of a lenticular form; they are usually thin, but sometimes attain from one half to three quarters of an inch in the thickest part, and occasionally present in the section, lines of six inches or even a foot in length. These patches interlock, one overlapping another, with variable distances between, while many single crystals and small spots of ore are disseminated throughout the whole thickness. In some parts the pyritous, and in others the variegated sulphuret prevails, and the quantity of metallic copper in the mass may range from about three to about five per cent. producing an average of about four per cent. The estimate however has been made by the eye and not by assays. Supposing the bed to average two feet in thickness, a cubic foot to weigh 180 pounds, the produce to be five per cent. and one fifth of the copper to be lost in dressing the ore up to twenty per cent., then each square fathom of the bed would yield 1.10 tons of dressed ore of the above produce, the value of which in Swansea would be about $110. If the produce were four per cent the value of a fathom would be $88; if three per cent $66. It is only by an experiment on a large quantity of ore in the way of dressing that the true produce of the bed can be determined.

The mode in which the copper ore is distributed in the nacreous slates of Leeds, precisely resembles that in which it occurs in the bituminous slates of Germany, and it is only the circumstance that the facts known in connection with the Canadian deposits are yet too few to give entire confidence in the persistence of similar conditions over a great area, which should moderate the expectation of an important result. As the copper in the beds is probably contemporaneous with them, it would of course be antecedent to that associated with the courses of quartz, the fissures holding which, it is unnecessary to state must have been formed subsequent to the strata in which they occur. The copper in the courses was probably derived from that in the beds, and though the former, not only in Leeds, but in other parts may in many cases prove to be economically unavailable, it may yet be serviceable as an index to the position of available beds, and materially aid in their discovery. The copper-bearing quartz courses, from contrast of color, are much more conspicuous than the copper-bearing beds, and though the latter from the undulations in the strata, might be brought to the surface in many places, they would not readily attract the eye, unless from marks connected with the strata more prominent than the copper ore itself, which at the surface will often have disappeared from the influence of weather. At Harvey's Hill the soapstone underlying the lower cupriferous bed, might prove a serviceable mark by which to trace the copper ore on the surface. The soapstone, known to crop out at a certain distance beyond Fremont's shaft, though its accompanying ore has not been there remarked, could in all probability be followed for a considerable distance on the strike, with very little difficulty. Should the cupriferous character of the upper part prove continuous, which appears to me very likely, the existence of a valuable copper ore deposit might thus be established as probable at a very small expense. Cupriferous beds would of course be subject to the accidents of dislocation affecting the strata in which they are enclosed. One of these appears to affect the Harvey Hill bed where the lower shaft intersects it. At this spot, the copper ore suddenly ceases, and a mass of quartz presents itself, cutting a part of the stratification in a nearly vertical direction, while a little to the eastward, the inclination of the copper-bearing bed suddenly increases from nineteen to thirty-nine degrees. These circumstances combined appear to me to indicate a dislocation with a down-throw to the northward.

The discovery of copper ore, subordinate to the stratification of the magnesian group in Upton, Acton and Leeds, of which the last two instances, and perhaps the first, afford quantities economically available, invest the traces so widely spread in connection with this group in Eastern Canada, with more importance than they previously possessed. These traces are not confined to the more crystalline

12,000 pounds annually. He could afford to pay the following prices for it according to size.*

From 10 centimeters	to 15 centimeters,	3.75	francs	per kilogram.
15 "	to 20 "	4.50	"	"
20 "		5.25	"	"
25 "		6.00	"	"

Phosphate of lime.—This mineral was met with in small crystals disseminated in the limestone in several places in the district of the Rouge, but no where in sufficient abundance to be of economic avail. Mr. J. McMullan in explorations connected with the Laurentian limestones on the south side of the Ottawa, met with larger crystals disseminated in greater abundance and associated with purple fluor spar in the limestone of Ross, on the seventh lot of the first range.†

Rensselaerite.—The application of this mineral as a refractory material and as serving other purposes was mentioned in the Report of 1856. No instances of i were met with on the Rouge, but Mr. R. Oatey of the Ramsay lead mine, has presented to the Museum specimens of it from the Laurentian limestones in the neighbourhood of that mine.‡

Shell marl.—Fresh-water shell marl was met with in the bottom of Long or Eagle Nest lake, on the twenty-second lot of the eighth range of Wentworth, and in a pond on the fifth lot of the fourth range of Harrington. The quantity in both cases was considerable.

Peat.—A swamp underlaid with peat was met with toward the front of the first and second lots of the fifth range of Harrington. It has an area of about sixty acres, and the depth of some parts having been tried was found to be twenty-five feet.

Marble.—On the eighteenth lot of the first range of Wentworth, exposures of white limestone were met with, a somewhat coarse-grained variety of which was spotted with green serpentine, in a manner similar to the marble which has been described in a former Report as obtained on the sixteenth lot of the third range of Grenville. The green spots however seemed to be more uniformly small than those of the Grenville rock, and produced a more pleasing effect.

Mr. Lowe has brought me specimens of a limestone from the twelfth and

and altered parts of the deposit, but extend to the portion which is so far unchanged as to be marked by characteristic fossils, and the ores being found to occur mingled with the original sedimentary matter of the beds, there is no geological reason why such traces may not lead to the discovery of economical quantities of the ore at Quebec and Point Levi, as well as in other parts. There are dolomites however in a lower part of Silurian series than this group, and both these dolomitic groups are found to exist below Quebec on the St. Lawrence, the one on the north side at Mingan, and the other on the south side all the way to Cape Rosier, and in various islands near both sides; and the fossils being the only sure guide by which the one group can be distinguished from the other, the study of these becomes an important part of the investigation.

In the Appendix is given a list of all the positions known to me, in which traces of copper have been met with in what we have sometimes termed the Quebec formation. Though most of these may lead to no available deposits, they will yet serve to shew the wide distribution of the metal.

* The centimeter is in round numbers, very nearly four-tenths of an inch, and the kilogram about two and one-fifth pounds avoirdupois; the franc is about nineteen cents.

† My friend Dr. J. Wilson, of Perth, has informed me, that crystals of the phosphate have been found in great abundance on the twenty-fifth lot of the eighth range of North Elmsley, the property of Mr. George Oliver.

‡ In examining the Laurentian rocks in the neighbourhood of the Ramsay mine, I found a band of Rensselaerite from which the specimens above mentioned were obtained, on the eighth lot of the sixth range of Ramsay. It is on the east side of the lot, toward the front, and runs in a general way with the length of the lot; it appears to be between a bed of quartz on the one hand, and crystalline limestone on the other, and considerable masses might be obtained from it.

thirteenth lots of the Ste. Marguerite range of Mille Isles, in which spots and streaks of a red color are mingled with spots of green; a few thin patches of chert are present in one of the specimens. If sufficiently large blocks can be obtained free from the chert, it is probable they would yield a handsome variegated marble.

GEOLOGICAL MAP AND GENERAL REPORT.

The number of township, seigniory and railroad plans which it has been found necessary to copy and reduce in order to represent with truth the topographical features of the country as far as they have been surveyed, and the unavoidable interruptions resulting from periodically recurring new field-work presented to the draughtsman for delineation, have delayed the completion of the geological map which is in progress, much longer than was anticipated. This, however, will afford the opportunity of placing on the face of it a much more correct and connected view of the relations of the Lower Silurian series of rocks in the eastern part of the province than would otherwise have been possible. The delay has also enabled the palæontologist of the Survey to make a more extensive examination of the great accumulation of organic remains which have been collected. In the course of this examination he has published in the Reports and Decades of the Survey, and in the scientific journals of the province, descriptions of upwards of 200 new species peculiarly marking the Canadian rocks, and descriptions of half as many more will shortly appear. With the present knowledge of our materials in this branch of the subject it appears as if it would scarcely have been judicious to publish before this a Report giving a condensed view of our results, in which our own discoveries in palæontology would have necessarily been left out, and in which the student in Canadian geology, in so far as this branch is concerned, would have been made to depend upon what had been done everywhere else but in Canada.

I have the honor to be
Your Excellency's
Most obedient servant,

W. E. LOGAN.

REPORT

FOR THE YEAR 1858,

OF

ALEX. MURRAY, Esq., ASSIST. PROVINCIAL GEOLOGIST,

ADDRESSED TO

SIR WILLIAM E. LOGAN, F.R.S., F.G.S.

PROVINCIAL GEOLOGIST.

MONTREAL, 1st *March*, 1859.

SIR

In continuance of the investigation commenced in 1857 I have been engaged during the last summer and autumn in following out the structure of the copper-bearing rocks on the north shore of Lake Huron, and have examined the portion of country lying between the valley of the Thessalon River and the lake coast south of it, in addition to that between the valleys of the Thessalon and the Mississagui.

Much inconvenience was experienced, especially during the early part of the season, from the difficulty of obtaining good canoe-men. This arose in consequence of the unexpected removal from that part of the country of two gentlemen to whom I had addressed communications on the subject early in the spring and on whom I had relied to hire men for me. I was thus compelled to employ such hands as happened to be out of work at the time of my arrival, and as none of them were disposed to engage for the whole season, it became necessary to make frequent changes in my crew, and finally to pay off the whole party earlier than was originally intended.

While in the neighbourhood of the Bruce Mines, which I made my head quarters during the earlier part of the season, I re-examined the whole coast from Point Thessalon to Portlock Harbour, making several excursions to the northward between the coast and Thessalon river, and completed a measurement of Walker Creek, and Walker Lake, which is discharged by the creek into Portlock Harbor. Subsequent to this I ascended the Thessalon, a measurement of which had been made in 1848 up to Desert or Thessalon Lake, the second sheet of water from the mouth; I surveyed a third expansion called by Mr. Salter, Rock Lake, as well as the stream connecting the two. The measurement of the main stream being then continued for a few miles above Rock Lake, I left the Thessalon to make an excursion north-westward from it, and join the work with that carried on from Echo Lake the previous season. Many excursions were also made from points on Lake Thessalon, and from the lower parts of the river, both by my assistant Mr. Johnston and myself, in the endeavor to trace as far as possible any well-marked band of the formation, by the aid of which to elucidate the arrangement of the whole series of rocks.

The latter part of the season was employed in examining the country and coast between the Thessalon and Mississagui, and in continuing the measurement of the latter river above the twenty-five miles which had been completed in 1848.

Geographical Characteristics.

It has been remarked in former Reports that the north coast of Lake Huron, in many parts picturesque, appears too rocky near the margin to be suited for agricultural settlement, though likely in time to become of importance to the province by the development of the metalliferous ores, which the geological formation of the region is known to contain. But while this description is applicable to the coast line and the margin of some of the rivers and larger lakes of the interior, it is by no means so to the country in general. On the contrary there are in many parts, especially in the valleys of the Thessalon and its tributaries, extensive tracts of the finest lands, covered with a luxuriant growth of hard wood interspersed with stately pine trees, probably equal in average size to any of the same species known in the province.

In the immediate neighbourhood of the Bruce and Wellington mines and thence to Portlock Harbour, the country is for the most part broken by low rocky ridges, the flat land between which is in general densely covered with thickets of spruce, balsam, or in marshy parts with tamaracks; but occasional patches display a stout growth of maple and white birch. In many parts the low grounds open out into extensive prairies or marshes, usually well covered with wild grass, and prettily dotted with clumps and little groves of small tamaracks or bushy spruce. The timber on the wooded flats is certainly not such as in general is supposed to indicate a very fertile soil, but much of the surface is nevertheless susceptible of cultivation, and there can be little doubt that with successful mines to produce a market for surplus produce, farming to a considerable extent might be advantageously followed. Admirably adapted for grazing, the prairies might also supply an ample stock of winter fodder for cattle, while nearly all the ordinary spring crops might be raised from the arable portions of the land.

The Thessalon River as heretofore stated empties into Lake Huron in latitude 46° 16′ 2″ N., and longitude 83° 27′ 31″ W. nearly. The upward course, independent of minor turns is a little westward of north for about nineteen miles, within which distance two lakes of considerable size are included, namely Otter-tail Lake between twelve and fourteen miles from the mouth, and Desert or Thessalon Lake at the termination of the distance formerly measured. Above Thessalon Lake the stream takes a northerly direction for about a mile and a half, and then turning easterly for another mile reaches Rock Lake. This lake stretches away to the southward until within about a mile and three quarters of the north shore of Otter-tail Lake, and between the two there is an Indian portage. The main stream falls into Rock Lake near its most northern part, and the general upward course is northerly for about a mile and a half, after which it bears north-easterly as far as we ascended.

Below Otter-tail Lake the navigation of the Thessalon is interrupted by two sets of rapids and two falls, the former severally about six and eight miles and the latter under nine and eleven miles from the mouth of the river. Excepting when the river is swollen by freshets, both of the rapids can be ascended and descended by canoes, but the falls of course require portages to be made. These rapids and falls constitute the only difficulties of navigation as far as we ascended, but I was informed by the Indians that farther up the river becomes very swift and turbulent.

The tributaries of the Thessalon are very numerous, but with the exception of the east branch, which joins the left side about three miles above the mouth, they are all very small, and navigable for only very short distances. Small trading vessels might ascend the Thessalon to the lowest rapid, and no doubt they will do so whenever the country becomes settled or the lumber trade introduced.

Much of the surrounding country is well qualified to sustain the operations of either the farmer or the lumber-man. On a line north-east from the lowest rapid there is a breadth of over four miles, which with the exception of the first fifty or sixty chains, presents either a dead level or a very gently undulating surface, all of which supports a growth of heavy hard wood mixed with white pine, some of the latter measuring from twelve to fifteen feet in circumference. South-eastward of this line, and from one to two miles from the river, a precipitous broken ridge of quartzite and red jasper conglomerate breaks the continuity of the good land, but the ridge dies down farther on and the rich flat land reappears at the junction of the east branch. From this it appears to extend a considerable distance to the eastward in a belt parallel to the coast of Lake Huron.

The immediate shores of the surveyed lakes of the Thessalon are for the most part bold, rocky and barren, but there are many parts at no great distance from them, especially west of Thessalon Lake and north-westward of Rock Lake, where the land is of excellent quality. The country between Rock Lake and Echo Lake, is marked by a series of high and frequently precipitous parallel ridges ranging about W.N.W. and E.S.E. The valleys alternating with them are in some cases wide and extensive and in others contracted, but almost in every instance they are covered with a luxuriant vegetation of the finest maple, elm and birch, with occasional large sized white pines, and it is only in comparatively few places, where the ground is either swampy or subject to occasional inundations, that tamarack and spruce prevail, while thickets of hemlock frequently fringe the edges of the more abrupt and precipitous ground. The region is spangled with numerous ponds and lakes, some of which are extremely picturesque, and each valley has a stream of excellent water, usually well stocked with speckled trout.

One of the lakes of this part, lying rather nearer to Echo than to Rock Lake was represented in the Report of 1857 as being one of the sources of Echo River. The upward course of this river instead of turning south-eastward to this lake has been ascertained by Mr. Salter to turn north-eastward, and the outlet of the lake in question, which commences with a downward south-easterly course, is now supposed to maintain it to a junction with the stream connecting Rock and Thessalon Lakes, meeting it about a mile below the former.

The Mississagui joins Lake Huron about twenty-six miles to the eastward of the Thessalon in latitude 46° 11′ 13″ N. and longitude 82° 55′ 53″ W. nearly. At the mouth it splits into a series of channels forming a group of marshy islands. Through these channels the river is easily entered either from the east or from the west, and it is navigable up to the Hudson Bay Company's trading post for boats and small coasting vessels. The trading post stands at the union of the channels; immediately above it the current becomes pretty strong, and at the end of about a mile, in which the ascent is about north, the navigation is interrupted by a break in the river. This sometimes assumes the character of a fall, at others that of a rapid, its condition depending upon that of the great lake below. When visited in 1848 Lake Huron was considerably below its average height, and this part of the river displayed a fall of 3·3 feet; but on the occasion of my late visit, the lake being unusually high, the fall was reduced to a moderate rapid, and we ascended it without difficulty in our canoes by the aid of paddles. About half a mile north above the fall the upward bearing of the river turns westerly and makes a course nearly N. W. for about thirty miles, presenting however many minor turns in the distance. It then assumes a general bearing of N. N. E. for a little over fifteen miles, and afterwards N. W. for three or four miles more. Here our measurements ceased.

Many tributary streams fall into the Mississagui, but only two of them are of much importance or capable of being ascended in canoes. These are the Pakowagaming and the Little White River. The former joins on the right side about nine miles above the fall, and the latter on the left from fourteen to fifteen miles farther up. The former flows from a suit of fine lakes severally named by the Indians Wahbiquekobing, Wahbiquekobingsing and Pakowagaming. These stretch in a north-westerly direction somewhat parallel to the main stream for a distance of twelve or thirteen miles from their outlet into it, and the head of the largest of the lakes, Wahbiquekobing reaches to within four and a half miles of the Thessalon River. The Little White River is a rapid and tortuous stream flowing from N. E. to S. W. as a general course, as far as we ascended it, which did not exceed from six to seven miles in a straight line.

The navigation of the Mississagui is rendered tedious by interruptions of heavy falls and violent rapids, together with a strong current prevailing for the whole length of its course from the highest part we reached. To illustrate this character, the following estimate of the rise of its channel is given in a tabular form, but being founded on observations by a clinometer level and rough guesses at the rate of the current, it must be regarded merely as an approximation to the truth.

Levels of the Mississagui River.

	Distance. Miles.	*Rise.* Feet.	*Total Dist.* Miles.	*Height above the Sea.* Feet.	
Height of Lake Huron............				578.00	Lake Huron.
Rise from smooth water at the Hudson Bay Company's post to the head of 1st fall or rapid............	1.00	3.50			
—in current between the 1st fall and the mouth of the Pakowagaming estimated at 1.00 foot per mile........................	11.00	11.00	12.00	592.50	Pakowagaming.
—in current between the Pakowagaming and the foot of a strong rapid, estimated at 1.00 foot per mile........................	5.25	5.25			
—in rapid........................	0.30	5.20			
—in current above the rapid to the foot of a fall, estimated at 0.80 foot per mile, say..........	0.85	0.60			
—in 2d fall........................	0.10	19.50			
—in current above 2d fall to the foot of 3d fall, estimated at 0.50 foot per mile........................	2.50	1.25			
—in 3d fall........................	0.10	18.50	21.10	642.80	
—in current above 3d fall to foot of 4th fall estimated at 0.50 per mile	0.40	0.20			
—in 4th fall........................	0.25	33.25			
—in current above 4th fall to the mouth of the Little White River, estimated at 1.50 feet per mile	4.00	6.00	25.75	682.25	Little White River.
—in current above Little White River to the foot of the rapid at the Gd. Portage; the current increasing in velocity with the ascent, estimated at 2.00 feet per mile........................	6.00	12.00	31.75	694.25	Foot of Gd. Portage.
—in 5th fall and rapids at the gorge of the Grand Portage to foot of 5th fall estimated at..........	1.40	18.00			
—in 5th fall nearly vertical.......	0.05	20.00	33.20	732.25	Head of Gd. Portage.
—in current across two pools including a small rapid between, estimated at about.............	0.40	2.00			
—in 7th fall nearly vertical	0.03	26.00			
—in current above the 7th fall to the foot of a strong rapid, estimated at about 1.5 foot per mile say........................	2.85	4.00			
—in rapid........................	0.15	4.00	36.63	768.25	Salter's Side-line.
—in current above rapid to the foot of 8th fall estimated at 1.5 foot per mile........................	4.00	6.00			
—8th fall........................	0.20	14.00			
—in a succession of small rapids alternating with swift currents, estimated at 3.00 feet per mile	5.00	15.00	45.83	803.25	Salter's Base-line.
—in a succession of small rapids alternating with swift currents to the foot of 9th fall, estimated at 3.00 feet per mile............	10.00	30.00			
—in 9th fall and rapid..........	0.10	2.50			
—in current above the 9th fall to the end of the measured distance, being a succession of rapids as before..................	6.00	18.00	61.93	853.75	End of measurement.

The river scenery of the Mississagui is for the most part very beautiful, and much of it, especially above the Grand Portage, is grand and imposing. There is however but little land fit for cultivation and the timber generally is of inferior size and description. A considerable tract north of Lake Pakowagaming has a good soil, and there the Indians have opened up several small clearings; but it is south of the Lake Wahbiquekobingsing and between it and Lake Huron that the finest land was observed. This appears to be a continuation of the belt of good land running eastward from the east branch of the Thessalon, for I was given to understand from the Indians to whom it has been reserved, that the same character of soil is maintained more or less all the way.

Character and Distribution of the Rocks.

The order of succession in which the various rock masses were found in the area examined last season corresponds with the descriptions given of them as seen around Echo Lake in the Report of 1857. The close resemblance in mineral character of individual strata in one part of the series with strata in another, all equally destitute of organic remains to constitute a distinctive guide, and the frequent large intervals of ground wholly void of exposures, occasionally produce much embarrassment in attempting to identify masses widely apart. The band of limestone which was followed the previous year from Echo Lake is undoubtedly the best characterized feature of the whole series, and were it always exposed, the difficulty of making out the structure would be comparatively small; but its course appears usually to run in low swampy ground, in prairies or in lakes. It comes to the surface only in small irregular sections, often at long distances from one another, and it in consequence frequently becomes necessary to take what is above or below it as a guide. The position of the limestone band in the series is evidently near the base of the slate conglomerate masses. Slate conglomerate was the superior rock in every instance in which the next succeeding rock above the limestone was seen; it was generally also the rock below it; but the lower slate conglomerate appears sometimes to pass imperceptibly into a greenstone or to be replaced by one, and it sometimes has happened therefore, as at the Bruce Mines, that the limestone has been found resting on greenstone, without conglomerate perceptibly near. It was principally by tracing the slate conglomerates of the series, with the actual exposure of the limestone at intervals as a guide, that the conclusions stated in the present Report were arrived at, and the lines of stratigraphical division on the accompanying map were constructed.

But before proceeding to explain the distribution of the rock masses it will be proper to give an enumeration of them as they succeed one another. In the following list they are given in ascending order, with the nearest estimate I have been enabled to arrive at in respect to their thicknesses on the line selected for the representation of a vertical section.

1. Greenish chloritic red-weathering silicious slates; of these the thickness is very doubtful	2000
2. White quartzite sometimes becoming a fine conglomerate with pebbles chiefly of white quartz; the beds are interstratified with fine silicious slate, and divided by occasional intercalated masses of greenstone	1000
3. Slate conglomerate and greenstone, the conglomerate generally very coarse, the pebbles consisting chiefly of syenite and gneiss with occasionally some of red jasper	1280
4. Limestone	300
5. Slate conglomerate as before, but not so coarse, with interstratified beds of reddish or grey quartzite, and fine compact silicious slate sometimes marked by epidote, with intercalated masses of greenstone	3000
6. Red quartzite and greenstone	2300
7. Red jasper conglomerate, the matrix composed chiefly of white quartz sand and many of the pebbles of blood-red jasper; it is interstratified with masses of greenstone	2150

8. White quartzite frequently of vitreous aspect, generally in massive beds, which are sometimes separated by thin silicious layers resembling chert, and interstratified with masses of greenstone........................	2970
9. Yellowish chert in thin and very regular beds interstratified with layers of impure limestone, and green and pale drab very compact slaty layers, with a stratum of red and yellowish fine grained sandstone at the bottom..................	400
10. White quartzite frequently of vitreous aspect, occasionally mottled with leaden-grey patches..	1300
	16700

The only difference between the preceding list of rock masses and that given in the Report of 1857, in so far as the latter reached in the ascending series, consists in the accidental portion of intercalated greenstone, and the thickness given to the masses. In the present list however there are added three numbers, 8, 9 and 10. Number 9 is the limestone of the Thessalon lakes, which it was suggested in the Report of 1857 might possibly be a continuation of the Echo Lake band, represented above by number 4. It will be found however by what follows, that from the physical structure of the area now examined, the Thessalon band must be much higher in the Huronian series than that of Echo Lake, and that it is not yet quite certain whether there may not be a third partially calcareous band still higher up.

In the investigation of the structure it appears to be one of the results of the season's work, that two main troughs exist in the Huronian rocks of the area in question, divided from one another by an anticlinal axis, which seems to run up the Mississagui for over twenty miles from its mouth, then leaving it to continue a course nearly north-west. These two troughs may be distinguished as the Thessalon and Mississagui troughs, and it will be convenient to consider them separately.

The Thessalon trough may be roughly described as extending transversely from the lower part of Echo River to some point beneath the unconformable fossiliferous rocks to the south-west. The longitudinal axis extends along the valley of the Thessalon from the lowest rapid to the south-west side of Thessalon Lake, and proceeds thence toward the St. Mary River between Little and Great George Lakes. It is divided into several subordinate parallel troughs, two of them arising from an anticlinal form, the axis of which was shown in the Report of 1857 to pass a little south of Echo Lake, and two more occasioned by a similar form at the Bruce Mines, to which allusion was also made.

Resuming the work of the previous year at the Bruce Mines, the band of limestone which was used as the index to the general structure was easily traced for about two miles west of the point near the French Islands, where it emerges from the water. It skirts the shore for rather more than half the distance and then bears off in a N.W. direction for the remainder, presenting a well-marked escarpment to the N. E. Here it suddenly breaks off and the ground beyond becomes swampy; but south of the supposed continuation of the band, the upper slate conglomerate is largely displayed. The lower part is seen resting on the limestone where the latter leaves the coast, and as it runs westward higher and higher beds come up from the lake upon the shore, until the mass assumes a breadth exceeding a mile, presenting irregular low broken but parallel ridges, generally showing small dips to the south or westward of south. Interstratified with the conglomerate are strong beds of pale reddish and grey quartzite, and layers of fine grained greenish-black and light olive-green silicious slates, some of which yield hones of a very fine description. The slates are well displayed on the eastern shore of Portlock Harbour and on the islands opposite, where it was observed that they were marked by epidote running both in streaks with the layers and in strings across them; calc spar was observed investing small fissures and rents in the rock.

Proceeding along the east side of Portlock Harbour the dip appeared gradually to assume more westing, and on reaching its north-east corner it became nearly north, in which direction, some distance inland, a ridge of greenstone showed itself, beneath which the conglomerate appeared to sink. From the north-east corner of the harbour, the conglomerate bends eastward across the Hincks location, and the distribution thus indicated results from the effect of the Bruce Mines anticlinal.

How far the summit of the upper slate conglomerate may extend westward on the axis of the anticlinal is not yet quite certain, but from the facts ascertained by yourself along the strait between St. Joseph Island and the main land in 1848, it seems probable that it will not turn before reaching the western side of the Hart location, and that its southern slope, in addition to many of the smaller islands, will include rather more than the northern half of the Island of Campment d'Ours.

On the axis of the anticlinal across the Keating location, to the eastward of the supposed position of the limestone, the ground is low and swampy, and the rocks are altogether concealed, but on reaching the neighbourhood of the Wellington mine, near the line between the Keating and Cuthbertson locations, at the distance of fifty-five chains from the margin of Lake Huron, there is an exposure of the limestone which by its northern dip marks the north side of the anticlinal form. From this to the eastward the limestone rises to the surface in low irregular knolls, with flat and generally swampy land between, until reaching Cameron's lot on the Cuthbertson location. Here it shews itself pretty regularly for nearly a mile, striking on the average E. N. E., and dipping northerly from eighteen to twenty-five degrees. Beyond this it runs into a swamp, and in its probable course there is a succession of swamps, prairies and marshes; but the rock appears on the line separating the Belanger and Delorme locations, about ninety-five chains south from the Thessalon River, striking in the direction of the lower rapid, which is about four miles beyond.

Immediately north of the limestone band across the mining locations there appears in general to be a greater or less breadth of low swampy or prairie land without exposures; but beyond this the exposures were frequent, and wherever they were met with, they proved to be for a considerable breadth either the slate conglomerate, the quartzites and silicious slates associated with it, or masses of greenstone. On the line between the Keating and Cuthbertson locations as determined by yourself in 1848, the slate conglomerate and its associated beds occupy a breadth exceeding two miles, and their breadth appears to be undiminished farther to the east on the Starnes location, until approaching to within a short distance of the north-east corner. Here the rock displays a dip north, but following on the strike it suddenly ceases and is replaced by a white quartzite with a dip S. 20 W. $< 30^{\circ}$, from beneath which on the Thessalon about a quarter of a mile to the northward there rises a set of thin yellowish chert beds, interstratified with layers of impure limestone. These chert beds in their strike follow the bearing of the river to the immediate vicinity of the upper fall, the rock of which seems to be the white quartzite above them. The slate conglomerate, from the position where it displays the northern dip on the Starnes location, can be traced at intervals until it comes upon the river at a turn on the Belanger location below the fall, and to the position where the line between the Belanger and Delorme locations intersects the river; but in each successive exposure the rock breaks off obliquely to the strike, the dip remaining north, and the beds displayed occupy a lower and a lower place in the vertical section. At the intersection of the boundary line and the river the distance from the underlying limestone as has been said does not much exceed a mile. The same phenomena continue to the rapid below the lower fall at the eastern boundary of the Delorme location, where the distance from the underlying limestone would not exceed half a mile; while on the opposite side of the river, a succession of white quartzite beds approaches the stream with a dip to the S. W., the two different rocks on the opposite sides apparently coming up to one another in the shape of a **V**. The only explanation of such an arrangement is in the existence of a fault or dislocation running up the stream.

Between the exposures of limestone on the opposite sides of the anticlinal on the Keating and Cuthbertson locations, the rock seen is chiefly greenstone, and it is in cracks which occur in it on the crown of the anticlinal, that are found the copper ores of the Bruce and Wellington mines. The lower conglomerate however with which this greenstone is associated, is seen in several parts of these locations close beneath the limestone on the north side of the anticlinal, and in the same relation beneath the exposure of the limestone on the line of division between the Belanger and Delorme locations. In all of these places its breadth is inconsiderable and in all of them it is followed by great masses of greenstone. A larger exhibition of the conglomerate rock however is met with on the south side of the anticlinal in the Palladeau Islands, the whole of which with the exception of the southern half of the largest one (where we meet with quartzite,) are composed of this rock. The conglomerate of the Palladeau Islands is occasionally of very coarse material, being a mass of rounded boulders of syenite, gneiss and other crystalline rocks, among which red jaspers are not uncommon, the whole cemented together by a coarse greenish silicious paste. The Palladeau rock is no doubt an inferior part of the lower slate conglomerate, which the greenstone of the Bruce mine either replaces or overlies. In its extension to the eastward on the north side of the anticlinal the masses belonging to this division of the series are supposed to occupy the breadth of about a mile.

At a point in the bay between the Bruce mine and Eagle Point, beds of white quartzite, in parts becoming slightly conglomerate by the presence of small pebbles chiefly of white quartz, pass below the greenstone of the mine, dipping northward, and the east coast of the bay farther south displays similar measures interstratified with greenstone, shewing a moderate westerly dip on the axis of the anticlinal arch. Rocks of a similar character compose the coast opposite the Palladeau Islands with a southerly dip, as they do the rest of the coast eastward to the boundary between the two Ferrier locations, with a northerly dip, the axis of the anticlinal running between. The islands in front of those two locations consist of the same rock, and northward on the line between them exposures of the same character were met with for a mile and a half from the coast.

An island about three quarters of a mile outside of the Palladeau group is composed of the same quartzite. The dip of the strata is northward at a very moderate angle; and as the quartzite on the south side of the largest of the Palladeau islands dips northward, though at so high an angle as to seem almost perpendicular, (to which the conglomerate in contact conforms,) a synclinal axis must run through the conglomerate of this island of the Palladeau group.

Thessalon Point is composed of detrital matter up to the mouth of the river, but the coast a short distance to the east of the river consists of green chloritic slates, which weather red in some parts. The strata are so much disturbed that it is difficult to determine the dip, but the position of the rock in relation to those which have been previously described leads to the supposition that it comes from beneath them, thus constituting the lowest division of the series.

Immediately north of the upper slate conglomerate and its associated strata, on a small stream on the east side of the Desbarats location there was met with an exposure of red quartzite with a moderate dip northward, and the rock was visible at intervals for a breadth across the stratification of about a quarter of a mile. West of this on Walker Creek and the south part of Walker Lake other exposures of a similar rock occurred, which were supposed to succeed the previous beds; and these, interstratified with occasional masses of greenstone, occupied a breadth of about three quarters of a mile, the dip being much the same as before. This division of the series was not followed eastward, but between what was considered the position of the slate conglomerate and the base of the succeeding division (the red jasper conglomerates,) there always appeared to be sufficient space for the red quartzites.

The interstratified greenstone of this division near the exit of Walker Lake is intersected by a white quartz vein holding copper pyrites. The breadth of the lode is about two feet, but the copper ore is rather thinly disseminated in it; the bearing of the lode is about east. A mass of greenstone is met with towards the north termination of the dividing line between the Hincks and Keating locations, and a corresponding one on the dividing line between the Keating and Cuthbertson locations. Both masses are supposed to hold the same stratigraphical place among the red quartzites as the greenstone of Walker Lake, and a copper lode intersects the rock in each of the localities. On the west side of the Keating location the lode is about two feet wide; the vein-stone is white quartz and it holds a promising quantity of copper pyrites. On the east side of the location the lode is pretty much of the same character, and it seems probable that the three instances are exhibitions on one and the same lode, the extreme distance between them being eight miles.

The red jasper conglomerate rocks overlying the red quartzite are displayed in great force on the north side of Walker Lake. They are here interstratified with occasional beds of greenstone, and occupy a breadth of about a mile and three quarters, which is greater than their breadth to the eastward. The dips which they display are moderate, seldom exceeding ten or fifteen degrees, but as often happens, in such cases, the bearings of the dips are somewhat variable, ranging from about north in some places, to nearly west in others. This division was not traced farther westward than Walker Lake on the south side of the Thessalon; but its full breadth was traversed on one of Mr. Salter's side lines about four miles to the eastward. On this line the base of the division occurred in a small bay in the south-east corner of a moderately large sheet of water about three miles from Lake Thessalon, and what was considered the summit was met with not far from the outlet at the southern extremity of a smaller lake, the position being about a mile and a half from the shore of Lake Thessalon, thus giving a mile and a half as the breadth of the division in this part. The beds here, as near Walker Lake, are interstratified with occasional masses of greenstone, and the dip which is about north, shews a somewhat higher inclination than near that lake, being between twenty and thirty degrees, and in one instance towards the summit, where there was perhaps some disturbance, so much as seventy degrees were observed. The strike of the beds would carry the summit of the division, in a distance of two miles, and the base in one of four miles, to the flank of a hill overlooking Otter-tail Lake. This flank however being covered with soil shewed no exposure of rock. Coming down on the lake however, we met with a continuation of the white quartzites and cherty limestones mentioned as occurring lower down the Thessalon, dipping as before south-westward, and proving a continuance of the dislocation to which allusion has been made.

North of the red jasper conglomerates a set of white quartzites succeed. On Salter's side-line the space which they would occupy measures about fifty chains; but in this part the only exposures seen were about a mile to the west of the side-line, where an escarpment of from 100 to 200 feet rose above a prairie. The rock was very white and vitreous, with a uniformity of aspect that made it very difficult to distinguish what might be joints from beds. The dip was in consequence not very satisfactorily made out, but such evidences as were obtained appeared to indicate that the inclination was not less than forty-five degrees, and towards the north, the run of the escarpment shewing that the strike was a little north of west. From the escarpment exposures of the same character were met with at intervals on a north line for a distance somewhat under half a mile, when they terminated in an escarpment of thin yellowish chert beds with a dip N. 19 E. $<18^{\circ}$. The exposures on this line include the chief part of this division, but there is probably some portion wanting at the base, which was not any where seen on the south side of the Thessalon.

The yellowish chert beds were well displayed on Salter's side-line, dipping eastward of north at an angle of eighteen degrees, and maintaining this inclination across a breadth of about a quarter of a mile. The beds of chert were interstratified with hard calcareous layers and beds of silicious slate, and they formed a ridge with low ground on both sides. To the eastward the ridge died down at no great distance into the low land which limits the south side of Thessalon Lake, but to the westward it was followed two miles in a nearly due west course, after which the bearing of the band seemed gradually to turn about north-west, which it maintained for two miles more, obliquely crossing in that distance the outlet of a small lake which is tributary to Walker Lake, and including more than the southern half of the small lake itself. From this lake it turned again nearly west, in which bearing it was followed for about another mile. Along this course the dip of the beds gradually diminishes, and the breadth of the band increases until it measures about half a mile, with a dip not far removed from horizontality on the south, not over eight degrees about half-way across, but suddenly increasing to forty-five degrees where it disappears on the north, plunging beneath a mass of quartzite with the same dip. Where the examination of the chert ridge ceased there was a dingle of about two chains in width to the south of it, beyond which the underlying white quartzites rose into a pretty bold hill. This appeared to run for some distance to the westward, and from it the water of Great George Lake could be well seen about nine miles off, there occurring no land north of the white quartzite ridge high enough to interrupt the view. The intermediate ground however still remains to be investigated.

Chert beds very similar in aspect to those just described are met with on the north-east side of the small lake which is tributary to Walker Lake. Between those and the nearest approach to the previous beds there is a distance of no more than a quarter of a mile. They dip to the south-west with a slope of thirty-five degrees, and they might well be supposed to be the same beds as before on the opposite side of a synclinal axis. There is some suspicion however, as will be seen from the sequel, that they are higher strata on the north side of a great downthrow fault.

These beds in the attitude above mentioned are seen along the north-east side of the lake for a distance of a quarter of a mile; they are followed northward by a mass of greenstone, and that again by a great display of white quartzite, both running parallel with the chert beds. Three quarters of a mile south-eastward chert beds again appear, dipping to the south-west, with greenstone coming out from beneath them and in this relation they can be traced for two miles to the south-east. Here the chert beds are within eight chains of the south-west corner of Thessalon Lake and the greenstone lies between them and the margin. This position is about half a mile from Salter's side-line, but the farther progress of the chert beds towards the side-line appears to be interrupted by a mass of white quartzite.

The low ground on Salter's side-line, mentioned as occurring to the north of the chert ridge first described, forms a hollow of a few chains in width, beyond which the mass of white quartzite just alluded to rises pretty sharply, constituting a hill which fills the space between the hollow and the lake, with the exception of a narrow mass of greenstone at the water's edge, and overlooks the low ground on the south margin of Lake Thessalon to the east.

On this low ground there is an interval of marsh, but beyond the marsh there is a point about half a mile above the outlet of the lake, where the strata make their appearance. They consist of yellowish chert interstratified with impure limestone, and they dip S. 37 W. $<19^{\circ}$. The band is about a quarter of a mile wide, and it can be traced without much difficulty in a pretty straight line fcr upwards of eight miles down the river to the higher fall, dipping in the same direction and nearly at the same inclination the whole way. In this course the band obliquely crosses in succession the terminal edges of all the divisions which have been described on the south-east side of the river to the middle of the upper slate conglomerate, its relation to which has already been pointed out.

At the point which has been mentioned on the south side above the exit of Thessalon Lake, the chert band proceeding north-westward enters the lake, but some uncertainty exists as to the position at which it leaves it. On the north-east side of the peninsula of Otter-tail Lake, there is at the base of the chert band a bed of a red and yellowish fine grained sandstone. A similar bed is seen at the upper end of Thessalon Lake with a bed of yellowish chert resting on it, and it is probably here that the band again enters upon the land; but the dip at the spot is irregular, and the band has not been traced beyond it. There is no doubt from the sequence of the rocks beneath the band that it is equivalent to the one overlying the white quartzite on Salter's side-line, and should it on farther investigation be found to continue westward from the upper end of Thessalon Lake, then the south-west-dipping chert band which faces the first described one, would necessarily occupy a higher stratigraphical place, and would prove the continuance of the fault which no doubt reaches Salter's side-line. The extent of this downthrow is not quite certain, but it appears to me it cannot be less than 1500 feet at this part.

The rock which would lie between these two chert bands is seen in a hill forming a point north of the south-west corner of Thessalon Lake. It occupies three quarters of a mile across the stratification and consists of white quartzite. A dip of eighteen degrees would give to this a thickness of nearly 1500 feet, to which if 200 feet be added for the upper chert band the dislocation would appear to approach even 1700 feet on Salter's side-line.

The downthrow however, if the dislocation result from a vertical movement, must be progressively much greater to the south-east, for the chert band terminating near the upper fall against the middle of the upper slate conglomerate, would there shew a displacement equal to the whole volume of strata between, which according to the thicknesses given in the list of strata would be 9,320 feet additional, or upwards of 11,000 feet.

Having thus shewn the distribution of the various divisions of the Huronian series on the south side of the Thessalon trough in ascending order, I shall now proceed to describe their distribution on the north side in an opposite order.

On the north-east side of Thessalon and Otter-tail Lakes the white quartzites underlying the lower chert band are displayed in a bold ridge which separates these two lakes with their connecting stream from Rock Lake. These quartzites are well seen on the Indian portage between the latter and Otter-tail Lake, where, as on the south side of the Thessalon, they are interstratified with greenstone. Their breadth in this neighbourhood is upwards of a mile, and their average dip nearly south-west, with a slope of about twenty-five degrees. The hills which they form continue down on the left side of the river, gradually approaching nearer to it below the upper fall, and at the lower fall the ridge occupies a breadth of about half a mile with low land on the north-east side of it. At the upper rapid the base of the white quartzites is about thirty-five chains from the stream, immediately beyond which the beds begin to shew blood-red jasper pebbles. At the lower rapid the red jaspers are a little farther back. The white quartzites in front of them shew leaden-grey patches, but farther on in the strike the ridge dies down, and the surface becoming low extends into a great cedar swamp.

This swamp is situated on the east Ferrier location, where the Thessalon begins to take a more southerly course for Lake Huron. From the river it has the breadth of about a mile, and on the north side of the swamp there rises to the height of 100 or 150 feet a well marked hill, which has a breadth of nearly a mile. The hill consists of strong beds of red jasper conglomerate interstratified with greenstone, and the dip averages S. 55 W. $<$ from 10^{o} to 12^{o}. The summit of the division near the lower rapid has already been mentioned, and the traverse from the river at this place did not extend beyond it. On the traverse from the lower fall, the ground north-eastward of the white quartzite was flat for a considerable distance, and showed no red jasper conglomerate in place, but where it was to be expected there occurred a great number of large angular blocks of the rock.

The next exhibition of the division examined was on Rock Lake. Here the summit of the division strikes upon the lake in its south-eastern bay, whence it runs parallel with the Thessalon, forming the promontories of the south-west side of the lake, leaving the bights of the bays for the white quartzite. From the south-western bay the trend of the summit is to that turn in the stream discharging Rock Lake, where its course changes from about west to about south. The upper part of the division is much mixed with greenstone, and an exemplification of the interstratification is seen on the island of the south-east bay, where the dip is westward of south with a slope of twenty degrees. In the middle part of the division there is a great mass of greenstone seen in conspicuous promontories on opposite sides of the lake, while the rocks on the opposite sides of the outlet present a section of the lower part. Here the beds, dipping to the south-westward, present a pretty regular slope of forty degrees, and unless some unperceived dislocation in the bed of the river occasion a repetition of strata, this part alone must measure nearly 1500 feet.

Between the exposures of red jasper conglomerate on the stream connecting Rock and Thessalon Lakes, and those met with in my exploration from Echo Lake, the distance is about three miles. From the latter lake the division comes upon a lake mentioned in the Report of 1857 as tributary to the lower part of Echo River. The rock appears to occupy upwards of a mile on the northern part of this lake, the base reaching the northern extremity. Masses of greenstone are interstratified with the other beds, and the whole seem to turn southward across the lake, probably folding over the axis of the anticlinal which was ascertained to affect the limestone band to the west of Echo Lake. The strata again turn westward and have been traced for about a mile and a half from the lake in that direction. The strike would apparently bring them out to the flat land bordering the lower half of that part of Echo River which discharges Echo Lake, but the nearest exposures seen are two or three miles from its bank.

The red quartzites which underlie the red jasper conglomerates have not been recognized as yet on Echo Lake. They might be expected on the lower part of the lake and the upper half of its discharging stream, but this space is occupied by great masses of greenstone in which copper lodes are known to exist, and perhaps it may be worthy of remark that this copper bearing greenstone has here the same relation in stratigraphical place, as the greenstone holding copper veins on Walker Lake and in the rear of the Cuthbertson location. The red quartzites are seen on the north shore of Rock Lake, where pale brownish flesh-red and pale and dark grey beds of a somewhat granular character are interstratified with one another, and sometimes present ripple-marks on their surface. Masses of greenstone are often intercalated, those toward the summit being of considerable thickness. The dip, which is south-westward, varies from twenty eight to fifty-five degrees in inclination, and the breadth assigned to all that belongs to the division is about a mile. On the traverse from the lower fall of the Thessalon the red quartzites were met with a little under three miles from the river, near a small lake on the western Ferrier location. Some of the beds were of a light brownish flesh-red and others grey, and greenstone was interstratified with them. The dip of the strata was S. S. W.$<23^{\circ}$. The exposures spread over a transverse distance of about half a mile, but as the land both in front and rear of them was flat and the rock was concealed, it is not probable that the whole breadth of the division comes to the surface. Beyond this to the south-east this division was seen no more. It was searched for north of the red jasper conglomerate on the east Ferrier location, but the land being flat presented no exposures whatsoever.

The upper and lower slate conglomerates with the limestone band between them on the north side of the Thessalon trough, were so necessary as guides to one another in tracing them out on the surface, that it will be convenient to describe them together.

In the Report of 1857 all the facts known in respect to the distribution of the lower limestone band on the west side of Echo River were given in considerable detail. The upper slate conglomerate follows the limestone in a belt having a breadth of from one half to three quarters of a mile, and presenting nearly the same sinuosities of outline. In the upper part of this belt there is here a more than usual amount of pale and dark grey quartzite, which however is supposed to belong to the slate conglomerate group, from the occasional occurrence of beds similar to these in the lower part of this group elsewhere. In the Report of 1858 on page 26, there is a diagram representing a vertical section running north-eastward from the upper end of Great Lake George, in which under the several letters *l*, *g*, and *h* are given, upper slate conglomerate, fine grained black and grey quartzites, and whitish and grey quartzites. All these are now supposed to belong to the division No. 5 of the present Report. In the tabular list of rocks on page 24 of the Report of 1857, the division No. 6 is described from exposures on the east side of Echo River, and it was supposed that the whitish or whitish-grey quartzites there mentioned were equivalent in part to the whitish and grey quartzites, *h* of the diagram. It is now however considered that the former are higher in the series, and that the red quartzites No. 6 of the present Report come in between. These red quartzites have not yet been seen on the west side of Echo River, the only rock met with there above what is now included in No. 7 being greenstone.

The Report for 1857 gave all the details known of the limestone for ten miles south-eastward of Echo Lake, to a position about half a mile from the small lake then supposed to be the head of Echo River, but now known to be tributary to the Thessalon. The supposed position of the limestone in this part was indicated by the presence of loose angular blocks of the rock. Characteristic exposures of the slate conglomerate rock occurred both north and south of the position, with interstratified quartzite and greenstone. To the south the breadth is three quarters of a mile, which is precisely the breadth which the rock shows south of the limestone on the east shore of Echo Lake, where it is well displayed; so that the breadth may be considered pretty uniform the whole way. Between the rock on Echo Lake and the most western exposures of the red jasper conglomerates, there is a distance of two miles in a due south bearing. In this space rise up the great masses of greenstone already mentioned as holding copper lodes. One of the masses with a breadth of half a mile extends three miles and a half east and west, terminated westwardly in a great bluff; round the extremity of this the summit of the slate conglomerate appears to bend to the south-eastward, proceeding to its position southward of the small lake tributary to the Thessalon. Between the summit of the slate conglomerate at this place and the base of the red jasper conglomerates the distance is about thirty-five chains, and in this space the red quartzites are supposed to be represented by some reddish-grey and dark grey beds of this description of rock.

Two miles in a direction a little south of east from the supposed position of the limestone in this part, we meet with Mr. Salter's side-line, and about a quarter of a mile beyond it the limestone band is seen in place, dipping S. 25 E. $< 37^{\circ}$. From this the limestone was not again seen in place to the eastward, and it became necessary to depend on the slate conglomerate in the endeavour to trace out farther its probable course.

From Mr. Salter's side-line the strike of the slate conglomerate appeared to be very regular all the way to the Thessalon, the distance being about four miles and the bearing about S.S.E. The position to which this would carry the limestone band on the river, is about a quarter of a mile below the turn which the upward course of the river takes to the eastward within a short distance from the end of my measurements. Although there was no limestone seen here, there was nothing to contradict its possible presence beneath the high clay banks between which the river makes its way. Considerable masses of greenstone rose up immediately north of the position, along the foot of which there was a clay-covered depression, and across the measures to the south-westward the slate conglomerate with its associated masses was spread out for a mile and a quarter, leaving upwards of three quarters of a mile beyond, between them and the red jasper conglomerates, for the red quartzites.

On the east side of the river, about a mile farther in about the same strike, slate conglomerate is associated with greenstone on the northward side of the place assigned to the limestone band, and the same breadth and description of rock as before extends to the southward. The same breadth is in front of it half a mile still farther on the strike, and in this place the summit of the slate conglomerate reaches to the margin of the north-eastern bay of Rock Lake where the dip, is S. 33 W $< 35^{\circ}$. For about three miles beyond this the strike appears to turn slightly more south, but the supposed position of the limestone, which would be somewhat over two miles and a quarter east of the north-eastern bay of Rock Lake, has the same relation to the slate conglomerate as before. An east line from the bay would cross the measures obliquely, and on it the summit of the slate conglomerate was met with about thirty chains from the lake.

Between this position and the next at which the slate conglomerates were examined, there occurs an interval of six miles on the strike. The exposures connected with it were reached by the traverse from the lower rapid of the Thessalon. The distance across the measures from the nearest of these exposures to the base of the red jasper conglomerates would be about two miles. But though there appears to be a diminution in the inclination of the strata over a considerable area in this neighbourhood, the distance is considered too great to be filled up by the red quartzites alone, which as already stated are concealed in the interval. It is therefore supposed probable that a portion of the slate conglomerates is also covered up, and the place of the summit of the division might be indicated as half a mile farther south than the exposures.

From this position the slate conglomerate was traced for about five miles on the strike to the west end of Wahbiquekobing Lake. In this distance it presented low flat hills and shewed a dip somewhat to the west of south seldom exceeding ten or fifteen degrees in inclination. If the summit has been correctly indicated above, the formation would have a breadth of over two miles. At that distance it was every where limited by a great and continuous mass of greenstone, which extends in a nearly straight line from the north-west bay of lake Wahbiquekobing for six miles, while the north side of the lake presents a continuation of the same mass for seven miles more in an opposite direction. The greenstone was thus found to continue in a straight line without an interruption for thirteen miles, the bearing being about S. 20° E. At the west end of the lake this rock was found to extend two miles northward on Mr. Salter's side-line, and southward it composed nearly all the west end of the lake to the bight of the south-west bay. From the bight of the north-west bay however, a narrow valley, commencing south of the brook which enters at the corner, runs westward in front of the continuous range of greenstone. The depression at the end of a mile comes upon a small lake which discharges into the south-west bay. Towards the east end of this lake, slate conglomerate, dipping south at a small angle, was overlaid with greenstone. The depression from the north-west bay was covered with clay, which may be underlaid with slate conglomerate.

With the exception of a long tongue-like promontory about a mile below the portage to Lake Wahbiquekobingsing, and the drift-covered bays on each side of the promontory, the whole of the south side of Lake Wahbiquekobing consists of slate conglomerate, in some parts nearly flat, and in others dipping southward at an angle seldom exceeding six degrees; so also does the north-east side of Lake Wahbiquekobingsing, as far to the south-east as a promontory cutting the lake nearly in two about a mile above the portage. The promontories on both lakes are greenstone, and a ridge inland appears to connect them. Slate conglomerate probably composes also the north-eastern shore of Lake Pakowagaming for upwards of two miles above the exit, being seen at both ends of the distance, dipping to the south at the south-eastern end at an angle of five degrees. It seems probable also that it will extend over the area between this part of Lake Pakowagaming and the west end of Lake Wahbiquekobing, for it lies along the shore of the west end uninterruptedly as far as the portage to the Mississagui from the most eastern bay. The next promontory north is composed of greenstone; the next bay shews strata belonging to the slate conglomerate; while the coast from the succeeding point to the portage at the north-east corner of the lake, and for half a mile farther is greenstone; but a narrow strip of slate conglomerate skirts the shore for half a mile farther, coming against the greenstone which has been mentioned as running along the north shore.

This greenstone in a narrower mass than it presents on the north-eastern shore, seems in its continuation to outflank the slate conglomerate of the west end of the lake. It occupies the north portage all the way to the Mississagui, and the south one to within a quarter of a mile of the river. It constitutes mountain masses two miles to the east of south, and reaching Lake Pakowagaming it is seen in a wide and moderately bold promontory, the point of which is under a mile and a half above the outlet, but a cape which forms the southern horn of a cove three quarters of a mile further up the lake, consists of nearly horizontal beds of grey and pale reddish quartzite, which is supposed to belong to the slate conglomerate division, and to indicate that this is the farthest eastern extension of it belonging to the Thessalon trough.

Opposite the greenstone promontory on the north-eastern side of Pakowagaming there is a square bluff of the same rock standing conspicuously out between two bays on the other side of the lake. The next point above this is also composed of greenstone, which is the rock of the shore for a mile farther. Above this, opposite a small island, the only one of the lake, the rock is again slate conglomerate; but instead of displaying the nearly horizontal attitude of the formation on the opposite side of the lake, the strata are here disturbed and corrugated, and plunge under the water with a dip N. 23 E $<$ from 56° to 60°. With a strike corresponding to this dip, the front of the mass gradually separates from the shore of the lake, and is traceable in a well marked ridge for two miles, leaving between the foot of the hill and the margin to the west end of the lake, a flat land in which there are no exposures.

An attempt to separate the upper from the lower slate conglomerate in this part, and thereby fix the position of the lower limestone band, has presented great difficulties, and I have been obliged to content myself with choosing a line of division, in regard to which I have met with nothing to contradict its possibility rather than much to support its probability. The only masses of limestone here met with were loose angular blocks, which occurred in some abundance near the west end of the north portage from Lake Wahbiquekobing to the Mississagui; but these may be derived from some more northern exposure of the band. To the south however of the greenstone promontory which cuts Lake Wahbiquekobingsing nearly in two, there is on the east side of the lake a breccia consisting of fragments of greenstone cemented together by a calcareous paste, while veins and cracks in the rocks both of quartzite and greenstone on both sides of the lake were filled with calc spar. A rock of a somewhat similar character to this breccia was observed on Lake Wahnapitaeping in 1856, and described in the Report of that year at page 177. The calcareous paste in it however bore a much larger proportion to the fragments than in the breccia of Wahbiquekobingsing. If this breccia indicates the true position of the limestone band, the band probably enters Lake Wahbiquekobing at the south-west bay and passes along the lake to the east side of the tongue-like promontory of quartzite mentioned on the south side, thence crossing the land to Lake Wahbiquekobingsing.

At the south-east end of Lake Pakowagaming there are red quartzites, slates and other rocks of the Huronian age, whose place in the series is yet uncertain, but they are all twisted, highly tilted northward or vertical, and on the south-west side of the lake for two miles up in the bights of the bays and in positions behind the greenstone points and promontories, there are exposures of well characterized massive gneiss. The same rock forms the south side of Lake Wahbiquekobingsing, and the fact that these positions are not much out of the direct line of the great dislocation of the Thessalon valley makes it very probable that we have here an exhibition of a portion of the Laurentian series, brought up against the Huronian from a great depth. On the coast of Lake Huron four miles south of Wahbiquekobingsing, there are exposures of gneiss, and these continue along the coast for twelve miles to the eastward. Great masses of intrusive greenstone are also seen along this line, and dykes emanating from them are often found cutting the gneiss. How the gneiss is related to the chloritic slates near the mouth of the Thessalon has not yet been ascertained.

From beneath the greenstone which outflanks the slate conglomerates of the east end of Lake Wahbiquekobing there appears to emerge a group of strata consisting of fine dark olive-gray or grayish-black slates weathering somewhat brown, associated with reddish-grey, brownish-grey or reddish-brown quartzites. The slates are very thin bedded and often break into rather regular rhomboidal forms. The quartzites appear to have disseminated through them in many places very minute grains or cubes of iron pyrites, and they occasionally present pebbly layers, giving them the characters of fine conglomerates. The slates and quartzites are interstratified, the slates predominating at the bottom, and the quartzites at the top. These strata come upon the Mississagui, on which exposures of them exist from a position about a mile below the mouth of the Pakowagaming to the second fall, being that immediately above the southern portage to Lake Wahbiquekobing, and from the north portage to the mouth of the Little White River. On that part of the Missisagui which is between the two portages the prevailing rock is greenstone.

The dips of these rocks present slopes in opposite directions from the general upward course of the river, as far as a turn northward occurring about half-way between the north portage above mentioned and the Little White River. The angles of inclination are usually small, shewing a rather flat anticlinal arch with a shallow saddle-shaped depression between the two portages, over which the greenstone passes from one side to the other. Near the mouth of the Pakowagaming however there are some corrugations and sharp opposite dips in the slate, but these are probably local and may not extend far on each side.

Along the crown of this anticlinal arch there were met with several veins holding more or less copper pyrites; their courses were parallel with the axis of the anticlinal. Near the mouth of the Pakowagaming they intersected the slates, and consisted of calc spar in which both copper and iron pyrites were observed. At the south portage the gangue of a vein cutting quartzite and holding copper pyrites was quartz and bitter spar. A vein of from one to two feet in width met with at the north portage intersected greenstone; the vein-stone was quartz in which both iron and copper pyrites were disseminated. Though the quantity of copper ore disseminated in these veins was small, yet as the veins occurred in cracks on the crown of an anticlinal where dislocations may be expected, they are deemed worthy of notice, as they may become of more importance in their farther prolongation.

With what division the slates and quartzites which come from beneath the greenstones on the anticlinal of the Mississagui should be classed, is not yet quite certain; nor am I able in respect to the structure of the area through which the river flows, to do more than give some isolated facts to be connected at some future time after further exploration.

From the north portage the greenstone which there crosses the Mississagui runs up the valley of the river in two pretty bold flanks which separate as they proceed; that on the east side bears a few degrees west of north to the Little White River; that on the west about north-west for about two miles and a half, when it comes to the valley of a tributary joining the Mississagui on the right side near the bend half way to the Little White River. Here the flank of the hill is about half a mile west of the bend, and while greenstone composes the top, the slates and quartzites come from beneath it at the bottom, the dip being apparently W. S. W. at a very small angle. The flank continues on the north side from the valley of the tributary and comes close upon the right bank of the Mississagui under two miles above the Little White River. Here again the slate and quartzite come from beneath the greenstone. They also come from beneath the greenstone of the Little White River, about three quarters of a mile below its mouth.

Greenstone is the rock of the Little White River all the way to the first fall, which is two miles up. About four miles due east from the mouth of the Little White River a band of limestone was met with dipping S.E. $<$ from 5^{o} to 8^{o}; it was overlaid by slate conglomerate and underlaid by quartzite. About a mile and three quarters west of north from this on the bank of the Little White River there occurred a farther indication of the band, with a dip only a little east of north, and here it was again associated with slate conglomerate.

If this band of limestone be considered equivalent to the lower one of the Thessalon trough, then the strata between it and the greenstone at the fall lower down the stream would come in the place of the lower slate conglomerate. In this part of the stream there are several good exposures of strata, and though some of them resemble the beds of the lower slate conglomerate in character, others as much resemble beds of the red jasper conglomerate. Although red jasper pebbles have been occasionally met with in the slate conglomerates of the Thessalon, white quartzite containing them never has. White quartz pebbles however, are occasionally by no means deficient, and it would not be surprising therefore that the finer part of the rock should take the form of white quartz sand. Though the dips in this part of the Little White River are irregular, none of them present higher angles of inclination than might result from gentle undulations, and from the dips prevailing near the greenstone, it is evident the conglomerates sink beneath it. It thus seems probable that the conglomerates on the one side of the greenstones of the Little White River belong to the same division as the slates and quartzites on the other. It would follow that the slates and quartzites of the Mississagui are equivalent to the lower slate conglomerates on Wahbiquekobing Lake and that both underlie the intermediate greenstones.

From the mouth of the Little White River the greenstone ridge on the left bank of the Mississagui continues its northward bearing in a pretty straight line to the vicinity of the Grand Portage. At the Grand Portage the channel of the river, whose ordinary breadth is from sixty to eighty yards, suddenly becomes contracted to eight or ten yards, with vertical banks rising to the height of seventy or eighty feet, and through this the water rushes in a torrent for nearly a mile and a half. This deep cut is through greenstone all the way. At the lower end of the portage this greenstone has a breadth of nearly a mile on the left side of the river, forming a hill of 300 or 400 feet in height; beyond the foot of this to the north-east there extends a level country, which for another mile and a quarter is underlaid with slate conglomerate, fine green slate and quartzite in a nearly horizontal attitude; the dip is northward, and does not appear to exceed three or four degrees in inclination. The greenstone probably overlies these beds.

The hill of greenstone appears to extend up the river on the left side to Salter's side-line, which is some three miles above the portage. A corresponding ridge, but not so high, extends along the opposite bank of the river. On the west side of the portage it forms a plain about 100 feet above the river for a moderate breadth and then gradually falls to the south-west; but about half a mile above the head of the portage, and not quite half a mile from the river, it presents a hill of about 300 feet high, while the part intermediate between it and the river, and a small strip on the opposite side with a height of not more than thirty feet above the river, have an even surface underlaid with slate conglomerate in a nearly horizontal attitude. Similar strips of slate conglomerate on opposite sides of the stream are seen near Salter's side-line, dipping at moderate angles in several directions, but horizontal on the average. South of the river on Salter's side-line there are two small lakes, one a mile and the other three miles distant. Between the river and the first lake, with the exception of slates and quartzite on the margin of the river, the space is filled with greenstone. Between the two lakes the rock is slate conglomerate in a horizontal attitude, and it is probable that the same horizontal slate conglomerate extends to the greenstone of Wahbiquekobing Lake as it does to the foot of the greenstone hill at the head of the Grand Portage.

The same arrangement of greenstone and slate conglomerate continues for some few miles farther on the river to the eighth fall, in latitude 46° 30′ N. Beyond this there is a change in the character of the rocks, and what appear to be red syenite, red granite and occasionally red gneiss (all associated with greenstone) prevail on the more immediate banks of the river as far as surveyed, with the exception of slate conglomerate, which comes in on the left bank about a mile in continuation of Salter's side-line beyond his base line. This conglomerate appears at intervals for two miles up the stream with a dip northward at a moderate angle. The lowest exposure seems to approach close upon the gneiss on the opposite side of the stream. The facts ascertained in regard to these apparently older rocks being wholly confined to the banks of the river, their relations are not yet understood.

At both ends of the Grand Portage and along the portage path, as well as at Salter's side-line, indications of copper ore were met with in quartz veins intersecting the greenstone and slate conglomerate. The bearings of those near the portage coincide with the bearing of the deep straight narrow chasm through which the river here makes its way. The chasm is not far removed from them and may possibly mark the position of another vein, though nothing was observed to confirm the supposition. A list is given at the end of the Report of all the localities where traces of copper ore were met with on the Mississagui, and though the quantity of the ore does not in the case of any of the veins appear very encouraging they may become the means of leading to the discovery of veins of a more promising character in the neighbourhood.*

The examination of the area connected with the Mississagui has not yet been sufficiently extended to determine the relation between the copper-bearing veins of the Grand Portage and the physical form to which they are subordinate. The veins of the lower part of the river are evidently related to the anticlinal existing there. Those of the south part of Echo Lake also belong to an anticlinal; so do those of the Bruce and Wellington mines; and it would almost appear as if the importance of the metalliferous indications rose with the sharpness of the fold. But whatever be the cause of the dislocations in which metalliferous minerals are secreted, it would seem to be a probable supposition that in a metalliferous district the greater the dislocations the greater the chances of valuable metalliferous lodes. If this be the case, the great dislocation of the valley of the Thessalon would become invested with much importance. But though there is no doubt whatever that it is a master fault, it would I fear be a somewhat expensive affair to prove or disprove that it is a master lode, for although the proximate position of it has been more or less examined for upwards of fifty miles, never in any place have I been so fortunate as to find the rocks on the opposite sides of the fault in juxtaposition. On arriving at the spot where the junction was expected there was always a swamp, a marsh, prairie, river, lake, or some flat surface covered over with drift. The only mode of proving the matter would be by costeening, and it is probable that the thickness of the covering would cause this to be attended with much outlay.

DRIFT.

A deposit of clay usually of a brownish-drab color is spread over a large portion of the region examined. This clay occupies the lower part of the hollows and valleys, and was exposed occasionally in considerable thickness on the banks of the streams. On the Thessalon and Mississagui it was observed to be distinctly stratified, and frequently to contain calcareous concretionary nodules of various shapes and sizes. Near the top of some of the highest sections of clay,

* The list is introduced into the Appendix.

such as are seen on the Mississagui and Little White River, thin seams of yellowish sand become interstratified, and the whole mass is overlaid with sand of a similar character higher up the main stream. The sand extends far and wide over the highest table lands and a great part of the country generally, concealing the clay beneath, except in ravines and the banks of rivers, where the action of the water has made sections.

The clays on the banks of the Little White River were observed at several places to be tilted; just below the first fall on that stream the dip was N.W. $<$ 25°. About three miles above the fall, where the bank is from seventy to eighty feet high, the lower fifty of which were clay, the strata were again tilted in the same direction as before and at about the same angle. One bed of the clay about a foot thick was observed to be curiously corrugated, while those above and below were perfectly even and regular. This corrugated bed and its associated strata were exposed for no more than thirty feet, the face of the section on each side and above being concealed by clay and sand which had fallen from above, mingled with a few small boulders. The debris presented a talus on each side of the exposed strata, the surface of which shewed a slope of about forty-five degrees. The cliff faced south-east, and the section of the folds in the corrugated bed induced the opinion that their axes were at right angles to the strike of the general mass or nearly so. In your Report for 1844–5, p. 32, you mention an analogous case in the limestone and shale of Cape Bon Ami near Cape Rosier, where the corrugated bed was traced for upward of a mile.

The clay deposits of the Mississagui and Little White River do not appear to attain a height of much more than 160 feet over Lake Huron, or 738 feet above the sea. That is the greatest height found on the banks of the tributary, whilst on the main stream above the head of the Grand Portage, the height of which I have given as 732 feet, the clay is replaced by a great accumulation of sand and gravel, the gravel becoming coarser and more prevalent as we ascend the river. On the banks and flats above Salter's base-line, where the height is 830 feet above the sea, the shingle consists of rounded masses almost all of syenite, the smallest of which is rarely under the size of a man's fist and the average as large as a twelve-pound cannon ball. Many of the masses are much larger, and in addition there are a great number of huge boulders.

Between Wahbiquekobingsing and Lake Huron there is a remarkable piece of table land, about a mile wide from north to south, which stretches to the east and west, rudely parallel with the shore of Lake Huron. It rises by abrupt banks of from eighty to one hundred feet over the flats on either side, which may be between thirty and forty feet above the lake, making the table land about 700 feet above the sea. One of the banks faces Lake Huron, which is from wo to three miles distant, the other Lake Pakowagaming. The sides and upper edges of the banks expose coarse gravel at intervals, but the upper surface, which is flat, is covered with a good loamy soil, growing timber of mixed hardwood and evergreens. No running streams were observed on this table land, although there was abundance of water on either side. From these circumstances it appears probable that the whole of the upper part is of loose material such as gravel and sand, and that it is supported on clay, from above which the surface water, percolating through the looser material, issues on to the flat below.

Glacial grooves and scratches were observed on the smooth rounded faces of the solid rock at many parts of the coast of Lake Huron, in the valley of the Thessalon and in the lower part of Mississagui. The following is a list of such as were registered, with their bearings:

1. Island south side of Echo Lake.. S. 55 W.
2. Half a mile below island south side of Echo Lake.......................... S. 70 W.

These two bearings are in the general run of Echo Lake, on the south side of which rises a bold hill.

3. North of Walker Lake in a shallow depression on the top of a hill and from 200 to 300 feet over the lake which is very little higher than Lake Huron; the valley of Walker River discharges the lake in front of this shallow depression and has the same general bearing as the grooves.......... S. 17 W.
4. Right side of Thessalon River a short distance above Rock Lake in the general bearing of the valley of the river for several miles above,.......... S. 25 W.
5. West and south sides of Rock Lake. There is high land in the direction of these grooves to the southward.......... S. 15 W.
6. East side of bay, Bruce Mines.......... S.
7. North side and east end of the larger eastern Island of the Palladeau group, in three places.......... S. 15 W.
9. Entrance of the Thessalon River, east side.......... S. 18 W.
10. North-west end of Wahbiquekobingsing Lake.......... S.
11. South-east end of Wahbiquekobingsing Lake.......... S. 12 W.
12. South-west shore of Pakowagaming Lake a mile from the south east end.......... S. 25 W.
13. Coast of Lake Huron, nine miles west of the Mississagui.......... S. 15 W.
14. North end of the large island dividing the mouths of the Mississagui River.......... S. 12 W.
15. Right side of the Mississagui below the first fall.......... S. 12 W.
16. Right side of the Mississagui a mile and a half above the mouth of the Pakowagaming. S. 10 W.

The effect of recently moving ice was noticed in a few instances on the Mississagui River north of Salter's base-line, where the coarse shingle was loosely piled up into great conical heaps. The accumulations were usually at a turn in the river where there was a strong current above. The ice brought down with violence and impinging on the side at the turn appeared to have ploughed up the shingle and pushed it forward on to the bank. One of these heaps was estimated to be about ten feet high at the apex, with a diameter at the base of from forty to fifty feet; it rested on closer packed material of the same kind, which also formed the bed and the margin of of the stream in the neighbourhood.

I have the honor to be, sir,
Your most obedient servant,
A. MURRAY.

REPORT

OF

MR. JAMES RICHARDSON, EXPLORER,

ADDRESSED TO

SIR WILLIAM E. LOGAN, F. R. AND G. S.

PROVINCIAL GEOLOGIST.

MONTREAL, 1*st March* 1859.

SIR,

In the month of May last you were pleased to direct me to prosecute a geological examination of the Gaspé peninsula in cntinuation of the previous season's investigation, and to carry the work to a connection with that of yourself and Mr. Murray inthe years 1843-4-5 and 1849 at Cape Ste. Anne on the one hand and Rivière du Loup on the other, as well as to follow out a line of research across the peninsula from some such point on this part of the St. Lawrence as I might deem expedient, to the Restigouche and Bay of Chaleur.

Leaving Montreal on the 13th May in company with Mr. R. Bell, I reached Rivière du Loup on the 16th. We here landed our camping materials with a small quantity of provisions, and forwarded the bulk of what was intended for the work of the season, to Rimouski, to be placed under the charge of Mr. J. B. St. Laurent of that place.

The first part of our season's operations was an examination of the country between Rivière du Loup and Ste. Anne des Monts. In this, removing forward our camping materials from point to point by means of carts, we required the aid of but one permanently hired hand. The whole distance, 176 miles, was measured by pacing, the measurements being made along the shore and along the roads running parallel with it, as well as along occasional transverse lines extending from ten to twenty miles into the interior. Being provided with Bayfield's charts of the St. Lawrence, our distances were checked by means of them, when practicable, at the end of every two or three miles, and every day's work was registered on a map in our tent at night, care being taken to introduce in its proper place every rock met with, together with its dip and strike. We reached Ste. Anne des Monts on the 23rd of June, and continued our measurements in the same manner for thirty miles more along the coast, terminating this part of our work at a point seven miles below the Marsouin River.

Hiring two Indians at Ste. Anne, we ascended the Ste. Anne River in a canoe for thirty-two miles to the junction of the north branch with the main stream. Here, leaving the canoe, a pedestrian measurement was made for twenty miles south-eastward over the Mount Albert of Mr. Murray, to within six miles of that part of the Great Cascapedia, (tributary to the Bay Chaleur,) which is south from a hill called in your Report for 1844–5, the Barn-shaped Mountain. This mountain we visited on our route back. Returning to Ste. Anne, another transverse measurement was made up the valley of the Marsouin River for twelve miles in a bearing S. 12 W. which was continued in a bearing S. 45 E. for about ten miles more to the top of the high mountains that rise between the Ste. Anne and the Magdalen Rivers. Returning from this, we kept a nearly straight line to a point on our southward line within a mile and a half of the mouth of the Marsouin, in a general bearing a few degrees west of north. On this return line, after leaving the higher ground, our route was up the valley of a stream which flows southward to the main north branch of the Ste. Anne, and then along a tributary of the Marsouin (called by us Henley's Brook) which runs in a course opposite to that of the previous stream, but in the same depression.

After this, procuring a boat at the Marsouin we ascended the coast to the Great Metis River, reaching it on the 14th August. Here, hiring a third Indian and another canoe, we made a portage to Lake Matapedia, measuring the road by pacing, and registering on our map, as in all other parts, the various bands of rock which crossed our path. We descended the Matapedia in our canoe, and from the mouth of it, made an excursion to Dalhousie for the purpose of obtaining a collection of fossils required to determine the age of the rocks in the vicinity, on both sides of the Restigouche.

At the mouth of the Matapedia, I obtained through the obliging kindness of Messrs. Daniel and Alexander Fraser, a good plan of the Restigouche for fifty-four miles from its mouth, which, in connection with the valuable information regarding the interior of the country, derived from those gentlemen, saved me much time. The distance especially examined on the Restigouche was about thirty-six miles, extending from the mouth of the Matapedia to that of the Patapedia.

Having determined to return across the Peninsula by this stream, and possessing no map of it, a measurement of the river was made for about thirty-one and a quarter miles to a tributary called the Awaganasees or Pass Brook, the bearings being determined by prismatic compass, and the distances by Rochon's micrometer telescope. The Awaganasees was measured for about nine miles and a quarter more, and from this, a portage of three-quarters of a mile brought us to the head of the lakes of the Metis. These lakes, three in number, and the River Metis were measured in the same way to the junction of their waters with the St. Lawrence, the distance being fifty-one miles and a half.

We reached the mouth of the Metis on the 28th of September, and subsequent to this various measurements and examinations were made in the townships of Macpes and Duquesne in the rear of Rimouski, and in those of Denonville, Viger, and Whitworth in the rear of Trois Pistoles, Cacouna and Rivière du Loup, as well as in various parts as far up as the Seigniory of St. Denis.

After my return to Montreal on the 14th of November, an excursion was made to the Thousand Islands in the neighbourhood of Gananoque to continue certain partial explorations made in 1855–56, but further examinations will have to be made in that neighbourhood before the facts connected with the rocks of those islands can be satisfactorily combined.

Geographical Characteristics.

Valley of the Marsouin and neighbourhood.

The Marsouin falls into the St. Lawrence nearly thirty-three miles below Cape Chat. Where it meets the highest tides, which is about half a mile up from the open gulf, the stream is about one chain wide, and there is at the mouth of the river a lagoon behind a barrier of sand which runs out from a rocky point on the west side of a not very deep bay. The lagoon forms a very good harbour for fishermen's boats and such small schooners as can effect an entrance in moderate weather, but a small rocky island, and the narrowness of the channel render the entrance dangerous at other times.

The hills near the mouth of the river are not more than from 200 to 400 feet in height, and their crests appear to run parallel with the coast; but a few miles inland, they become lofty and their run appears to be about north and south. At about six miles from the coast, between the main trunk of the Marsouin and Henley's Brook, they were estimated to rise to the height of from 2500 to 3000 feet, while east of Henley's Brook and west of the Marsouin they do not attain 2500 feet. In a shallow depression on the ridge between the Marsouin and the north branch of the Ste. Anne, the height was supposed to be about 2600 feet, and two streams belonging to this branch crossed on our south-east line in a mile and a half beyond this, were respectively about 270 and 310 feet lower.

The first of these two streams takes its rise in the depression already mentioned, which is four miles to the north-east. Its source is a pond about a quarter of a mile in diameter, which is immediately followed by two small lakes, each three-quarters of a mile long by a quarter of a mile wide. The second, which is the larger and the main stream of the north branch, takes its rise about two miles to the south-east of these lakes, in a sheet of water which is a mile and a half long by half a mile wide.

A mile and a half beyond these streams, we reached the summit, which was estimated at about 3500 feet above the sea. It displays a narrow ridge running west for two miles between the north branch and another of its tributaries, and then rapidly falling toward their junction; but in an opposite direction the ridge sweeps round to the south with a breadth not exceeding a quarter of a mile, flanked on either side by a narrow ravine sinking precipitously 800 or 1000 feet. Continuing southwardly for about a mile, the ridge widens out and meets the equally high surfaces coming from the opposite side of the ravines. This increased breadth constitutes a sort of table land of some two or three miles wide, extending southwardly for about eleven miles, to the summit over-looking the valley of what was last season called the middle branch of the Magdalen. With the exception of one point, the inequalities of this table land scarcely exceed 100 or 200 feet, and they are chiefly due to a somewhat raised rim which occupies each side of the top. The rim however is broken through by various gaps, permitting the escape of the water which collects in the central depression.

The point just referred to is situated on the eastern rim about four miles from the north end of the table, and it constitutes a peak which attains a height estimated to be about 4000 feet above the level of the sea. It is this part of the mountain to which Mr. Murray alludes in the Report of 1845 and 1846 (p. 104) as interrupting his view from Mount Albert on the west side of the Ste. Anne River. Mr. Murray ascertained by barometrical measurement that Mount Albert is 3778 feet over the sea, and this height has been taken as a standard by which to compare the heights of the various summits that could be seen from it, so that it is partly by this aid that the elevations here given have been computed.

The waters collected in the central depression are discharged partly into the Ste. Anne and partly into the Magdalen from a multitude of small lakes or ponds. The most northern group of these consists of thirteen sheets of water, none of them exceeding fifty acres in superficies. They spangle an area of about three square miles and unite in a stream, which running northward, falls into the ravine on the east side of the narrow ridge at the north end of the table top. These are tributary to the north branch of the Ste. Anne. A little south of these, there is a group of five ponds occupying an area of two square miles, of which the discharging stream flows eastward round the south side of the peak, and another group of two, whose outlet joins the previous stream at the east base of the mountain. The united waters of these brooks flow northeastward and then southward, being what in the Report of last season, was termed the northern branch of the Magdalen. About five miles southward of the peak there is a group of seven or eight more lakes and ponds scattered over an area of about the same number of square miles. The brook resulting from these flows first to the westward, but turning south within the western rim, gradually winds farther round, and flows eastward through a profound gorge as the middle branch of the Magdalen.

The western flank of this table-topped mountain stands at the distance of about four miles east of the junction of the north branch with the main stream of the Ste. Anne. The base is about four miles wide, and its eastern flank in its progress southward comes to within about four and a half or five miles of the junction of the north, south and middle branches of the Magdalen, being the point reached by the measurements of 1857.

The central depression of the top might be supposed to be continued in a pretty straight course along the line which we kept in returning to the mouth of the Marsouin, and approaching the coast to be represented by Henley's Brook; the whole mountain being thus continued north. But as the table-topped mountain is composed of intrusive rock, while the mass between the north branch of the Ste. Anne and the coast, is sedimentary, with an east and west strike, the north and south-ridge-like character of the latter must be only an accident arising from transverse valleys, the position of which give the sedimentary rocks the semblance of being a prolongation of the unstratified mass.

The bearing of the central depression on the intrusive hill, is about S.S.E., and the whole mountain mass has the same bearing. The mass is continued beyond the gorge of the middle branch for six miles, making the whole length about eighteen miles. These six miles, however, do not display summits of such great height as the general surface of the table land, none of them being estimated to exceed 3000 feet. The southern part separates the Ste. Anne from the south branch of the Magdalen; but from a bulge toward the Ste. Anne on the western flank and the occurrence of a bare mountain mass on the east side of the stream of the same general aspect, it is supposed that the intrusive rock may cross the stream at the spot. The whole intrusive mass occupies an area of about seventy-two square miles, the greater part of which is bare rock.

What was considered to be the south limit of the unstratified mass was determined by a bearing from the Barn-shaped Mountain, and by another bearing from it, the position of the supposed igneous rock on the east side of the Ste. Anne, was ascertained to be in a line between the Barn-shaped Mountain and the profound gorge which gives egress to the middle branch of the Magdalen from the table top. The Barn-shaped Mountain as conjectured in your report of 1844, was also found to be composed of igneous rock.

In the depression of the table land and in some of the gorges, especially near the ponds, moss has accumulated to a thickness of from one to three feet, supporting spruce trees growing widely apart and from fifteen to twenty feet high. The greatest diameters of the stems vary from eight to twelve inches, and the stems preserve a very uniform measure to within a few feet of the top. These trees are very ancient and very hard; their wood taking a high polish might be valuable to cabinet makers if it were more accessible. In a stem of four inches in diameter I counted 161 rings of growth, and the largest seen I computed to be 600 years old. Under these trees, various grasses and small flowering plants, all of the most lively green, are met with. In various parts of the central depression patches of snow still lay many feet deep, on the 1st of August; and through its agency, were brought together plants just springing up from the ground, and others of the same kind in blossom only a few yards removed. Between the table land and the coast, around the small lakes at the head of the north tributary of the north branch of the Ste. Anne, spruce and balsam stand in clumps widely apart, while the surface is wet and the open spaces are covered with short wiry grass. The upper part of the Marsouin and the valley of Henley's Brook afford a thin soil, supporting balsam-fir, spruce and some white birch; but in the valley of the main stream, for six miles up from its mouth, good land prevails. There are probably from fifteen to twenty square miles of excellent agricultural soil, which at present supports a heavy growth of maple and birch, with some spruce and balsam intermixed.

Coast between Marsouin and Great Metis Rivers.

From the Marsouin to within three miles of the Ste. Anne, the coast is generally bold, the heights within half a mile of the shore, attaining from 300 to 1000 feet above the sea. At the mouths of some of the streams, considerable areas of good land exist, with maple and birch, and I was informed that the less elevated grounds some distance inland, displayed many patches of excellent soil, supporting a heavy growth of maple, birch and spruce.

From three miles below the Ste. Anne to Cape Chat, there is a distance of fifteen miles. It was stated in your report of 1844, and in Mr. Murray's of 1845, that there was here a considerable area of land fit for cultivation near the shore, which is rather low. The whole distance is now occupied by settlers, and back from the shore for two or three miles I observed clearings in the woods, on the sides of the hills, giving excellent crops of oats, barley, potatoes and timothy grass.

From the Chat to Cape Whale, between twenty-six and twenty-seven miles, the coast is generally bold and rugged, and but few settlers are as yet met with; but a new government road is now in course of construction under the superintendance of Mr. Dugald Fraser, who notwithstanding the difficulties of the ground has succeeded in laying out the road. This will not only afford a means of communication with the fine settlements already made at Cape Chat and Ste. Anne, but encourage the establishment of farms on the good lands along the route; of these at the time of my visit, people from the different parishes above, were availing themselves rapidly.

From Cape Whale to the Great Metis River, the coast is in no place much elevated, with the exception of a few points from two to three miles inland connected with ridges running parallel with the St. Lawrence; none of these appear to exceed from 500 to 600 feet above the sea, as far back as probably ten or twelve miles, and in the neighbourhood of the Tartigo River, even as far back as Lake Matapedia. Settlements are more or less established all along the coast, being continuous on approaching Matanne, and in some places between Matanne and Metis penetrating as far back as from two to four miles.

On the road from Metis to Matapedia the settlements may reach ten miles back, and although the country on this road appears to rise a little higher than it does some distance to the north-eastward, no part of it that I observed would much exceed 750 feet, with the exception of a ridge south-west of the road about ten miles from Metis. The height of this ridge is probably not under 1000 feet. It runs parallel with the other ridges met with on the road, their general bearing being from N. 32 E. to N. 30 E., and it presents a sharp rocky summit with bare rock on the north side. South of Matapedia Lake however, and as far as the Restigouche River, the principal hills, often attaining the height of 1000 or 1200 feet, and occasionally shewing rocky escarpments running for a few miles on one side or the other, appeared rather to stand up as detached masses, than to preserve any great degree of parallelism as ridges.

Except on some of the highest points, the whole of this country, from Metis to the Restigouche, for a distance of more than seventy miles in a straight line, may be said to possess a rich agricultural soil. At the head of Lake Matapedia, which is about 480 feet above the sea, Mr. Pierre Boucher has a large cleared farm, and his son has another at the outlet. On the latter, I saw a field with an excellent crop of barley ready for harvesting on the 18th of August; and both farms presented good crops of oats, potatoes and timothy grass. Thirteen miles below the lake, at the mouth of the Capscoult (a considerable tributary of the Matapedia,) Mr. Noble has about fifty acres in cultivation; the crops growing on them at the time of my visit I have seldom seen surpassed. They consisted of oats, barley, pease, potatoes, turnips and timothy grass. In their thick strong stems, and long branching heavy loaded ears, and the closeness with which the stalks stood upon the ground, the oats resembled more what is met with in a field in England than what I have usually seen in Canada. A large area of land in this neighbourhood has been denuded of its forest by fire, and much of it is of the same description as that occupied by Mr. Noble, requiring little more than ploughing to render the natural fertility of the soil available.

At the junction of the Matapedia with the Restigouche the land, except on the highest parts, which may be 800 or 1000 feet above the sea, has a soil of the richest description, and well cultivated farms are met with on the banks of both rivers. The farms on the Matapedia extend about four miles up the stream. Mr. Daniel Fraser, at the mouth of the Matapedia, feeds from seventy to a hundred head of cattle and from 150 to 200 sheep, which as well as those of his neighbours are large and unusually well conditioned. In this neighbourhood and farther down towards the Bay Chaleur, a large number of cattle and sheep are annually raised, but the want of a favorable outlet to a market naturally keeps down the value of farm produce. A government road is now being constructed in a most solid manner, and at low grades, under the superintendence of Mr. J. B. Lefebvre, from the Bay Chaleur along the east bank of the Matapedia to Matapedia Lake, and thence to some point of the St. Lawrence. This road, in addition to affording a means to the settlement of the country across the peninsula, may become of great advantage to the farming community of the Restigouche, as well as to the inhabitants of Quebec, for with steam communication up the St. Lawrence from some point near Rimouski, Quebec might be benefited by an additional supply of cattle and sheep, as well as by the establishment of a general commercial intercourse with the Restigouche scarcely now existing.

The Restigouche River to the Mouth of the Patapedia.

About eight miles below the Matapedia the Restigouche meets the tide and there are about two miles more to the head of the Bay Chaleur. For several miles above the bay the river is from a mile to half a mile wide, and it is thickly set with low islands forming good meadow land. Above this to the Matapedia, the breadth becomes contracted to less than half a mile, and in some places, a considerable current prevails. From the Matapedia to the Patapedia the distance in a straight line is a little over twenty-one miles, in a bearing about S. 65 W.; but following the windings of the river, the distance given by the boundary commissioners is thirty-seven miles. About seven miles above the Matapedia, at a great bend to the right, a large tributary joins on the New Brunswick side. It is called the Upsalquitch and is five chains wide at the mouth. About six miles higher up a tributary not more than ten feet across, called the Brandy Brook, joins on the Canada side, and while the distance by water from the Matapedia is thus thirteen miles, it is only six and a half miles over land. Above this, several other conspicuous bends occur; the bow at Cross Point, which is the most remarkable, is thirty-one miles above the Matapedia by the river. In this curve, the distance by water is two miles, while across the land it appears to be not much over a hundred yards.

As far up as Brandy Brook the hills stand somewhat back from the river, and rise with gently sloping sides, well covered with soil, to the height of from 300 to 500 feet. Within a short distance of this both sides of the river are settled, but farther up the hills come close upon the river and often rise up abruptly to heights of from 400 to 600 feet. It is thus only on flats at intervals of several miles that sites can be obtained for settlement on its banks. The sides of the hills in this part appear to be thinly covered with soil, but farther back the land is said to be capable of cultivation. Above the Patapedia the Restigouche is wholly within the province of New Brunswick. At its mouth the Patapedia is six chains wide, including a small island dividing it into two channels, but above this the breadth does not exceed about fifty yards.

Patapedia and Great Metis Rivers.

According to my measurements the whole of the distance from the mouth of the Patapedia on the Restigouche to the mouth of the Great Metis on the St. Lawrence, following the curves of the rivers, is 91 miles, 51 chains and 90 links; while the distance between the same two points reduced to a straight line would be 64 miles. The distance in a straight line between the same two points as deduced from the survey of the Boundary Commissioners on the Restigouche, and that of Bayfield on the St. Lawrence, would be 64 miles, 8 chains.

The distance measured on the Patapedia and its tributary the Awaganasees or Pass Brook, was 40 miles, 19 chains, 52 links. The first main stretch of the valley in an upward bearing N. 61 W. is a little over twelve miles, while by the water it is a little over fifteen miles and a quarter. The aspect of the river and its banks varies but little the whole way. In the lower half the hills rise irregularly to from 100 to 400 feet, generally close upon the river, but sometimes from 100 to 300 paces back, and where intermediate flats occur they produce ash, elm, yellow birch, spruce and poplar, while the slopes are covered with white birch, spruce and balsam, with a few white pines. Except on the flats the soil appears to be in many instances adapted for pasture only. The upper half resembles the lower, except in that the hills gain a little in height, and support more white pine. It is probable, however, that the greater part of the white pine has already been carried away from both parts by those engaged in the timber trade. I observed a few heads of timothy grass growing on the edge of the river, the seeds of which had probably been carried there by the lumber-men; the stalks measured fifty-five inches in height. The largest tributary brook seen in this part of the river is sixteen feet wide at the mouth; it falls in on the east or Canada side, seven miles and a quarter from the Restigouche.

The second upward stretch of the valley in a straight line N. 8 E. is a little over seven miles and three quarters; by the bends of the river the distance is upwards of thirteen miles. A little over a mile and a half up, a tributary called Pollard's Brook joins on the right side; a short distance above its mouth it is seventy links wide. About four miles and a half above Pollard's Brook we reach the forty-eighth parallel of latitude, on which the boundary line between Canada and New Brunswick is continued to the westward from the river. The spot is marked by an iron monument on the right bank, numbered 59. The measured distance by the river from the post numbered 60 at the mouth, is 22 miles, 16 chains, 94 links, and the distance reduced to a straight line is 15 miles, 11 chains. The distance as deduced from the measurements of the Boundary Commissioners is 15 miles, 17 chains; a little below the forty-eighth parallel a brook, measuring about twelve feet across, comes in on the right bank, and about seven miles above the parallel, there is at the end of this general bearing another tributary stream; it is called Indian Brook, and with a breadth of about eighty links, it joins on the left side. For about half a mile up the tributary the bearing is about ten degrees south of west, and it then turns to ten degrees north of east. The place where this stream joins is sometimes called by the lumber-men The Fork.

The aspect of the river as far as Pollard's Brook in this stretch resembles the upper half of the part below, but above the brook the hills are less elevated, and excepting on the flats, which are not extensive, there appears to be a thin soil. Near the stream in this part much of the country has been overrun by fire, and the new timber springing up in place of the old is spruce, white birch and cypress, occasionally in thick groves. About a mile from the right bank the hills rise to the height of from 400 to 600 feet, and at the same distance from the opposite side they are from 300 to 400 feet.

The next general bearing of the valley is N. 52 W. to the mouth of the Awaganasees. The distance in a straight line is a little over three miles, and by the river nearly four miles. Beyond this the Patapedia is said to have a bearing a little north of west for six miles, and then west of north for six miles more; it there issues from a lake which has an upward length of three quarters of a mile; this lake three quarters of a mile farther is followed by another of double the length, and by an additional one of two miles and a half in length a mile beyond, all three in the same bearing as the river.

Although the Patapedia is rapid it is well adapted for canoes, but the lumberers use scows or flats from eight to twelve feet wide and from twenty to thirty feet long, which are drawn by horses. As they draw the scow up the stream the horses wade in the shallowest part or sometimes walk on the bank, while the steersman guides his vessel in the deepest or most convenient water. Coming down stream the horses are embarked, and all are carried down by the current, the vessel being guided by the aid of poles. It is by such means that provisions for men, as well as oats and hay for horses and cattle, are conveyed for lumbering purposes up the Restigouche and its tributaries.

The bearing of the Awaganasees from the mouth to where we left it is N. 12 W., the distance in a straight line being seven miles, by water nine miles and a quarter. At its mouth the tributary is about half a chain wide, but somewhat over six miles up, after an expansion in a beaver meadow of from three to five chains, which continues for a mile, it splits into two equal branches, and where we landed our canoes from the western branch it was not over five or six feet across. The navigation all the way up this brook was very troublesome from overhanging bushes and fallen trees. The expansion in the meadow is flanked on either side by upwards of half a mile of swampy ground supporting a growth of spruce and tamarack. Near the brook the land is generally low, but detached hills rise at the distance of one or two miles to heights of from 200 to 400 and even 500 feet. The aspect of these hills as seen from the brook induced the opinion that they bore a considerable quantity of hard-wood, and might possess a good soil.

From this the upward course of the Awaganasees turns gradually eastward, while the portage continues in the same direction as the previous bearing of the brook; the length of the portage is three quarters of a mile, and it comes upon a long narrow bay or creek of the Upper Metis Lake, near a small run of water coming from the west. The height of land on the portage is about five feet, and the waters on the opposite sides appear to be about the same level.

In the upper part of the Metis there are three lakes which in the absence of other names, we called the Upper, Middle and Lower Metis Lakes. The first bearing from the head of the Upper Lake was N. 29 W. and the distance in a straight line nine miles and a half, but a little more following the curves of the water. This bearing included two of the lakes, the bearing touching the outlet of the first and terminating at the outlet of the second. The length of the Upper Lake is four miles, the stream connecting the first and second is nearly a mile, and the second lake is again about four miles. The average breadth of both the lakes is half or three quarters of a mile; the shores of both are low and they are furnished with a dense fringe of cedar and alders, the latter overhanging the water. The land rises gradually for half a mile on either side to the height of from fifty to seventy feet, while at the distance of three quarters of a mile more, the hills attain the height of 300 or 400 feet; the slopes appear to be moderate. Near the lakes some black ash was occasionally observed, and further back some maple trees, but the principal wood of the hills is spruce.

The only difference in the aspect of the two lakes is that the second one has several small islands. At the head of this lake is a well marked depression running to the right and to the left, nearly at a right angle to the axis of the two lakes. From these depressions a brook of six feet wide falls in on the east, and a somewhat larger one on the west. About the middle of the lake a stream fifteen feet wide comes in on the west side; it has a general upward bearing S. 65 W. for about a mile, where it issues from a lake said to extend a mile and a half farther in the same bearing with a breadth of half a mile, and three quarters of a mile still farther there is another lake, said to be nearly round, with a diameter of three quarters of a mile. Just above the outlet a stream measuring twenty-four feet across comes in on the east side, with an upward bearing of N. 70 E. for half a mile, where it splits into two branches, the one branch maintaining the same upward bearing, and the other bearing north six or seven miles, in which direction it comes from among a group of mountains which appear to be not under 1000 feet in height.

The stream connecting the middle and lower lakes meanders through a low swampy tract, and presents several small expansions on its sides; a bearing N. 63 W. and a distance of two miles and a half reaches from one end to the other.

The Lower Metis Lake is two and a half miles long in a bearing S. 73 W. which runs nearly along the middle of it. The breadth is from an eighth to a quarter of a mile, the shores like those of the other two lakes are low, and the hills which bound the lower ground at a distance varying from half a mile to a mile, are of moderate height.

The respective heights of these lakes over the sea are computed to be as follows:

Upper Metis Lake,	....	775 feet
Middle "	....	760 "
Lower "	....	758 "

From the outlet of the lower lake a bearing of N. 27 W. takes us fifteen miles and a half down the valley in a straight line, to which distance the curves of the stream would add three miles more. In the first three miles, in which the stream is very rapid and broken, there is an estimated fall of 115 feet, or thirty-eight feet per mile; in the next mile there is a fall of 143 feet, and three portages are necessary to accomplish the descent; the upper and lower ones are only from twenty to thirty yards each, but the middle one is nearly half a mile in length and comprehends the greatest falls. In about the middle of the portage there are two vertical cascades, of which the upper gives a fall of ten or eleven feet, and the lower one, fifty paces farther, a leap of about thirty-five feet, in addition to which there are several other leaps of different heights. Both above and below these falls the river runs through a narrow gorge in which it is for the most part inaccessible. Two miles below these falls we come to the mouth of a tributary about sixty links wide, called the Rouge, which joins on the east side; and four and a half miles farther to the Misquegegish, a chain and a half wide, joining on the west side. The fall from the cascades to the Rouge is estimated at fifty-five feet, and between the tributaries twenty-six feet. In the remaining six miles the fall is estimated at seventy-eight feet. Independent of the vertical falls, the river in all those parts that are capable of descent in a canoe, has a very rapid current.

The breadth of the river above the Rouge is about one chain, and below it is two chains; except at the portages the banks of the river are generally low, but at a little distance from the stream detached hills rise up to heights of 100 or 200 feet, and occasional escarpments of twenty and thirty feet come close upon the river. In the neighbourhood of the cascades and as far back as the lower lake the soil appears to be thin, while below the River Rouge, although spruce is most abundant, maple and yellow birch are not wanting, and elm is occasionally met with near the river. Below the Misquegegish after a short interval of comparatively level land, low ridges begin to appear, rising to heights of 100 and 200 feet, and towards the end of the distance they attain 300 feet. The ridges are unlike the detached hills above, for they preserve a general parallelism with one another, with courses varying from N. 45 E. to N. 83 E.; except in two cases where the summits were bare rocks, the ridges both on their sides and tops support a heavy growth of spruce, maple and yellow birch, with balsam fir. The flats, which are sometimes extensive, in addition to these species of trees, produce elm and ash, which are occasionally abundant.

The next bearing in the general course of the river is N. 87 W.; the distance in a straight line is three miles, and following the course of the channel, half a mile more. The fall is thirty-seven feet. Between this part and the lower portion of that which precedes it, the difference is confined to an extension of the flats, which are here under cultivation. The breadth of the valley is now from three-quarters of a mile to a mile in width, and on each side of it ridges rise up gradually to heights of 150 and 300 feet; approaching the end of the distance the River Neigette comes in on the west side; its width is seventy-five links at the mouth, and its upward course is westward with the general bearing of the ridges; in this direction it reaches to within a few miles of the River Rimouski, and to a position not exceeding five or six miles south-east from the St. Lawrence; it then turns southward for some distance to a lake of no great extent, from which the stream issues.

The last general bearing of the River Metis to its mouth in Metis Bay is north; in a straight line the distance is six miles, and following the sinuosities of the channel ten miles and a little over. The first six miles and a half present no new feature with the exception of ridges which occur three miles down, rising to the height of 300 feet at the respective distances of 100 and 300 paces on opposite sides of the stream, and run parallel with the other ridges. The fall in these six miles is forty feet, and in the rest of the distance to the mouth 215 feet; the remaining distance is upwards of three miles and a quarter, in the upper half of which there occurs a vertical fall of ninety feet, and another of fifteen feet over the dam of Messrs. W. Price & Sons' saw-mill, with still another a mile and a quarter farther down over the grist-mill dam, of twelve feet. These three vertical falls, amounting to 117 feet, leave ninety-eight feet for the slope of the intervening spaces. From the upper fall to the grist-mill the river forces its way between banks rising from 50 to 100 feet over its bed, and from three to four chains separated from one another.

The entrance to the Metis from the bay is at a point or bluff of rock rising on the west side to the height of about fifty feet, and at low water the channel is not over two chains across to a low point on the east side composed of sand and clay. In side of this, a basin sixty-seven chains long and about half that measure in width, affords a good harbor for schooners of moderate draught. The bay outside of this is protected by a point a mile out from the mouth of the river, projecting from the west side eastwardly, and this with two low narrow elongated islands lying a little within the point, yields shelter for a larger class of vessels. Any vessel however drawing more than nine or ten feet would be in danger of injury from the numerous large boulders of Laurentian rocks that lie scattered over the bottom of the bay.

Country between Metis and River du Loup.

To the westward of Metis as far up as the River Rimouski, a distance of twenty-seven miles, the rise, either immediately upon the shore or in a distance of from 100 to 200 paces from it, is from thirty to forty feet. Beyond this for a breadth of from one to two miles the surface is nearly level; a great part of it is swampy and covered with moss. This swampy tract is widest about half-way up, narrowing considerably toward the two extremes; for two or three miles beyond the breadth of this low ground, the surface rises gradually to the height of from 400 to 500 feet above the sea, and then breaks into undulations which extend as far as the Neigette River. Opposite to where this river takes its upward turn to the south, the ridge on the north, over-looking its valley, is about 400 feet high. This ridge at this place and for some distance eastward and westward presents an exposure of bare rock. From the turn on the Neigette, the depression of the eastward and westward portion of its valley continues westward, and it becomes occupied by another small stream called the Bois Brulé, which flows westward until it joins the River Rimouski, about six miles above the mouth of the latter. An apparent continuation of the valley of the Bois Brulé brings the Little River Rimouski from the westward, to join the main stream a little above the former, so that there is a marked continuation of one valley for upwards of thirty miles.

Below these tributaries the Rimouski flows towards the St. Lawrence through a deep and not very wide gorge, which continues to within a mile of its mouth, where Messrs. W. Price & Sons have a saw-mill, which is situated a little above high water mark. Below the mill the banks of the river become less elevated, and they are quite low at the mouth. Above the junction of the two tributaries the Rimouski is rapid, and continues confined in a narrow gorge as far up as eight miles in a straight line. The breadth of this gorge at the top is from five to six chains, but the breadth of the channel, which is from 100 to 200 feet below, does not exceed a chain or a chain and a half. In the whole distance given, (eight miles) only one place was observed where an approach to the water from the top is tolerably easy; it was at the mouth of a brook coming from an extensive marsh in the township of Macpes, and falling into the Rimouski on the fifteenth lot of the third range of Duquesne.

The falls of the Rimouski are situated on the twenty-third lot of the fifth range of the same township. The descent is in two cascades; the height of the upper is about sixty feet, while that of the second, which is about a hundred paces farther down, is only twenty feet. Immediately above the falls the river is but little below the top of the banks, and a moderate current and good land on each side of the stream are said to prevail from the falls to the head waters of the river.

From the falls to within a mile of the Bois Brulé River the hills are detached, but not elevated; below them swamps and small lakes are abundant. The timber is spruce, balsam, white and some yellow birch, with now and then a pine tree. The soil appears to be thin, and the timber is not large. Between Metis and Rimouski, to the north of the Neigette valley, and in it, the very best soil prevails. This is evident in the numerous well built farm steads. Approaching the village of Rimouski the country is highly cultivated, and the beautiful village itself shews considerable wealth in its many tasteful large and substantial buildings.

From the Rimouski for a distance of seven miles to a small stream called the River Athie, within two miles of Bic Harbour, the coast is still low except in two places, one of them opposite Barnaby Island, where the bank has a height of fifty feet, and another two miles farther up the coast, where the bank is about sixty feet high. From the low ground of the shore there is a gradual rise in the surface for two miles back, where it attains 400 feet above the sea, and then breaks into parallel ridges, which succeed one another to the valley of the Little Rimouski River.

From the River Athie to Pointe aux Trembles, two miles below Trois Pistoles church, the coast is rock-bound nearly the whole way; the distance is twenty-six miles and a half, and except at Bic Harbour and another place a little below St. Fabien, no settlement can be effected along it. Towards the east end there are three indentations in the coast line; one of these is Bic Harbour, which is bounded on the east by a rocky point lying between Bic River and the St. Lawrence, and by two small islands, the larger called L'isle Massacre, lying in continuation of the point; and on the west by Cape Enragé, which runs into a peninsular form in the same line as the islands and point on the opposite side. Another of the indentations forms a deep bay between Cape Enragé and a jagged sided promontory of a peninsular form, running out a mile from the continuous line of coast and called Cape Orignal. The third is Haha Bay, which lies on the west side of the peninsula of Cape Orignal.

This uninhabited part of the coast forms a belt of from one to two miles wide, which is ribbed by sharp longitudinal ridges rising over the sea from 400 to 500 feet, and even occasionally 600 feet, with an elevated point which on Bayfield's chart is called the Highland of Bic, and to which is given the height of 1263 feet. To the south of this belt, long stretches of a flat valley run parallel with it, having a breadth of from half a mile to a mile, succeeded by another sharp ridge from a quarter to half a mile across. These valleys and ridges follow one another in the neighbourhood of St. Fabien and St. Simon, for about four miles, to a well marked depression holding the waters of a stream called Rivière du Sud-Ouest, which in its course expands into several long narrow lakes and empties into the south-west corner of Bic Harbour; beyond this the country is more elevated but less broken.

From Point aux Trembles, two miles below Trois Pistoles church, to Rivière du Loup a distance of nearly thirty miles the coast is in in no place bold, and it is all the way accessible from the land. The only prominent rocky points are one just above the church of Trois Pistoles, running up from it a mile, and from twenty to fifty feet high; another about a mile above Trois Pistoles River, which runs along the coast for another mile with the height of forty feet; and a third over three miles above Green Island River, which runs along the coast for three miles and a half, making straight for Cacouna Peninsula, and separated from it about half a mile. The ridges behind are not so well marked as farther to the east, but there are indications that the spaces between them are well filled up with drift clays and sands, two terraces of which run along the country from the east of Green Island River to the River of Trois Pistoles. The first is abcut a mile from the St. Lawrence and 110 feet above its surface; the second is 170 feet higher and a mile farther back. The greatest development of these terraces is to the west of Trois Pistoles River, but before reaching Green Island River their marked outline is lost.

To the east of Rivière du Loup village several low rocky ridges and hills are seen, but these have been already described by yourself in your Report of 1849. A well displayed ridge crosses the falls above Rivière du Loup, but it loses its marked outline in its easterly extension in the rear of the village of Cacouna. On the south of this the waters of Green Island River flow to the eastward, and farther south in the townships of Viger and Whitworth higher lands rise up, the north side of which may be the continuation of the highland already mentioned as lying to the southward of the valley of the river.

DISTRIBUTION OF THE ROCK FORMATIONS.

The rocks prevailing in the district of which some of the geographical features have been given above, are similar to those of the previous season's Report. Without repeating the explanations then given, I shall describe their characters as they appeared to me, the following being their supposed sequence in ascending order.

A, Graptolitic shales and sandstones,.......	Lower Silurian.
B, Conglomerate limestones often magnesian,	Lower Silurian.
C, Pillars and stonesand red shales,..	Middle Silurian.
D, Gaspé limestone,................	Upper Silurian.
E, Gaspé sandstone,................	Devonian.

Section between the mouth of the Marsouin and the Table-topped Mountain.

A little below the mouth of the Marsouin River there occurs a set of grey slightly calcareous sandstones, divided into beds of from two to three feet thick; some of the beds are coarse grained and hold small translucent fragments of blackish quartz, little pebbles of grey and black chert, and small fragments of black shale and of brownish-weathering magnesian limestone. The coarse beds under atmospheric influences become rough on the surface and present the character of fine conglomerates, the pebbles seldom exceeding the size of peas, but in fresh fractures this character is not so conspicuous. These sandstones at the spot present a vertical attitude with a strike bearing N. 49 E.,* but at a point about three quarters of a mile eastward very nearly in the strike, the dip becomes N. 41 E. $< 64^{\circ}$. Crossing obliquely southward from this it soon becomes S. 26 E. $< 30^{\circ} - 55^{\circ}$, and for two miles and a half in a coast line oblique to the measures it continues southerly, bringing out higher and higher strata, though from disturbances and irregularities it is difficult to say what the thickness may be. Still farther on the coast continues to cross the measures obliquely, but several undulations occur, and the measures acquire a general but irregular dip, apparently southward at a somewhat high angle. The sandstones become yellow-weathering and fragments of bivalve shells are met with in them, while black shales holding graptolites become more and more interstratified.

The irregularities of the dip render it difficult to determine the thickness exposed, but the mass appears very much to resemble part of a group of strata described by yourself in the Report for 1844, as occurring four miles below the Magdalen River on the south side of an anticlinal, and then again on the north side of it at Gros Mâle. The group below the Magdalen includes certain strata still underlying those given above; they are stated to be a set of splintery sandstones with very large yellow-weathering calcareous nodules or patches, interstratified with grey slates. Perhaps this portion may be exposed somewhat farther below the Marsouin, but the section was not followed far enough to ascertain it. The total thickness given to the whole group in 1844 is 2000 feet; the part seen below the Marsouin may represent half the amount. The beds are supposed to belong to Division A.

A little above the mouth of the Marsouin there occurs a set of black bituminous shales highly charged with nodules of iron pyrites and interstratified with thin layers of limestone, and in these beds graptolitic remains are abundant, with an occasional *Orthoceras* replaced by iron pyrites. On a small island at the mouth of the river, masses of black and green compact rock resembling jasper occur, very similar in aspect to masses described in the Report of 1852–3, as met with in association with black graptolitic shales on the north-west side of the St. Lawrence, a mile and a half above Cap Rouge River. Immediately above the black pyritiferous graptolitic shales at the mouth of the Marsouin there occurs a band of red shale, interstratified with green shale, and associated with a bed of conglomerate from six to twelve inches thick, in which a multitude of rounded masses of black chert, with some softer masses resembling the chert, are set in a dolomitic limestone, the masses being somewhat flattened and some of them reaching an inch in diameter.

Although these strata are somewhat disturbed, the red shales can be traced several miles up the coast. The black graptolitic pyritiferous shales are considered to belong to the top of the Division A, and the red and green shales with

* The bearings in this Report are in reference to true north.

their thin conglomerate band to the Division B. But between the obscurely fossiliferous sandstones below, and the black graptolitic shales above the marsh of the Marsouin, though they both belong to the same division, there is supposed to be wanting a considerable thickness of black graptolitic shales interstratified with black yellow-weathering dolomites, which on the Magdalen River were found to overlie the sandstones. It would be hazardous to assign to the beds wanting any specific thickness; but it would seem probable that there is a dislocation running up the Marsouin, with an upthrow on the east side of it, the value of which would be represented by the beds wanting.

Passing up the valley of the Marsouin about a mile and a quarter, sandstones resembling those seen on the coast below the mouth are met with, interstratified with black shale, and dipping S. $<48°$. A mile farther the debris in the stream was black calcareous shale, and black shales were again seen in the bed of the stream two miles still farther up. Upwards of two miles beyond this we came upon a set of black slates, which though uniform in color, presented a diversity in mineral character, some of them being somewhat calcareous, while others appeared to be destitute of carbonate of lime, and shewed small scales of mica on the surfaces. The divisional planes were nearly vertical, with a strike N. 47 E. Rock of a similar character prevailed for two miles, and at the end of the distance the divisional planes shewed a dip N. 11 W. $<64°$. The thicknesses of the slates were very regular, varying from a quarter to three-eighths of an inch; and with these thicknesses slabs of eight or ten feet square might be obtained. Loose masses indicated that from some beds, which were not seen in place, slabs of from two to three inches might be obtained, capable of yielding excellent flag-stones, while the others would form good tile-stones or good roofing slates, provided the calcareous parts were avoided. No change in the character of the rock was observed for upwards of three miles farther, the planes of division about half-way shewing a dip N. 26 W. $<60° - 70°$.

In the valley of Henley's Brook, rock of a similar character was observed about four miles from the coast. It prevailed in the upward course of the brook for two miles and a half, and the rock of this valley would be a material of a very superior description for roofing slates and flag-stones. The position of the most northern exposure of these slates on Henley's Brook would be in the strike of the divisional plane of the most northern exposure on the main stream, while the strike of the more southern exposures does not differ materially from what may be considered that of corresponding positions in the two valleys, though the slope in the one is northward and in the other southward, the dip in the more southern exposure on Henley's Brook being S. 8 E. $< 50° - 80°$. From this, it appears probable that there is not much difference between the cleavage planes and the bedding of the rock.

Beyond these roofing slates no exposures of rock were seen for some distance. The nearest south of the position on Henley's Brook was on the small lakes at the source of the north tributary of the north branch of the Ste. Anne, where the rock that forms the sides and the bottom of the lakes is a black hard brittle slate, holding cubes of iron pyrites; and the nearest to the slates of the Marsouin was at the junction of the south tributary with the main stream of the north branch. This was also a hard and brittle black slate; it was traversed by strings of white quartz, but contained no observed pyrites; the dip was S. 26 E. $<60°$. The whole of the rocks from the sandstones at the mouth of the Marsouin up to this point, are supposed to belong to the group A.

A mile and a half southward of the black brittle slates an exposure occurs on the high narrow ridge constituting the north end of the table-topped mountain. The beds dip S. 64 E. $<70°-80°$, and the following is the section which they present in ascending order:

Blueish-grey slate in beds of from one quarter to one half an inch; it appears to have disseminated through it very small grains or imperfect crystals of chloritoid	510
Blueish-grey slate as before, interstratified with beds of from two to six inches of grey sandstone; some of the beds are coarse enough to constitute a conglomerate, the pebbles of which consist chiefly of colorless transparent and translucent quartz as large as small peas	319
Reddish-grey slate with a nacreous or pearly lustre, showing a great abundance of imperfectly formed crystals of chloritoid	49
Blueish-grey slate in beds of from a quarter to half an inch with very small grains of chloritoid; the slates are interstratified at intervals of ten, fifteen, and twenty feet with thin bands of white crystalline feldspar	828
	1706

The stratigraphical place of these beds is somewhat uncertain, but the pearly lustre of part of the slates, and the presence of chloritoid give them the aspect of slates often met with near the dolomites and serpentines of the Eastern Townships, and they may represent some part of the summit of Division A., or the base of division B.

These strata appear to plunge under the great mass of igneous rock of which the table-topped mountain is chiefly composed. As already stated this mass extends probably eighteen miles to the southward, with a breadth of four miles in general, but opposite the middle branch of the Magdalen, it becomes broader and extends across the Ste. Anne. The rock appears to be a fine grained granite, composed of flesh-red feldspar and brown mica, with so sparing an amount of quartz in some places that it is very difficult to detect it, while boulders, supposed to be derived from the mountain, show it to be abundant in others. The northern limit of the mass was traced from the neck of the narrow ridge where it turns from east and west to south, as far as the small lake which gives origin to the main stream of the north branch of the Ste. Anne.

The position of this mass of intrusive rock makes it probable that the dislocation supposed to exist at the mouth of the Marsouin will have some connection with it, in which case the most likely course for the dislocation would be up the valley of Henley's Brook and of the small lakes at the source of the north tributary of the north branch of the Ste. Anne, from which it would gain the west side of the igneous mass, passing close in front of the chloritoid slates mentioned above.

Section from the Ste. Anne to the Barn-shaped Mountain and the Valley of the Cascapedia.

Mr. Murray in his survey of Mount Albert established three stations for the purpose of triangulating the peaks of various mountains in the neighbourhood. The traverse line which I followed from the junction of the north and south branches of the Ste. Anne to the neighbourhood of the Cascapedia and the Barn-shaped mountain, led me in the first instance by two of these stations, and the following are the bearings and distances of the courses followed to within six miles of the Cascapedia.

S. 53 W. 2 miles 8 chains, to Mr. Murray's 1st station.
S. 35 W. 2 " 60 " to " 2nd "
S. 29 W. 10 " 40 " to within 6 miles of the Cascapedia River.

The Barn-shaped mountain was visited as we returned, but for the convenience of description I shall give the bearings of our courses in reverse order, starting from Mr. Murray's second station; they are as follows:

S. 39 W. 7 miles 38 chains to Barn-shaped Mountain.
S. 2 " 77 " to within six miles of the Cascapedia.

In the section along the coast the rocks at the mouth of the Ste. Anne belong to division B.

The description given by Mr. Murray in his Report of 1844 of the brecciated or conglomerate limestones in that part of the stream which runs along the foot of the Shickshock range, shews that there must there be a repetition of the coast rocks. In successive exposures along this part of the stream, Mr. Murray has traced the conglomerate limestones, associated with black slates and black thin bedded limestones, for between twelve and thirteen miles, showing that for this distance the stream probably runs in the strike. The last exposure of the conglomerate limestones in ascending the stream reached to within two miles and a half of the union of the north and south branches, and the black slates and thin limestones to within a mile and a half. According to Mr. Murray, green slates appeared to occupy the interval, and these slates resembled some that he had seen among the Shickshock Mountains.

The black slates and thin calcareous layers must be repeated at the mouth of the north branch, or another band of them be interstratified there, as they constitute the beds from which my traverse started; the breadth visible was only a few yards, and the thickness would not exceed twenty or thirty feet. They were immediately succeeded by a mass of dark green serpentine, holding disseminated crystals of diallage in some abundance; exteriorly the rock weathered to a brownish-yellow. The breadth of the mass on the measured line was 230 yards, and this taking the dip of the nearest strata above and below, would give a vertical thickness of 430 feet, which appears to preserve much uniformity of character throughout. After a concealed interval of nearly half a mile, part of which, from the form of the surface, is supposed to be underlaid by the serpentine, the next rock seen was a green coarse tough chlorite slate, with a somewhat fibrous or ligneous structure, partly marked with spots of epidote; it had a tendency to break into long splinters. The breadth was about sixty yards and the dip S. 24 W.$<45°$, which would give a vertical thickness of 115 feet. The succeeding 1100 yards were concealed, but they were followed by 1000 yards, in which only 250 yards towards the commencement were deficient in exposed strata. The exposed strata consisted of green chloritic and epidotic slate similar to the previous, some parts of it displaying thin patches of whitish quartz irregularly distributed among the layers. The dip of the mass was S. 29 W. $< 42°$, and the thickness would be about 600 feet. To this succeeded a belt of black rather coarsely crystalline hornblende slate, divided into beds of greater or less thickness, some not exceeding a quarter of an inch, interstratified with grey layers scarcely exceeding the eighth of an inch, deriving their tint from the presence of more or less white feldspar. Nearly the whole mass was more or less studded with small red garnets, sometimes thickly distributed in clusters. The breadth of this mass was 250 yards, and the dip S. 14 W.$<$ 74° the thickness would be about 570 feet. The summit of this rock passed close by Mr. Murray's first station.

The two miles and three quarters to the second station were wholly occupied by serpentine, which continued for four miles and nearly three quarters farther on the S. 39 W. course. On all the lines it generally presented evidences of stratification, in some parts remarkably clear and distinct, in other parts more obscure. That part which immediately rested on the hornblende slate displayed the bedding very beautifully by differences of color on the weathered exterior, as well as on freshly fractured surfaces. The weathered exterior was marked by a set of red and opaque white bands, the white broader than the red, and varying from the eighth of an inch to an inch, and becoming often interstratified with layers of a brownish fawn color, which varied in breadth in the same way.

The interior when cut and polished displays parallel bands of a rich mahogany-brown, with thin blood-red vein-like lines running through those beds which are red on the weathered surface; these blood-red lines are sometimes disposed after the manner of false bedding. With the red layers there are parallel bands of asbestus not much thicker than stout paper, looking like mere partings among the broader layers, and these asbestus partings, as well as occasional crystals of diallage, when in the proper light, give golden reflections. With the red-tinted beds chromic iron is associated, which is sometimes diffused in grains along the layer in a clouded manner, and sometimes is arranged in a manner somewhat resembling false bedding; occasionally minute faults dislocate the beds, and when these cross the layers containing chromic iron, the fissure connected with the fault is also filled with the mineral for a considerable distance on each side.

The thickness of this well stratified red and brown part appeared to be about 400 feet. But the great mass of the serpentine exposed was of various shades of green, much of it bottle-green, and came in succession to the well stratified part. To calculate the thickness of this part it would not be safe to take the measures on the second and third courses on the line of traverse as these very probable run much in the strike. In its aspect this portion resembles the serpentine first met with near the Ste. Anne, and as the measure there was clearly transverse, though a little oblique to the strike, the elements of a calculation for thickness are much more certain. Taking the thickness thus ascertained this part of the rock would probably exceed 600 feet, giving 1000 feet for the whole.

Somewhat above the well stratified serpentine, chromic iron was observed in considerable quantity, in loose angular blocks, which were traced on the strike for a considerable distance; and there were indications on the traverse line, of a repetition both of the well stratified rock and the ore, near the commencement of the third course. At the southern limit of the serpentine black shales and thin limestone beds, similar to those on the Ste. Anne were met with, shewing the probability of an outcrop connection between the two places. The dip of the shale was S. 44 E. $< 80^{\circ}$, which would be an overturn; but the exposure being only a couple of yards in extent the attitude is too near the vertical to contradict the supposition of the structure you have suggested as deducible from the other facts ascertained; namely that the serpentine of the Ste. Anne and that at Mr. Murray's first station are the same, on the opposite sides of a synclinal form, with an overturn dip on the south side, and that the hornblende slate and the chloritic and epidotic rocks overlie the serpentine; so that the repetition of the well stratified serpentine and chromic iron on the line of traverse is due to an anticlinal axis, over which the serpentine folds so as to give another synclinal form on the south side.

Beyond the base of the serpentine on the S. 39 W. line, and above 230 yards from it, a mass of intrusive rock presented itself. The same intrusive rock was met with on the S. 29 W. line at the distance of about two miles and a half, which would be very nearly in the strike of the black shales and limestones underlying the serpentine on the other line. This intrusive rock continued on the west line for about the breadth of 540 yards, and on the east one for upwards of a mile and a quarter, appearing thus to widen to the eastward. This intrusive rock has the aspect of a trachyte, passing into a granite. It has some resemblance to the granite of the Table-top Mountain. Its color is a yellowish-flesh tint, and it is composed chiefly of feldspar, distinct crystals of the mineral of about an eighth of an inch in diameter being imbedded in a fine feldspathic paste. Brownish mica is present in small quantity, and quartz in still less amount, being indeed detected with difficulty. Many small druses exist in the rock, lined with a reddish-brown film, which may be peroxyd of iron.

The descent from the summit of Mount Albert is very rapid on the serpentine; less so on the intrusive rock. It is still less on the succeeding rock, which consists of greenish-grey shale, occupying a valley. This rock was not seen in place; but its presence was indicated by the fragments brought up on the roots of overturned trees, and these fragments prevailed for a distance of three quarters of a mile or a mile.

Beyond this we again came upon an intrusive rock, identical in its composition with the previous one, which rose rapidly up to form the Barn-shaped Mountain. The breadth of this mass on our lines of traverse exceeded two miles; its length appeared to be about three miles from east to west, and in this direction it displayed two summits about two miles apart, of about 3400 feet each in height above the sea, with a ridge between them about 400 feet lower. The hill was about 700 or 800 feet higher than the valleys on each side of it.

At the foot of the south flank fragments of greenish-grey sandstone in abundance, with a few of yellow-weathering chert were met with, mixed up with fragments of the intrusive rock, in the bed of a brook, and in pieces brought up on the roots of overturned trees. They appeared to belong to beds of from one to four inches thick, and the faces of many of them were marked by the presence of carbonized comminuted plants. Thin beds of sandstone were met with in place about a mile south of the intrusive rock, interstratified with shaly limestones holding obscure fossils. The dip of the beds was from S. 15 W. to S. 16 W. and the slope three degrees. These beds prevailed to the termination of the traverse; they are supposed to belong to the very summit of the Gaspé limestones, or group D, and to the same group are probably to be referred the shales on the north side of the mountain.

The shales between the two masses of intrusive rock, and the sandstones and limestones on the south of them, appear to be unchanged at the contact. They present at the same time a very moderate dip, approaching indeed to horizontality. They thus appear to overlie and finish against the intrusive rock as if it had been an elevated mass when they were deposited, and this may account for the absence of the great body of the limestones belonging to group D, which yet appears in great force where you crossed it in your traverse from the Chat to the Cascapedia in 1844, its breadth between the forks of the Chat and the intrusive mass of the Conical Mountain being from eight to ten miles.

As seen from the summit of the Barn-shaped Mountain, the country to the westward appeared to offer no obstacle to the supposition that the group D, from the position near the intrusive rock, will at a short distance to the westward come upon the serpentine, from which it will follow the flank of the Shickshock range, gradually widening as it proceeds, until it reaches the position where you met with its base, on the River Chat north of the range. In an opposite direction it will probably present a much narrower zone, if it does not become altogether covered up by the sandstones of group E. But it is evident from the dips shewn in the map of your exploration, that the sandstones of group E. gradually round toward the south-east from the turn of the river near Berry Hill, and this course may give room for the limestones to curve round the southern extremity of the intrusive mass connected with the Table-top Mountain.

Coast Section from the Marsouin to the Metis and to the River du Loup.

The black graptolitic shales and thin interstratified limestones which occur above the mouth of the Marsouin and constitute the top of group A, have already been mentioned. They are seen along the foot of the cliff and have a thickness of about thirty feet.

The strata which overlie them are, first a band of red shale, succeeded by rather hard olive-green shales which do not effervesce with an acid, interstratified with pale olive-green beds slowly effervescing, and brownish-black beds which effervesce a little more freely. These calcareous beds weather to a brownish tinge, and it appears to me not improbable that they may be of a magnesian character, and possibly fit for hydraulic purposes. The lighter olive-green beds are from one to four inches in thickness, and peculiarly marked on their under sides by short ridges, all ranging one way and overlapping one another, and all coming to a pointed termination in one direction. They are very probably the casts of furrows made in the lower bed by running water. On these surfaces there are occasionally many small flat pebbles of black chert. The blackish-brown beds are some of them a foot thick; they have a conchoidal fracture, and an impalpable grain, and are sufficiently hard to receive a polish. Above these were olivegreen shales with thin greyish-brown limestones. These beds occupied the coast more or less all the way from the Marsouin to the Martin River, a distance of nearly five miles, with a general dip towards the land; the cliff in which they are exposed rose abruptly from the shore and shewed so many violent twists, that it is difficult to be assured either of the sequence or the thickness. After much trouble in endeavouring to disentangle the details, the following is the best arrangement I could make of them in ascending order.

1. Red shale,	10	feet.
2. Olive-green shale,	10	"
3. Pale olive-green slightly calcareous beds,	8	"
4. Brownish-black dolomite,	22	"
5. Olive-green shales and greyish-brown limestones,	200	"
	250	"

Above the Martin River, strata of a similar character continue to a prominent cliff about a mile up, where they become capped by about forty feet of light grey fine grained sandstones, in beds of from two to six feet. On the top of the cliff they appear to be in a nearly horizontal position, but out a little way from the foot of it similar sandstones occur, with a small dip towards the water; proceeding along the shore the beds of the cliff descend, and those of the shore approach the cliff, and the two bands joining shew a turn related to the north side of an anticlinal form.

Beyond this, and apparently overlying the previous beds, the rock of the cliff consisted of black shale with thin dark colored limestones and yellow-weathering limestone conglomerates, with which were associated grey sandstones, some of the beds sufficiently coarse to constitute fine conglomerates, the pebbles of which, consisting chiefly of white quartz and black shale, were about as large as peas. The cliff was about a hundred feet high, and it extended from the sandstones to the Ruisseau Vallée, a distance of a mile and a half, and for two miles farther; but the disturbances exhibited in it were so numerous that it was impossible to determine the thickness of the mass with any approach to truth.

Farther on, a change occurred in the character of the rocks composing the beach and the cliff, and the new strata were supposed to overlie the previous beds, though I was not successful in tracing the connection. On the shore there occurred light grey strongly calcareous sandstone in massive beds of from four to six feet thick, giving an aggregate of about ninety feet. The rock was free and somewhat coarse grained, and displayed small fragments of black shale with small green specks resembling chlorite; it was intersected in many directions by veins of calc-spar. Above the sandstone blackish and greenish banded shale occupied the cliff, with a bed of lead-grey shale of about thirty feet thick in the middle. These beds were followed by a set of brownish-grey limestone beds of from one to two inches thick, interstratified with black shale and grey sandstone. These strata, most of which were yellow-weathering, occupied the cliff for upwards of a mile and a half.

About seventeen miles of the coast are occupied by the rocks given thus far, and from the Marsouin they reach to within two miles of the Ruisseau Castor. The whole of them are supposed to belong to the Division B. The hills which this division forms to the distance of perhaps two miles south from the coast, do not appear to be higher than between 300 and 400 feet, but those resulting from the succeeding group suddenly rise to about 1000 feet. This rise is seen in an escarpment which faces the east; the most salient part of it in that direction is over a mile and a half above the Ruisseau Vallée, and removed about a mile or a mile and a half from the coast. From this position the rocks which compose it sweep round towards the coast and come upon it at the place attained by the last strata described. The coast is occupied by these new rocks from this spot to Cape Tourette, a distance of seven miles. They consist of massive greenish sandstones, weathering to a drab color. They have been particularly described in your Report for 1844 p. 22, as the Pillar sandstones, the name being derived from the remarkable pillars worn out of the strata in this neighbourhood by the action of the sea.

Along the coast these sandstones run upon the axis of an anticlinal, on which, at the spot where the inferior strata plunge beneath the sandstone at the east end of the seven miles, the dip is S. 74 W.$<$84°. The inferior strata emerge again on the axis about a mile below Cape Tourette, near the east limit of the bay immediately below the cape. On the north side of the axis the sandstones, in a nearly vertical attitude, cross the bay to the pillar or tower which gives the cape its name, and run along the front of the cape to the west, while on the south side they turn inland, and sweeping round at some distance behind the cape, come out again upon the coast about 1000 yards above it. Beyond this they occupy one third of a mile along the shore, with dips towards each other on the opposite sides of the exposure, exhibiting a synclinal form, in which it can be shewn that the sandstones extend under the water for at least two miles to the westward, the continuation of the rock on the south side of the trough being observable between high and low water mark about 200 paces out in front of Little Cape Ste. Anne. This trough is very probably subordinate to a much more important one south of it, connected with the great escarpment lower down, which has been mentioned as rising to 1000 feet. This forms a mountain which keeps its height until reaching a position behind Cape Tourette, and there gradually falls in an escarpment facing westward, but before the base of the sandstone crops out on the axis of the synclinal, it appears to reach the eastern side of the valley of the Little Ste. Anne River, as exposures of the rock were met with about a mile back from the mouth of that stream, with the subjacent calcareous strata coming from beneath. This great synclinal mass of sandstone may have a length of about eleven miles. Its precise breadth was not ascertained, but probably it does not exceed between three and four miles. The axis of the anticlinal over which the rock folds on the north, is as has been said coincident with the coast, and the great amount of disturbance affecting the coast section all the way from the Marsouin may very probably be due to it.

The subjacent strata emerging from beneath the sandstone on the anticlinal near Tourette are as follows in descending order.

Green shale interstratified with beds of greenish sandstone of from three to twelve inches thick,	100
Green arenaceous shale,	20
Red and green shale interstratified with grey compact calcareous beds of two or three inches thick, weathering brown	50
	170

The beds which succeed these are brownish-grey limestones interstratified with brownish-black shales, all weathering yellowish; they are similar to those which sink beneath the sandstones seven miles to the eastward. The first 120 feet of the above section may be considered beds of passage, but the red and green shales appear to be a new feature, and are worthy of remark, as they are in the stratigraphical place of the red shales which make so conspicuous a figure at Cap Rouge near Quebec, being there as you have described, 1000 feet thick.

The coast is occupied by the strata of group B from the vicinity of Little Ste. Anne River to the River Chat, and the best exhibition of the beds belonging to it in the whole distance, which is between three and four miles, is met with at a prominent point between two and three miles west of the Ste. Anne. But as you have given the details of this section in your Report for 1844, it is unnecessary for me to repeat them here, and I shall only remark that among the black shales of the locality which come next in succession to the red and green shales, *Phyllograpsus*, one of the new genera of graptolites from Point Lévi described by Mr. Hall, is frequent.

In your Report for 1844, you allude to a hill of about 320 feet in height which stands on the right bank of the River Chat, about a mile and a half from the mouth, and state that the hill is composed of sandstone, apparently of the group C, the strike of which would bring the rock out upon the coast near the mouth of the Ste. Anne. This hill it is probable is not far removed from the eastern extremity of a trough on the same synclinal axis as the one which has been shewn to pass in front of the Little Ste. Anne. The axis westward appears to come upon the coast just above Cape Chat in a small cove in a well marked notch. On the north side of the axis are all the sandstones and interstratified red shales mentioned by you as forming the coast from the river to the cape. The beds at the cape dip S. 11 E. $<44°$, while those on the south side of the axis at the notch dip S. 17 W. $< 64°$, shewing an overturn. Red shales interstratified with greenish sandstones, still belonging to the same group, come upon the coast about a mile above the cape and continue along the shore for a mile more. At the east end of the distance the dip is S. 9 W. $<32°$ and at the west end S. 25 E. $<40°$. But notwithstanding the reduction of the slope the beds must still be considered as inverted; for in the bay of the Little Capucin River, about four miles above Cape Chat, black shales and black limestones, with black and green shales above them, which are supposed to belong to group B, make their appearance. These however cannot be far removed below the green sandstones, for while the strike on the east would bring the sandstones into the east side of the bay, they re-appear on the west side in considerable force, occupying a mile of the coast, and constituting the point between that bay and another two miles to the westward which receives the Great Capucin River.

On the west side of the river a band of red shale is met with, in which occurs a small vein of quartz, running with the beds and holding a few spots of yellow sulphuret and green carbonate of copper. North of the red shale the sandstones again present themselves, and form a point on the west side of the bay marked by a pillar of twenty feet in height and eight feet in diameter, similar to those of Tourette. The strata dip S. 25 E. $<45°$ and shew a thickness of 700 feet. The mass maintains a pretty uniform course along the coast for four and a half miles, and terminates at a point within a quarter of a mile of the Little Michaud River, where it dips S. 45 E.< 43°. That this mass is inverted is made manifest by the attitude of the strata at the west horn of the bay into which the Little Michaud empties. Along the shore of the bay between the river and the point, a distance of three quarters of a mile, the black and green shales occur, above which there is a band of 100 feet of red and green shale followed by green sandstones. The shales dip N. <80°, and a turn occurs in the sandstones above them giving a dip S. 87 E. <60°, shewing the axis of the trough to which the sandstones belong.

About a mile and three quarters west from the Little Michaud River, and about 200 yards back from the coast, massive coarse limestone conglomerates, interstratified with grey calcareous sandstones, rise at once in vertical strata to the height of sixty or eighty feet, and run for some distance either way parallel with the coast. These strata would come in beneath the red shales of the west horn of the Little Michaud bay, and black shales seen near the mouth of the Great Michaud River a mile farther up, would come in between, but in what volume is uncertain, though it must be considerable.

Conglomerates and sandstones of the same character are again seen about a mile above Great Michaud River, and they run along the coast for another mile, to a point opposite two small islands called Les Islets. These islands are composed of similar rocks underlying the beds at the point. The dip is S. 25 E.< 30°, and while the vertical strata near the Little Michaud are on the south side of a synclinal form, those of Les Islets are supposed to be on the north, and to leave the coast before reaching the Grand Michaud to run north of the Cape Chat sandstones.

The masses exposed at Les Islets consist of grey calcareous sandstones, composed of translucent colorless quartz grains of the size of pin-heads, cemented together with calcareous matter. The beds are from one to two feet thick, and the divisional planes are sometimes marked by a film of black unctuous material, probably argillaceous. The sandstones are interstratified with an equal and perhaps greater amount of beds of conglomerate of from one to three feet thick, consisting of rounded and flattened masses of compact grey and black limestone in a matrix of calcareous sandstone similar to that of the sandstone beds, with cracks that are often lined with a black mineral resembling coal, being identical with the altered bitumen you have mentioned as existing at Cape Ste. Anne, Point Lévi, Quebec, Sillery, and other places. Among the sandstones and conglomerate beds, are interstratified deep brownish-black shales, with obscure graptolites, resembling some of those of Point Lévi.

Strata of this character occupy the coast for three quarters of a mile above Les Islets, and after an interval of the same distance showing black shales and interstratified thin limestones, the conglomerates and calcareous sandstones again appear, and continue for a mile and a half. In this mile and a half they strike more into the land, and present an anticlinal axis about half-way, the bearing of which is S. W. On the south-east side the dip is S. 45 E.<41°, and on the north-west N. 45 W.<56°; but a quarter of a mile farther, beds of the same character show a dip N. 76 E.<36°, apparently indicating that the anticlinal fold is not of great importance. These limestone conglomerates reach to within half a mile of Rivière à Crapaud, the interval to the river being concealed. Above the river, for a mile and a quarter, but one band of limestone conglomerate is met with, its position being about half-way; the space on the east side is occupied with grey calcareous sandstones interstratified with thin hard grey limestones and black shale, and then red and green shales interstratified with hard grey limestones and black shales, each of the groups of strata being about equal in amount. West of the conglomerate band are compact grey limestones interstratified with black shale, with nearly half a mile of fine black shale beyond, terminated with an interstratification of thin black limestones.

Above this on the coast, about a mile is occupied with a mass of limestone conglomerates with sandstones more or less calcareous, and these are considered to be a repetition of the sandstones and conglomerates of Les Islets. At about mid-distance of this exposure an anticlinal axis is displayed, and the masses in the half mile on each side of it appear so nearly to correspond that they are supposed to represent one another, notwithstanding that a part of the western side shows a dip which must be overturned, in which the overturn inclination is reduced to twenty-six degrees. The following is a description of the strata as they succeed one another in what is supposed to be an ascending order, with the thicknesses on the east and west sides of the anticlinal.

	East side.	*West side.*
Black shale	20 feet	20 feet.
Limestone conglomerates, with pebbles of grey limestone and light grey sandstone, of which the average weight is about a pound.	75	70
Concealed	50	
Grey mottled hard slightly calcareous sandstone resembling quartzite; no indication of subdivisions into beds, though looked for, was observed	137	149
Greyish-brown calcareous sandstone, yielding with facility to the weather, without observable divisions into beds	22	
Grey calcareous sandstone interstratified with coarse limestone conglomerate beds, the sandstone predominating	22	33
Grey mottled sandstone resembling quartzite	12	
Grey calcareous sandstone in beds of from two to four feet; the stone crumbles readily under the influence of the weather	15	50
Limestone conglomerate	14	
Grey mottled hard slightly calcareous sandstone resembling quartzite	6	136
Light grey calcareous sandstone	63	
Limestone conglomerate	6	
Grey compact limestone in beds of from two to three inches associated with greenish shale	22	39
Concealed on the west side; limestone conglomerate on the east side	113	
Limestone conglomerate with pebbles and boulders of compact grey limestone weighing from half an ounce to several tons; smaller masses of black limestone and occasional masses of amygdaloidal trap weighing from one to thirty pounds; the conglomerate beds are from one to six feet thick and are interstratified with light grey calcareous sandstones of from one to three feet thick; the whole mass is cut by numerous veins of calc spar, and iron pyrites is disseminated in nodules in all the beds in some abundance	90	194
	667	691

The coast composed of these limestone conglomerates and sandstones is known under the name of Les Crapauds. The rocks render the shore very rough and broken, but though a somewhat bold cliff rises from the beach, the country inland is moderately smooth. About two miles and a half above Les Crapauds a bold headland rises over the sea, and from it to Cape Whale, about three quarters of a mile farther up, the coast is almost inaccessible. I was here under the necessity of examining the coast line from a boat; but inland at a distance of a quarter or half a mile I was aided by a road. The rocks on the coast line and the road were found to consist of the greenish sandstones and associated red and green shales of group C. These composed also the shore as far as Long Point, a distance of five miles more.

About a mile below Long Point the sandstones are massive; the beds are from six inches to six feet thick and very even. The rock is fine grained, and while the main body of it appears to be free from carbonate of lime, there are included portions of various shapes and sizes, from one to several inches in diameter, which when reduced to powder, effervesced with an acid. The sandstones at irregular intervals are interstratified with bands of red and green shale, which include greyish-green layers of from one to six inches thick, weathering to a whitish-yellow. These effervesce with an acid, but with difficulty until reduced to a powder, and are probably magnesian. The red shales are spotted and striped with green, and the green with red.

Where the greenish sandstones of group C terminate at Long Point, the dip is S. 21 W.$<46^{\circ}$, and about 250 yards in the direction of the dip, the grey calcareous sandstones and conglomerates of group B again make their appearance, continuing along the coast for about two miles, where the following section occurs:

	Feet.
Grey calcareous sandstones interstratified with limestone conglomerates, each in beds of from six inches to two feet; among the beds occur a few layers of grey quartzite, and the whole resemble the strata of Les Islets	60
Brownish-black arenaceous limestone, sometimes finely laminated, and occasionally weathering to a whitish hue and pulverulent condition on the exterior; the limestones are interstratified with black shale, and the whole mass is cut with many strings and veins of calc spar; in the cracks occurs the black mineral resembling coal so often met with in the rocks of Point Lévi and Quebec	50
	110

The dip of these strata is S. 19 W.$<53^{\circ}$, and as this would apparently place them over the sandstones of group C at Long Point, while in reality they are stratigraphically inferior, it is evident that the dip must be an overturn.

From Long Point upwards the coast is occupied with the rocks of group B for thirty-one miles, with the exception of a small interval about a mile below Little White River; although there appear to be several small folds in the strata, the coast line and the strike seem nearly to coincide the whole way, and it is the upper parts of the formation that occur in most of the exposures, consisting of red, green and black shales, or of the summit of the limestone conglomerates and calcareous sandstones. These conglomerates, in addition to the exposure near Long Point, were seen about half way between the Little and Great Matanne Rivers, at the mouth of the Tartigo, also between two and a half and three miles above the Trent, as well as three miles below the Little Metis River. Black shales which would seem to come in a little north of the exposure of the Tartigo, display fragments of encrinites and broken shells, but too obscure to be determined.

The following is the section about a mile below the Little White River, where one of the folds above alluded to occurs, the beds being given in ascending order.

	Feet.
1. Greenish-grey compact limestones weathering to a whitish-yellow and supposed to be magnesian, separated by thin layers of olive-green shale	22
2. Greenish-grey compact limestones of the same character, separated by layers of red shale of an inch thick, striped and spotted with green	5
3. Greenish-grey compact limestones as before, interstratified with layers of from one to six inches of red shale striped with reddish-black bands and spotted with green	10
The whole of these limestones would be well adapted for flagging were they not cut by two sets of joints, parallel in strike but different in slope, the underlie of the one being S. 43 W.$<18^{\circ}$ and the other S. 43 W.$<80^{\circ}$. The joints of the first set are from two to three feet apart and of the second from five to ten feet apart.	
4. Olive-green fine grained shale striped with black	30
5. Indian-red shale interstratified with beds of greenish-grey compact limestone as before, of two or three inches thick	24

6. Measures concealed	30
7. Greenish sandstone of group C in one bed	6
8. Olive-green and black shale, interstratified with greenish-grey compact limestones as before of two and three inches thick, finely laminated	53
9. Greenish fine grained even bedded sandstones seen out in the tide-way; the thickness is doubtful, but at least	30
	210

The dip of these strata is N. 67 W. $\angle 80^{\circ}$ but strata resembling number 8 are seen with a sharp rise at the mouth of the Little White River, so that the sandstones of group C scarcely do more than touch the coast at this part.

The exposure of conglomerate about two miles and a quarter above the Trent dips S. 40 W. $\angle 34^{\circ}$, and north-east of it about 300 yards there is an exposure of the greenish sandstones of group C with red shale in the interval, which appears to curve round the south-eastern end of the sandstone, as if these constituted the extremity of a trough with an overturn dip on the south side.

About two miles below the mouth of the Little Metis the greenish sandstones of group C again succeed the conglomerates, and in addition to forming the coasts for the two miles below the river, they extend for two miles along the coast above it, running into Metis Point. About a quarter of a mile out from the mouth of the Little Metis River there appears to be an anticlinal axis running about W. S. W., over which the sandstones fold, assuming the form of a trough in Metis Point. It is probable that the sandstones run for about a mile on the anticlinal axis, and the synclinal form which they present on the south may have the breadth of a mile in this part.

Where the sandstones cease at the upper corner of Metis Point the following section was observed, in ascending order:

1. Red shale	25
2. Green and black shale interstratified with greyish fine grained limestones, weathering yellowish and supposed to be magnesian, in beds of from one to two inches, with a few bands of grey compact pure limestone of the same thickness	25
3. Greenish sandstones in even beds of from six inches to two feet, interstratified with black and green shales	180
4. Greenish sandstones of the same character, without shales	187
	1017

Between Metis and Green Island River, a distance of about seventy five miles the coast is occupied with the rocks of group B only; but a strip of between nine and ten miles extending from Green Island River to the point at Rivière au Moulin, and passing thence to the upper end of the island of Cacouna, consists of the greenish sandstones of group C, and though it has not a breadth of more than half a mile, presents several folds subordinate to a general synclinal form.

These sandstones form another narrow strip, running about two miles along the coast and terminating at a point about two miles below Rivière du Loup; they seem here to be brought into this position by a transverse dislocation with a down throw on the south-west side.

In the vicinity of Bic Harbour there is a great display of the limestone conglomerates and the associated calcareous sandstones of group B, and it is to the resistance which they have offered to the destroying agencies that have worn away the other rocks of the coast, that the formation of Bic Harbour is due. A great deal of very beautiful structural detail might be obtained in the neighbourhood of Bic, but it would have required too much time for me to have attempted its minute investigation without abandoning other parts of the work. One point ascertained, however, which may prove useful at a future time is the existence of a small synclinal patch of the green sandstones of group C, as it furnishes the means of determining the summit of the subjacent rocks so much spread around. Bic Point is about two miles below Bic Harbour, and the sandstones in question were met with about three quarters of a mile inland from the bight of the bay below the point. The bearing of the synclinal axis is N. 65 E. and the area of the sandstone trough measures about three quarters of a mile long by 250 yards wide. The sandstones appear to be surrounded by red and green shales, and the limestone conglomerates come into their place on the outside of the shales. The relations of the strata are here better shewn than in many other parts, as none of the dips are overturned.

In the limestone conglomerates the masses inclosed are sometimes very large; a boulder of dark grey limestone inclosed in one of the bands at Metis was measured and computed to weigh twelve tons; another in another part of probably the same band measured eleven feet long by six feet broad, and was supposed to weigh upwards of twenty-five tons. At Trois Pistoles there is a band with a multitude of large boulders which may be the continuation of the same one. The following section, of which the details were obtained in a mile along the coast from the church of Trois Pistoles, will shew the place of this band in relation to other parts of the deposit. The beds are given in ascending order:

	Feet.
Limestone conglomerate in which occur rounded masses of amygdaloidal trap, weighing from a pound to a ton; of dark grey arenaceous limestone from a few ounces to a ton; of grey compact limestone from an ounce to a pound; with pebbles of white quartz from the size of snipe shot to that of musket balls. The matrix is a grey calcareous sandstone, and iron pyrites is frequently met with in it,	13
Grey calcareous sandstone,	3
Limestone conglomerate the same as above; but with no trap, and much smaller constituent masses,	3
Grey calcareous sandstone in beds of from a quarter of an inch to an inch thick,	4
Limestone conglomerate,	2
Grey thin bedded calcareous sandstone,	9
Limestone conglomerate,	4
Grey calcareous sandstone,	2
Limestone conglomerate occupying the whole thickness of the bed in some parts, but in others becoming gradually a grey calcareous sandstone, the conglomerate character being confined to a width of three inches,	2
Grey calcareous sandstone in beds of one foot, alternating with thin bedded aggregations of a foot,	42
Limestone conglomerate,	3
Grey coarse grained calcareous sandstone, becoming a limestone conglomerate in the run of the bed,	8
Grey coarse grained calcareous sandstone,	2
Limestone conglomerate,	7
Grey coarse grained calcareous sandstone,	11
Limestone conglomerate,	2
Grey calcareous sandstone,	4
Grey calcareous sandstone beds, alternating with beds of limestone conglomerate,	24
Limestone conglomerate, in one bed	16
Measures concealed,	36
Reddish-grey fine grained shale, interstratified with bands of reddish-black shale, and beds of greenish-white compact limestone of from one to three inches thick,	71
Chocolate-red shale,	5
Green shale,	2
Red shale with a thin layer of green shale,	1
Red shale interstratified with greenish-white compact limestone beds of one and two inches thick,	10
Green shale with similar beds of greenish-white compact limestone,	4
Green shale interstratified with beds of grey limestone, and a one inch bed of black shale,	2
Green and black shale, interstratified with one another,	2
Green and chocolate-red shale, interstratified with one another.	6
Red shale interstratified with green shale,	4
Reddish-grey shale with two beds of grey limestone of three inches each,	2
Brick-red shale interstratified with light grey bands of pure limestone of from one to four inches thick, at intervals of from six to twelve inches,	10

	Feet.
Brick-red shale and light grey compact pure limestone, with two masses of limestone conglomerate of about 200 pounds weight each, imbedded about the middle of the whole; the pebbles of these two masses are in part of light grey very fine and compact limestone, with some of red limestone not so compact, others of black limestone, and a few of green and yellow limestone; the pebbles are flattened and fitted against one another,....	12
Red shale interstratified with grey limestone of a coarser grain than before,....	4
Grey arenaceous limestone, sometimes becoming conglomerate in the run of the band	1
Green and red shale interstratified with thin beds of greenish white compact limestone,....	3
Green shale,....	1
Greenish-white thin even bedded limestone,....	2
Green and red shale,....	1
Greenish-white thin even bedded compact limestone, interstratified with two bands of black shale,....	1
Grey even thin bedded compact limestone, interstratified with green shale,....	9
Red shale interstratified with beds of greenish-white limestone of two inches thick,....	1
Green shale with greenish-white thin bedded compact limestone,....	2
Green shale interstratified with bands of chocolate-red shale and two inches of greenish-white limestone at the base,....	3
Green shale,....	2
Grey thin bedded limestone,....	2
Green shale with thin greenish-white compact limestone and two bands of black shale of one inch each,....	6
Red and green shale,....	3
Grey thin bedded limestone,....	1
Black shale interstratified with green bands and greenish-white compact thin bedded limestone,....	7
Green and red shale,....	1
Green shale interstratified with black shale,....	3
Brick-red shale,....	15
Greenish-white thin bedded compact limestone tinged with red,....	5
Brick-red shale,....	12
Green shale,....	2
Red shale,....	8
Reddish-grey drab-weathering shale striped with reddish-black with strings of calcspar,	6
Reddish-grey drab-weathering shale striped with reddish-black shale and holding iron pyrites in nodular aggregations of cubic crystals,....	15
Reddish-grey drab-weathering shale striped with reddish-black bands, with less iron pyrites than the last,....	250
	694

Section of the Metis and Patapedia Rivers.

As has already been stated, an anticlinal axis bearing about S. 65 W. runs about a quarter of a mile north of the mouth of the Little Metis River, throwing the greenish sandstones of group C in Metis Point into the form of a trough. These strata on the lower part of the Little Metis River assume a corresponding synclinal form on the south side of the axis. The north rim of the latter trough would cross the Great Metis River about three quarters of a mile inland from the mouth. No exposure of the sandstone is seen on the stream, but over a mile southward of west from the river, there occurs an escarpment of it, which can be traced running in a pretty straight line for about two miles farther, with a dip of S 35 E. $<36^\circ$; its place on the river would be about the position indicated. The breadth which these sandstones might have on the stream would not exceed between 700 and 800 yards, as exposures of the lower rocks occur on both sides of this breadth; the calcareous conglomerates of group B are conspicuous in two parallel bands below the position, one of them being at the very outlet of the river, and the other about half a mile from it up the stream. In weathered fragments, resting on the lower band and of the same character with it, were obtained well defined examples of a coral allied to *Favosites Gothlandica*, which occurs at Cape James in Anticosti, near the summit of the Hudson River group.*

Above the position assigned to the sandstones of group C, the banks of the Great Metis in the first mile transverse to the measures, shew grey quartzite, green shales and grey calcareous sandstones with limestone conglomerates; in the second there are no exposures, and in the third the only rock seen is a band of black shale. There then occurs an exposure of red shale, followed by the green sandstones of group C immediately above. The distance of this from the mouth, across the measures, would be about four miles. On the east side of the river the sandstones present a breadth of about 600 yards, and appear to stand in the form of a double trough, the sandstones only of the south synclinal belonging to which cross the river to the west, their breadth on the immediate bank of the river being reduced to about 300 yards.

In the next half mile south of the sandstones, limestone conglomerates and black shales belonging to group B are met with, the conglomerates being not far removed from the green sandstones. Farther southward to the Neigette, there are no exposures. Beyond this as far up the river as cultivation extends, a distance of about three miles in a straight line, the only rocks seen were green shales. In the third mile still beyond this, the calcareous conglomerates are again seen, and black shales beyond them, in which there occur the remains of graptolites. For three miles farther on to the mouth of the Musquegegish, the only exposure met with was one of smooth unctuous black shales interstratified with thin limestones, which with all the rocks from the exposure of green sandstone, are considered to belong to group B.

In the first four miles above the Neigette, the river makes a semi-circular sweep to the north-east, in which it passes round the north-eastern extremity of Mont Commis. This mountain, with a breadth of from one to two miles, extends for about twelve miles to the south-west and appears to be composed of the sandstones of group C. In its highest part it may rise about 700 feet above the valley of the Neigette.

A little below the mouth of the Musquegegish large loose angular blocks of fine grained white sandstone are abundant, the rock being similar to that which you describe in your Report of 1844 as underlying the Gaspé limestones at the forks of the Chat, and in the Report for 1849 as being found in a similar stratigraphical place in relation to the same limestones on Lake Matapedia; at the mouth of the Musquegegish, cacareous rocks occur, which would come in the same sequence in regard to these sandstones as the limestone of the Chat and Matapedia. These calcareous rocks, with a dip S. 66 E. $<45^{\circ}$, presented an escarpment of about twenty feet high, and consisted of grey nodular fossiliferous limestone, divided into beds of two and three feet. In one of the fragments near the escarpment were obtained a *Pentamerus* resembling *P. Knightii*, a *Strophomena* like *S. inequiradiata*, and another species which is resupinate and resembles *S. punctilifera*; I may here mention that in passing Lake Matapedia going south, I met with a fossil in the white sandstones strongly resembling *Pentamerus oblongus*.

Farther up the stream at a distance of about 850 yards at right angles to the strike, another exposure occurred, and here the beds consisted of limestone of the same character interstratified with greenish shale, the dip being S. 65 E. $<32^{\circ}$. About fifty chains still farther up, another exposure was met with, but here the dip was N. 75 E. $<$ from 2° to 6°. These beds consisted of dark grey argillo-calcareous shale interstratified with greenish shales; at the base a bed of about

* All that occurs in this Report in respect to the fossils is stated on the authoriy of Mr. Billings.

three feet thick consisted of greenish arenaceous limestone, and contained obscure fossils, one of which resembled *Pentamerus oblongus*. There is little doubt the beds of these three exposures overlie one another. Their total thickness, with what is concealed, is computed to be about 2000 feet.

For two miles above this, no exposures occurred, but in the succeeding two and a half miles to the River Rouge several were met with, consisting in the first exposure of greenish crumbling arenaceo-calcareous shale, and in the others, of grey micaceo-arenaceous limestones or strongly calcareous sandstones, well fitted for flagging stones, interstratified with purplish-brown arenaceo-calcareous shale. Masses of similar character constituted the rocks of the falls between the Rouge and the Metis Lakes and near the lowest lake, but both above and below the Rouge, they showed various and sometimes opposite dips, with occasionally very high angles. In part of the distance the rocks exhibited a cleavage independent of the bedding, and it was often difficult to distinguish the one from the other. I have in consequence found it impossible to compute the thickness; but the rocks, from the amount of calcareous matter which they contain, are supposed to belong to group D, and to represent a higher part than before mentioned of the Gaspé limestones.

No rocks were seen on the lower Metis Lake; on the middle lake, strata were observed in several places in the up half; they consisted of grey granular limestone, weathering brownish-yellow, and containing obscure fossils. The beds were from six to twelve inches thick, and were interstratified with less calcareous layers, greyish-green in color, and weathering to a brown. An obscure cleavage existed in the less calcareous layers, and they separated with difficulty in the direction of the beds. The strata, with several minor undulations, appeared to preserve a general horizontality. These rocks were supposed to be a repetition of the lower part of the Gaspé limestones.

The shores of the upper lake are strewed with many large flat fragments of calcareo-arenaceous shale mixed with sandstones, and in one place the bottom of the lake was paved with a greenish sandstone interstratified with greenish shale, and the beds appeared to be horizontal. After passing the watershed, an exposure about half-way down the Awaganasees consisted of greenish calcareous sandstones in beds of from six to eight inches, dipping N. 3 W. $\angle 24^{\circ}$, and below this to within a mile of the Patapedia, there appeared flagging stones very similar in character to those below the lower Metis Lake and near the Rouge, excepting that they are more even and regular in their divisional planes; in some parts the thicker slabs are separated by calcareous slates, which split into large and remarkably even slabs, no thicker than the eighth of an inch, of a dark grey internally, but changing rapidly in the weather to a greyish-yellow or light drab. Rocks of a similar character, but not so evenly bedded, prevailed for the remainder of the distance to the Patapedia, and they were considered to be a repetition of the upper part of group D, to which is here assigned a breadth of between fourteen and fifteen miles.

Between the mouth of the Awaganasees and Indian River, and half a mile below the latter, the rocks are dark grey compact thin bedded limestones, interstratified with blackish calcareous slates, recurring twice, and followed on each occasion by dark grey calcareous shales. Below this for seven miles, as far as Pollard's Brook, there prevails greenish-grey arenaceous shale weathering yellowish-brown, sometimes calcareous and sometimes not. At Pollard's Brook and a short distance below, we have a recurrence of dark grey calcareo-argillaceous finely laminated slates, splitting into large slabs of about the thickness of roofing slates, and weathering to a greyish-yellow or drab, like those of the Awaganasees. With the exception of these drab-weathering slates, the prevailing rocks, for five miles below Pollard's Brook, are dark grey argillaceous and calcareo-argillaceous slates, interstratified with occasional more calcareous layers; for four miles below this the rock is a dark grey calcareous slate or shale, and this is succeeded by two miles of slates of a similar character interstratified with more calcareous bands. For a mile and a half farther, thin bedded black and often very pure limestone, occurs a third time, interstratified with black and dark grey argillaceous shales, beyond which the only rocks for two miles to the mouth of the Patapedia are dark grey calcareous shales or slates, interstratified with greenish arenaceous shales and greenish sandstones.

In all these rocks on the Patapedia, there is a cleavage independent of the bedding, and it is very often very difficult to say which is cleavage and which bedding. Occasionally the strata are much contorted, and it is impossible for me to state what the thickness may be, or how many repetitions there may be of equivalent groups of strata. No fossils were found in these rocks, and it is in consequence difficult at present to determine the age of the mass, but it is not supposed to be older than the Gaspé limestones.

The greenish arenaceous shales and sandstones of the mouth of the Patapedia appear to have a dip up the river, and to underlie the thin bedded limestones and dark grey shales beyond; they can be traced down the Restigouche to Cross Point, a distance of about four miles, where the beds associated with them are calcareous and hold fossils consisting of fragments of trilobites and bivalve shells, but too much broken to be identified. The sandstones attain the neck of Cross Point, while the thin bedded limestones above them occur at the north part of the turn in the river. To this point the strike and the general valley of the river run about north-east; lower down they turn together, and the sandstones and their associated dark grey calcareous shales are every now and then seen for seven miles in a bearing nearly east. Here the river separates from them, and while they appear to continue in a pretty straight course to the junction of the Upsalquitch, the Restigouche makes a turn to the north-eastward on the thin bedded limestones to Brandy Brook, and returns upon them south-eastward to the sandstones at the Upsalquitch. From the Upsalquitch, the Restigouche appears to flow on the thin bedded black limestones to the mouth of the Matapedia. According to your Report of 1844 the thin bedded black limestones strike away from the river on the north side of the Restigouche a short distance below the mouth of the Matapedia, followed farther down, near the mouth of Seller's and Anderson's Brooks by a fossiliferous limestone which directs its course to the road-bridge on Little River. The succession which you give at this place shows a set of calcareous and arenaceous shales coming in between th fossiliferous limestones and the thin bedded limestones, and these probably represent the calcareo-arenaceous rocks at the mouth of the Patapedia. The fossils of Little River I believe, are supposed to resemble some of those of the Gaspé limestones, and it may thus be inferred that the rocks of the Patapedia, which are all more or less calcareous, may be related to these fossiliferous strata, as a higher part of the group D.

Section of Rimouski River.

In describing the coast section from Metis to Rivière du Loup, mention was made of a synclinal patch of the green sandstones of group C, which lies about three quarters of a mile inland from the bay below Bic Point. The axis of this synclinal would cross the Rimouski River probably not far above its mouth. On the south side of the synclinal patch of green sandstones there appears red shale, and a white-weathering green shale, succeeded by limestone conglomerate. The white-weathering green shale appears upon the road up the Rimouski River about four miles back from its mouth; it has south of it a grey sandstone, and somewhat to the east grey sandstone and blueish-grey brown-weathering limestone, which probably represent the limestone conglomerate. The strata appear to dip to the north at a very high angle. The blueish-grey limestone is repeated in a short distance down the stream with a south dip, but independent of this there are no exposures of rock to the mouth, with the exception of two, one of them shewing red shale interstratified with thin hard greenish siliceous beds.

About a mile farther south than the grey sandstones, the green sandstones of group C make their appearance, with red shales to the north of them, and it is probable that on the south of the anticlinal axis, which must pass between the exposures of the grey and green sandstones, the conglomerate band, or the grey sandstone representing it, is repeated although concealed. The green sandstones are traceable to the east for some distance, and after five miles in that direction they form the south limit of Great Lake, which is tributary to Rivière au Moulin. From this, with the conglomerate band north of them and the red shale between, they trend for five miles toward the escarpment belonging to group C, which it has been stated crosses the Metis about three quarters of a mile from its mouth.

The Rivière au Moulin, into which Great Lake discharges, joins the St. Lawrence about two and a half miles below the Rimouski, and the conglomerates just alluded to would cross the stream about half a mile below the outlet of the lake. They were traced for a mile to the south-westward, and about two miles and a half to the north-eastward, with the red shales accompanying them. Vast masses of the conglomerates, some of them weighing fifty tons, occasionally marked the outcrop, and from these were often obtained the coral allied to *Favosites Gothlandica*; some of the shales also in the vicinity of the band were fossiliferous, but the shales were too soft to permit the successful extraction of the fossils. About two miles farther down the Rivière au Moulin, limestone conglomerates were again met with, and here also the same coral was obtained. Westward of this from one to two miles, large exposures of grey calcareous sandstone of the group B were observed in two places, about half a mile from one another across the measures, and their strikes so converged that they would meet to the north-eastward before reaching the Rivière au Moulin. The sandstones were largely made up of dark transparent grains of quartz and small fragments of green shale, and contained much iron pyrites. Similar sandstones were observed a mile nearer Great Lake, and being in this position still a mile and a half from the margin of the lake, they were supposed to be on the north side of the anticlinal which limits the green sandstones of group C on the Rimouski.

These sandstones on the Rimouski have a breadth of about a mile, with a synclinal form, and their southern outcrop appears to be on the flank of the ridge which overlooks the valley of the Bois Brulé River, and farther to the north-eastward, of the Neigette River; after folding over an anticlinal axis to the south-east, the outcrop follows the Neigette to the Metis. South of the outcrop of the sandstones on the Rimouski there are exposures of striped green and black shales, interstratified with hard silicious beds of from one to two inches thick, and also of green argillaceous shales, which are studded with scales of mica and are somewhat pyritiferous. These strata, which are on the Bois Brulé, and above it on the Rimouski, dip northward at high angles. They belong to group B, and are probably not far removed from an anticlinal axis; southward from them however we have a new series of rocks.

These rocks are the Gaspé limestones. Where they cross the Rimouski they are about nine miles and a half in a straight line from the mouth, but no more than seven miles from the coast between Rimouski and Bic. They rise in a well marked escarpment over a hundred feet high, on the right bank of the Rimouski. The rock at the base is a whitish-grey calcareous sandstone, of which between twenty and thirty feet are seen, probably representing the sandstone of Matapedia Lake and the Chat River; it shews a dip S. 39 E. $<$ from 7° to 9°. This is succeeded by beds of from six inches to two feet thick of blueish argillaceous limestone, which constitutes the remainder of the escarpment. Limestone of a similar character is met with at intervals for about five miles up the Rimouski to a large swamp on the fourteenth lot of the third range of the township of Duquesne. This would be about two and a quarter miles across the measures, and the dip is here S. 60 E. $<45^\circ$. The rock is here a dark grey calcareo-argillaceous shale, interstratified with greenish calcareous sandstones in beds of from one to two inches. A ridge rises south of the swamp to the height of about 150 feet, and there is a depression on the south side of the ridge, which on the east side of the river contains Lake Macpes and its discharging stream, and on the west the River Touradif. The depression is over half a mile from that of the swamp, and the rocks seen in it are much the same as those just described, with perhaps a somewhat smaller quantity of shale; the dip was S. 59 E. $<30^\circ$. A mile and a quarter above this, across the measures, there is another depression, occupied on the west side by the Rivière à France; and two miles and a half farther up, we have the fall of the Rimouski on the twenty-fourth lot of the sixth range of Duquesne. The rock at the fall is a greenish-grey calcareous sandstone in beds of two or three inches, separated by grey calcareous shale, the shale and the sandstone being about equal in quantity, but irregularly interstratified. The dip at the fall is S 44 E. $<60^\circ$, but just below the fall there is a small undulation, by which the same beds are kept at the surface for a distance of about forty-five yards across the measures. The Rimouski for a considerable distance below the fall flows in a very deep and inaccessible chasm; the strata in consequence were examined only at considerable intervals, and if there should be many undulations similar to that at the fall, these would materially diminish the thickness deducible from the dips ascertained.

About a hundred yards below the fall the rock is very evenly divided into beds of from one to four inches thick, and would yield excellent flagstones of from two to three feet wide and from four to six feet long. They very much resemble the flagstones already described on the Metis, and their stratigraphical place may very possibly be the same in the vertical sequence. Fossils were observed in several parts of the series, but the only one that could be identified was the pear-shaped variety of *Favosites basaltica.*

From the position where the escarpment of the Gaspé limestones is seen on the Rimouski River, the outcrop, after crossing the stream to the west side, appears to keep on the south side of its tributary, the Little Rimouski, very nearly to the water-shed between it and the east tributaries of the River Trois Pistoles. Turning here more southward it runs a course about parallel with the Toledo, and comes upon Lake Temisquata, where you have described it as forming Mount Wissik or Lennox. In an opposite direction it runs N. 60 E. on the south side of the valley of the Bois Brulé for some three miles and a half. It then turns about east for a mile and gains the south side of the valley of the Neigette, running with it for about five miles. From this the escarpment turns south-east for about five miles and crosses the south-western extremity of Mount Commis, leaving a small valley between it and the mountain, and again sweeping round to the north-eastward, in about fourteen miles it gains the Metis at the mouth of the Misquegegish.

DRIFT.

From Rivière du Loup to the Marsouin, clays, sands and gravels are met with in numerous places on the coast. Inland, long stretches between sharp ridges are deeply covered with them, and this is particularly the case in the parishes of St. Simon and St. Fabien, below Trois Pistoles.

Two terraces, already mentioned, were observed in the drift to the west of Trois Pistoles River, with the respective heights of 130 and 300 feet above the sea, and there was another at the mouth of the Matanne and below the Metis River, the height of which was from forty-eight to fifty feet. Stratified clay occurred at the head of Lake Matapedia, where a surface was computed to be 480 feet above the sea, and near the outlet of the lake there were deposits which appear to be of the same character, of which the height was computed to be 530 feet, but no marine shells were met with at these heights.

Marine testacea were found in clay and sand on the east side of the Matanne River at the summit of a terrace fifty feet above the sea; the species were *Mya arenaria*, *Tellina Grœnlandica* and *Mytilus edulis*. At Metis River they were observed at the same height on the east side, and again about two miles to the west at 130 feet. In the last place the species were *Saxicava rugosa* and *Mya arenaria*. Eight miles up the Metis River the following species were observed at 245 feet above the sea, *Saxicava rugosa*, *Natica clausa* and *Balanus hameri*. To the east of Rivière du Loup *Mya arenaria* and *Scalarea borealis* were found in abundance at ten feet and twenty-four feet above the sea, in numerous places.

At the Ste. Anne River there are five or six distinct terraces in a height of twenty four or twenty-five feet, each abounding in fragments of *Mya arenaria* and *Saxicava rugosa*, and it would seem as if there had been an interval of rest in the elevation of the coast after every few feet of rise.

Ice grooves were observed in two places only. One of them was half a mile below Trois Pistoles church, sixty feet above the level of the sea; the course of the grooves was S. 32 E. The other was on the Kempt road about two miles from Lake Matapedia; here the grooves run S. 80 E., and the height of the spot above the sea is 630 feet.

ECONOMIC MATERIALS.

The substances capable of economic application met with in the course of my investigations, were bog iron ore, wad or bog manganese, copper ore, chromic iron, serpentine, roofing slates, tile stones, flagstones, building stones, limestone for burning, mill stones, shell-marl, peat, and the water of mineral springs.

Bog iron ore. This ore was abundant in the second concession of the seigniory of Green Island, on the land of Mr. Félix Avril. About the middle of his lot it occurred in patches of from three feet up to eight feet in diameter and from twelve to twenty inches thick. Between these patches there were intervals of thirty or forty paces. With a breadth that was not observed to exceed a hundred yards, the length of the area over which these patches were disseminated extended across ten lots, in the bearing S. 27 W., and half a mile in rather less abundance, in a contrary direction.

In the seigniory of Cacouna at the village of La Plaine on the lot belonging to Mr. Stanislaus Roy, a patch of the ore was seen, measuring fifty feet by fifteen feet, with a thickness of four inches. On the adjoining lot to the east, another patch of about the size of the previous one, was met with; yellow ochre occurred in the same place in small quantity.

Another locality was in the seigniory of Villeray about three miles west from Green Island River. On the land of Mr. Narcisse Marquis there is a patch of the ore about 270 feet long, and from twenty to thirty feet wide, with a thickness of from six to twelve inches. The ore was likewise observed on several adjoining farms in smaller quantities, but from the information I obtained from the farmers, it appeared not unlikely that the spread of such patches of the ore is considerable in the neighbourhood.

Traces of the ore were seen in several other places in the seigniories of Green Island, Villeray, Cacouna and Rivière du Loup, as well as in the townships of Viger and Whitworth, but the quantity was too small to require particular mention. As a whole, the ore-bearing tract is about twenty-four miles east and west by about five or six north and south. Whether the ore can be found in sufficient abundance to warrant the establishment of a smelting furnace is perhaps as yet doubtful. From the wooded character of a great part of the country to the south of the tract, charcoal for smelting purposes could be procured easily for many years to come.

Wad or bog manganese. This ore was found in the seigniory of Cacouna, on the lot of Stanislaus Roy already mentioned, in a patch measuring twenty-five feet by twenty feet; it occurs in nodules of from a half to a quarter of an inch in diameter, imbedded in sand, and forming a layer of the thickness of four or five inches.

Copper ore. Notwithstanding the great area over which the limestones and limestone conglomerates of the same age as the copper-bearing rocks of Upton, Acton and Leeds were examined, the only traces of copper ore met with were near the mouth of the Great Capucin River. Here, as already has been mentioned, the pyritous sulphuret is disseminated in small specks in a bed of greyish-green quartz, interstratified in red shale, while the green carbonate invests some of the cracks in the two inches of thickness containing the sulphuret.

Chromic iron. On the summit of Mount Albert, near the second station established by Mr. Murray for his measurements, chromic iron was strewed in abundance on the surface among the fragments of serpentine. It occurred in loose masses weighing from a few ounces to twenty pounds. It was almost all quite free from rock, and the masses, continuing for a little over half a mile in a bearing N. 44 E. gave indication that this was the probable direction of its run, though the bed itself was not seen. The loose masses were so abundant that in a few hours a ton of the ore might have been collected by a single person; and their cleanness leaves little doubt that there must be a rich deposit close to the surface beneath the moss and soil.

About four miles to the north-east of this, a bed of the ore of about one inch thick was observed in the serpentine; but the ore was not so pure as the masses on the summit of the mountain. The bed was traceable in the strike of the serpentine for about fifty paces.

Serpentine. The serpentine of Mount Albert, occupying an area of not less than ten square miles, would yield an inexhaustible supply of material capable of economic application. The rock appears to be unusually solid, and in several places vertical cliffs of several hundred feet in height shew nothing but bare serpentine; while masses of eight and ten feet in diameter, fallen from them, lie at their base. The general colors, as far as observed, were green, or green mottled with red, and mahogany-brown striped with red; occasionally a blueish tint was mingled with the other colors. The distance of the locality from the St. Lawrence by the valley of the Ste. Anne River is thirty-four miles. By the valley of the north tributary branch of the Ste. Anne and the valley of the Marsouin the distance is twenty-four miles. In either direction roads could be easily constructed, while a great part of the way is well adapted for settlement.

Roofing slates, tile stones and flagstones. The best roofing slates were observed on Henley's Brook. The nearest exposure of the rock yielding them is about two miles and a half above the junction of the brook with the Marsouin, or about four miles from the St. Lawrence, and it prevails for a breadth of two and a half miles up the valley of the brook. The slates might be obtained in thicknesses varying from an eighth to a quarter of an inch, and in slabs of eight or ten feet square, with very smooth surfaces. Some part of the rock gave thicker slabs, measuring from two to three inches, and would serve as excellent flagstones. The color of the rock is a dark blueish-grey or black. Some bands of the slate are calcareous, and these, for roofing purposes, should be avoided.

The same rock comes out in the strike upon the Marsouin River from seven to nine miles from the St. Lawrence, and would here give a material of much the same character.

Allusion has already been made in the geological description to the flagstones of the Metis. They occur about twenty-six miles and a half from the mouth of the river, and consist of calcareous sandstones weathering to a light drab. Slabs might be obtained of two feet square, with thicknesses ranging from two to four inches.

Another locality for flagstones is on the Awaganasees Brook about thirty-four miles and a half from the mouth of the Patapedia. They so much resemble those of the Metis River that they are supposed to be of the same geological formation. The slates however were of larger dimensions, some of those seen being two feet square, and others four by eight feet, the thicknesses being from one to two inches. Another exposure about a mile lower on the Awaganasees would yield as large but thinner slabs, which would form excellent tile stones.

Another locality of the same description of material was met with on the Patapedia about seventeen miles and three quarters from the mouth. Here good tile stones might be obtained.

On the Rimouski River below the fall, on the twenty-fourth lot of the sixth range of Duquesne, flagstones might be obtained of a character so similar to those of the Metis, that they are supposed to have the same stratigraphical place. The dimensions observed, as already stated, were two by three feet, and four by six feet, with thicknesses varying from one to four inches.

Mill stones. On Lake Matapedia the white sandstones which underlie the Gaspé limestones would answer the purpose of mill stones. When I passed the lake Mr. Pierre Boucher shewed me a stone which he had prepared from the rock to be used in a mill about to be erected by him. The rock is undoubtedly hard and solid enough for the purpose, but wants the small cavities required for mill stones of the best description.

Building stones. From the grey calcareous sandstones of group B excellent building stones may be obtained, and so many localities in which these sandstones occur, have been named in the geological description, that farther allusion to them is unnecessary. The more solid beds at the base of the Gaspé limestones, as they appear on the Middle Metis Lake and Lake Matapedia, would give good building stone.

Lime. In the limestone conglomerates of group B masses of the rock are found, in most localities, which yield stone of sufficient purity for burning into quick-lime. At Metis a single boulder of dark grey limestone imbedded in one of the conglomerate bands was calculated to weigh twenty-five tons. It was being quarried for lime-burning at the time of my visit to the place. Pretty good stone for burning might be obtained from the base of the Gaspé limestones as far as they were traced.

Shell-marl. About five miles below the Matanne River just over the bank of the St. Lawrence, on the lot of Mr. Denis Gougé, there occurs a deposit of fresh-water shell-marl. It is at the outlet of a swamp, and where dug through it had a thickness of fifteen inches. I was informed that on an occasion when the swamp became dry in summer, the deposit had been seen in other parts of it. The swamp has an area of between fifty and sixty acres.

The only other locality in which shell-marl was observed was on the Lower

Lake Metis. In the upper part of this lake wherever the dredge was used it always brought up shell-marl, but the thickness of the deposit is uncertain.

Peat. A large area in the seigniory of Rivière du Loup is covered with peat. The locality is called the Savanne de la Plaine. The exact boundaries were not ascertained, but the area cannot be less than nine or ten square miles. It stretches along both sides of the river from the third to the sixth mile, and to the eastward it has a length of three miles, diminishing to the breadth of a mile at the east end. Its length on the west side of the river I was not able to ascertain.

Peat was observed in abundance on the first and second concessions of Green Island Seigniory, and from a point two miles below the Rimouski River there is a belt of it extending nearly all the way to Metis River, a distance of over twenty miles. The northern edge of the belt approaches in some places to within a quarter and in others to within half a mile of the St. Lawrence, and its width is from a quarter of a mile to a mile. The thickness of the deposit where observed was from one to six feet.

The swamp which has been mentioned on the Rimouski in the third range of Duquesne is underlaid with peat; from within half a mile of the Rimouski it extends two miles to the east in Duquesne, and from one to two miles more in Macpes. Its breadth is about three quarters of a mile, and its thickness from five to twelve feet. Where tried by me, a pole was sunk in it nine feet; but I was informed by one of the inhabitants that a pole had been sunk in it to a depth of thirty feet on Bouchette's road.

Mineral springs. Mineral springs occur in abundance in the neighbourhood of Cacouna and Green Island, and from the circumstance of this part of the St. Lawrence being a considerable place of resort in the summer for persons in search of health it would perhaps be desirable that the medicinal properties of the most important of the springs should be ascertained. Without attempting a description of any of them, the following is a list of those which came under my own observation and of which I obtained information:

1. I was informed that one mile south from Cacouna village there is a copious saline spring but I could not ascertain the proprietor's name.
2. About half a mile below the village, a spring was observed about three feet under high water mark; it appeared to be sulphurous and saline.
3. About a quarter of a mile farther down the coast, another of the same character was met with about three feet above high water mark.
4. Three miles west from Green Island, on the farm of Mr. Narcisse Marquis, in the second concession of the seigniory of Villeray, there are two strong saline and sulphurous springs, specimens of which were brought to Montreal.
5. On the next farm to the westward belonging to Mme. Marie Beaulieu, there is another strongly saline and sulphurous spring.
6. Just below the bank to the west of Green Island River, at the village there are several springs. The first is 200 yards from the river, on the land of Mr. Paradis. On the next adjoining lot belonging to Mr. J. B. Dumont, there are two springs, and in the suceeding one, the property of Mr. Coté, there are two more. These five springs occur on a nearly east and west line, within a length of 200 yards. They are not so copious nor so strong as those mentioned to the west. I was informed that there are many other mineral springs in the same neighbourhood, but I was not able to ascertain their exact localities.
7. About six miles below Cap Balêine or Whale Point, at the upper end of Les Crapauds, there is a sulphurous spring below high water mark. The water had also a saline taste, but as the tide had just left the spot it was not certain whether the taste was not derived from an admixture of sea-water.
8. About two miles farther down the coast there are two springs about half a mile apart, with the Rivière à Crapaud between them. These are both under high-water mark; they had a strong sulphurous odor and saline taste.
9. There are two springs above Ste. Anne River. One of them is two and the other five miles from the river. Both are under high-water mark, and they are both sulphurous and may be saline.
10. Another of a similar character occurs between high and low water mark, about 200 paces below Little Ste. Anne River.

11. In the valley of the Marsouin, on the east side of the river about nine miles up, there is a spring with a small flow of water; but it is strongly sulphurous and slightly saline. Well beaten paths lead to it, shewing that it is much resorted to by the wild animals of the country.

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

JAMES RICHARDSON.

REPORT

FOR THE YEAR 1858

OF

MR. T. STERRY HUNT, F.R.S.

CHEMIST AND MINERALOGIST TO THE GEOLOGICAL SURVEY OF CANADA,

ADDRESSED TO

SIR W. E. LOGAN, F.R.S.

DIRECTOR OF THE GEOLOGICAL SURVEY OF CANADA.

MONTREAL, 1st *May*, 1859.

SIR,

At the close of my Report for 1856, I had occasion to call your attention to the composition of some varieties of intrusive rock, occurring in the vicinity of Montreal, and locally known as white traps. These rocks, which are some times compactly crystalline, at others are porphyritic, the base being dull and earthy in aspect, and enclosing crystals of feldspar. My analyses showed these rocks to be essentially composed of a feldspar approaching orthoclase in composition, with occasional admixtures of a silicate of alumina and alkalies decomposable by acid together with carbonates of lime, magnesia and oxyd of iron. These carbonates were sometimes entirely wanting, but in other varieties of the the rock equalled five or six per cent. In like manner certain varieties gave to muriatic acid only traces of alumina from the decomposable silicate, which in other specimens equalled five or six per cent. and in one case from 36·0 to 46·0 per cent. and had the composition of natrolite, gelatinizing with acids the insoluble portion in this as in the other cases consisted of a feldspar resembling orthoclase. This rock which contained besides, about seven per cent. of carbonates, I described under the name of phonolite. (Report for 1856, p. 490.)

The feldspathic residue from these white traps contains from 60·0 to 66·0 per cent. of silica, and only traces of lime, with from 10·0 to 13·0 per cent. of alkalies, in which potash sometimes predominates, while more often soda makes up the larger portion, a fact observed in many orthoclase feldspars, especially those from trachyte; for to this class of rocks, the white traps are for the most part to be referred, as you have already indicated by describing as a trachytic porphyry, the feldspathic trap from Chambly, whose analysis is given at page 486 of the Report just cited, (see also your Report for 1847, p. 17.)

Under the title of trachytes lithologists have included a large class of igneous rocks, generally more or less rough to the touch (as the name indicates,) white or of pale colors, and composed essentially of orthoclase or a closely related feldspar, with small portions of mica, hornblende and more rarely pyroxene. Some varieties contain disseminated grains of quartz. The typical trachytes have an uncrystalline base, which is sometimes porous and at others compact, generally dull and earthy in aspect; the base is sometimes vitreous and passes into obsidian and pumice while in others it is finely crystalline. These varieties often become porphyritic from the dissemination of crystals of glassy feldspar and other minerals, passing into the so-called argillophyre or clay porphyry. The base is sometimes highly silicious and becomes a sort of petrosilex, which is probably nothing more than an intimate mixture of quartz and feldspar; through such trachytes, and those which contain disseminated quartz, we have a passage to true granites, which consist of orthoclase feldspar mingled with quartz and mica. There are not wanting trachytes whose whole mass is coarsely crystalline, constituting granitoid and even gneissoid trachytes. Such are some of the rocks about to be described, which are only distinguished from true granites and syenites by the absence of quartz. The analyses of other trachytic rocks show them to consist of orthoclase mingled with more basic feldspars, or with hydrated silicates like natrolite, thus passing into phonolites. The accidents of structure which are supposed to characterize this class of rocks are however so little dependent upon chemical composition that in many of the so-called trachytic rocks of Hungary and Guadaloupe the predominant mineral is a basic feldspar like labradorite, containing large amounts of lime and soda, with but little potash.

Among the trachytic rocks of Lower Canada, I have met with none which are porous or vitreous. The white trachytic dykes at Lachine are finely granular, and sometimes earthy in texture; they occasionally assume a concretionary structure, and are often porphyritic from the presence of crystals of feldspar. The reddish-gray trachytic porphyry of Chambly offers an example of well-defined feldspar crystals in a paste consisting of finely lamellar orthoclase with a slight excess of silica and small portions of mica. Several dykes about Montreal consist of a trachytic porphyry with large feldspar crystals in a compact purplish or lavender-gray base of a waxy lustre, which effervesces with acids from an admixture of carbonates, and closely resembles in appearance certain trachytes from the Siebengebirge upon the Rhine. Other varieties can hardly be distinguished from the so-called domite, the trachyte of the Puy de Dôme, and exhibit small drusy cavities. The presence of carbonates in trachytes has generally been overlooked; Deville however found seven per cent. of carbonate of lime in a trachytic rock from Hungary, and I have observed it disseminated in some of the trachytes of the Siebengebirge.

In my Report already referred to I have shown that some of the trachytes of our vicinity apparently contain carbonates of magnesia and iron, and perhaps of manganese, in addition to carbonate of lime. Many of these rocks weather to some depth of a reddish-brown from the peroxydation of the iron. One of this kind, which forms a large dyke in the limestones at the Mile-End Quarries, is remarkable for its large proportion of carbonates. It is grayish-white with dark gray spots, granular, sub-vitreous in lustre, and has the aspect of an impure quartzite. It loses by ignition 11·0 per cent. of its weight; reduced to powder it effervesces freely with nitric acid, disengaging carbonic acid, which when heat is applied is mingled with nitrous fumes from the peroxydation of the iron. 100 parts of the rock gave in this way to the acid, 4·84 of alumina, besides lime, magnesia and iron, which represented as carbonates equalled carbonate of lime 11·60, carbonate of magnesia 3·58, carbonate of iron 3·82 = 19·00; a small portion of these bases was perhaps united with the alumina in a silicate. The insoluble residue gave as follows:

	I.
Silica,	61·62
Alumina,	21·00
Lime,	2·69
Magnesia,	(traces)
Potash,	4·66
Soda,	5·35
Volatile,	2·37
	97·69

It will be seen that this residue is near to orthoclase or rather to oligoclase in composition; as I have suggested in a previous Report, the decomposition of a portion of the feldspar, which has been converted into a hydrated silicate of alumina with loss of the alkalies and a portion of silica, will explain the presence of water and an excess of alumina, not less than the deficiency of silica and alkalies, in the feldspathic matter of the more earthy of these trachytes.

These trachytic rocks occur in dykes cutting the dolerites and melaphyres of the Mountain of Montreal, and constitute the little island known as Moffatt's Island, but the most remarkable exhibition of them is met with in the mountains of Brome and Shefford. The former occupies an area of about twenty square miles in the township of Brome and the western part of the township of Shefford, and consists of a great mass of trachyte rising into several rounded hills, of which Brome and Gale Mountains are the principal, and may have an elevation of about 1000 feet above the surrounding plain, from which the intrusive rock rises boldly. It shows divisional planes, giving it the aspect of stratification, and is divided by other joints into rectangular blocks. Another similar mass, covering an area of about nine miles, is met with in the township of Shefford a little to the N. W., and distant in the nearest point only about two miles from the last. These masses of rock, as you have shown in your Report for 1847, break through the slates and sandstones of the upper portion of the Hudson River group, which in that vicinity, although on the confines of the metamorphic region, are but little altered.

The rock of these two mountainous areas presents but very slight differences, being everywhere made up in great part of a cleavable feldspar with small portions of brownish-black mica or of black hornblende, which are sometimes associated. The proportion of these two minerals to the mass is never above a few hundredths and often less than one-hundredth. The other minerals are small brilliant crystals of yellowish sphene and others of magnetic iron, amounting together probably to one-thousandth of the mass; in some finer grained varieties rare crystals of sodalite and nepheline are met with.

These rocks never contain quartz, but being made up entirely of cleavable grains of feldspar without any cementing material, are very friable and subject to disintegration; so that for some distance around the mountains, the soil is almost entirely made up of the disaggregated crystals of feldspar, which however show but little tendency to decomposition, and retain their lustre. The rock is sometimes rather finely granular, but is often composed of cleavable forms, which are from one-fifth to one-half of an inch in breadth and sometimes nearly an inch in length. The cleavages of the feldspar are those of orthoclase. The lustre is vitreous and in the more opaque varieties pearly, but the crystals never exhibit that eminently glassy lustre nor the fissured appearance which characterises the feldspar of many foreign trachytes, identical with these in composition. The color of the feldspars of these mountains is white, passing to reddish on the one hand and to pearl or lavender-gray on the other.

Specimens of the rock of Brome Mountain were taken from the side near the village of West Shefford; it was coarsely crystalline, lavender-grey in color, and contained a little brown mica, sphene and magnetic iron, but no hornblende. The density of fragments of the mass was found to be 2·632—2·638. Selected grains of the feldspar had the specific gravity of 2·575 and did not yield anything to the action of hydrochloric acid. The analysis was effected in the usual way by fusing with an alkaline carbonate. The alkalies were determined from another portion, which was decomposed by ignition with a mixture of carbonate of lime and muriate of ammonia. The analyses of two portions from different specimens gave as follows:

	II.	III.
Silica,	65·70	65·30
Alumina,	20·80	20·70
Lime,	·84	·84
Potash,	6·43	....
Soda,	6·52	....
Volatile,	·50	....
	100·79	

A specimen from the south side of Shefford Mountain was next examined. A little above the place where it was collected the rock was a coarse greyish-white feldspar with a little black mica, and closely resembled that just described, but the portion selected contained a little black brilliant hornblende in crystalline grains about the size of those of rice, with very small portions of magnetite and yellow sphene, disseminated in a base, which although completely crystalline, was more coherent and finer grained than that of Brome, rarely exhibiting cleavage planes more than one-fourth of an inch in length. Its colour was yellowish-white, and it was sub-translucent with a somewhat pearly lustre. Fragments of the rock gave a specific gravity of 2·607—2·626—2·657. By crushing and washing the mass, the white feldspar grains were separated from the heavier minerals, and had in powder a specific gravity of 2·561.

The composition of this feldspar is almost identical with that from the trachytes of Brome and Chambly. For the sake of comparison, the analysis of the crystals from the latter is subjoined. (A) See Report for 1856, p. 486.

Analysis gave for the feldspar of Shefford:

	IV.	A.
Silica	65.15	66·15
Alumina,	20·55	19.75
Lime,	·73	.95
Potash,	6·39	7.53
Soda,	6·67	5·19
Volatile,	·50	·55
	99·99	100·12

Going westward from the mountains of Brome and Shefford, which from their proximity and their identity of composition may be looked upon as forming but one great trachytic mass, we meet with a series of intrusive masses, less extensive, but similar in attitude, and which as you have remarked are placed along the line of an anticlinal, traceable as a gentle undulation for 180 miles across the country as far west as the Lac des Chats on the Ottawa. The hills lying to the west of Brome and Shefford are in the order of their succession, Yamaska, Rougemont, Belœil, Montarville, Mount Royal and Rigaud, all of which are intruded through Lower Silurian strata. A few miles to the south of Belœil is Mount Johnson or Monnoir, another intrusive mass, which although somewhat out of the range of those just mentioned, apparently belongs to the same series. The mineral composition of these intrusive masses varies considerably, not only for the different mountains, but for different portions of the same mountain.

Yamaska Mountain.—The greater portion of this mass is a granitoid trachytic rock, which differs from that of Brome and Shefford in being somewhat more micaceous and more fissile. The dark brown mica is in elongated flakes, and hornblende is absent in the specimens collected, which however hold small portions of magnetite and minute crystals of amber-yellow sphene; these seem to be disseminated in veins of segregation, which are of a lighter colour than the mass.* The feldspar grains which make up this rock are brilliant, of a vitreous lustre and often yellowish or reddish-gray in color. Separated by washing from the crushed mass, the crystalline feldspar in powder had a density of 2·563, and gave by analysis as follows (V.) Another specimen of this granitoid trachyte, having been crushed and separated by a sieve from the greater portion of the mica, gave for the composition of picked grains (VI.):

	V.	VI.
Silica,	61·10	58·60
Alumina,	20·10	21·60
Peroxyd of iron,	2·90	2·88
Lime,	3·65	5·40
Magnesia,	·79	1·84
Potash,	3·54	3·08
Soda,	5·93	5·51
Volatile,	·40	·80
	98·41	99·71

The south-eastern part of the mountain offers a composition entirely different from the last, being a dolerite made up of a pearly white crystalline translucent feldspar, with black brilliant hornblende, ilmenite and magnetic iron. This rock is sometimes rather fine grained, though the elements are always very distinct to the naked eye, while in other portions large cleavage surfaces of feldspar half an inch in breadth are met with, which exhibit in a very beautiful manner the striæ characteristic of the polysynthetic macles of the triclinic feldspars. The associated crystals of hornblende are always much smaller and less distinct, forming with grains of feldspar a matrix to which the larger feldspar crystals give a porphyritic aspect. Finer grained bands, in which magnetite and ilmenite predominate, traverse the coarser portions, often reticulating; while the whole mass is also occasionally cut by dykes of a whitish or brownish-gray trachytic rock, which is often porphyritic. If, as is not improbable, these dykes belong to the great trachytic portion of the mountain, it would show that here as in Mount Royal the trachytes are more recent than the dolerites or diorites, but the relations of these different rocks have yet to be made out.

A portion of the coarse grained diorite selected for examination, contained besides the minerals already enumerated, small portions of black mica, with grains of pyrites, and a little disseminated carbonate of lime, which caused the mass to effervesce slightly with nitric acid. The macled feldspar crystals, sometimes half an inch in length and beautifully striated, were so much penetrated by hornblende that they were not fit for analysis, but by crushing and washing the rock a portion of the feldspar was obtained which did not effervesce with nitric acid, and contained no visible impurity except a few scales of mica. The specific gravity of the powdered feldspar was 2.756—2.763. It was attacked by hydrochloric acid with separation of pulverulent silica, but the complete analysis by this means was somewhat difficult, a portion of the mineral escaping decom-

* For an examination of the sphene of the Yamaska Mountain see the Report for 1851, p. 119. By an error of the press, the determined specific gravity is said to be 2·76 instead of 3·76.

position, so that the ordinary method of fusion with an alkaline carbonate was had recourse to. Two analyses gave as follows:—

	VII.	VIII.	B.
Silica	46.90	47.00	47.40
Alumina	31.10	32.65	30.45
Peroxyd of iron	1.35		.80
Lime	16.07	15.90	14.24
Magnesia	.65	......	.37
Potash	.58	......	.38
Soda	1.77	......	2.82
Volatile	1.00	......	2.00
	99·42		98.96

This feldspar then approaches closely in composition to anorthite, which although formerly regarded as a rare species, has recently been shown by Deville, Damour and Forchammer to enter into the composition of the volcanic rocks of Iceland and Teneriffe, and Scott has lately described a coarse-grained diorite from near Bogoslowsk in the Urals, which contains a feldspar of specific gravity 2.72, composed of silica 46.79, alumina 33.16, peroxyd of iron 3.04, lime 15.97, potash 0.55; soda 1.28 = 100.79. It is associated with a greenish-black aluminous hornblende, containing some soda and titanic acid, together with a little mica and some quartz. (*Phil. Mag.* (4,) xv. 518). Quartz was also observed by Delesse in the orbicular diorite of Corsica, the feldspar of which contains according to him silica 48.62, and lime 12.02, approaching to anorthite in composition. In all of these feldspars however, the proportion of silica is somewhat greater than in pure anorthite, which contains only 43.2 per cent. of silica. I have already in a previous Report discussed the question of the composition of these feldspars, and my reasons for regarding them as mixtures of two or more species. (Report for 1853-56, p. 383, and *Phil. Mag.* (4) ix. 262.) I may here call attention to my analysis of the Bytownite of Thompson from near Ottawa; this is a granular feldspar, forming with occasional grains of hornblende a diorite, and having a specific gravity of 2.732, which in my Report for 1850, p. 39, I described as an impure anorthite. Its analysis is for comparison placed along side of that of the feldspar of the Yamaska diorite, and marked B.

Mount Johnson or *Monnoir*, is composed of a diorite which in general aspect greatly resembles that of Yamaska except that it is rather more feldspathic; the finer grained varieties are lighter colored and exhibit a mixture of grains and small crystals of feldspar with hornblende, brown mica and magnetite. Frequently however the rock is much coarser grained, consisting of a mixture of feldspar grains with slender prisms of black hornblende often half an inch long and one-tenth of an inch broad, and numerous small crystals of amber colored sphene.

In this aggregate there are imbedded cleavable masses of the feldspar often an inch long by half an inch in breadth. At the southern foot of the mountain large blocks of the coarse grained diorite are found in a state of disintegration, affording detached crystals of feldspar with rounded angles, and weathered externally to an opaque white from partial decomposition. Near the base of the mountain a coarse grained variety of the diorite encloses small but distinct crystals of brown mica, and a fine grained micaceous variety near the summit contains sphene.

The feldspar in all the specimens which I have examined appears uniform in its character; it is white, rarely greenish, or grayish; lustre vitreous inclining to pearly. In its cleavages it resembles oligoclase, to which species it is shown to be related by its specific gravity and chemical composition; but I have never seen among its crystals the polysynthetic macles so common in triclinic feldspars. The specific gravity of a carefully selected fragment was 2.631, of another specimen in powder 2.659. The analyses of two different specimens gave as follows:

	IX.	X.
Silica	62.05	62.10
Alumina	22.60	
Peroxyd of iron	·75	
Lime	3.96	3.69
Potash	1.80	
Soda	7.95	
Volatile	.80	
	99.91	

Belœil or Rouville Mountain.—The specimens which I have examined from this mountain may be described as a micaceous diorite. The feldspar, which predominates so far as to give a light grey colour to the rock, is in white translucent vitreous cleavable grains, with small distinct prisms of black hornblende and scales of copper-colored mica. Magnetic iron is also disseminated, and the rock resembles the micaceous portion of Yamaska. A portion of the feldspar separated by washing, still retained a little mica, and gave by analysis:

		XI.
Silica		58.30
Alumina } Peroxyd of iron }	24.72	
Lime		5.42
Magnesia		.91
Potash		2.74
Soda		6.73
Volatile		.50
		99.32

It will be seen that this feldspar approaches very closely to that from Yamaska numbered VI., and there is much resemblances between the two rocks.

Montarville or Boucherville Mountain.—The collection of specimens from this intrusive mass offers two or three remarkable varieties of rock not met with in the mountains already described; and characterized by the presence of augite and olivine. The first variety consists almost entirely of coarsely crystalline black augite, with small scales of brown mica, and rare grains of white feldspar; other of calcite are also scattered throughout the mass, and their removal by solutio has left numerous little pits on the weathered surface; it may be described as highly augitic dolerite. Another and remarkable variety of dolerite appears to form the greater part of the mountain; it consists of olivine in rounded crystallin masses, from one-tenth to half an inch in diameter, associated with a white or greenish-white crystalline feldspar, black augite and a little brown mica and magnetic iron. The augite appears both in the form of small grains, and of well defined crystals, often an inch in length by half an inch in diameter, and partially coated with a film of brown mica; the olivine is evidently the predominant mineral.

An average specimen of this olivinitic dolerite was reduced to powder; it did not effervesce with nitric acid, and when ignited lost only 0.5 per cent. When heated with sulphuric acid the olivine was readily decomposed with separation of silica, and by the subsequent use of a dilute solution of soda, followed by hydrochloric acid, and a second treatment with the alkaline ley, 55·0 per cent. of the mass were dissolved. The dissolved portion consisted of,

	XII.
Silica	37.30
Magnesia	33.50
Protoxyd of iron	26.20
Alumina	3.00
	100.00

Another portion of the same pulverized specimen was gently warmed with dilute sulphuric acid, and the silica being removed from the residue by a solution of soda, some grains of olivine which still remained, were decomposed by a repetition of the process. The undissolved portion equalled 44·7 per cent., and appeared to consist of feldspar and pyroxene, with some mica and a little magnetite. The acid solution gave a quantity of magnesia equal to 18·0 per cent. of the rock.

Selected grains of the olivine were now submitted to analysis. The powdered mineral gelatinized with hydrochloric acid even in the cold, and was almost instantly decomposed when warmed with sulphuric acid diluted with an equal volume of water, the silica separating for the most part in a flocculent form, and enclosing small grains of undecomposed mineral, which were left after dissolving the ignited silica. One or two hundredths of silica were however retained in solution, and were precipitated by ammonia with the oxyd of iron. Two analyses of separate portions of the olivine gave as follows, after deducting the undecomposed mineral.

	XIII.	XIV.		Oxygen.
Silica,	37·13	37·17	=	19·82
Magnesia,	39·36	39·68	=	15·87
Protoxyd,	22·57	22·54	=	5·10
	99.06	99·39		

If we suppose the 18·0 per cent. of magnesia found above to correspond to olivine containing 39·5 per cent. of magnesia, we shall have 45·5 per cent of olivine in the rock examined. The silicates not attacked by sulphuric acid were decomposed by fusion with an alkaline carbonate, and gave as follows:

	XV.
Silica	49.35
Alumina	18.92
Protoxyd of iron	4.51
Lime	18.36
Magnesia	6.36
Loss (alkalies?)	2.50
	100.00

A crystal of the black cleavable augite from the olivinitic dolerite had a hardness of 6.0 and a density of 3.341; its powder was ash-gray. Analysis gave,

	XVI.
Silica	49.40
Alumina	6.70
Lime	21.88
Magnesia	13.06
Protoxyd of iron	7.83
Soda with traces of potash	.74
Volatile	.50
	100.11

In some portions of the dolerite of Montarville, the feldspar is more abundant and appears in slender crystals, with augite and a smaller proportion of olivine than the last. A specimen of this variety crushed and washed, gave 3.9 p. c. of magnetic iron, and 10.0 p. c. of a mixture of ilmenite with olivine. The feldspar was obtained nearly pure, in the form of slightly yellowish vitreous grains having a density of 2.731–2.743. Its analysis gave the composition of labradorite:

	XVII.
Silica,	53·10
Alumina,	26·80
Lime,	11·48
Peroxyd of iron,	1·35
Magnesia,	·72
Potash,	·71
Soda,	4·24
Volatile,	·60
	99·00

Rougemont.—The rocks from this mountain offer very great varieties in composition and appearance. Some portions are a coarse grained dolerite in which augite greatly predominates; grains of feldspar are present, and a little disseminated carbonate of lime. In some specimens the augite crystals are an inch or more in diameter, with brilliant cleavages, and grains of pyrites are abundant, with calcite, in the interstices. This rock approaches closely to the highly augitic dolerite of Montarville. The olivine which characterises the latter mountain is also very abundant in two varieties of dolerite from Rougemont. One of these consists of a grayish-white finely granular feldspathic base, in which are disseminated well defined crystalline grains of black augite and amber coloured olivine, the latter sometimes in distinct crystals. The proportions of these elements vary in the same specimen, the feldspar forming more than one-half the mass in one part, while in the other the augite and olivine predominate. By the action of the weather the feldspar acquires an opaque white surface, upon which the black lustrous augite and the rusty-red decomposing olivine appear in strong contrast.

Another variety of dolerite from this mountain may be described as a fine-grained grayish-black basalt enclosing a great number of crystals of dark bottle-green translucent olivine, which appear in high relief upon the weathered surfaces, and are often half an inch in diameter.

In your notes upon this mountain you have remarked that dykes of a fine grained granitic trap cut the augitic mass; and I find among the collections from this locality specimens of a light gray rock which is made up of a white crystalline feldspar with small prisms of black hornblende and scales of brown mica, resembling somewhat the finer grained diorite of Mount Johnson, while others more micaceous approach to that of Belœil.

Mount Royal or Montreal Mountain.—A large portion of this mountain consists of a dolerite in which augite greatly predominates, resembling the highly augitic varieties of Rougemont and Montarville. The white crystalline feldspar, which is often very sparsely disseminated, is at other times more abundant, and occasionally predominates in bands, which traverse the dark coloured rock and appear to be veins of segregation. At the east end of the mountain a variety of dolerite containing olivine occurs; it consists of a base of grayish-white granular feldspar, which constitutes in the specimen before me about one-half the mass, and incloses crystals of brilliant black augite, and others of semi-transparent amber-yellow olivine. This rock closely resembles the feldspathic olivine rock of Rougemont described above, but the imbedded crystals are somewhat larger, although much smaller than the crystals of the same mineral in the dolorite of Montarville. A portion of the feldspar freed as much as possible from augite, gave by analysis the following result, which shows that it approaches labradorite in composition:

	XVIII.
Silica,	53·60
Alumina,	25·40
Peroxyd of iron,	4·60

Lime,	8·62
Magnesia,	·86
Alkalies, by difference,	6·12
Volatile,	·80
	100.00

The silica contained 1·60 of matter insoluble in carbonate of soda, apparently titanic acid from intermingled ilmenite, from whence a portion of the oxyd of iron is also derived.

Rigaud Mountain.—This, the most western of the series of intrusive masses under consideration, is in great part made up of a rock which approaches in character those of Brome and Shefford, being an aggregation of large crystalline grains of what appears to be a reddish orthoclase, often without any cementing medium; at other times the feldspar crystals are imbedded in a fine grained grayish base, and the rock closely resembles the trachytic porphyry of Chambly. Quartz and hornblende are both however sometimes present, the rock passing into a granite or syenite. These rocks are cut by thin veins or dykes of a hard reddish-brown jasper-like feldspathic rock.

A portion of Rigaud Mountain however consists of a rather coarse grained diorite, which is made up of a crystalline feldspar, white or greenish in colour, with small prisms of brilliant black hornblende and crystals of black mica, in some specimens the feldspar and in others the hornblende predominating. These diorites resemble closely those of Belœil and Rougemont.

The rocks of all these mountains, and especially of Montreal and Rigaud, still demand a great deal of study, and these observations and analyses are to be looked upon only as preliminary to a more extended examination, which shall determine the mutual relations of the trachytes, diorites, dolerites and olivinitic rocks above described, as well as their probable relations to the stratified deposits of more ancient periods.

The eruption of these augitic and olivinitic rocks was evidently antecedent to the deposition of the Lower Helderberg rocks, since in the dolomitic conglomerate of that age we meet with fragments of augite, oliv and mica identical with those found in the dolerites just described (Report 1857, p. 202.)

The metamorphic action exerted by these intrusive masses upon the Silurian strata in their immediate vicinity appears to have been very local, but is not less worthy of study, inasmuch as its results on a small scale resemble those produced by the wide-spread action which has altered such vast areas of similar rocks in the Green Mountain chain, far removed from the influence of intrusive rocks.

Among the sandstones and shales of the Hudson River group which surround Rougemont, there occur beds of those highly ferruginous dolomites so often met with in this formation, and similar to those which I have described in previous Reports.

In one of these, which is conglomerate or concretionary in its structure, the paste has been converted into a dark greenish crystalline hornblende, which retains its colour on the weathered surfaces, while the nodules of buff coloured dolomite have become reddish-brown and pulverulent.

In another specimen of this rock, also from Rougemont, and made up of thin layers of white crystalline red-weathering dolomite with others of a compact greenish-gray mineral, are interposed layers of blackish-green crystalline hornblende from one-sixth to one-fourth of an inch in thickness; like the other bands they are variable in thickness and interrupted. Occasionally the cleavages of the hornblende, which are nearly perpendicular to the beds, are seen cutting through thin layers of the dolomite, which as before, weathers reddish-brown.

A portion of the rock free from hornblende was attacked with effervescence by warm dilute nitric acid, which dissolved 54·0 per c. of carbonates of lime, magnesia and iron. The soluble portion had the following composition.

Carbonate of lime	38.9
" magnesia	31.2
" iron	29.9
	100.0

Minute grains of pyrites were disseminated through the rock, which gave to the acid traces both of copper and nickel. The residue decomposed by fusion with carbonate of soda was found to contain—silica 65.40 ; alumina 10.10 ; lime 0.56 ; magnesia 2.05 ; protoxyd of iron 4.80 ; titanic acid 7.30 ; volatile 2.20; loss (alkalies ?) 7.59 = 100.00.

The fossiliferous limestones around the mountain of Montreal appear to have suffered very little change from the proximity of the igneous rocks. In one instance a portion of the limestone for the distance of five or six inches from the dolerite was seen to be whitened, and intermixed with a portion of a greenish matter having somewhat the aspect of serpentine. Nitric acid dissolved from the crushed rock carbonate of lime with some alumina and a trace of magnesia, and the residue dried at 212° F., gave by analysis, silica 40.20 ; alumina 9.30 ; protoxyd of iron 5.22 ; lime 36.40 ; magnesia 3.70 ; volatile 0.20 = 95.02. The insoluble matter of these limestones is generally aluminous, and contains only traces of earthy protoxyd bases. A portion of the gray fossiliferous limestone from the vicinity of the mountain left by the action of a dilute acid a residue black with carbonaceous matter, which became white by ignition, and equalled 12·8 per cent. of the rock. It was an impalpable powder which gave to dilute soda ley, 9·5 per cent. of its weight as soluble silica, while the residue had nearly the composition of a potash feldspar ; analysis giving me silica 73·02, alumina 18·31, lime 0·93, magnesia 0·87, potash 5·55, soda 0·89 = 99·57. (See Report for 1857, p. 198.) It would appear that under the influence of the heat of the intrusive rock this argillaceous matter combines with lime, magnesia and oxyd of iron to form the silicate whose analysis has been given above, a portion of alumina being set free in a soluble form.

Intrusive Rocks of Grenville.

In your Report for 1856, you have described a series of intrusive rocks which cut the gneissoid rocks of the Laurentian system in Grenville, and are evidently older than the Silurian strata, which in some instances rest upon the worn surfaces of these intrusive rocks. The syenite, which is more recent than the dykes of a variety of dolerite found there, is cut by a quartziferous porphyry ; while all of these are intersected by dykes of a porphyritic dolerite or melaphyre, whose relations to the Silurian strata you have not yet determined.

These syenites and porphyries are very distinct from the rocks which we have found intruded among the Silurian strata, and being the oldest known intrusive rocks upon the earth's surface, their composition presents no small interest. My examinations of them are as yet incomplete, but I give the results of analyses of the porphyry, dolerite and melaphyre.

The Grenville porphyries belong to what has been called felsite porphyry, hornstone porphyry and orthophyre, having a base of petrosilex, which may be regarded as an intimate mixture of orthoclase and quartz, colored by oxyd of iron, and varying in color from green to various shades of red and black, according to the state of oxydation of this metal. Throughout this paste, which is homogeneous and conchoidal in its fracture, are disseminated well-defined crystals of a rose-red or flesh-red feldspar, apparently orthoclase, and although less frequently, small grains of nearly colorless translucent quartz. Some varieties of this rock which you have caused to be wrought, rival for the fineness of texture, brilliancy of polish and beautiful contrasts of color, the rarest antique porphyries. An analysis was made of a characteristic variety, the paste of which was greenish-black, jasper-like, and slightly translucent on the edges; its fracture was conchoidal and its lustre somewhat waxy. The hardness was nearly equal to that of quartz and the specific gavity 2·62. A few well-defined crystals of flesh-red feldspar and some small grains of quartz were found disseminated; the composition of the paste, as free as possible from these, was found to be:

	XIX.		
Silica	72.20	= Oxygen	38.51
Alumina	12.50		5.84
Protoxyd of iron	3.70		.82
Lime	.90		·26
Potash	3.88		.66
Soda	5.30		1.36
Volatile	.60		
	99.08		

The oxygen ratios of the alkalies and the alumina are 2.02 : 5.84; or very nearly as 1 : 3; the alumina requires 43.80 of silica to form with the alkalies 65.48 of orthoclase or a feldspar with the oxygen ratios 1:3:12; leaving 28.40 of silica, of which a small portion only is combined with the lime and oxyd of iron.

The intrusive syenite of this region is generally made up of flesh-red orthoclase and grayish vitreous quartz, with a portion of blackish-green hornblende, which is sometimes almost or altogether wanting. The feldspar is generally distinctly crystalline and cleavable; at other times it is nearly compact. In some portions the syenite has undergone a peculiar decomposition which has reduced it to a soft unctuous greenish-matter, having somewhat the aspect of serpentine or rather of steatite. This change, as you have remarked, is observed in the vicinity of those remarkable veins of chert so much resembling buhr-stone, which are here found cutting the syenite, and is more or less complete for a distance of 200 yards on either side of them. In specimens of this altered rock, the quartz remains unchanged, while the feldspar, still preserving its cleavages, has a hardness no greater than carbonate of lime; it is somewhat unctuous to the touch and has a feeble waxy lustre; its color is sometimes reddish, but more often of a pale green; such a specimen was selected for analysis and gave:

	XX.		
Silica	80.65	= Oxygen	43.01
Alumina	12.60		5.89
Oxyd of iron and magnesia, traces,	....		
Lime	.60		.17
Soda and a little potash	2.65		.68
Volatile	2.10		
	98.60		

It will be seen from the oxygen ratios of the alumina and alkali, that the feldspar has lost nearly two-thirds of its alkali, the iron and other bases having also for the most part disappeared. This change is therefore in fact a conversion of the feldspar into kaolin, and as the process involves a separation of silica as a soluble alkaline silicate, it is not improbable that this decomposition has been the source of this chert, which I have found to be nearly pure silica approaching to calcedony.

The oldest dykes of this region are cut by the syenite, and are of a fine-grained dark greenish-gray dolerite or green-stone, which weathers grayish-white, and is seen by the aid of a glass to consist of a greenish-white feldspar with a scaly fracture, mixed with pyroxene, occasional scales of mica and grains of pyrites. These dolerites contain no carbonates. The analyses of specimens from two dykes varying a little in texture, gave the following results:

	XXI	XXII.
Silica	50.35	50.25
Alumina	17.35	32.10
Peroxyd of iron	12.50	
Lime	10.19	9.63
Magnesia	4.93	5.04
Potash	.69	.58
Soda	2.28	2.12
Volatile	.57	1.00
	99.04	100.72

The iron although represented as peroxyd, exists in the form of protoxyd, and in the case of XXI., in part as sulphuret. These rocks evidently correspond to mixtures of basic feldspars with pyroxene, and present nothing in their composition to distinguish them from ordinary dolerites.

The newer dykes, which cut the quartziferous porphyries, have a grayish black, very fine-grained base, earthy and subconchoidal in its fracture, somewhat resembling the dolerites just described, but contain occasional crystalline masses of black augite, sometimes half an inch in diameter, brilliant black grains of titaniferous iron ore, and small cleavable masses of white carbonate of lime, with which indeed the whole rock seems penetrated. A portion of the paste when reduced to powder and treated with dilute nitric acid, was attacked with abundant evolution of carbonic acid, followed on the application of heat, by red fumes. The acid solution contained an amount of alumina and oxyd of iron equal to 6·50 per cent., 0·50 of magnesia, and lime equal to 8·7 per cent. of carbonate, in which state it evidently existed in the rock. The sum of the dissolved matters equalled 15·70 per cent. and the residue dried at 212°=83·30. There had evidently been a decomposition of an aluminous silicate by the acid, but the examination was not carried farther, and the dried residue gave on analysis:

	XXIII.
Silica,	52·20
Alumina,	18·50
Peroxyd of iron,	10·00
Lime,	7·34
Magnesia,	4·17
Potash,	2·14
Soda,	2·41
Volatile,	2·50
	99.26

Except in the somewhat greater proportion of potash it will be seen that the insoluble portion of this melaphyre (deducting a little silica,) approaches very nearly in composition to the older dolerites described above.

You have described as occurring at Lake Simon on the River Rouge, (*ante*, p. 28,) a peculiar gneissoid feldspathic rock, whose composition offers considerable interest. The rock has a granular base, which is perfectly white, crystalline, and resembles in appearance a coarse-grained marble; it encloses large masses of a white semi-transparent orthoclase feldspar, having three distinct cleavages, one of 90°. The specific gravity of selected fragments of this orthoclase was 2·564—2·566. Its analysis showed no traces of iron or magnesia, and gave as follows:

	XXIV.
Silica,	65.75
Alumina,	19·40
Lime,	.45
Potash,	13.60
Soda,	·69
Volatile,	.25
	100.14

By the analysis of the finely granular portion of the rock, which contained no carbonate of lime, the following results were obtained:

	XXV.
Silica,	70·10
Alumina,	16·40
Lime,	1·42
Potash,	10.96
Soda,	·79
Volatile,	·40
	100·07

Disseminated through this rock were small rounded masses of garnet from one-tenth to one-half an inch in diameter. They were much fissured and very fragile; the fragments were transparent and rose-red inclining to brownish, the powder a pale pink, becoming a bright buff by ignition. The analysis of selected grains of this garnet gave:

	XXVI.
Silica,	37·80
Alumina,	21·00
Lime,	1·81
Magnesia,	8·85
Protoxyd of Iron,	29·03
Volatile,	.18
	98·67

A fragment of reddish feldspathic gneiss from Grenville, gave by analysis as follows:

	XXVII.
Silica,	69·00
Alumina,	17·90
Lime,	2·80
Potash,	3·86
Soda,	3·70
Volatile,	1·00
	98·26

ON SOME MINERALS FROM THE SILURIAN ROCKS.

In many localities in the Eastern Townships the altered clay slates hold small crystalline plates of a mineral which has been designated in your Report for 1847, as phyllite. This name was applied by Dr. Thompson to a similar mineral said to occur in like rocks in Massachusetts, but which has never been re-examined, nor satisfactorily identified. The mineral in question is abundant in a fine grained grayish wrinkled micaceous schist from Brome, and in larger specimens from Leeds, where it occurs in a similar rock, which is pearl-gray in colour passing to greenish-gray, and is made up of quartz with a mineral having a talcose aspect, but aluminous in its composition, and apparently a mica. The rock resembles somewhat the mica schist of St. Gothard, in which are found the well known kyanite and staurotide crystals. The mineral about to be described occurs in this mica schist of Leeds in small lamellar masses, rarely more than one-fourth of an inch broad and one-eighth thick; in some specimens there occur spherical masses of it, a half an inch or more in diameter, composed of lamellæ radiating from a centre, and often making up one-half the volume of the rock. It has a perfect cleavage in one direction, and two less distinct transverse cleavages; the lamellæ are often curved, and are not easily separable. The mineral somewhat resembles hypersthene in appearance. Its hardness is 6, and its density 3·513. The color is dark greenish-gray to black, and appears brilliant black upon the faces of perfect cleavage, which have a vitreous lustre the surfaces of fracture have a feeble waxy lustre. The streak and powder are greenish-gray. The analysis of carefully selected fragments gave as follows:

	XXVIII.
Silica,	26·30
Alumina,	37·10
Protoxyd of iron	25·92
Protoxyd of manganese,	·93
Magnesia,	3·66
Water,	6·10
	100·01

The analysis shows the mineral in question to be chloritoid, with which its physical characters correspond. This same species has been described under the name of barytophyllite, chlorite-spar and sismondine; it is the masonite of Jackson, which occurs in argillaceous slates in Rhode Island, and the phyllite of Thompson may prove to be the same species.

Epidotic Rocks.—The presence of epidote characterizes great portions of the altered rocks of the Eastern Townships. It is generally associated with quartz, and often forms veins or patches in a granular quartz rock, which passes into argillite; chlorite is not an unfrequent accompaniment. In many localities there is found a rock which is made up entirely of quartz and epidote, sometimes in distinct grains, but at others forming an apparently homogeneous mass, generally of a pale yellowish-green colour. Characteristic specimens of this rock are found in various localities in the range of metamorphic rocks, from St. Armand on the line of Vermont to the Shick-shock mountains in Gaspé, where upon the Grand Matanne River, the epidotic rock forms large beds among the chloritic schists. The specimens which I have examined are compact, very tough, sonorous, and have a granular sub-conchoidal fracture; the colour is pale olive-green or pea-green, occasionally stained or barred with brick-red; the rock has a feeble waxy lustre and is translucent on the edges. In some parts grains or thin layers of quartz become apparent. The hardness of the compact homogeneous specimens is equal to that of quartz, and the specific gravity 3·04—3·09. A portion of density 3·04 was submitted to analysis and gave as follows:

	XXIX.		
Silica,	62·60	= Oxygen	33·38
Alumina,	12·30		5·78
Peroxyd of iron,	9·40		2·82
Lime,	14·10		4·03
Magnesia,	·72		·29
Soda,	·43		·11
Volatile,	·16		
	99·71		

The oxygen of the protoxyds and peroxyds in the above analysis equals 4·43 and 8·60. If to these we add the silica corresponding to 13·00 of oxygen, we shall have 61·33 parts of epidote, leaving 38·22 parts of silica uncombined. The density is that of a mixture of quartz and epidote in these proportions, and in portions where the rock becomes granular the two species are easily distinguishable.

On the green colouring matter of some sandstones.

The quartzose sandstones of the Quebec group are often colored by disseminated rounded grains of a peculiar greenish matter, having very much the aspect of glauconite; they have the softness of gypsum and give a pale green powder. It was not possible to separate the grains for analysis, but as I found them to be decomposed by hydrochloric acid, a specimen of the sand-stone from Indian Cove at Point Levi, which was free from calcareous matter and contained a large proportion of the green grains, was pulverized and digested for some days with warm hydrochloric acid until the green colour disappeared. The acid solution was then submitted to analysis, and the soluble silica removed from the residue by a dilute solution of caustic soda. In this way there were obtained from five grams of different portions of the sandstone the following elements.

	XXX.	XXXI.
Silica,	·570	·613
Alumina,	·283	·342
Protoxyd of iron,	·378	·319
Lime,	·010	·009
Magnesia,	·022	·043
Potash,	·080	·074
	1·343	1.400

The soluble portions of this sandstone amounted only to twenty-eight per cent; and as the results might be vitiated by the presence of some decomposable silicate other than the green mineral, we could only conclude as to the existence of a silicate containing a large amount of protoxyd of iron and considerable potash. Last summer however, I discovered a more abundant supply of the green grains, in thin layers of sandstone among the magnesian conglomerates of the Island of Orleans. The rock consisted of little more than a very friable aggregation of colorless quartz sand with grains of the green mineral, the whole cemented by a little carbonate of lime. After crushing and sifting to separate the coarser grains of quartz, the carbonate of lime was removed by cold dilute nitric acid, and the green grains were obtained free from all apparent impurity other than the grains of quartz. This mixture was analyzed as before by digestion with hydrochloric acid, and the soluble silica separated from the residue by a boiling solution of carbonate of soda. There were obtained in two analyses, respectively of 2.5 and 2.0 grams, as follows, calculated for 100 parts:

	XXXII.	XXXIII.
Silica,	31·32	31·30
Alumina,	12·20	12.15
Protoxyd of iron,	5·29	5·27
Magnesia,	2·26	
Potash,	5·05	5·60
Soda,	.33	
Water (by ignition)	5·25	
Insoluble quartz,	35·96	
	97·66	

If we subtract the quartz we shall have for the composition of the green grains:

	XXXIV.		Oxygen.
Silica,	50·7	=	27·04
Alumina,	19·8		9·25
Protoxyd of iron,	8·6		1·91
Magnesia,	3·7		1·48
Potash,	8.2		1·39
Soda,	·5		·13
Water,	8·5		7·71
	100·0		

It is evident from these results that this green matter differs chemically from the glauconite or green-sand of the cretaceous and tertiary strata, which is a hydrous silicate of protoxyd of iron and potash, with only a few hundredths of alumina; at the same time the physical characters of the green grains from the Silurian sandstones, not less than the presence of a large proportion of potash, suggest relations which should not be overlooked. This Silurian green-sand may be looked up on as a glauconite in which alumina replaces a large portion of the protoxyd of iron, just as in pyrophyllite it is substituted for the magnesia of talc. The connection of this material with what I have described as parophite, and with the dysyntribite of Shepard, hydrated aluminous rocks, containing much potash, deserves to be considered. The history of these substances is as yet but very imperfectly known. (See my Report for 1852, p. 94, and G. J. Brush, *Am. Jour. of Science*, (2) xxvi., p. 68.)

FARTHER CONTRIBUTIONS TO THE HISTORY OF MAGNESIAN LIMESTONES.

In my Report for 1857, after describing a number of our magnesian limestones, and recalling the principal facts in the history of magnesian rocks, I proceeded to notice the different theories which had been proposed to account for their formation. I then detailed the results of some experiments made for the purpose of ascertaining the action of waters containing alkaline bicarbonates upon sea-water and other waters holding in solution muriates and sulphates of lime and magnesia. It was shewn that at the ordinary temperature, and in somewhat dilute solutions, the whole of the lime may thus be separated as a crystalline carbonate retaining only one or two per cent. of carbonate of magnesia, and that the addition of an excess of the alkaline bicarbonate gives rise to a very soluble bicarbonate of magnesia, whose solution deposits by evaporation a hydrated monocarbonate.

Previous experimenters had already shown that solutions of magnesian carbonate have the power of decomposing solutions of muriate and even of sulphate of lime; a solution of the latter is according to Mitscherlich slowly but completely decomposed when digested at the ordinary temperature with carbonate of magnesia or dolomite. I found, however, that under certain conditions these affinities are apparently reversed, so that sulphate of magnesia may be decomposed by bicarbonate of lime with formation of gypsum and bicarbonate of magnesia. As I conceived this reaction to be of great importance in a geological point of view, I have since carefully investigated it, and have now to submit the results.

The observations of Bischof and other chemists shew that at the ordinary temperature and pressure, water charged with carbonic acid will hold dissolved about one-thousandth of carbonate of lime; such a solution according to Lassaigne contains about six equivalents of carbonic acid for one of lime, while from an experiment of Bischof it would appear that water may retain about six-tenths of this amount of lime combined with only one and a-half equivalents of carbonic acid. According to the latter author however, one thousand parts of water saturated with carbonic acid dissolve only 1·35 of magnesian carbonate, but the experiments of Bineau and my own show that in the presence of neutral salts at least, its solubility is many times greater. The liquids obtained by adding bicarbonate of soda to an artificial sea-water, gave more than four parts of magnesian carbonate to 1000, and by adding known quantities of carbonate of soda to a solution of carbonate of magnesia through which was passed a current of carbonic acid, I found it easy to produce permanent solutions retaining 21·0 grams of bicarbonate of magnesia in a liter of water. Bineau by prolonging the action of the carbonic acid obtained 11.2 grams of magnesia (equal to 23·5 grains of monocarbonate,) dissolved in a liter of water, with very nearly two equivalents of carbonic acid. This comparatively great solubility of bicarbonate of magnesia, is, as we shall hereafter see, of much importance in a geological point of view.

It has long been noticed that alkaline carbonates, sulphates and chlorids as well as the neutral salts of magnesia, augment the solubility of the carbonate of magnesia in water, but these for the most part do not sensibly affect the solubility of the carbonate or bicarbonate of lime. I have however found that the sulphates of soda and magnesia offer in this respect a remarkable exception; in fact a litre of water which contains a small portion of either of these neutral salts, is capable of dissolving in the presence of carbonic acid at the ordinary pressure, from 1·56 to 1·82 grams of carbonate of lime, or nearly twice as much as pure water under the same circumstances. A farther investigation of this unexpected reaction showed me that the lime existed in these solutions in the state of sulphate, of which they are in fact nearly saturated solutions. The solubility of this salt has been variously stated; according to Bucholz it requires 480 parts of hot or cold water, while Giese found it soluble in 380 parts of cold and 388 parts of hot water. I found a solution prepared by agitating pure gypsum frequently for several days with distilled water, to contain one part of sulphate in 483 of water, but by evaporating a portion of this same solution at a gentle heat until crystals of gypsum separated, the clear liquid decanted after twelve hours of repose at 60° F, contained one part of sulphate of lime ($CaO\,SO_3$) in 372 parts of water, a result which approaches closely to the determination of Giese.

When a solution of bicarbonate of lime is mixed with one of sulphate of soda or sulphate of magnesia, or when a current of carbonic acid gas is passed through a solution of either of these salts holding carbonate of lime in suspension, there are formed by double decomposition, sulphate of lime and bicarbonate of soda or magnesia. The addition of alcohol to these solutions determines a copious precipitate of sulphate of lime, and the filtrate by evaporation gives a residue of bicarbonate of soda or of carbonate of magnesia. The following, among other experiments, were made in illustration of this reaction.

To 400 cubic centimeters of a recent solution of bicarbonate of lime, free from all traces of chlorid or sulphate, were added two grams of crystallized sulphate of soda and an equal volume of alcohol; the white flocculent precipitate which immediately separated was collected after a few hours, and washed with dilute spirit of wine; it was completely soluble in water, from which it was again thrown down by alcohol, with the addition of a few drops of hydrochloric acid. It was pure sulphate of lime, weighing after ignition 0·428 grs. which correspond to 0.915 gr. of carbonate of lime to the liter.

400 c. c. of a similar solution of bicarbonate of lime were mingled with two grams of sulphate of magnesia and precipitated by alcohol; the sulphate of lime equalled 0·467 gr., and by boiling a copious precipitate separated, which contained a little lime and 0·276 gr. of carbonate of magnesia, theory requiring 0.288.

500 c. c. of a solution of bicarbonate of lime, with two grams of hydrated

sulphate of soda and an equal volume of alcohol, gave a precipitate of gypsum, which dissolved and reprecipitated as in A, gave 0·570 of sulphate of lime, corresponding to 0·838 gr. of carbonate to a liter. The alkaline filtrate was evaporated to dryness; the residue dissolved and precipitated at a boiling heat by a dilute solution of chlorid of calcium gave an amount of carbonate of lime, free from sulphate, which was equal to 0·445 gr. of carbonate of soda; theory demands 0·442.

To a little more than 200 c. c. of lime-water were added four grams of sulphate of soda, and a current of carefully washed carbonic acid was then passed through the liquid for four hours, at the end of which time the solution of the lime was nearly complete. The liquid now gave with alcohol 0·555 gr. of sulphate of lime, and by the indirect method described above, the carbonate of soda was found to be equal to 0·434 gr., theory requiring 0·432.

In order to determine more carefully the increased solubility of carbonate of lime in the presence of sulphates, the following experiments were made.

250 c. c. of water containing ten grams of hydrated sulphate of soda and two grams of pure carbonate of lime, were exposed for an hour and a-half to a current of carbonic acid gas, and the solution was then left for four hours in a covered flask, after which 150 c. c. of it were mixed with an equal volume of absolute alcohol. The precipitate of gypsum thus obtained was completely soluble in water, and equalled 0·363 grs. of sulphate of lime, being 2·420 grs. to a liter.

In a similar experiment the precipitate of gypsum from 200 c. c. was dissolved in pure water and thrown down as oxalate of lime. It gave an amount of carbonate equal to 1·820 grs. to the liter, or 2.475 of sulphate of lime.

A current of carbonic acid gas was passed for an hour and a quarter through a solution of sulphate of magnesia containing suspended carbonate of lime. The filtered liquid remained transparent after many hours of exposure to the air, but 200 c. c. of it gave with alcohol a precipitate of gypsum, which was collected after twelve hours, and was completely soluble in water, from which solution the lime was thrown down as oxalate, giving an amount of carbonate equal to 1·565 gr., or 2·128 gr. of sulphate of lime to the liter. The filtrate, being evaporated to dryness over a water-bath, gave a little carbonate of lime, and an amount of carbonate of magnesia equal to 1·100 grs. to the liter; theory requires 1·312, but it is difficult to separate in this way the whole of the carbonate from the sulphate of magnesia. The solutions in the last three experiments contained respectively one part of gypsum in 413, 405 and 459 parts of water.

When a solution like the last is evaporated at a gentle heat gypsum is deposited, while bicarbonate of magnesia remains in solution. I have already alluded to this unexpected reaction in my Report for 1857, p. 216, and the following experiments were made in confirmation of it. The sulphate of magnesia was carefully recrystallized and free from all traces of lime; its solution did not alter the color of curcuma, but slowly restored that of reddened litmus. The carbonic acid was evolved by hydrochloric acid from limestone, and carefully washed, so that its solution was not disturbed by nitrate of silver.

To 500 c. c. of water were added twelve grams of sulphate of magnesia and half a gram of precipitated carbonate of lime, and a current of carbonic acid gas passed for two hours through the liquid, when the carbonate of lime was nearly all dissolved. The solution was now evaporated in a porcelain basin at a temperature varying from 90° to 110° F., until crystals of sulphate of magnesia separated; a little water was then added, and the solution being immediately filtered, contained no lime-salt, but was strongly alkaline to curcuma paper. When heated it became turbid before boiling, and after fifteen minutes ebullition deposited a flocculent precipitate containing 0·208 gr. of carbonate of magnesia. The basin in which the evaporation had been conducted was covered with a crystalline crust, which effervesced but slightly with hydrochloric acid; it was soluble in a large volume of water, and was principally gypsum.

To 800 c. c. of water were added twenty grams of sulphate of magnesia and one gram of pure carbonate of lime; a current of carbonic acid gas was now passed through the liquid for an hour and a half, when the lime was nearly all dissolved; the solution was saturated with the gas, but contained no trace of chlorids. It was neutral to curcuma, and gave with alcohol a precipitate of gypsum. A portion of it heated to boiling remained clear for five minutes, but then grew turbid and deposited an abundant precipitate of carbonate of lime.

200 c. c. of this solution were evaporated at a temperature of 180°-190° F., until crystals of sulphate of magnesia separated; after twelve hours repose in the cold a little water was added and the solution decanted from a precipitate, of which ·272 grm were collected; when this was treated with hydrochloric acid and dilute alcohol, a portion of carbonate of lime was removed, and there remained ·236 gr. of crystalline gypsum, weighing when ignited, ·185, equal to ·925, gr. of sulphate of lime to the liter. This filtered solution of sulphate of magnesia was strongly alkaline to curcuma, and gave by boiling a precipitate, which contained no lime, but a portion of carbonate of magnesia equal to ·490 gr. to the liter; theory demands ·570.

A solution of twelve grams of sulphate of magnesia in 300 c. c. of water was mingled with carbonate of lime and saturated with carbonic acid. It was then filtered and evaporated at about 160° F., until sulphate of magnesia separated. By this means a sparingly soluble crystalline precipitate was formed, which contained gypsum equal to ·235 grm. of sulphate of lime, with a little carbonate. The filtrate gave by boiling a precipitate of carbonate of magnesia, which equalled ·098, while theory demands ·145.

To 600 c. c. of a solution of bicarbonate of lime were added twenty grams of sulphate of magnesia, when the liquid, which was before turbid from a portion of suspended carbonate, became clear, and gave by evaporation at 90° F. a precipitate containing .144 of sulphate of lime, with some carbonate of lime and a trace only of magnesia.

A solution of five grams of sulphate of magnesia was mingled with a portion of solution of bicarbonate of lime, and evaporated at 160°–180° F., further portions of the latter amounting in all to 300 c. c. being added as the evaporation went on. There was deposited a mixture of carbonate of lime, with crystalline gypsum equal to ·373 gr. of sulphate of lime to the liter.

It will be remarked, that while the recent solution, containing gypsum and carbonate of magnesia with excess of carbonic acid, is neutral to curcuma, and may be boiled for some minutes before a precipitate of carbonate appears, the liquid from which gypsum has been deposited by evaporation is strongly alkaline to curcuma paper, and lets fall a precipitate of carbonate of magnesia even before attaining the boiling point; this precipitate is in part redissolved as the liquid cools. When this alkaline liquid is mixed with a solution of gypsum, it deposits in a few hours, especially if gently warmed, a crystalline precipitate of carbonate of lime, resulting from the decomposition of the sulphate of lime by the carbonate of magnesia.

The sulphate of magnesia retains the carbonate of magnesia in solution in such a manner that the latter is not rendered completely insoluble, even when the liquid is evaporated to dryness over a water-bath. Hence the deficiency observed in the determinations of carbonate of magnesia whenever in the preceding experiments, a large portion of sulphate was present The filtrate from the carbonate in these cases is still alkaline to curcuma paper, and gives with nitrates of silver and copper, precipitates of carbonates.

In the preceding experiments all salts other than those concerned in the reaction, were excluded, but similar results were obtained in the presence of sea-salt and chlorid of magnesium. Twenty grams of pure chlorid of sodium, and ten grams of sulphate of magnesia, with a portion of carbonate of lime, were added to 800 c. c. of water, and the solution saturated with carbonic acid gas. Of this liquid 400 c. c. were evaporated at 160°–180° F., until sea-salt separated, and gave ·045 grm. of sulphate of lime, mixed with ·291 of carbonate.

Ten grams of chlorid of sodium and twenty grams of crystallized chlorid of magnesium were added to 600 c. c. of solution of bicarbonate of lime, containing two grams of sulphate of magnesia; 300 c. c. of this solution were now evaporated at 160°–180° F., until crystals of sea-salt appeared; there were obtained ·057 gram. of sulphate of lime.

A saturated solution of one part of sea-salt and two parts of sulphate of magnesia was exposed to a cold of 32° F., when a large amount of sulphate of soda separated. The mother liquor, containing besides some sea-salt and sulphate of magnesia, a large amount of chlorid of magnesium, was diluted with four parts of water. 500 c. c. of this solution were mingled with carbonate of lime, saturated with carbonic acid and then evaporated at a temperature of 85°–90° F., to one-twelfth, when crystals of sea-salt separated, and a crystalline residue of gypsum was obtained. It did not effervesce with hydrochloric acid, and was soluble in a large volume of water. The saline liquid by evaporation to dryness, gave ·331 of carbonate of magnesia, equal to ·535 of gypsum.

To another portion of 100 c. c. of the saline solution employed in the last experiment, 500 c. c. of a solution of bicarbonate of lime were gradually added, the mixture being meanwhile evaporated at a temperature below 100° F., and at length carried to dryness. On treating the mass with water, the strongly saline filtrate was found to contain no salt of lime, but sulphate of lime was abundant in the washings, and the residue on the filter, when treated with hydrochloric acid, left crystalline grains of gypsum.

In the foregoing experiments it is not easy to separate the more soluble salts from the gypsum, which although insoluble in saturated saline liquids, is readily dissolved by washing with water, in place of which a solution of gypsum may be used. In either case, as a solution of sulphate of lime is decomposed by the dissolved carbonate of magnesia, the washings should not be mingled with the alkaline filtrate in which we wish to determine this salt. As a solution of magnesian carbonate which has lost its excess of carbonic acid by evaporation, is incompatible with dissolved gypsum, it is evident that the presence of an excess of this acid must be one of the conditions required for the crystallization of gypsum from such a solution. It often happens that some slight variations in the conditions of the experiment with two portions of the same solution, will give in one case abundance of gypsum and in the other chiefly carbonate of lime.

The power of bicarbonate of baryta to decompose sulphate of magnesia and even sulphate of soda, is well known; and I have found that the insolubility of the sulphate of strontia determines a similar result. A solution of bicarbonate of strontia, prepared by passing carbonic acid gas through water holding the carbonate in suspension, was divided into two portions, one of which was mingled with a portion of sulphate of soda and the other with sulphate of magnesia. The mixtures, at first clear, soon became troubled from the separation of a precipitate, which adhered to the sides of the vessels, and like ammonio-magnesian phosphate, along the lines marked by the rod in stirring. After twelve hours the liquids decanted from the precipitate, which was in each case sulphate of strontia, were evaporated at a gentle heat to a small volume, during which process they deposited a portion of carbonate of strontia. The first contained some sulphate, with a large proportion of carbonate of soda, and the second, which gave no trace of dissolved strontia, let fall by boiling a copious precipitate of magnesian carbonate.

An analogous reaction between the sulphates of iron and zinc and the bicarbonate of lime, resulting in the production of gypsum and carbonates of zinc and iron, has already been suggested by Monheim to explain the association of these minerals in a modern deposit from the waters of a mine. The experiments of Bischof have established the fact of such a decomposition for the sulphate of copper, as well as for the sulphates of zinc, and protoxyd of iron.—(*Lehrbuch*, ii, 1198–1202.)

The carbonates of lime and magnesia, although so frequently combined in nature in the form of dolomite, exhibit under ordinary circumstances, little disposition to unite with each other. The carbonate of lime, as we have seen, separates nearly pure from solutions of bicarbonate of magnesia at ordinary temperatures; and if by the aid of heat a portion of magnesian carbonate is at the same time precipitated, the two appear to be only in a state of admixture.

Karsten long since observed that dilute acetic acid, at temperatures below 32° F., readily dissolves carbonate of lime, but is without action on the double carbonate of lime and magnesia, which constitutes dolomite. By this means he was enabled to make proximate analyses of many magnesian limestones, which he found to be mixtures of dolomite with carbonate of lime. Before undertaking a series of experiments on the production of this double carbonate, I endeavored to fix by experiment the limits of error in Karsten's process.

For this purpose I took a pure acetic acid containing 29·4 p. c. of glacial acid; this was mixed with an equal volume of water, so that the dilute acid used in the following experiments contained about 15·0 p. c. of glacial acetic acid. Unless otherwise specified, it was employed at 32° F. (lower temperatures being difficult to regulate), and this temperature was maintained by a bath of ice and water. In these conditions the acid dissolved precipitated carbonate of lime and pulverized limestone with lively effervescence, even when farther diluted. A pure crystalline dolomite in fine powder was however slowly attacked, subsiding to the bottom of the liquid, and disengaging small bubbles of gas from time to time. After six hours digestion with a large excess of the acid at 32° F., 1.680 grs. of this dolomite had lost .082 of carbonate of lime and ·063 of carbonate of magnesia, equal to 8·63 p. c. of dolomite. At a temperature of 60° F. the same acid caused a slow but continued disengagement of gas bubbles from the powdered dolomite, which after thirty hours had lost 28·0 p. c. of its weight, the dissolved portion containing 45·0 p. c. of carbonate of magnesia. At 125° F. the action of the acid upon the powdered dolomite was accompanied with gentle effervescence, and the amount dissolved after two hours digestion, was 13·6 per cent.

A white crystalline magnesite from Styria, whose only impurity was a portion of carbonate of iron equal to 0·9 p. c. of peroxyd, and which was slowly but completely soluble in hot hydrochloric acid, was also slightly attacked by dilute acetic acid at 60° F.; after twelve hours digestion there were dissolved 0·63 p. c. of the carbonate. At 125° F. however a distinct effervescence was produced with the acid, and at the end of three hours 11·0 p. c. of the magnesite were dissolved.

From these experiments it was evident that although not insoluble in acetic acid of 15·0 p. c. at 32° F., this liquid might serve to separate dolomite from carbonate of lime, and also to effect a partial separation of dolomite from magnesite.

In subsequent experiments I found that a much more dilute acid, prepared by mixing one part of the above acetic acid with nine parts of water, and consequently containing only about 3·0 p. c. of glacial acetic acid, attacks pure carbonate of lime with lively effervescence at 60°, and even at 32° F., and may be therefore used with still greater advantage in the investigation of these mixed carbonates.

The insolubility of the double carbonate of lime and magnesia in carbonic acid water is also an important fact in the history of dolomite. Bischof found that by the prolonged action of a solution of carbonic acid upon a limestone containing 11·54 p. c. of magnesian carbonate, there were dissolved 4·29 p. c. of carbonate of lime, and not a trace of magnesia. In like manner a manganesian iron-spar which contained 14·0 p. c. of carbonate of lime and 15·0 p. c. of carbonate of magnesia, gave to carbonic acid water four parts of carbonate of lime for one part of magnesian carbonate.—(*Lehrbuch*, ii, 1176.)

The following experiments were made to determine the solubility of dolomite in carbonic acid water. The magnesian limestone of Galt, which is a nearly pure crystalline dolomite, was selected, and one gram of this in fine powder was suspended in a little more than half a liter of water, which was then saturated with carbonic acid gas, and the mixture digested for eighteen hours at about 65° F. with frequent agitation, when the quantity of dissolved carbonates in a liter of the filtered liquid was found to be 0·150 grs., consisting of carbonate of lime 57, carbonate of magnesia 43. In order to determine the influence of time and a greater surface of the solid matter, two grams of the same dolomite were treated as above for five days, when there were dissolved of the double carbonate ·390 grs. to a liter.

A mixture of one gram of the dolomite and one gram of artificial carbonate of lime were digested as above with half a liter of carbonic acid water for eighteen hours, when there were found in solution, of carbonate of lime ·380, and ofcarbonate of magnesia 007, equal to 015 of dolomite, so that only four parts of dolomite were dissolved for ninety-six parts of carbonate of lime.

Accepting the idea that dolomites have been formed by the alteration of beds of carbonate of lime, Haidinger long since suggested that a solution of sulphate of magnesia at a high temperature might produce this change, giving rise by double decomposition to carbonate of magnesia and sulphate of lime, although Mitscherlich had shown that at ordinary temperatures sulphate of lime and carbonate of magnesia are mutually decomposed. Von Morlot subsequently verified this conjecture of Haidinger; he found that by heating together to 200° centigrade, for six hours in a sealed tube a mixture of two equivalents of carbonate of lime and one equivalent of crystallized sulphate of magnesia, the latter was completely decomposed with the production of sulphate of lime and carbonate of magnesia, which he seems to have regarded as forming with the excess of carbonate of lime a double carbonate.—(Liebig and Kopp, *Jahresbericht*, 1848, ii, 500). Desirous of verifying this observation I have repeated the experiment of Von Morlot, but have found that although the sulphate of magnesia is indeed completely converted into carbonate, this remains for the most part in the form of magnesite, mechanically intermixed with the excess of carbonate of lime which may be separated by the aid of dilute acetic acid.

100 parts of pure precipitated carbonate of lime (two equivalents,) and 123 parts of crystallized sulphate of magnesia (one equivalent,) were intimately mingled and exposed in sealed glass tubes for six hours to a temperature of 392° F. (200° C.) The resulting white tasteless mass was treated with cold dilute acetic acid,which immediately caused a strong effervescence. When this action had subsided the residue was washed with cold water and then treated with

dilute hydrochloric acid, which produced no effect in the cold, but by the aid of a gentle heat dissolved a large portion with effervescence. The addition of alcohol threw down abundance of gypsum from the solution, and the filtrate from this being evaporated to dryness and then moistened with hydrochloric acid, was digested with absolute alcohol, by which the chlorids alone were dissolved, leaving a small residue of gypsum, and were found to consist of chlorid of magnesium with but very little chlorid of calcium. The acetic acid on the contrary had dissolved a large portion of carbonate of lime, with but little carbonate of magnesia, and a little gypsum. Thus in one experiment the acetic solution gave besides ·079 of sulphate, ·523 of carbonate of lime and ·016 of carbonate of magnesia, equal to 3·0 p. c. of the dissolved carbonates, while the portion insoluble in acetic acid, separated from gypsum by the process just described, gave ·459 of carbonate of magnesia and 0·17 of carbonate of lime, or 96·3 p. c. of magnesian carbonate. In another experiment there was obtained from the residue insoluble in acetic acid, carbonate of magnesia ·437, carbonate of lime 0·20.

The crystallized sulphate of magnesia undergoes the aqueous fusion at about 230° F., and contains sufficient water to render the mixture with car bonate of lime somewhat moist after heating. The above experiment was however repeated with the addition of a portion of water, but with the same result as before ; the carbonates not dissolved by acetic acid consisted of ·242 of carbonate of magnesia and ·008 of carbonate of lime.

A subsequent experiment in a metallic tube upon a larger quantity of the mixture of crystallized sulphate of magnesia and carbonate of lime, with the use of an acid of only 3·0 p. c., confirms the previous results, and shows the sparing solubility of the carbonate of magnesia which is formed. Of the carbonates from the acetic solution, that of magnesia equalled only seven thousandths, while the carbonate of magnesia remaining with the gypsum retained but 1·3 p. c. of carbonate of lime. In separating small portions of lime from magnesia I have repeatedly had occasion to verify Scheerer's observation that an excess of magnesian salt hinders the precipitation of oxalate of lime, so that it is necessary to separate the two bases as sulphates by the aid of spirits of wine.

The experiments of De Senarmont have shown that when carbonate of magnesia is formed at a temperature of 150°–175° C. by the reaction between solutions of sulphate of magnesia and carbonate of soda, or by the decomposition of a solution of bicarbonate of magnesia, it separates as a crystalline powder sparingly soluble in acids and apparently identical with magnesite.—*Ann. de Chim. et de Phys.* [3], xxxii, 148. It is evident from the results just detailed that a similar result takes place when carbonate of lime is substituted for the carbonate of soda, the carbonate of magnesia formed in the presence of an excess of carbonate of lime retaining only a very small proportion of this carbonate.

According to Marignac when carbonate of lime is heated in sealed tubes with a solution of chlorid of magnesium to 200° C. for six hours, there is obtained, besides a portion of chlorid of calcium, a product consisting of 48·0 parts of carbonate of lime and 52·0 of carbonate of magnesia ; at the end of two hours' heating, the proportion of magnesian carbonate was less. (*Bul. Soc. Geol. de France* [2] vi. 318.) It does not appear whether Marignac examined the product by the aid of acetic acid, but I find that in this process a portion of double carbonate of lime and magnesia is really formed.

A mixture of six parts of pure precipitated carbonate of lime with five parts of pure crystallized hydrated chlorid of magnesium, dissolved in a little water, was placed in sealed tubes, and heated for eight hours to a temperature of 150° C., which was gradually raised to 220° C. Two hours after cooling, the matter was removed from the tubes, washed, dried and treated with dilute acetic acid, which caused a violent effervescence; as soon as this had subsided, the liquid, which contained a large excess of acid and still attacked carbonate of lime with energy, was separated by filtration from the undissolved residue, which was but little more than one-fifth of the whole. The dissolved portion consisted of carbonate of lime 96·86, carbonate of magnesia 3·14.

Previous experiments had shown me that in operating with glass tubes, a portion of silicate of magnesia is always formed, and as this is decomposed by mineral acids, acetic acid was employed in the analysis of the undissolved carbonates, of which ·800 gr. from the last experiment were treated with acetic acid of 15 p. c. at 60° F. No action was apparent even after some minutes, but with a heat of 120° F. a gentle effervescence ensued. When this ceased there remained a flocculent residue equal to 15·7 p. c., and the undissolved portion gave carbonate of lime 37·6, carbonate of magnesia 62·4.

A portion of ·500 gr. of the same carbonates was now digested with dilute acetic acid at 60° F. for several hours. The soluble portion contained carbonate of lime 40·0 and carbonate of magnesia 60·0, while the undissolved residue equalled 22·5 p. c. It effervesced freely with warm somewhat dilute hydrochloric acid, and left a silicious residue of ·032 grm., while the dissolved portion gave ·007 of carbonate of lime and ·060 of carbonate of magnesia.

In a subsequent experiment in which metallic tubes were used, the formation of this silicate was obviated. The mixture of six parts of carbonate of lime and five parts of crystallized hydrated chlorid of magnesium with a little water, was heated during six hours from 150° to 220° C., then rapidly cooled and exhausted with water. The solution contained rather more than four equivalents of chlorid of magnesium for three of chlorid of calcium, and the mixture of carbonates gave only 15·0 p. c. of carbonate of magnesia. Treated with acetic acid of 3·0 p. c. at 32° F. the mixture effervesced strongly, leaving a residue which no longer effervesced with a farther portion of the same acid. The acetic solution gave 2·72 parts of carbonate of magnesia for 97·28 of carbonate of lime, while the portion undissolved was carbonate of magnesia with 12·6 p. c. carbonate of lime; in another experiment upon the same mixture of carbonates, the residue from acetic acid contained 13·0 p. c. of carbonate of lime.

The results of different trials with mixtures of carbonate of lime and chlorid of magnesium were somewhat variable; while in the last experiment the proportion of carbonate of magnesia formed equalled only 15·0 p. c. of the carbonates, in another trial it was found to be 24·4 p. c. and the residue from acetic acid, instead of 13·0, contained 30·3 p. c. of carbonate of lime, and in a third under similar circumstances 23·6 p. c.

It is evident from the above results that these magnesian carbonates, which retain after the action of acetic acid from 13·0 to 37·0 p. c. of carbonate of lime, are mixtures of a double carbonate of lime and magnesia with a less soluble carbonate of magnesia, from which the double salt may be partially separated by the prolonged action of acetic acid at ordinary temperatures.

It would appear that the carbonate of magnesia unites at the moment of its formation with a portion of carbonate of lime to form the double carbonate. It remained to be seen whether mixtures of the two carbonates would combine directly, and experiments were made with the Styrian magnesite before mentioned, which was mingled in fine powder with carbonate of lime and heated for some hours in sealed tubes to 200° C. with a dilute solution of chlorid of calcium. No combination took place, and the carbonate of lime was afterwards completely removed from the magnesite by cold dilute acetic acid.

The dense insoluble magnesite, as might be conjectured from its occurrence in the products of the previous experiments, exhibits none of that aptitude to combine with carbonate of lime which seems to characterize the newly formed magnesian carbonate before passing into this sparingly soluble condition, a change which from the experiments of De Senarmont, takes place at from 155° to 175° C. The amorphous hydrated carbonate of magnesia formed at low temperatures and readily soluble in dilute acids, is in like manner, when heated under pressure to prevent the loss of carbonic acid, converted into magnesite; if under these conditions carbonate of lime be present, the two combine to form a double salt, possessing the chemical characters of dolomite.*

In his researches on the double carbonates, H. Deville has described an anhydrous crystalline salt composed of one equivalent each of the carbonates of magnesia and soda. This double carbonate is insoluble in cold water, but readily dissolves in acetic acid. When it is heated with a solution of chlorid of magnesium in sealed tubes to 200° C., chlorid of sodium and sparingly soluble magnesite are obtained. When warmed with a solution of chlorid of calcium, this double carbonate is decomposed and gives rise to a mixture of carbonates of lime and magnesia readily soluble in acetic acid; at a higher temperature under pressure the two carbonates unite to form a double salt.

Three parts of the finely pulverized carbonate of magnesia and soda were added to two parts of chlorid of calcium dissolved in a little water and rendered slightly acid by hydrochloric acid. The mixture being placed in hermetically sealed glass tubes, these were heated for some hours in a bath of boiling water with frequent agitation, and then in an oil-bath for eight hours, the temperature being slowly raised from 130° to 220° C. On cooling, the saline liquid in the tubes was found to contain besides chlorids of sodium and calcium, a considerable amount of chlorid of magnesium. A portion of the double salt became coated over by the precipitated carbonate of lime and thus protected from the further action of the chlorid of calcium.

The carbonates from the above experiment were treated with a large excess of dilute acetic acid at 60° F. till effervescence ceased. ·600 gr. of the residue were now digested for two hours with dilute acid at 60° F.; the action was accompanied with a slow and constant disengagement of carbonic acid gas, and the solution gave ·302 grm. of carbonates, of which the carbonate of lime constituted 41·3 p. c. The undissolved portion effervesced with warm hydrochloric acid, which dissolved ·178 of carbonates containing only 12·3 p. c. of carbonate of lime, leaving ·116 grm. of insoluble silicious residue.

In a repetition of the above experiments the carbonates were treated with acetic acid at 32° F. till effervescence ceased, and a portion of the remaining double carbonate was digested for some time with acetic acid at 125° F., which took up 80·0 p. c. of carbonates containing 38·4 p. c. of carbonate of lime. The insoluble portion did not effervesce with hydrochloric acid, which however removed from it a portion of magnesia, but no lime, and left a silicious residue. Another portion was digested for several hours with acetic acid at 60° F., which took up 78·0 p. c. of carbonates containing 40·8 of carbonate of lime. The insoluble residue effervesced freely with warm sulphuric acid, which dissolved a portion of magnesia, but no trace of lime.

* I have shown, from a consideration of the densities of the rhombohedrla carbon spars, that supposing them to possess a common atomic volume, we may represent calcite by $15(C_2M_2O_6)$ while dolomite and chalybite are $18(C_2M_2O_6)$ and magnesite and carbonate of zinc (smithsonite) $20(C_2M_2O_6)$. Farther examples of polymerism in mineral compounds are seen in sillimanite and cyanite, in meionite and zoisite (saussurite), and in hornblende and pyroxene. These latter, accepting the late analyses of Rammelsberg, may be represented respectively by $25(SiMO_3)$ and $28(SiMO_3)$, wollastonite being $22(SiMO_3)$; these formulas correspond to three types of homœomorphous isomeric silicates. (See American Journal of Science, [2], xvi, 203, and *Comptes Rendus de l'Acad.* 1855,

Experiments were now made with directly prepared mixtures of the two carbonates. When concentrated solutions of sulphate of magnesia and carbonate of soda are mingled in equivalent proportions, the pasty mass is after a few days repose at ordinary temperatures entirely converted into a mass of crystals of the ter-hydrated monocarbonate of magnesia. $MgO.CO_2+3HO$. The salt thus prepared contained 29.0 per cent of magnesia, which is exactly the quantity indicated by theory. A portion of this crystalline hydro-carbonate (which is readily soluble in dilute acetic acid,) was intimately mingled with a little more than an equivalent of precipitated carbonate of lime and one-fifth of an equivalent of bicarbonate of soda. The mixture made into a paste with water was heated in a close metal tube for two hours, to from 120° to 130° C. and then slowly raised to 180° C. At the end of six hours it was removed, washed with water, and treated with acetic acid of 3.0 p. c. which at 32° F. produced a lively effervescence. The residue from the action of the acid was slowly but completely dissolved with effervescence in hydrochloric acid, and was carbonate of magnesia with but 3.2 p. c. of lime, while the portion dissolved by the acetic acid consisted of carbonate of lime 96.7, carbonate of magnesia 3.3. The crystalline condition of the hydro-carbonate appears then to prevent the formation of a double carbonate. When however a mixture of the chlorids of calcium and magnesium is precipitated in the cold by a slight excess of carbonate of soda and the moist and bulky precipitate of carbonates is treated as above, the double salt is readily formed. But if the precipitate formed in the cold and still suspended in the liquid, is heated for some hours to 130° F. it becomes dense and granular, and when subsequently heated under pressure to 400° F. the combination is imperfect. A mixture of the two carbonates prepared in this way was treated for ten minutes with an excess of acetic acid of 3.0 per cent. at 60° F; the portion dissolved consisted of carbonate of lime 66.7, carbonate of magnesia 33.3, while the residue contained 39.0 p. c. of carbonate of lime, the remainder being carbonate of magnesia. This was however a mixture, for after digesting it for half an hour with an excess of dilute acetic acid at 60° F. it was in great part dissolved, leaving a residue which was completely soluble in hydrochloric acid, and was carbonate of magnesia without any lime, while the portion dissolved by this second treatment with acetic acid consisted of carbonate of lime 55.4, carbonate of magnesia 44.6.

A solution of the mixed chlorids of calcium and magnesium was precipitated by a slight excess of carbonate of soda in the cold, and the partially washed and pasty mixture of carbonate heated as before under pressure to 180° C. for six hours. The precipitate, which had become very dense and granular contained an excess of carbonate of magnesia. Acetic acid of 3.0 p. c., which rapidly dissolved pure carbonate of lime and even finely pulverized limestone at 32° F., with lively effervescence, attacked the prepared carbonate but slowly even at 60° F. the powder subsiding to the bottom of the vase and only giving off bubbles from time to time, while the admixture with it of a small portion of pure carbonate of lime, sufficed to produce a brisk evolution of carbonic acid. These comparative results are decisive as showing the formation of a double carbonate of lime and magnesia. In a preparation of this kind, the portion dissolved by the prolonged action of acetic acid at 32° F. contained 48.4 p. c. of carbonate of magnesia, and that dissolved by the further action of the acid upon the residue at 65° F. contained 47.0 p. c., a residue of carbonate of magnesia free from lime remaining. Another portion treated directly with acetic acid of 3·0 p. c., at 60° F. gave carbonate of lime ·420, carbonate of magnesia ·395 (=48.4 p. c.) and left a residue of ·296 of carbonate of magnesia free from lime. Similar results were obtained from another preparation which contained 52·0 p. c. of magnesian carbonate; a portion of magnesia, apparently in the form of a basic carbonate, seems to be generally present in these products, and hence the first action of a dilute acid dissolves a larger proportion of magnesia than is obtained afterwards. Thus the first portion dissolved by acetic acid from the above preparation contained 51.7 p. c. of magnesian carbonates, while a repetition of the process with the residue gave only 50·0 p. c. of carbonate of magnesia. The action of 500 c.c. of water saturated with carbonic acid, prolonged for two and a half hours, dissolved from a gram of the combined carbonates, ·453 gr. containing 48.5 p. c. of carbonate of magnesia, but the residue from which the more finely divided portion ad been removed by the carbonated water, was very slowly attacked by the same solvent, 500 c. c. of which took up ·145 gr. after four hours, and ·162 gr. after eighteen hours digestion, the dissolved portion in each case containing 47.0 p. c. of magnesian carbonate.

The foregoing experiments show that when a mixture of carbonate of lime with an excess of carbonate of magnesia is exposed to the requisite conditions, a true dolomite is formed, while the excess of magnesia remains intermingled as a sparingly soluble carbonate.

The whole theory of the formation of dolomites now becomes very simple and easily understood. In my Report for 1857, p. 217, I pointed out two reactions which may give rise to deposits of carbonate of magnesia in lakes or sea basins without an outlet, where an abundant evaporation is going on. The first is the mutual decomposition of bicarbonate of lime and sulphate of magnesia, yielding gypsum and bicarbonate of magnesia which are successively deposited by evaporation. This reaction which is illustrated at length by the experiments detailed in the present Report (pp. 200-204), explains the constant association of magnesian rocks with stratified gypsums. In the second process the action of waters containing bicarbonate of soda upon basins of sea-water, causes, as I have shown in the Report for 1857, already cited, p. 212, the separation of all the lime as carbonate, and the subsequent formation of a very soluble bicarbonate of magnesia, which by further evaporation separates in a hydrated form. Now these alkaline waters generally contain an abundance of bicarbonate of lime, which in this case, as well as in that of the gypsiferous basins, will be precipitated as carbonate and mingled with the carbonate of magnesia. We have then a mixture of the two carbonates, which as we have already shewn, readily combine when heated under pressure, and give rise to the double carbonate which constitutes dolomite. The lowest temperature at which their union can be slowly effected, remains to be determined by experiments.

The contraction which must follow the conversion of mixtures of the two carbonates into the denser double salt gives rise to the porous or cavernous structure of many magnesian limestones, and the rock being thus rendered readily pervious to water any excess of carbonate of lime as well as any calcareous fossils will often be dissolved out.

The intervention of alkaline waters in the production of a large class of magnesian limestones will explain the fact that these are frequently metalliferous, since these waters, although in part derived from the decomposition of rocks at the surface, often arise from buried strata, and bring to the surface, not only iron, but smaller quantities of most of the rarer metals in solution, all of which being precipitated with the carbonate of magnesia, enter into the composition of the dolomite. For some considerations as to the origin and importance of these alkaline water I may refer to my Report for 1856, pp. 468-472. The formation of alkalines carbonates by the decomposition of feldspathic rocks, gives rise to the production of clays and aluminous silicates on the one hand, and to sea-salt, limestones and dolomites on the other; the study of these relations tends to throw much light upon the history of sedimentary rocks, and many other important points in the chemical history of the earth's crust.*

I have the honor, to be,

Sir,

Your most obedient servant,

T. STERRY HUNT.

APPENDIX.

I.

Levels of the River Rouge.

While ascending the Rouge, an attempt was made to determine the general rise in the stream by a measurement of the precipitous falls and the rapids interrupting the upward navigation in canoes; and by an estimate in the navigable parts, taking into consideration the rapidity of the current, the breadth of the stream and the depth of water. The following is the result:—

		Rise. Feet.	*Height above Lake St. Peter.* Feet.	
Height of the Ottawa at the mouth of the Rouge over Lake St. Peter (see Report 1845–6, p. 31,) say			109.00	Junction of Rouge & Ottawa.
Rise in the cascades between the mouth of the river and the pool above Mr. Cousin's house		164.50	273.50	Cousin's.
—— between the surface of the pool above Cousin's and the smooth water below Moore's house		23.16	296.66	Moore's.
—— in *Nataboonochékun* or Bigstone rapids above Moore's	14.00			
—— in navigable water	0.34			
—— in *Esquigingunmug* or Hindleg Rapids, below Johnson's	1.16	15.50	312.16	Johnson's.
—— in navigable water	0.50			
—— in the Blackburn Rapids or Island Chute, Lower Fall	22.50			
Next above	1.66			
Next above	1.00			
Upper Fall	4.00	29.66	341.82	
—— in navigable water	0.18			
Rise in a ripple below Fall	0.50			
—— in *Parskiminechinamug* or Burst-bag Rapids	6.50	7.18	349.00	
—— in navigable water	0.50			
—— in Chaudière Chute	10.00			
—— in navigable water to pool below Bell Chute	0.50	11.00	360.00	Foot of the Bell.
—— in the Bell Chute	18.84			
—— in Otter Chute, next above the Bell	3.66	22.50	382.50	
—— in navigable water	0.50			
—— in Marble or Pipe-Stone Chute	2.00			
—— in navigable water	0.50			
—— in a ripple below the mouth of the Maskinongé	2.25	5.25	387.75	Mouth of Maskinongé.

* See my paper in the Canadian Naturalist for January 1860, *On some Points in Chemical Geology.*

		Rise. Feet.	*Height above Lake St. Peter.* Feet.	
—— from the mouth of the Maskinongé to the head of the Mountain Chute at Millway's..........................	90.00		477.75	Head of Mountain Chute.
—— in navigable water between Mountain Chute and Dog Rapid................	1.50			
—— in the Dog Rapid or Chute.........	5.00			
—— in navigable water between the Dog Chute and Iroquois Rapids..........	.25			
—— in Iroquois Rapids.................	15.10			
—— in navigable water to Fitzallan....	·50	22.35	500.10	Fitzallan.
—— in Bevan's or Cutlog Rapids........	16.50			
—— in Island Chute....................	5.00			
—— in navigable water to foot of Devil's Rapids..........................	1.00	22.50	522.60	
—— in Devil's Rapids..................	12.50			
—— in navigable water to Devil's River..	0.75	13.25	535.85	Devil's River.
—— in navigable water to foot of Huckleberry Chute......................	0.75			
—— in Huckleberry or Blacklead Chute..	14.80			
—— in navigable water to mouth of George's Brook....................	3.00	18.55	554.40	George's Brook.
—— in navigable water to foot of Iroquois Chute......................	2.66		557.06	Foot of Iroquois.
—— in Iroquois Chute..................	13.50	16.16	570.56	Head of Iroquois.

Levels of Lakes on George's Brook.

Height of the Rouge at the mouth of George's Brook..........................		554.40	
Rise to Lake Simon....................	31.60	586·00	Lake Simon.
—— to 2nd Small Lake.................	83.75	669.75	
—— to Lake of Three Mountains........	2.25	672·00	Lake of Three Mountains.
—— to Green Lake....................	76.00	748.00	Green Lake.

Levels of Lakes N. W. of Lake of Three Mountains.

	Rise. Feet.	*Height above Lake St. Peter.* Feet.
Height of Lake of Three Mountains.......		672.00
Rise to 1st. Lake to N. W...............	58.00	730.00
—— to 2d " "	16.00	746.00
—— to 3rd " "	13.00	759.00
—— to 4th " "	73.00	832.00

Levels of Lakes East Side of the River Rouge.

	Rise and Fall. Feet.	*Height above Lake St. Peter.* Feet.	
Height of Rouge below Iroquois Chute..		557.06	
Rise to Small Lake on Portage to Trembling Lake.......................	195.00	752.06	
Fall to Long Lake.....................	15.00	737.06	Long Lake.
—— to Great Beaver Lake..............	11.25	725.81	Great Beaver L.
—— to Trembling Lake.................	82.00	643.81	Trembling Lake.
—— to pool below cascade at the outlet of Trembling Lake................	29.00	614.81	

II.

List of Localities shewing traces of Copper ore in the Lower Silurian rocks of Canada East, more particularly in the magnesian group of Quebec occurring at the summit of the Hudson River formation, and intermediate between what has occasionally been called the Richelieu shales and the Sillery sandstones. The localities are given going from west to east, and the list is intended, not to shew workable quantities, but the distribution of the metal in the magnesian rocks.

1.	St. Armand,	Lot 59 or 60.		—On the road at Cook's Corner at the base of the magnesian limestones, but in clay slate: Copper pyrites in a vein of white quartz running with the stratification.
2.	Sutton,	Lot 9,	Range 9.	—The property of Oramel Stutson: Copper pyrites in small quantity in a bed of iron ore.
3.	"	" 5	" 4.	—Green carbonate of copper associated with feldspar, quartz, and rutile, in a vein cutting nacreous slates.
4.	"	" 2,	" 9.	—Green carbonate investing joints in a bed of iron ore.
5.	"	" 9,	" 7.	—The property of Mr. D. Farnsworth: Green carbonate investing joints in a bed of iron ore.
6.	"	" 5,	" 4.	—Copper pyrites in small quantity in a bed of iron ore.
7.	Potton,	" 17,	" 5.	—Copper pyrites in a vein of quartz two or three inches thick.
8.	"	" 14,	" 10.	—North side of Owl's Head Mountain: Copper pyrites in what appears to be sandstone.
9.	Brome,	" 16,	" 11.	—Spots of green carbonate in dolomite.
10.	"	" 6,	" 4.	—Spots of green carbonate in slate.
11.	"	" 1,	" 3.	—The property of Mr. Reed Sweet: Filmy spots of green carbonate in a bed of iron ore.
12.	"	" " 2,	3.	—Filmy spots of green carbonate in a bed of iron ore.
13.	"	" 6,	" 3 & 4.	—Spots of green carbonate in a thin vein of quartz in a bed of iron ore.
14.	Bolton,	" 17,	" 9.	—Green carbonate in soapstone and serpentine.
15.	Orford,	Lot 1,	Range 9.	—At the south end of the east face of Carbuncle Hill, west side of the Brompton Lake: Copper pyrites in thin quartz veins, one of them about four inches wide.
16.	Ascot,	" 17,	" 7.	—Copper pyrites in a quartz vein of one foot in nacreous slate.
17.	"	" 19,	" 7.	—Copper pyrites in a small vein in railroad cutting near Sherbrooke station.
18.	Windsor,	" 6,	" 12.	—Spots of green carbonate in railroad cutting.
19.	Upton,	Lot 14,	Range 20.	—Copper pyrites in dolomitic limestone.
20.	"	" 51,	" 20.	—Copper pyrites in dolomitic limestone.
21.	"	" 51,	" 21.	—The property of Mr. Ouimet: Copper pyrites in dolomitic limestone and breccia or conglomerate.
22.	"	" 50,	" 21.	—Copper pyrites in dolomitic limestone.
23.	Acton,	" 32,	" 3.	—The property of Mr. Cushing: Pyritous, variegated and vitreous sulphurets and green carbonate, in a breccia or conglomerate, near dolomite. This is the Acton Mine deposit.
24.	"	" 32,	" 5.	—The property of Mr. C. Gauthier. Variegated sulphuret in dolomitic limestone.
25.	"	" 31,	" 4.	—Variegated sulphuret in dolomitic limestone.
26.	Wickham,	" 26,	Range 12.	—Copper pyrites in dolomitic limestone.
27.	"	" 13,	" 12.	—Copper pyrites in dolomitic limestone.
28.	"	" 19,	" 10.	—Copper pyrites in dolomitic limestone.
29.	"	" 14,	" 10.	—Copper pyrites in dolomitic limestone.
30.	"	" 15,	" 10.	—Variegated sulphuret with calc spar in dolomitic limestone.
31.	Wendover,	" 1,	" 1.	—Variegated and vitreous sulphurets, in brecciated or conglomerate slate.
32.	Shipton,	" 16,	" 5.	—Green carbonate in potstone or compact chlorite, near serpentine.
33.	Somerset,	" 14 & 15	" 8.	—Copper pyrites in conglomerate limestone.
34.	Halifax,	" 6,	" 7.	—The property of the Megantic Mining Company: Copper pyrites in dolomitic limestone.
35.	"	" 6,	" 9.	—Variegated sulphuret.
36.	"	" 4,	" 9.	—Variegated sulphuret.
37.	"	" 6,	" 11.	—Variegated sulphuret.
38.	Inverness,	" 4,	" 2.	—The property of the Megantic Mining Company: Variegated sulphuret in a two feet vein of quartz in nacreous slates.
39.	"	" 2,	" 4.	—Copper pyrites in dolomitic limestone.
40.	Ireland,	" 4,	" 11.	—The property of Mr. Bailey: Variegated sulphuret.

41. Ireland, Lot 9, Range 9.—Copper pyrites in dolomitic limestone.
42. Leeds, " 6, " 15.—The property of Mr. Warkup: Variegated sulphuret.
43. " " 4, " 4.—The property of Mr. Ewert: Copper pyrites in dolomitic limestone.
44. " " 6, " 2.—The property of Mr. Harris: Variegated sulphuret.
45. " " 12, " 11.—Variegated sulphuret in a two feet vein of quartz.
46. " " 18, " 12.—The property of Mr. Regan: Vitreous and variegated sulphurets and green carbonate in quartz courses in nacreous slate.
47. " " 15, " 14.—The property of Mr. Nutbrown: Pyritous, variegated and vitreous sulphurets in a vein with quartz, bitter spar, chlorite, and talc, with a little native gold.
48. " " 17, " 15.—The property of the English and Canadian Mining Company: Pyritous, variegated and vitreous sulphurets with green carbonate in nine quartz courses and three beds in nacreous slates, at present being worked by the Company.
49. " "16 & 17," 13.—
50. " "14 & 15," 14.—
51. " "16 & 18," 15.—
} The property of the English and Canadian Mining Company; Pyritous, variegated and vitreous sulphurets.
52. " " 13 " 14.—Pyritous, variegated and vitreous sulphurets.
53. " " 8 to 11," 10.—
54. " "11 to 13," 11.—
55. " "10,11,13" 12.—
} Pyritous, variegated and vitreous sulphurets.
56. St. Giles, Sy. " 1, 2, 3, Conces.—St. Margaret; the property of Mr. Cromwell: Pyritous, variegated and vitreous sulphurets and green carbonate, in eight quartz courses in nacreous slates.
57. S. Joseph, Sy." ? , " ? .—One mile west of River Chaudiere, opposite the road leading to Frampton, on the property of Mr. Ignace Tardi: Variegated sulphuret associated with quart and chlorite in red and green slates near patches of red dolomitic limestone.
58. " " ? , " ? .—East side of the Chaudiere, 4 miles above the church of St. Joseph, on Calway's farm: Spots of green carbonate in red limestone.
59. St. Mary, Sy. " ? , Conces. 3.—Front of concession, on a line with a point one mile above St. Mary's Church: Pyritous and vitreous sulphurets and green carbonate in red and green nacreous slates near ferruginous dolomite.
60. Lauzon Sy. Lot ? , Conces. ? .—On the Etchemin, two miles below St. Anselm Church; Native copper in red slate.
61. " " ? , " ? .—On the Etchemin, four miles above its mouth: Copper pyrites in red limestone.
62. " " ? , " ? .—At the Narrows on the Chaudiere, about ten miles above its mouth: Copper pyrites in calcareous sandstone.
63. " " ? , " ? .—At St. Nicholas, one mile below the church, on the bank of the St. Lawrence: Green carbonate in red slate.
64. " " ? , " ? .—One mile above Point Levi, in the cliff over the St. Lawrence: Green carbonate in red shale.
65. Sillery, " ? " ? .—One mile below Cap Rouge: Copper pyrites in sandstone and red slate.
66. Quebec. .—In the cut made for the water-pipe, Coteau St. Geneviève: Vitreous Sulphurets in or near limestone conglomerate.
67. Cape Chat. .—At the mouth of the Great Capucin River, four miles above the Cape: Copper pyrites in a two inch bed of quartz in red shale.

III.

Localities shewing copper lodes and traces of copper ore on the Mississaugui River, Lake Huron.

1. Head of islands below Hudson Bay Company's Post: Specks of copper pyrites disseminated in greenstone.
2. Half a mile above H. B. Co's Post: Specks of copper pyrites in granite dykes; the bearing of the dykes is N. 24 E. and S. 24 W.
3. Little island below the first or lowest fall: specks of copper pyrites disseminated through the rock of the island.
4. A mile below the Pakowagaming River: Small calcareous veins with small spots of copper pyrites; the general bearing of the veins is N. 70 W.
5. A mile and a half above the Pakowagaming: A vein of quartz and bitter spar with small spots of copper pyrites; the bearing of the vein is S. 71 W.

6. Second fall: A vein of two inches of quartz and bitter spar with copper pyrites cutting green stone; the bearing is N. 50 W.
7. East end of Lake Wabiquekobing: A vein of quartz two feet wide with small spots of copper pyrites cutting greenstone; the bearing of the vein is N. 84 W.
8. North portage to Lake Wabiquekobing within twelve or fourteen chains of the Missisaugui; A vein of quartz from one to two feet thick with small spots of copper pyrites cutting greenstone; the bearing of the vein is N. 15 W.
9. Fourth fall: A vein of quartz and bitter spar one foot wide with copper pyrites in small spots, cutting quartzite; the bearing of the vein is N. 55 W., running nearly parallel with a greenstone dyke which comes to the river obliquely.
10. Upper end of the portage at the fourth fall: Small veins of quartz, one of them about a foot thick, with small spots of copper pyrites cutting quartzite; the bearing is N. 72 W.; this vein varies in width and at some parts is two feet, and it is occasionally stained with the green carbonate of copper.
11. At the Grand Portage: A complication of veins with a general bearing of about N. 60 W. The largest, which was at the foot of the portage, was from one to three feet in width, and consisted of red stained quartz, with copper pyrites in spots and strings, and green carbonate in stains; Red unctuous scaly hœmatitic iron discolored the rock and the vein. A vein of bitter spar marked with copper pyrites occurs near the head of the Grand Portage, cutting slate and quartzite. All the main veins are nearly parallel with the narrow cut through which the river runs, and most of them intersect greenstone, but run also into the slates, the slate conglomerates and the quartzites.
12. At the turn of the river three miles above the Grand Portage: A calcareous vein of from two to three feet wide holds spots of copper pyrites and cuts greenstone in a bearing S. 70 W.; it is seen for only a little way on the right bank, and not at all on the opposite side of the river, where there is a brook falling into the river through sand.
13. At the eighth fall: Several veins of quartz intersecting slate conglomerate; the main ones are from one to two feet wide and they bear from N. 67 W. to N. 77 W. Numerous small veins reticulate from the main veins; some greenish stains were detected but the indications of copper were very indistinct.

IV.

Catalogue of Animals and Plants, collected and observed in the Valley of the River Rouge and the neighbouring Townships, in the Counties of Argenteuil and Ottawa. By Mr W. S M. D' Urban, Assistant to Sir W. E. Logan in* 1858.

VERTEBRATA.

CLASS MAMMALIA.

Order Cheiroptera.

1. *Vespertilio subulatus*, Say.—Rouge, August 8th and 10th. There are probably several species of bats in the district, but this is the only one of which a specimen was obtained.

* The list of plants having been taken by Mr. D'Urban to England for the purpose of reference in regard to some points, was unfortunately lost on its return in the Hungarian, and there has not been time to prepare another.

Order Carnivora.

2. *Ursus Americanus*, Pallas.—Although no bears were actually seen by us, yet the evidence afforded by recent traces of them, and the information received from settlers and others, induced me to believe that they were numerous in the district.
3. *Mustela martes*, Linn.—The pine marten does not appear to be plentiful. One specimen was seen at Hamilton's Farm on the Rouge, about fifty miles from its mouth.
4. " *Canadensis*, Schreber.—Said to be common about Hamilton's Farm; I saw a specimen which had been shot there.
5. " *vison*, Gmel.—Abundant throughout the district.
6. *Mephitis chinga*, Tiediman.—Common about the settlements in Grenville, &c.
7. *Lutra Canadensis*, Sabine.—Many were seen in the lakes throughout the district.
8. *Vulpes fulvus*, Desm.—Reported to be common.

ORDER RODENTIA.

9. *Castor fiber*, Linn.—Appears to be nearly extinct in the parts we explored, but seen by Sir. W. Logan between two and three miles east of Hamilton's Farm, and said to be numerous about forty miles above it.
10. *Fiber Zibethicus*, Cuvier.—Very numerous throughout the district.
11. *Arctomys monax*, Linn.—Said to be common about clearings in Grenville. A specimen was given to me which had just been killed in that township.
12. *Tamias Lysteri*, Ray.—Township of Montcalm and about Hamilton's Farm; rare.
13. *Sciurus Hudsonius*, Pennant.—Very numerous throughout the district.
14. *Hystrix dorsata*, Linn.—This species is believed to occur in the district.
15. *Lepus Americana*, Erxlebein.—Common.

ORDER RUMINANTIA.

16. *Cervus alces*, Linn.—This animal seems to be tolerably numerous above Hamilton's Farm, but none were seen in the district we passed through.
17. " *Virginianus*, Gmel.—Tracks of this deer were frequently met with, and two were reported to have been seen near Sixteen Island Lake.
18. " *tarandus*, Linn.—One was shot on Hamilton's Farm while we were camped there. Traces of them were observed on Trembling Mountain.

Besides the animals above enumerated, I may mention the racoon, *Procyonlotor*, said by the Indians to occur in the district; a wild cat, *Lynx Canadensis*, is supposed to have been heard in the township of Montcalm; a flying squirrel, *Pteromys volucella?* is said to occur, and near the Lake of Three Mountains I had a momentary view of a small *Arvicola*.

CLASS AVES.

ORDER RAPTORES.

1. *Buteo* ——— ?—A buzzard was frequently seen hovering around our camps, but I was unable to obtain a specimen.
2. *Pandion haliætus*, Linn.—On the 21st of May I shot the female of a pair of this species which had their nest on the summit of a large dead pine tree on an island in a small lake situated in the 8th and 9th ranges of Montcalm. Sir William Logan has called this sheet of water Eagle Nest Lake. An osprey was afterwards seen on several occasions when ascending the Rouge.
3. *Falco sparverius*, Linn.—Sixteen Island Lake; very numerous on Hamilton's Farm in August, and last seen on the 7th of October.
4. *Astur palumbarius*, Linn.—Hamilton's Farm, in the end of August and beginning of September.
5. " *fuscus*, Gmel.—Near Gate Lake, May 16th; very numerous at Hamilton's Farm in the end of August.
6. *Circus cyaneus*, Linn.—Hamilton's Farm, end of August and in September.
7. *Syrnium nebulosum*, Linn.—Observed near Trembling Lake.
8. *Otus brachyotus*, Linn.—I saw a specimen of this species which had just been shot on Hamilton's Farm, and was informed that it is not uncommon there after harvest.
9. *Bubo Virginianus*, Gmel.—Numerous throughout the district.

ORDER INSESSORES.

10. *Chordeiles Virginianus*, Briss.—A single bird seen at Hamilton's Farm in August.
11. *Chætura pelasgia*, Linn.—Common throughout the district. They were last seen by me at Hamilton's Farm on the 25th of August.
12. *Hirundo purpurea*, Linn.—Common at Grenville Village, May 13th, but not afterwards met with.
13. " *bicolor*, Vieill.—Townships of Grenville and Montcalm, middle and latter part of May. Noticed near Hamilton's Farm about the middle of August.
14. " *fulva*, Vieill.—Townships of Grenville and Harrington, from May 14th to 24th, and last seen at Hamilton's Farm, August 21st.
15. " *rustica*, Linn.—Common in Grenville and Harrington, May 14th and 15th; Wentworth, June 4th; Hamilton's Farm, July 15th to the middle of August.
16. *Muscicapa tyrannus*, Linn.—Bevan's Lake; near the Indian Village at the Devil's rapids on the Rouge; about Hamilton's Farm.
17. " *acadica*, Gmel.—Observed near Bevan's Lake, July 1st; Hamilton's Farm, August 25th.
18. *Sylvicola coronata*, Lath.—About Sixteen Island and Eagle Nest Lakes; Hamilton's Farm; Trembling Lake. Very numerous from May 19th till September 9th.
19. " *virens*, Lath.—Common about Sixteen Island Lake, May 24th.
20. " *Blackburniæ*, Lath.—Numerous about Sixteen Island and Eagle Nest Lakes, May 22nd and 24th, in company with the last two species.

21. *Sylvicola æstiva*, Gmel.—Observed in the township of Grenville, May 24th and about Hamilton's Farm August 23rd and 25th.
22. " *Canadensis*, Linn.—Hamilton's Farm; Trembling Lake; Lake of Three Mountains. From August 28th to September 23rd.
23. " *maculosa?* Lath.—Mouth of Devil's River, July 20th.
24. *Certhia familiaris*, Linn.—Throughout the whole district.
25. *Troglodytes hyemalis*, Vieill.—Seen occasionally at numerous localities up to September 26th.
26. *Parus atricapillus*, Linn.—First observed, August 17th, when we were camped about a mile below Hamilton's Farm, occasionally seen till the end of September.
27. *Regulus satrapa*, Lich.—First observed August 28th, at Hamilton's Farm.
28. *Sialia Wilsoni*, Swains.—Grenville, October 14th.
29. *Turdus migratorius*, Linn.—Throughout the district up to October 15th.
30. " *mustilinus*, Gmel.—Not uncommon throughout the district up to the end of September.
31. *Sciurus aurocapillus*, Lath.—Very numerous throughout the district.
32. *Alauda alpestris*, Linn.—Hamilton's Farm, end of September.
33. *Emberiza socialis*, Wils.—About all clearings visited, up to October 18th.
34. *Niphœa hyemalis*, Linn.—Throughout the district.
35. *Fringilla melodia*, Wils.—About clearings throughout the district.
36. " *Pennsylvanica*, Lath.—Very common in the woods throughout the district.
37. *Erythrospiza purpurea*, Gmel.—Balsam Lake, June 14th; Hamilton's Farm, July 15th.
38. *Coccoborus ludovicianus*, Linn.—Clearings about Gate Lake, May 16th and 17th.
39. *Agleaius Phœniceus*, Linn.—Grenville; Sugar-bush or RoundLake; Bevan's Lake; near Hamilton's Farm.
40. *Icterus Baltimorus*, Linn.—Said to have been heard singing at Balsam Lake, June 14th.
41. *Quiscalus versicolor*, Vieill.—Grenville, May 14th.
42. *Corvus Americanus*, Aud.—Common throughout the district.
43. *Garrulus cristatus*, Linn.—Abundant everywhere. They were seen in flocks of thirty or forty at Hamilton's Farm.
44. " *Canadensis*, Linn.—Abundant throughout the district.
45. *Vireo olivaceus*, Linn.—Common throughout the district,up to August 25th.
46. *Bombycilla Carolinensis*, Briss.—Observed only about clearings.
47. *Sitta Canadensis*, Linn.—Throughout the district, from May 26th till September 20th.
48. *Trochilus colubris*, Linn.—Occasionally seen from May 27th till August 12th.
49. *Alcedo alcyon*, Linn.—Very abundant the whole way up the Rouge till October 11th. Rarely seen on the lakes.
50. *Picus pileatus*, Linn.—One shot on Sixteen Island Lake, May 27th, and another seen on the Rouge August 8th.
51. " *villosus*, Linn.—Grenville, Harrington and Wentworth.
52. " *pubescens*, Linn.—Throughout the district.
53. " *varius*, Linn.—Sixteen Island Lake, May 27th; Trembling Lake, September 13th.
54. *Picus articus*, Swains.—One specimen observed in Harrington, October 15th.
55. " *auratus*, Linn.—Hamilton's Farm, end of August and beginning of September.
56. *Coccyzus erythropthalamus*, Wils.—Sugar-bush Lake, June 25th; Indian Village on the Rouge, July 16th.

Order Rasores.

57. *Ectopistes migratoria*, Linn.—Throughout the district, from spring till the beginning of October. Not common.
58. *Tetrao umbellus*, Linn.—Abundant throughout the district.

Order Grallatores.

59. *Fulica Americana*, Gmel.—A pair seen, September 14th, in a small lake near the Lake of Three Mountains.
60. *Totanus macularius*, Wils.—Common all along the Rouge and in the numerous lakes of the district.
61. " *solitarius*, Wils.—Along the Rouge from August 12th to September 13th.
62. " *vociferus*, Wils.—One specimen seen on Trembling Lake, September 11th.
63. *Microptera Americana*, Aud.—Said to have been heard in the swamps about Hamilton's Farm, September 2nd.
64. *Ardea nycticorax*, Linn.—A pair seen flying over head, when we were camped near Gate Lake, May 17th.
65. " *lentiginosa?* Swains.—Bevan's Lake during July.

Order Natores.

66. *Anas obscura*, Gmel.—Sixteen Island and Bevan's Lakes; Rouge, and the small lakes on either side of it.
67. " *sponsa*, Linn.—One seen on Bevan's Lake, October 16th.
68. " *discors*, Linn.—One observed on Trembling Lake, September 11th.

69. *Fuligula marila?* Linn.—Sixteen Island Lake, May 20th.
70. " *clangula*, Linn.—Sixteen Island Lake in May; Devil's River, July 20th.
71. *Mergus serrator*, Linn.—Rouge, and almost every lake we visited.
72. " *cucullatus?* Linn.—Lake of Three Mountains, September 23rd and 25th.
73. *Larus argentatus*, Brunnich.—A large gull, supposed to be of this species, was frequently seen at the end of May, on Sixteen Island Lake.
74. *Colymbus glacialis*, Linn.—Seen in almost every lake visited by us.
75. *Podiceps Carolinensis?* Lath.—I observed a grebe on Balsam Lake, June 14th, which appeared to be of this species.

The rice bunting, *Dolichonyx orizivora*, and the red-headed woodpecker, *Picus erythrocephalus*, were observed about Point Fortune on the Ottawa, but, were not met with in the woods.

CLASS REPTILIA.

Order Chelonia.

1. *Chelydra serpentina*, Schw.—*Emysaurus serpentina*, Linn.—I was given a shell of this species by G. W. Albright, Esq., P. L. S., who obtained it on the Devil's River. The carapace is one foot long and nine inches broad.
2. *Glyptemys insculpta*, Agassiz.—*Emys insculpta*, Leconte.—I was shown the shell of a specimen of this species, which had been obtained on a small sandy island in the Rouge in Arundel, and I also obtained a fragment of a shell at the mouth of the Devil's River.

Order Ophidia.

3. *Eutainia sirtalis*, Baird & Girard. *Tropidonotus sirtalis*, Holbrook.—Abundant in the Townships of Grenville, Harrington, De Salaberry, and at Hamilton's Farm.

No other Ophidian reptile was seen, but reports of a water snake, said to inhabit the lakes, came to my knowledge.

Order Batrachia.

4. *Rana Catesbiana*, Shaw.—*R. pipiens*, Holbrook.—Abounds in every lake and pond throughout the district.
5. " *nigricans*, Agassiz.—Abundant at Balsam, Sixteen Island and Sugarbush Lakes in May and June.
6. " *pipiens*, Gmel. *R. halecina*, Holbrook et aliorum.—Abundant inSugar-bush Lake in June.
7. *Hyla versicolor?* Leconte.—Said to have been heard about Sixteen Island Lake.
8. *Bufo Americana*, Leconte.—Common throughout the district.
9. *Plethodon erythronota*, Green.—Abundant in the townships of Wentworth and Montcalm in May.
10. *Spelerpes bilineata*, Green.—Township of Montcalm.
11. *Triton?* (undetermined).—One specimen taken in Sixteen Island Lake June 2nd.

A "lizard" was reported as inhabiting a small stream crossing the portage between Gut and Gate Lakes.

CLASS PISCES.

Order Acanthopteri.

1. *Perca flavescens*, Cuvier.—Numerous in Sugar-bush, Bevan's and Bark Lakes, Montcalm; in a small lake on lot 11, range 3, of the same township, and also in a lake about three miles east of Hamilton's Farm.

Order Malacopteri.

2. *Pimelodus cænosus*, Richardson.—Very abundant in the same lakes (with the exception of the last) as the perch.
3. *Esox boreus?* Agassiz.—The specimen preserved, was caught in the small lake on lot 11, range 3, Montcalm, and agrees very well with the description of *E. boreus* in Agassiz's "Lake Superior," p. 317, with the exception, that the lateral line is very indistinct, instead of being "very distinct." Pike were numerous in the same lakes as the cat-fish and perch and in the Rouge as far up as we ascended.
4. *Salmo fontinalis*, Mitchill.—Abounds in nearly all the lakes and streams in the district. In those lakes where cat-fish, pike and perch occur, no trout were caught.
5. *Salmo*.—A species of trout, which I have been unable to determine, was found in Sixteen Island, Trembling and Three Mountain Lakes.
6. *Coregonus*.—I saw several specimens of a *Coregonus* which had just been taken in Bevan's Lake, October 15th, but was unable to preserve a specimen.

7. *Catastomus.*—Two species of "sucker" were said to have been taken in Sixteen Island Lake whilst I was absent, and were spoken of as the "mullet" and "black sucker."
8. *Leuciscus.*—A large fish known as the carp, usually about seventeen inches in length and about two pounds in weight, was abundant in all the lakes and in the Rouge and Devil's Rivers. On the sides, the scales have a beautiful bronze or golden lustre, and the basal half and margin of each is black. The fin-rays are as follows: Br.3, D. 9. C. 20. V. 8. P. 16. This fish may be *Cyprinus Corporalis*, Mitchill, but does not agree satisfactorily, with any species I have seen described.
9. " *pulchellus*, Storer.—This was the most abundant fish in all the lakes and rivers throughout the district.
10. *Leuciscus frontalis*, Agassiz.—Abundant in streams flowing into the small lake on lot 11, range 3, Montcalm. The specimens collected agree exactly with the figure and description of this species in Agassiz's "Lake Superior," except that instead of fourteen, they have sixteen rays in their pectoral fins.
11. " ? —A small species which I cannot find described, though evidently very distinct, was common in the same stream with the last.

All the lakes swarmed with the young of various *Leucisci*, which are called dace and chub. Several species besides those above mentioned were met with in Trembling and Three Mountain Lakes, but I had no means of preserving specimens.

ARTICULATA.

CLASS INSECTA.

Order Coleoptera.

Besides the 114 species of Coleoptera enumerated in the following catalogue, many others were collected, but were unfortunately lost by the accidental fracture of the bottle which contained them.

I have added a list of 34 species, not observed in this district by myself, but brought by Mr. Robert Bell from the Augmentation of Grenville on the north, and the neighbourhood of L'Orignal on the south bank of the Ottawa.

1. *Cicindela longilabris*, Say.—Hamilton's Farm on the River Rouge, 2nd September.
2. " *vulgaris*, Say.—Very abundant on sand-banks, River Rouge, August.
3. " *Baltimorensis*, Herbst. (*repanda*, Say.)—Common on sand-banks, River Rouge, July and August.
4. *Lebia viridis* ? Say.—Huckleberry Rapids, River Rouge, DeSalaberry, 30th July.
5. *Patrobus longicornis*, Say.—Sixteen-Island Lake, &c., Montcalm, May and June.
6. *Platynus sinuatus*, Dej.—Under dead logs, Sixteen Island Lake, &c., township of Montcalm, May and June.
7. " *retractus*, Lec.—With the last species.
8. " *obsoletus*, Say.—With the last two species.
9. *Pœcilus lucublandus*, Say.—Under stones near the town of Grenville, 13th May.
10. *Pterostichus fastidatus*, Dej.—Under bark of decaying logs, Sixteen Island Lake, Montcalm, end of May; Lake of Three Mountains, end of September.
11. " *patruelis*, Dej.—River Rouge.
12. " *caudicalis*, Say.—Under stones near Grenville, 13th May.
13. " *orinomum*, Leach (*vitresis*, Esch.)—Township of Montcalm, June.
14. " *Luczotii*, Dej. (var. præc?)—Sixteen Island Lake, Montcalm, May and June.
15. *Lophoglossus scrutator*, Lec.—Under stones near Grenville, 13th May.
16. *Rembus major*, Lec.— " " " "
17. *Chlænius impunctifrons*, Say — " " " "
18. *Cychrus* (*Sphæroderus*) *Brevoorti*, Lec.—Under dead logs, Bevan's Lake, Montcalm, 4th July.
19. *Notiophilus punctatus*, Lec.—On rocks, Huckleberry Rapids, River Rouge, DeSalaberry, 27th July.
20. *Bembidium impressum*, Fabr.—On wet sand, River Rouge, 13th August.
21. " *punctatostriatum*, Say —Very abundant on wet sand, River Rouge, July and August.
22. " *patruelis*, Dej.—Abundant on wet sand, River Rouge, 13th August.
23. " *lucidum*, Lec.—Under stones near Grenville, 13th May.
24. *Agabus striatus* ? Say.—In Sixteen Island Lake, Montcalm, end of May.
25. *Coptotomus interrogatus*, Fabr.—In Sugar-bush Lake, Montcalm, 23rd June.
26. *Hydroporus proximus*, Aubé.—With the last species.
27. *Haliplus immaculaticollis*, Harris.—With the last two species.
28. " *cribarius*, Lec.—Very abundant in Sugar-bush Lake, Montcalm, 23rd June.
29. *Gyrinus* (several species not determined)—In various Lakes.
30. *Dineutes* (not named)—Very abundant, Sugar-bush Lake, Montcalm, 23rd June.
31. *Philhydrus cinctus*, Say.—In a small stream crossing the portage between Gate and Gut Lakes, Wentworth, and in Sugar-bush Lake, Montcalm.

32. *Necrophorus lunatus*, Lec.—Huckleberry Rapids, River Rouge, De Salaberry, 27th July.
33. " *pygmæus*, Kirby.—Township of Montcalm, 20th June.
34. *Silpha marginata*, Fabr.—Abundant under putrid fish, Sixteen Island Lake, Montcalm, 1st June.
35. *Homalota* (not determined)—Township of Montcalm, June.
36. *Tachyporus* (not determined) " " "
37. *Tachinus fumipennis*, Say.—In bear's dung, Chain Lake, Montcalm, 17th June.
38. " *conformis*, Dej.—Township of Montcalm, June.
39. *Philonthus cyanipennis*, Fabr.—In a fungus on a rotten tree, River Rouge, 13th August.
40. " (not determined)—Under stones near Grenville, 13th May.
41. *Stenus* (not determined)—Numerous on wet sand, River Rouge, Arundel, July.
42. " (not determined)—Numerous on wet sand, River Rouge, near Hamilton's Farm, 13th August.
43. *Oxytelus Pennsylvanicus*, Er.—Common in our tents throughout the district.
44. *Anthobium dimidiatum*, Mels.—Township of Montcalm, June.
45. *Platysoma parallelum*, Say.— " " "
46. *Carpophilus niger*, Er.— " " "
47. *Epuræa*, (not determined) " " "
48. *Cucujus clavipes*, Oliv.—One specimen taken as it pitched on the mane of a horse, Township of Harrington, 15th May.
49. *Pediacus planus*, Lec.—Very abundant in the tents, Huckleberry Rapids, end of July.
50. *Dermestes lardarius*, Linn.—Observed about the provisions, Sixteen Island Lake, Montcalm.
51. *Anthrenus castaneæ*, Mels.—Township of Montcalm, June.
52. *Platycerus depressus*, Lec.—Near Huckleberry Rapids, River Rouge, DeSalaberry, July.
53. *Onthophagus Hecate*, Pz.—Near Huckleberry Rapids, River Rouge, DeSalaberry, 2nd August.
54. *Geotrupes Egeriei*, Germ. (*microphagus*, Say.) Woods near Hamilton's Farm, 31st August.
55. *Aphodius fimetarius*, Fabr.—Abundant in cow-dung, Hamilton's Farm, August.
56. *Dichelonycha subvittata*, Lec.—Abundant throughout the district, June to August.
57. *Osmoderma scabra*, Beauv.—River Rouge, July and August.
58. *Nichius piger*, Fabr.—On blossoms of *Viburnum opulus*, Sugar-bush Lake, and on white clover blossoms, and bleeding stumps of yellow birch, Bevan's Lake, Montcalm, end of June and beginning of July.
59. *Ancylocheira maculiventris*, Say.—Near Silver Mountain, River Rouge, 12th August.
60. *Cryptohypnus silaceipes*, Germ.—Under stones near Grenville, 13th May.
61. *Dolopius fucosus*, Lec.—Township of Montcalm, June.
62. " *stabilis*, Lec.— " " "
63. *Corymbites triundulatus*, Randall.—Township of Montcalm, end of May.
64. *Pyractomena angulata*, Say.—Common, Sugar-bush Lake, Montcalm, 23d to 26th June.
65. *Ellychnia corrusca*, Linn.—Under stones near Grenville, 13th May.
66. " *lacustris*, Lec.—Abundant in the woods of Harrington, middle of May; Hamilton's Farm, and Lake of Three Mountains, August and September.
67. *Digrapha terminalis*, Say.—Bevan's Lake, 29th June, and 5th July, and Hamilton's Farm, 31st August.
68. *Eros coccinatus*, Say.—Sixteen-Island Lake, &c., Montcalm, end of May.
69. " *molis*, Lec.—Huckleberry Rapids, River Rouge, DeSalaberry, 2nd August.
70. *Podabrus modestus*, Say.—About clearings, Bevan's Lake, Montcalm, 2nd July.
71. *Telephorus rotundicollis*, Say.—Abundant " " "
72. " *carolinus*, Fabr.— " " " "
73. " *fraxini*, Say.—Township of Montcalm, June.
74. *Anobium foveatum*, Kirby.—Abundant in a rotten tree, Bevan's Lake, 4th July.
75. *Cis* (not determined)—Township of Montcalm, June.
76. *Pedilus collaris*, Say.— " " "
77. *Mordella nigricans*, Mels.— " " "
78. *Meloe rugipennis*, Lec.—Hamilton's Farm, 31st August, and Grenville, 14th October.
79. *Cistela* (not determined)—Very abundant on leaves of bass-wood, Sugar-bush Lake, Montcalm, 26th June.
80. " (not determined)—River Rouge.
81. *Nyctobates* (not determined)—Under logs on grass-land, Hamilton's Farm, August.
82. *Upis reticulatus*, Say.—(*ceramboides*, Linn.)—With the last species.
83. *Bolitophagus cornutus*, Pz.—Larvæ and Pupa in a boletus, Huckleberry Rapids, DeSalaberry, 3rd August.
84. *Apion* (not determined)—Township of Montcalm.
85. *Sitona lepidus*, Sch.—Near Hamilton's Farm.
86. *Hylobius* (near *pineti*)—Sixteen Island Lake, 1st June.
87. " *pales*, Herbst.—Township of Montcalm, June.
88. *Tomicus* (not named) " " "
89. *Saperda tridentata*, Oliv.—Base of Silver Mountain, Rouge, 10th Aug.
90. *Monohammus confusor*, Kirby.— " " " "
91. " *scutellatus*, Say.—Numerous, Bevan's Lake, 7th July; and abundant the whole way up the Rouge, to the end of August.
92. *Encyclops cæruleus*, Say.—One specimen taken on blossoms of *Viburnum opulus*, Sugar-bush Lake, Montcalm, 26th June.

93. *Acmæops proteus*, Kirby.—Township of Montcalm, June.
94. *Evodinus monticola*, Randall.—Sixteen-Island Lake, 30th May; and abundant on blossoms of *Viburnum opulus*, Sugar-bush Lake, end of June.
95. *Leptura Canadensis*, Oliv.—Abundant on blossoms of *Spiræa salicifolia*, River Rouge, July and August.
96 " *vittata*, Oliv.—Near Huckleberry Rapids, DeSalaberry, 15th July.
97 " *pubera*, Say.—Abundant on blossoms of *Viburnum opulus*, Sugar-bush Lake, Montcalm, 25th June.
98. " *proxima*, Say.—Near Huckleberry Rapids, DeSalaberry, 26thJuly.
99. " *mutabilis*, Lec.—On blossoms of *Viburnum opulus*, Sugar-bush Lake, end of June.
100. *Donacia palmata*,—In Oliv. blossoms of *Nuphar advena*, (Yellow Water-lily), Sugar-bush Lake, end of June.
101. " *subtilis*, Kunze.—In a small Lake near Lake of Three Mountains, 14th September.
102. " *pusilla*, Say.—Sugar-bush Lake, Montcalm, end of June.
103. " *flavipes*, Kirby.— " " "
104. *Syneta tripla*, Say.—Township of Montcalm.
105. *Chrysomela scalaris*, Lec.—Abundant on alders throughout the district, from the end of June to the end of September.
106. " *spiræ*, Say.—Very abundant, Sugar-bush Lake, 25th June.
107. " *interrupta*, Fabr.—Abundant on alders, Sixteen-Island and Sugar-bush Lakes, Montcalm, May and June. Larva abundant on alder leaves, June 25.
108. *Chrysomela Vitellinæ*, Linn.—Abundant on oak and poplar leaves, Sixteen Island and Sugar-bush Lakes, May and June.
109. *Systena pontalis*, Fabr.—Township of Montcalm, June.
110. *Phyllobrotica decorata*, Say. (*Olivieri*, Kirby,)—Very abundant on *Scutellaria galericulata* and *laterifolia*, River-Rouge, July and August.
111. *Adoxus vitis*, Fabr.—Amongst dead leaves, Gate Lake, Wentworth, 16th May.
112. *Chrysochus auratus*, Fabr.—Abundant on *Apocynum androsæmifolium* and *cannabinum*, Bevan's Lake, Huckleberry Rapids, &c., July.
113. *Galleruca sagittariæ*, Kirby.—Township of Montcalm, June.
114. *Coccinella picta*, Randall.— " " "

The following are the thirty-four species of Coleoptera from L'Orignal and the Augmentation of Grenville, collected by Mr. R. Bell.

Cymindis reflexa, Lec.
Calathus gregarius, Say.
Platynus capripennis, Say.
Pterostichus erythropus, Dej.
" *adjunctus*, Lec.
Amara angustata, Say.
" *impuncticollis*, Say.
Anisodactylus Baltimorensis, Say.
" *Harrisii*, Lec.
" *rusticus*, Say.
Harpalus Pennsylvanicus, Geer.
" *herbivagus*, Say.
Chlænius sericeus, Forst.
" *tricolor*, Dej.
Acilius fraternus, Harris.
Silpha Surinamensis, Latr.
Pæderus littorarius, Grav.
Hister perplexus ? Lec.
Ips quadrisignatus, Say.
Cytilus varius, Fabr.
Lachnosterna fusca, Frolich.
Osmoderma eremicola, Knoch.
Photuris Pennsylvanica, Geer.
Trichodes Nuttalii, Kirby.
Thanasimus dubius, Fabr.
Tenebris molitor, Linn.
Ipthinus Pennsylvanicus, Geer.
Orthosoma unicolor, Drury.
Saperda vestita, Say.
Chelymorpha cribaria, Fabr.
Haltica collaris, Fabr.
Chrysomela trimaculata, Fabr.
Helodes trivittata, Say.
Hippodamia 13-punctata, Linn.

Order Lepidoptera.

With the exception of the *Rhopalocera*, the greater portion of the *Lepidoptera* collected are still undetermined. Some of the *Heterocera* enumerated below were named for me at the British Museum by Mr. Francis Walker, to whom I am much indebted.

Rhopalocera.

115. *Papilio turnus*, Linn.—Abundant throughout the whole district, from May 30th till the end of July.
116. " *asterias*, Fab.—A large black butterfly, seen on the 17th June at Balsam Lake I supposed to be of this species.
117. *Colias philodice*, Godt.—Grenville Village, June 5th; along the Rouge from the 30th June till the middle of September; again seen at Grenville, October 14th and 18th

118. *Pieris oleracea*, Harris.—Abundant throughout the whole district, from the middle of May till the end of June. A few seen at Hamilton's Farm, end of August.
119. *Danais Archippus*, Fab.—A single specimen seen flying across the Rouge a little above Silver Mountain on the 12th of July.
120. *Debis Portlandia*, Boisd.—First seen on the 2nd July, at Bevan's Lake. Abundant in the woods along the Rouge as far as Silver Mountain till the first week in August. As this is generally supposed to be a southern species, it is not a little remarkable that it should be so abundant to the north of the Ottawa.
121. *Hipparchia nephele?* Kirby.—Abundant amongst grass on Hamilton's farm, from the 22nd August till the beginning of September.
122. *Limenitis Arthemis*, Drury.—Very abundant throughout the district, from the 26th June till the end of July, a few lingering till the middle of August.
123. *Cynthia cardui*, Linn.—One specimen met with at Hamilton's Farm on the 21st August.
124. *Vanessa Atalanta*, Linn.—I observed a butterfly which appeared to be of these species, at Sugar-bush Lakes on the 24th of June.
125. " *Antiopa*, Linn.—Grenville Village, May 13th; a few seen in the township of Montcalm in June and near Silver Mountain on the 12th of August.
126. " *Milberti*, Godt., *furcillata*, Say.—Grenville Village, May 14th; Rouge, July 10th, and occasionally seen at Hamilton's Farm, up to the 31st of August.
127. " *J. album* Boisd.—Common throughout the district, from May 19th till the end of September. One observed near Grenville on the 18th of October.
128. *Grapta Progne*, Fab.—Abundant everywhere, from the 14th May till the middle of September.
129. " *C. album*, Godt.—I took several specimens of a *Grapta* along the Rouge which I believe to be of this species.
130. *Argynnis Dalphnis* (?), Cramer.—First seen, July 2nd, and last, September 12th. Abundant. I am of opinion that Boisduval was in error in considering *A. Aphrodite*, Fab. and *A. Cybele*, Fab., as the same species. There are at least three closely allied species of *Argynnis* inhabiting Canada, but nothing short of breeding each from the larva will satisfactorily separate them. My specimens are all too small for *A. Cybele*, Fab.
131. *Argynnis Myrina*, Cramer.—From June 5th till August 31st. Common.
132. " *Bellona*, Fab.—The only specimen met with, was captured in Arundel on the 30th June.
133. *Melitæa Tharos*, Cramer.—Sugar-bush Lake, June 29th; Bevan's Lake, July 2nd; Devil's River, July 14th.
134. *Thecla* (?)—I observed a large *Thecla* at Huckleberry Rapids, July 30th, but did not succeed in capturing it.
135. *Lycæna Americana*, Harris.—Numerous on grass land at Hamilton's Farm, from the 21st to the 31st August.
136. *Polyommatus pseudargiolus*, Boisd.—Numerous in Grenville and about Sixteen Island Lake in May. Worn specimens were seen about Bevan's Lake as late as the 2nd of July.
137. *Pamphila*.—One specimen of a species resembling *P. paniscus* of Europe was captured near Bevan's Lake, July 2nd. Specimens of a dingy grey species and of two or three other *Pamphilas* were taken in various localities in June, July and August. I cannot find descriptions of any of these and some of them are probably new.

Heterocera.

138. *Sphinx*.—Two species of *Sphinx* were captured in July, in Arundel and DeSalaberry, allied to *S. Kalmiæ*, A. & S. and *S. gordius*, Cramer, but not agreeing satisfactorily with Dr. Harris's descriptions of these species given in the Amer. Jour. Sci. Vol. 28.
139. *Smerinthus*.—Two larvæ belonging to this genus were obtained at Hamilton's Farm on the 3rd and 4th September, of which the following are descriptions.—No. 1. Pale green, whitish on the back, with oblique stripes of white and dark green on the sides.—No. 2. Green, with oblique tuberculated stripes on the sides and two tubercles on each of the second and third segments.
140. *Trochilium*.—On the 25th June, at Sugar-bush Lake, I captured a beautiful and apparently undescribed species of *Trochilium*, sitting on the blossoms of *Viburnum opulus* (high-bush cranberry). The anal tuft is deep orange; antennæ black; expansion of the wings 11 lines; length of the body 5 lines.
141. *Ctenucha Latreillana*, Kirby.—One specimen taken in Arundel, July 16th.
142. *Crocota brevicornis*, Walker.—Township of DeSalaberry; Hamilton's Farm, July and August.
143. *Medaria mendica*, Walker.—Near Bevan's Lake, July.

144. *Arctia Parthenos*, Harris.—I took a fine *Arctia* on the Devil's River, July 19th, agreeing in every respect with the description and figure of this species in Agassiz's "Lake Superior," with the exception that it has *five*, instead of *three* cream-coloured spots on the costal edge of the anterior wings.
145. *Hypercompa Lecontei*, Boisd.—Montcalm, Arundel and DeSalaberry, during the month of July.
146. *Halesidota aunulifascia*, Walker.—Cocoons, apparently of this species, were found near Sixteen Island Lake, May 22nd.
147. *Orgyia leucostigma*, A. & S.—Hamilton's Farm, end of August and beginning of September.
148. *Telea Polyphemus*, Hübner.—Throughout the whole district.
149. *Thyatira scripta*, Gosse.—Montcalm and Arundel, end of June and beginning of July.
150. " *cymotaphoroides*, Guén.—Montcalm and Arundel, June and July; Trembling Lake, September 7th.
151. *Graphiphora C. nigrum*, Linn.—One specimen taken in DeSalaberry, July 24th, and another at Hamilton's Farm, August 28th.
152. " *Dahlii*, Hübner.—One specimen taken in Wentworth, May 17th.
153. *Euplexia lucipara*, Linn.—Common in Montcalm in June.
154. *Plusia mortuorum*.—Hamilton's Farm, end of August.
155. *Angerona crocataria*, Fab.—Common in Arundel and Montcalm in July.
156. *Sicya solfatarina*, Guén.—Not uncommon in DeSalaberry, end of July.
157. *Ellopia æqualiaria*.—Montcalm, June.
158. *Nematocampa filamentaria*, Guén.—DeSalaberry, July 22nd.
159. *Endropia tigrinaria*, Guén.—Very abundant in Montcalm at the end of June.
160. *Melanippe Gothicata*, Guén.—Extremely numerous in Montcalm during the month of June.
161. *Scotosia undulata*, Linn.—Common in Montcalm, end of June and beginning of July.
162. *Pyralis* n. sp?—DeSalaberry, June 27th. Mr. Walker supposes this to be a new species, and the following is a description of it.—Anterior wings, dull pink, crossed by two black transverse lines, the first of which, situated near the base, is straight and has a yellow spot on its inner side, occupying the angle which it forms with the costa; the second, situated beyond the middle, is bent, forming an obtuse angle before it reaches the costal margin, where it has a yellow crescent-shaped spot on the outer side. Posterior wings, dusky-white at the base with a broad, pale black, sub-marginal band and crossed by two black transverse lines. Expansion of the wings 12½ lines; length of body 4 lines.
163. *Bleptina surrectalis*, Guén.—DeSalaberry, August 4th.
164. *Anania octomaculata*, Linn.—One specimen taken in Montcalm, July 2nd.
165. *Hydrocampa*.—A species of *Hydrocampa* was abundant near Hamilton's Farm, August 15th.
166. *Botys verticalis*, Linn.—DeSalaberry, not uncommon about the first of August.
167. *Eubulea*.—A small species apparently closely allied to the European *E. sambercalis*, Schiff., was very numerous on the blossoms of the raspberry (*Rubus strigosus*), near Bevan's Lake, at the beginning of July.
168. *Tortrix*.—Several pupæ of a *Tortrix*, which I collected on the Devil's River, produced the perfect insect, but I have been unable to determine either this or any other of my *Micro-Lepidoptera*.

MOLLUSCA.

CLASS GASTEROPODA.

Order Pulmonifera.

1. *Tebennophorus Carolinensis*, Bosc.—Throughout the district.
2. *Succinea obliqua*, Say.—Occurred plentifully at Hamilton's Farm, and sparingly in wild parts of the district.
3. *Helix albolabris*, Say.—Wentworth; Montcalm; Harrington.
4. " *exoleta*, Binney.—Wentworth; DeSalaberry; Harrington.
5. " *monodon*, Rackett.—Arundel; Hamilton's Farm; near the Lake of Three Mountains.
6. " *concava*, Say.—Wentworth; Montcalm; Arundel. Abundant.
7. " *pulchella*, Müller.—Under stones at Carillon, but not elsewhere met with.
8. " *Sayii*, Binney.—Near Doran's Lake, Grenville.
9. " *labyrinthica*, Say.—Wentworth; Montcalm; Arundel. Common.
10. " *alternata*, Say.—Abundant throughout the district.
11. " *striatella*, Anthony.—Very abundant throughout the district.
12. " *arborea*, Say.—Plentiful throughout the district.
13. " *chersina*, Say.— " " " "
14. " *lineata*, Say.—Abundant throughout the district.
15. *Bulimus marginatus*, Say.—Sugar-bush Lake and near Gate Lake.
16. *Achatina lubrica*, Müll.—Bevan's and Gate Lakes. Common.

17. *Vertigo Gouldii,* Binney.—Sixteen Island Lake.
18. *Pupa* (undetermined).—With the last species.
19. *Carychium exiguum,* Say.—One specimen found near Sixteen Island Lake.

(*Fresh Water.*)

20. *Physa heterostropha,* Say.—Sugar-bush Lake, and near Grenville Village.
21. " *aurea,* Lea.—Small Lake near Hamilton's Farm.
22. *Physa elliptica,* Lea.—In a small lake one mile west of the Indian Village in Arundel.
23. " *elongata,* Say.—Near Grenville Village.
24. *Limnæa exigua,* Lea. (young).—In a small lake near Hamilton's Farm.
25. " *galbanus,* Say.—Abundant in shell marl from the bottom of Eagle Nest Lake.
26. " *plicata,* Lea.—Sugar-bush Lake. Abundant.
27. " *reflexa,* Say.—Near Grenville Village.
28. " *umbilicata,* Say.—With the last species.
29. *Planorbis trivolvis,* Say.—In the small lake one mile west of the Indian Village in Arundel.
30. " *bicarinatus,* Say.—Eagle Nest Lake and a small lake near Hamilton's Farm.
31. " *campanulatus,* Say.—Near Grenville Village and in numerous lakes throughout the district.
32. " *parvus,* Say.—In shell marl in Eagle Nest Lake, and living in the lake one mile west of the Indian Village, Devil's Rapids, and in the lakes near Hamilton's Farm.
33. " *deflectus,* Say.—Sixteen Island and Sugar-bush Lakes.

Order Prosobranchiata.

34. *Paludina decisa,* Say.—Very abundant the whole way up the Rouge and its tributary the Devil's River. Those collected are of a reddish-brown color, very unlike the light green of specimens from L'Orignal, opposite the mouth of the Rouge, and from the St. Lawrence near Montreal.
35. *Valvata tricarinata,* Say.—A few specimens found in shell marl from the bottom of Eagle Nest Lake.

CLASS LAMELLIBRANCHIATA.

1. *Unio complanatus,* Lea.—This was the only species of *Unio* met with. It inhabits nearly every lake in the district, and was abundant in the Rouge as far as we ascended it. It was extraordinarily abundant in the shallow stream by which the waters of Bevan's and Bark Lakes are discharged into the Rouge; in fact they were crowded together as closely as they could lie, in the same manner as a bed of mussels on the sea shore.
2. *Margaritana rugosa,* Barnes.—One fine specimen obtained in the fourth small lake west of Balsam Lake, lot 11, range 3, Montcalm.
3. *Anodonta cygnea* (?), Linn.—This species was found in almost every lake we visited.
4. *Anodonta edentula,* Say.—One specimen obtained from the lake on lot 11, range 3, Montcalm.
5. " *fragilis,* Linn.—Sixteen Island, Eagle Nest, and Bevan's Lakes.
6. " *Footiana,* Lea.—With the last species.
7. *Cyclas similis,* Say.—Sixteen Island and Sugar-bush Lakes; lake one mile west of the Indian Village; in shell marl in Eagle Nest Lake.
8. " *partumeia* (?), Say.—Ponds near Eagle Nest Lake; Sugar-bush Lake; small lake near Hamilton's Farm.
9. " *dubia* (?), Say.—In shell marl, Eagle Nest Lake; living in the small lake near Hamilton's Farm.

Catalogue of Animals and Plants collected and observed, on the south-east side of the St. Lawrence from Quebec to Gaspé, and in the Counties of Rimouski, Gaspé and Bonaventure. By Mr. Robert Bell, Jr., Assistant to Mr. James Richardson, Geological Explorer under Sir W. E. Logan, in 1858.

VERTEBRATA.

CLASS MAMMALIA.

Order Cheiroptera.

1. *Vespertilio subulatus,* Say.—Restigouche, Matapedia and Patapedia Rivers.

ORDER INSECTIVORA.

2. *Sorex Forsteri*, Richardson.—Counties of Rimouski and Bonaventure.

ORDER CARNIVORA.

3. *Ursus Americanus*, Pallas.—Throughout the district.
4. *Mustela martes*, Linn.— " "
5. " *vison*, Gmel.— " "
6. " *vulgaris*, Linn.— " "
7. " *Canadensis*, Schreber.— " "
8. *Mephitis Chinga*, Tiedimann.— " "
9. *Lutra Canadensis*, Sabine.— " "
10. *Canis fulvus*, Desm.— " "
11. " *lupus*, Linn.—Said to come no farther north than the St. John River.
12. *Lynx Canadensis*, Linn.—Gaspé, and probably throughout the whole district.

ORDER RODENTIA.

13. *Castor fiber*, Linn.—Throughout the district.
14. *Fiber zibethicus*, Cuv.,— " "
15. *Mus musculus*, Linn.—In settled parts throughout the district.
16. *Pteromys volucella*, Desm.—Gaspé.
17. *Tamias Lysteri*, Ray.—Rimouski and Gaspé.
18. *Sciurus Hudsonius*, Penn.—Throughout the district.
19. *Hystrix dorsata*, Linn.— " "
20. *Lepus Americanus*, Erxl.— " "

ORDER RUMINANTIA.

21. *Cervus alces*, Linn.—Rimouski, Bonaventure and western part of Gaspé.
22. " *tarandus*, Linn.—Among the Shickshock Mountains.

CLASS AVES.

Determined by Mr. D'Urban.

ORDER RAPTORES.

1. *Haliætus leucocephalus*, Linn.—Along the St. Lawrence from Green Island to Martin River, in June and July; seen on the Restigouche in August.
2. *Astur fuscus*, Gmel.—Capucin, August 8th.
3. *Surnia funerea*, Gmel.—Green Island, middle of October.
4. *Syrnium nebulosum*, Gmel.—Marsouin River, end of July.

ORDER INSESSORES.

5. *Chordeiles Virginianus*, Briss.—Chat River, June 18th; Ste. Anne, June 28th to July 17th; at the mouth of the Matapedia, August 28th.
6. *Hirundo bicolor*, Vieill.—Chat River, June 18th; Ste. Anne, June 30th: Martin River, July 20th.
7. " *fulva*, Vieill.—Metis, beginning of June.
8. " *rustica*, Linn.—Trois Pistoles, May 30th; Metis, June 10th; Long Point, June 15th.
9. " *riparia*, Linn.—Ste. Anne, June 28th.
10. *Sylvicola coronata*, Lath.—Green Island Village, May 25th.
11. *Troglodytes hyemalis*, Vieill.—Patapedia River, September 5th.
12. *Parus atricapillus*,? Linn.—First seen on the Patapedia River, September 5th, and afterwards in various localities.
13. *Regulus satrapa*, Lich.—Rivière du Loup, May 18th.
14. *Turdus migratorius*, Linn.—In settled parts, throughout the district.
15. *Anthus Ludovicianus*, Lich.—Rivèire du Loup to Rimouski, from May 10th to June 5th.
16. *Aladua alpestris*, Linn.—Rimouski Village, beginning of October.
17. *Plectrophanes nivalis*, Linn.—Kamouraska, beginning of November.
18. *Emberiza socialis*, Wils.—Various localities from Rivière du Loup to Cape Chat.
19. *Niphæa hyemalis*, Linn.—Throughout the district.
20. *Carduelis tristis*, Linn.—Along the coast from St. Fabien to Martin River, from May 31st to July 19th; on the Restigouche, September 2nd.
21. *Fringilla Pennsylvanica*, Lath.—About clearings along the whole coast.
22. *Erythrospiza purpurea*, Gmel.—St. Fabien, May 30th; Ste. Anne, July 18th.
23. *Agelaius Phœniceus*, Linn.—Ste. Anne, July 17th.
24. *Quiscalus ferrugineus*, Lath.—Metis River, and between Metis and Rimouski, September and October.
25. *Corvus Americanus*, Aud.—Along the whole coast, and on the Restigouche, but not seen in inland parts.

26. *Garrulus cristatus*, Linn.—Lake Matapedia, August 19th.
27. " *Canadensis*, Linn.—Throughout the district.
28. *Bombycilla Carolinensis*, Briss.—Metis, June 8th; Ste. Anne, in July; Marsouin River, August 2nd.
29. *Trochilus colubris*, Linn.—Metis, middle of August.
30. *Sitta Canadensis*, Linn.—Matapedia Lakes, August 19th.
31. *Alcedo alcyon*, Linn.—Throughout the district; observed from May 19th to the end of September.
32. *Picus pileatus*, Linn.—Green Island Seigniory.
33. " *villosus*, Linn.—Bic, Ste. Anne, Marsouin and Martin Rivers.

ORDER RASORES.

34. *Ectopistes migratoria*, Linn.—From Metis to Ste. Anne; about Lake Matapedia, and along the Restigouche, from June 18th to August 31st.
35. *Tetrao umbellus*, Linn.—Near Rimouski. This species was not met with in Gaspé, and is believed by the Indians not to extend so far to the north-east.
36. " *Canadensis*, Linn.—Throughout the district.

ORDER GRALLATORES.

37. *Strepsilas interpres*, Linn.—Green Island Village, October 26th.
38. *Tringa pusilla*, Wils.—Rivière du Loup and Green Island in May; Chat and Martin Rivers in July.
39. *Tringa* (undetermined).—Mouth of Marsouin, August 4th.
40. *Totanus solitarius*, Wils.—Matapedia and Restigouche Rivers in August.
41. " *vociferus*, Wils.—Rivière du Loup, May 20th.
42. *Scolopax Noveboracensis*, Gmel.—Green Island, May 25th.
43. *Ardea nycticorax*, Linn.—Dalhousie, N. B., August 25th; Patapedia River, September 9th; Metis Lake, October 1st.

ORDER NATORES.

44. *Anser Canadensis*, Linn.—Rimouski, beginning of June; Cape Chat, June 17th, and near Green Island and Cacouna in the end of October.
45. " *leucopsis*, Bechst.—Rimouski and Green Island in October.
46. *Fuligula fusca*, Linn.—Coast of Rimouski and Gaspé in June and July.
47. " *perspicillata*, Linn.—Green Island and various localities further down.
48. " *clangula*, Linn.—Bic and Green Island in October, and Metis Lakes, September 18th.
49. " *histrionica*, Linn.—Ste. Anne River in July; Restigouche in August, and Patapedia in the beginning of September.
50. *Mergus serrator*, Linn.—Along the whole coast and on every river visited; first seen at Ste. Anne, June 30th.
51. *Phalacrocorax carbo*, Linn.—Between Bic and Green Island, middle of October.
52. *Larus atricilla*, Linn.—Whole coast.
53. *Uria Grylle*, Linn.—Hare Island; Green Island; Ste. Anne and near Martin River.
54. *Colymbus glacialis*, Linn.—Metis Lakes; Marsouin River and Rimouski.
55. " *septentrionalis*, Linn.—Skins of this bird were procured by Mr. Richardson in Anticosti.

CLASS REPTILIA.

1. *Tropidonotus sirtalis*, Linn.—Throughout the district.
2. *Rana pipiens*, Gmel.— " "
3. *Salamandra erythronota*, Green.— " "
4. *Bufo Americana*, Leconte.— " "

CLASS PISCES.

ORDER ACANTHOPTERI.

1. *Gasterosteus* (not determined).—Metis River, above the high falls.
2. " *pungitius*, Linn.—In numerous localities along the coast, from Rivière du Loup downwards.
3. " *biaculeatus*, Mitch.—With the preceding species, but more abundant. Found also in Lake Matapedia.
4. *Cottus Virginianus*, Willughby.—Coast of Gaspé and Rimouski
5. " *gracilis*? Heck.—Restigouche River and Metis Lakes.
6. *Scomber vernalis*, DeKay.—Ascends the St. Lawrence to Rimouski.

ORDER MALACOPTERI.

7. *Salmo salar*, Linn.—Ascends all the rivers in the peninsula which are free from mill-dams.
8. " *fontinalis*, Mitch.—In every stream and lake throughout the district.
9. " *trutta*, Linn.—Abundant for a short distance up the clear streams of Gaspé.

10. *Osmerus viridescens*, Lesueur.—Whole coast below Green Island.
11. *Alosa præstabilis*, DeKay.—Coast of Rimouski, middle of May.
12. " *tyrannus*, DeKay.—Rimouski Village.
13. *Clupea virescens* (?), DeKay.—Whole coast as far up as the salt water extends.
14. " *elongata*, Lesueur.—Whole coast also.
15. *Mallotus villosus*, Cuvier.—With the last two species; extremely abundant.

ORDER ANACANTHINI.

16. *Ammodytes Americanus*, DeKay.—Coast of Gaspé.
17. *Morrhua Americana*, Storer.—Ascends the river as far as Trois Pistoles.
18. " *æglefinus*, Cuvier.—Taken with cod on the Gaspé coast.
19. " *pruinosa*, DeKay.—Caught at the mouths of various rivers from the Chat upwards.
20. *Motella cimbria* (?), Parnell.—Ste. Anne.
21. *Zoarcus viviparus*, Cuvier.—Off the mouth of Marsouin River.
22. *Hippoglossus vulgaris*, Cuvier.—Ascends the river to Green Island.
23. *Platessa vulgaris*, Flem.—Several of the fishing stations on the Gaspé coast.
24. *Cyclopterus lumpus*,—Linn.—Ste. Anne; Green Island.

ORDER PLAGIOSTOMI.

25. *Spinax acanthias*, Cuvier.—Les Islets.
26. *Raia radiata*, Don.—Ste. Anne.

MISCELLANEOUS.

27. *Coregonus*.—Herring Trout, probably *C. clupeiformis*, are abundant in the Metis Lakes and River.
28. *Cyprinus*.—Lake Matapedia and the Restigouche River.
29. *Catastomus*.—Black Suckers occur in the Restigouche and the larger lakes of the district.
30. *Anguilla*.—Probably *A. acutirostris*, about the mouths of the rivers all along the coast.
31. *Salmo*.—An important species of *Salmo*, known as "Toag," abounds in the lakes of Rimouski County, but as no specimens were preserved nothing certain can be said about it.

ARTICULATA.

CLASS INSECTA.

ORDER COLEOPTERA.

Determined by Dr. J. L. Leconte of Philadelphia.

1. *Cicindela longilabris*, Say.—Green Island Seigniory; between Metis and Lake Matapedia; Ste. Anne.
2. " *vulgaris*, Say.—Ste. Anne; Ruisseau de la Grande Vallée; between Metis and the mouth of the Matapedia.
3. " *duodecimguttata*, Dej.—Metis River; between Metis and the Matapedia; Ste. Anne.
4. " *Baltimorensis*, Herbst. (*repanda*, Say.)—Rimouski; Metis River; Capucin.
5. *Brachinus*, (not determined).—Abundant on Metis River.
6. *Cymindis reflexa*, Lec. (*marginata*, Kirby).—Rivière du Loup; Rimouski; Metis; Matanne.
7. *Calathus gregarius*, Say.—St. Simon; from the mouth of the Marsouin to the Shickshock Mountains, fourteen miles up that river; Mount Commis on the Metis River.
8. *Platynus sinuatus*, Dej.—Point Levi; St. Simon; Marsouin River.
9. " *extensicollis*, Say.—Metis River.
10. " *melanarius*, Dej.—Point Levi, opposite Quebec.
11. " *tenuis*, Say.—Berthier and Ste. Anne.
12. " *cupripenne*, Say.—Point Levi, St. Simon and Ste. Anne.
13. " *retractus*, Lec.—Berthier, Rivière du Loup, and Ste. Anne.
14. " *picipennis*, Kirby, (*lenum*, Lec.)—Berthier, Marsouin River, and between Metis and the Matapedia.
15. *lutulentus*, Lec.—Point Levi.
16. " *placidus*, Say.—Berthier, Matanne, and Ruisseau de la Grande Vallée.
17. *Pæcilus lucublandus*, Say.—Very abundant at Point Levi, Berthier, Rivière du Loup, Green Island Village, St. Simon and Metis.
18. *Pterostichus erythropus*, Dej.—Point Levi.
19. " *patruelis*, Dej.—Green Island Seigniory.
20. " *mandibularis*, Kirby.—Between the mouth of the Marsouin and the Shickshock Mountains.
21. " *caudicalis*, Say.—Berthier and Green Island Seigniory.
22. " *corvinus*, Lec.—Point Levi.

23. " *orinomum*, Leach. (*vitreus*, Esch.)—Abundant from Rivière du Loup to Ste. Anne; Mount Commis near the Metis.
24. " *Luczotii*, Dej. (var. præc.?)—Metis and Ste. Anne.
25. " *adjunctus*, Lec.—Rivière du Loup to Ste. Anne.
26. *Amara libera*, Lec.—Rivière du Loup.
27. " *pallipes*, Kirby, (*depressa*, Lec.)—Rimouski.
28. " *impuncticollis*, Say.—Berthier and Ste. Anne.
29. " *fallax*, Lec.—Green Island Seigniory and Matanne.
30. " *interstitialis*, Dej.—Rimouski and Matanne.
31. *Anisodactylus Harrisii*, Lec.(*agricola*,vide Harris.)—Point Levi and Berthier.
32. *Harpalus viridiæneus*, Beauv.—Very abundant at Green Island Seigniory, between Metis Lake and the Matapedia, Matanne, and Ste. Anne.
33. " *pleuriticus*, Kirby.—Abundant from Berthier to Rimouski.
34. " *megacephalus*, Lec.—Rivière du Loup.
35. " *rufimanus*, Lec —Ste. Anne.
36. *Chlænius sericeus*, Say.—Point Levi, Berthier, and St. Simon.
37. " *chlorophanus*, Dej.—Metis River.
38. " *tricolor*, Dej.—Berthier.
39. *Cychrus (Sphæroderus) Brevoortii*, Lec.—Rivière du Loup,St. Simon, Mount Commis twenty miles up Metis River, Ste. Anne and Marsouin River.
40. *Carabus serratus*, Say.—Rivière du Loup to Matanne, and between Metis and the Matapedia River.
41. " *Lapilayi*, Lec.—Rivière du Loup and Green Island Seigniory.
42. *Calosoma calidum*, Fabr.—L'Islet, Rimouski, Metis, Matanne, and Ste. Anne.
43. *Elaphrus Californicus*, Mann. var. *punctatissimus*, Lec.—St. Simon.
44. *Patrobus longicornis*, Say.—Berthier, Metis, and mouth of the Matapedia.
45. " *angicollis*, Randall.—Metis River.
46. *Bembidium dilatatum*, Lec.—Metis River.
47. " *lucidum*, Lec.—Point Levi.
48. *Dytiscus confluens*, Say. (*O. Oligbukii*, Kirby.)—Mouth of Metis River.
49. *Agabus striatus* (?), Say.—Rivière du Loup, Green Island Seigniory, and Ste. Anne.
50. *Necrophorus velutinus*, Fabr.—Metis River.
51. *Silpha lapponica*, Herbst.—Very abundant at Ste. Anne.
52. *Staphylinus villosus*, Grav.—Rimouski, Metis, Matanne, and Ste. Anne.
53. *Omosita colon*, Fab.—In vast numbers in fields manured with capeling.
54. *Pediacus planus*, Lec.—Between Metis and Matapedia.
55. *Byrrhus picipes*, Kirby.—Ste. Anne.
56. *Platycerus depressus*, Lec.—Ste. Anne.
57. *Aphodius fossor*, ("absolutely the same as the European," Leconte, in lit.)—Rivière du Loup and Ste. Anne.
58. " *fimetarius*, Fabr.—Abundant from Metis to the Matapedia.
59. " n. sp. (?)—Metis.
60. *Lachnosterna fusca*, Frohlich.—Point Levi and Rivière du Loup.
61. *Dichelonycha subvittata*, Lec.—Ste. Anne.
62. *Ancylochira maculiventris*, Say.—Metis River, and between Metis and the Matapedia.
63. *Ellychnia corrusca*, Dej.—Capucin, Ste. Anne, and Ruisseau de la Grande Vallée.
64. *Meloe rugipennis*, Lec.—Between Metis and the mouth of the Matapedia.
65. *Serropalpus substriatus*, Hd.—Metis River.
66. *Upis reticulata*, Say.—Metis.
67. *Tomicus* (not named).—Between Metis and the Matapedia.
68. *Physocnemum ligneum*, Fabr.—Green Island Seigniory.
69. *Monohammus confusor*, Kirby.—Metis.
70. " *scutellatus*, Say.—Metis and Ste. Anne.
71. *Chrysomela scalaris*, Lec.—Metis.
72. *Galleruca* (not named).—Between Metis and the Matapedia.
73. *Coccinella novemnotata*, Fabr.—Rimouski and Metis.

Order Lepidoptera.

Determined by Mr. D'Urban.

(*a*) Rhopalocera.

74. *Papilio turnus*, Linn.—From Cape Chat to Martin River, from June 18th till the end of July. Extremely abundant.
75. *Colias philodice*, Godart.—Cape Chat and Ste. Anne, from the middle of June till the middle of July; between Metis and Lake Matapedia, August 17th; along the Restigouche during the latter half of August; last seen September 1st.
76. *Pieris oleracea*, Harris.—St. Simon, May 28th; Ste. Anne, from June 20th to the middle of July. Common.
77. *Limenitis Arthemis*, Drury.—Ste. Anne, July 16th; Marsouin River July 26th.

78. *Cynthia cardui*, Linn.—Seigniory of Grand Metis, August 16th; Dalhousie N. B., August 25th.
79. *Vanessa J. album*, Boisd.—Junction of the Patapedia and Awaganasees, September 12th.
80. " *Antiopa*, Linn.—Metis and near Rimouski, September 29th.
81. *Grapta Progne*, Fab.—From Rivière du Loup to Ste. Anne, from May 18th till July 19th; Lake Matapedia, August 17th; along the Restigouche and Patapedia Rivers till September 12th.
82. *Grapta C. aureum*, Cramer (?)—Mouth of Awaganasees Brook, September 12th.
83. *Argynnis Aphrodite*, Fab.—First observed at Ste. Anne on the 20th of June and very abundant there for the next month; Marsouin River, July 26th; between Metis and Lake Matapedia and along the Restigouche in August, and last seen at the mouth of the Awaganasees, September 12th.
84. " *myrina*, Cramer.—Ste. Anne, end of June and beginning of July; between Metis and Lake Matapedia, August 16th.
85. " *Bellona*, Godart.—Mouth of Matapedia River, August 27th.
86. *Melitœa Tharos*, Cramer.—Ste. Anne, beginning of July.
87. *Polyommatus pseudargiolus*, Boisd.—Rivière du Loup, May 19th, and thence as far down as Chat River, till June 18th.
88. *Hesperia* ——— (?) —Metis, August 13th; Lake Matapedia, August 17th.

(*b*) Heterocera.

89. *Orgyia* ——— (?) —Matapedia River, August 20th.
90. *Ctenucha Latreillana*, Kirby.—Ste. Anne, June 28th. Abundant.
91. *Phragmatobia fuliginosa*, Linn.—Matanne, June 12th.
92. *Mamestra* ——— (?) —Ste. Anne.
93. *Plusia* ——— (?) —Common in Gaspé and on the Restigouche.
94. *Pyralis* ——— (?) — Mouth of the Matapedia River.
95. *Crambus* ——— (?) —Very abundant in meadows at Ste. Anne, and at the mouth of the Matapedia. Five undetermined species of Geometric Moths.

CLASS CRUSTACEA.

Order Decapoda.

1. *Cancer irroratus*, Say.—Whole coast below Green Island.
2. *Hyas fissirostra*, Say sp.—With the preceding species.
3. *Pagurus Bernhardus*, Fabr.—Coast of Gaspé and Rimouski.
4. *Homerus Americanus*, Milne-Edw.—Rare on the coast of Rimouski and on the north coast of Gaspé but abundant in Gaspé Bay, on Anticosti and in the Bay of Chaleur.
5. *Astacus Bartonii*, Bosc.—Metis, Matapedia and Restigouche Rivers.
6. *Crangon vulgaris*, Fabr.—Coast of Gaspé and Rimouski.
7. " *sculptus* (?), Bell.—Off Cape Chat.
8. *Hippolyte* (not determined)—Near Metis.
9. *Orchestia* (not determined)—Whole coast.

CLASS ANNULATA.

Order Tubicolæ.

Determined by Dr. J. W. Dawson.

1. *Spirorbis porrecta*,—North coast of Gaspé.
2. " *sinistrosa*,— " "
3. " *carinata*,— " "
4. " *vitrea*,— " "
5. " *cancellata*,— " "
6. " *spirillum*.—On littoral *Algae*, whole coast below Rivière du Loup.
7. *Serpula (vermilia) serrula*, Stimpson.—North coast of Gaspé.

MOLLUSCA.

CLASS GASTEROPODA.

Order Pulmonifera.

(*Terrestrial.*)

1. *Helix alternata*, Say.—Common from Quebec along the whole coast into Gaspé; it appears to be diffused over the whole peninsula.
2. " *albolabris*, Say.—From Quebec to Metis; Lake Matapedia; along the Restigouche River from Dalhousie to the mouth of the Patapedia. I never met with this species in the County of Gaspé.

3. " *monodon*, Rackett.—Point Levi; along the banks of the Restigouche from Dalhousie to the mouth of the Patapedia.
4. " *Sayii*, Binney.—Restigouche River, about five miles above the mouth of the Matapedia.
5. " *concava*, Say.—Point Levi; abundant.
6. " *hortensis*, Müll.—From all that I could ascertain regarding this species, it appears to have diffused itself over a strip of country several miles in width, bordering on the St. Lawrence and extending from Metis to Gaspé Bay.
7. " *arborea*, Say.—Throughout the whole district; very abundant. Occurs on the Island of Anticosti.
8. " *striatella*, Anthony.—With the last species and equally abundant.
9. " *lineata*, Say.—Numerous localities on the coast, from Berthier to Marsouin River.
10. " *labyrinthica*, Say.—Rivière du Loup and Green Island.
11. *Helix pulchella*, Müll.—Berthier, mouth of Magdalen River and Dalhousie, N. B.
12. " *asteriscus*, Morse.—Valley of the Marsouin River.
13. " *chersina*, Say.—Trois Pistoles; Capucin; Ste. Anne; along the vallies of the Marsouin, Magdalen and Matatapedia Rivers, and at the mouth of the Patapedia.
14. *Helix* (undetermined).—A young shell of one of the larger species, but differing from any of the preceding; Rivière du Loup.
15. *Succinea avara*, Say.—Matanne; mouth of Magdalen River; several localities on the Restigouche.
16. " *ovalis*, Gould.—Metis, Matanne and Ste. Anne.
17. " *obliqua*, Say.—Throughout the district.
18. *Achatina lubrica*, Müll —Rivière du Loup; Trois Pistoles; Metis Lakes and along the Restigouche.
19. *Bulimus harpa*, Say sp.—Metis; mouth of Magdalen River, and very abundant in the Marsouin Valley.
20. *Vitrina pellucida*, Drap.—Rivière du Loup; Trois Pistoles; Ste. Anne; Restigouche River ten miles above its junction with the Matapedia.
21. *Pupa (Vertigo) simplex*, Gould.—Valley of the Marsouin; along the Restigouche and at Metis.

(Fresh Water.)

22. *Physa heterostropha*, Say.—Throughout the district; very abundant.
23. " *aurea*, Lea.—Several localities in the County of Rimouski.
24. " *elongata*, Say.—Green Island Village; Metis; Ste. Anne.
25. " *ancillaria*, Say.—Rimouski Village.
26. " *marginata*, Say —Near Rimouski Village.
27. *Limnæa stagnalis*, Lam.—Extremely abundant in the Metis Lakes, and in the lakes on the Rimouski River.
28. " *caperata*, Say.—Lakes Metis and Matapedia, and the Metis and Restigouche Rivers. Abundant.
29. " *umbrosa*, Say.—Ste. Anne; a creek about two miles below Chat River; Metis and Restigouche Rivers.
30. " *catiscopium*, Say.—Rimouski, Restigouche, and Dartmouth rivers.
31. " *apacina*, Lea.—Living in the St. Lawrence at Point Levi; in the Metis, Rimouski and White Rivers.
32. " *acuta*, Lea.—Upper Lake Metis; abundant in Marl Lake, Anticosti.
33. " *umbilicata*, Say.—Metis and Ste. Anne.
34. " *reflexa*, Say.—Upper Metis Lake.
35. " *pallida*, Adams.—Large Lake Matapedia; near Cape Chat.
36. " *modicella*, Say.—Green Island Village; Rimouski; Ste. Anne.
37. " *parva*, Lea.—Rivière du Loup.
38. " *decollata*, Say.—Large Lake Matapedia; Rimouski Village.
39. " *alternata*, or new.—Point Levi.
40. *Planorbis trivolvis*, Say.—Rimouski, Metis and Restigouche Rivers.
41. " *campanulatus*, Say.—Lakes Metis and Matapedia.
42. " *bicarinatus*, Say.—Restigouche River.
43. " *parvus*, Say.—Throughout the district.
44. " *deflectus*, Say.—Large Lake Matapedia.

ORDER PROSOBRANCHIATA.

(Fresh Water.)

45. *Amnicola porata*, Say.—Little Lake Matapedia.
46. *Valvata tricarinata*, Say.—Matapedia Lakes.
47. " *humeralis*, Say (or a new species).—Matanne; small lake at the head of Awaganasees Brook; Little Lake Matapedia.
48. " *sincera*, Say.—Marl Lake, Anticosti. Abundant.

NOTE.—Many of the above species of land and fresh water Gasteropoda were kindly determined for me by W. G. Binney Esq., of Burlington N. J. and Dr. Isaac Lea, of Philadelphia.

(*Marine.*)

49. *Fusus scalariformis*, Gould.—Peter River; Ste. Anne; Marsouin.
50. " *gracilis* Alder.—Trent; Ste. Anne; Marsouin.
51. " *tornatus*, Gould.—Rimouski Village; near Ste. Anne.
52. " *decemcostatus*, Say.—Near Cape Gaspé (collected by Sir W. E. Logan in 1844.)
53. " *rufus*, Gould.—Ruisseau de la Grande Vallée.
54. " *Bamffius*, Flem.— " "
55. *Bela cancellata*, M. & A.— " "
56. *Pleurotoma bicarinata* (?), Couth.— "
57. *Buccinum undatum*, Linn.—Whole coast below Rivière du Loup.
58. " *Donovani*, Gray.—Several localities below St. Flavie.
59. *Nassa trivittata*, Say.—Gaspé Bay and Bay of Chaleur.
60. " *obsoleta*, Say.—Vicinity of Cape Gaspé.
61. *Purpura lapillus*.—Lam.—Whole coast below Metis.
62. *Trichotropis borealis*, Sowerby.—Ste. Anne and near Cape Chat.
63. *Velutina ahalioloides*, Müll.—Ste. Anne and Marsouin.
64. *Lamellaria perspicua*, Lovèn.—Ruisseau Vallée.
65. *Natica heros*, Say, *ampullaria*, Lam.—In sandy bays on the Gaspé coast at Dalhousie, Bay of Chaleur.
66. " *clausa*, Brod. & Sow.—Several localities between Bic and Marsouin.
67. " *triseriata*, Say.—Magdalen Bay.
68. " *flava* ? Gould.—Rimouski; Les Islets; Claude.
69. " *helicoides*, Johnston.—Marsouin.
70. *Chemnitzia*.—One or more species of *Chemnitzia* dredged off Marsouin.
71. *Aphorhais occidentalis*, Gould.—Bic; Ste. Anne; Claude; Marsouin.
72. *Rissoa minuta*, St.—Green Island and Long Point.
73. *Lacuna vincta*, Turt.—Whole coast below Rimouski.
74. *Littorina littoralis*, F. & H., *palliata*, Gould.—Whole coast below Rivière Ouelle.
75. *Littorina rudis*, Gould, (including *tenebrosa*).—With the preceding species.
76. *Margarita cinerea*, Gould.—Ste. Anne; Ruisseau Vallée; Peter River and Marsouin.
77. " *undulata*, Sow.—Ste. Anne; Ruisseau Vallée.
78. " *helicina*, Müll.—Trent; Les Islets; Ste. Anne.
79. *Skenea costulata*, F. & H.—Marsouin.
80. *Diadora Noachina*, Gray.—Capucin; Ste. Anne; Marsouin.
81. *Crepidula fornicata*, Lam.—Dalhousie, Bay of Chaleur.
82. *Acmæa testudinalis*, Hanley.—Whole coast below Rivière du Loup, also in Bay of Chaleur.
83. " *cæca*.—Marsouin.
84. *Chiton marmoreus*, Fabr.—Bic, and whole coast of Gaspé.

CLASS LAMELLIBRANCHIATA.

(*Marine.*)

1. *Pholas crispata*, Linn.—Bic; Rimouski; near the Trent.
2. *Saxicava rugosa*, Lam.—Les Islets; Ste. Anne; Cape Chat; Marsouin Claude.
3. *Mya arenaria*, Linn.—Whole coast below Rivière Ouelle, and in Bay of Chaleur.
4. " *truncata*, Linn.—Numerous localities on the coast of Rimouski and Gaspé.
5. *Glycymeris siliqua*, Lam.—Cape Chat; Ruisseau Vallée; and Marsouin.
6. *Osteodesma hyalina*, Couth.—Ste. Anne.
7. *Machæra costata*, Gould.—Rimouski.
8. *Solen ensis*, Linn.—Bic; Rimouski, and numerous localities on the coast of Gaspé.
9. *Tellina proxima*, Brown.—Ste. Anne; Ruisseau Vallée; Marsouin.
10. " *Grœnlandica*, Beck.—Whole coast below Bay St. Paul (fifty-five miles below Quebec), and in the Bay of Chaleur.
11. *Mactra ovalis*, Gould.—Bic; Rimouski; Metis, and in sandy bays everywhere on the Gaspé coast.
12. *Mesodesma arctatum*, Gould.—Whole coast below Green Island. Extremely abundant.
13. *Venus gemma*, Tott.—Green Island.
14. *Aphrodite Grœnlandica*, St.—Bic; Rimouski; Metis; Ste. Anne; Ruisseau Vallée.
15. *Cardium Islandicum*, Linn.—Bic; Rimouski; Metis; Ste. Anne.
16. *Cardita borealis*, Con.—Marsouin; Capucin; Ste. Anne; Ruisseau Vallée.
17. *Astarte sulcata*, Costa.—Bic, and various localities on the Gaspé coast.
18. " *elliptica*, Brown.—Marsouin.
19. " *compressa*, Mont.—Marsouin.
20. *Lucina flexuosa*, Gould.—Ste. Anne; Ruisseau Vallée and Marsouin.
21. *Lima subauriculata*, Mont.—Ste. Anne.
22. *Mytilus edulis*, Linn.—Whole coast below Kamouraska.
23. *Modiola discors*, Linn.—Ste. Anne; Marsouin.
24. " *plicatula*, Lam—Vicinity of Gaspé Bay.
25. " *glandula*, Tott.—Ste. Anne; Ruisseau Vallée; Marsouin.

26. " *pectinula*, Gould.—Ruisseau Vallée; Marsouin.
27. " *nexa*, Gould.—Ruisseau Vallée.
28. *Nucula myalis*, Couth.—Numerous localities on the Gaspé coast.
29. " *tenuis*, Turt.—Capucin; Ste. Anne; Ruisseau Vallée.
30. *Pecten Magellanicus*, Lam.—Ste. Anne; Claude and Gaspé Bay.
31. " *Islandicus*, Müll.—Whole coast below Metis.
32. *Anomia ephippium*, Linn.—Ste. Anne; Marsouin.

(*Fresh Water.*)

33. *Unio complanatus*, Lea.—Living in the St. Lawrence as far down as Berthier. Valves both of this species and of *U. radiatus* were frequently found on the beach the whole way to Gaspé. They had probably drifted from the fresh water of the St. Lawrence, as no species of *Unio* was found in any of the rivers or lakes of our present district.
34. *Margaritana arcuata*, Barnes sp.—Green and Rimouski Rivers, and both the Matapedia Lakes.
35. *Anodonta subcylindracea*, Lea.—Grand Lac (ten miles south of Rimouski Village); Lake Matapedia; small lake six miles S. W. of Metis.
36. " new species.—Berthier.
37. " *edentula*, Say.—Lake Matapedia.
38. " *fragilis*, Lam.—Metis Lakes.
39. " *implicata*, Say.—Berthier.
40. *Cyclas similis*, Say.—Metis Lakes and a small lake six miles S. W. of Metis.
41. " *dubia* (?), Say.—Throughout the district.
42. " (undetermined).—Ste. Anne.

CLASS BRACHIOPODA.

1. *Hypothyris psittacea*, King.—Ste. Anne; Ruisseau Vallée; Marsouin. Abundant.

CLASS POLYZOA.

Order Cheilostomata.

The Polyzoa dredged at Marsouin on the north coast of Gaspé, were kindly determined by Dr. J. W. Dawson, Principal of McGill College. The following is his communication in full.

The Polyzoa in Mr. Bell's Collections are numerous and fine, but much time and care would be required for their accurate determination. The appearances presented in various stages of growth and preservation, are so perplexing, and the characters given for the species of authors, of so little value, that little can be done with a collection of dead cells, except to indicate the described species with which they seem to be identical. The following species were all attached to dead shells and stones, from a depth of about thirty fathoms.

1. *Hippothoa catenularia*, Jameson.
2. " *divaricata*, Elliot.
3. *Hippothoa expansa.* New species. Description. Cells oval, depressed, and expanded at the sides, not contracted at the base, branching dichotomously. When magnified the surface presents indistinct transverse wrinkles and delicate longitudinal lines. Aperture, small, round, with a slight sinus. Texture hyaline, but less delicate than *H. divaricata*.

   All the three species above mentioned are found associated on small pebbles and shells.
4. *Lepralia pertusa*, Thompson.—Very abundant.
5. " *Peachii*, Johnston.—Very abundant also.
6. " *trispinosa*, Johnston.—Abundant.
7. " *hyalina*? *, Johnston.—Rare.
8. " *punctata*, Hassal.—Rare.
9. " *puncturata*, Busk.—A little group of three cells on a shell of *Mactra ovalis* have the precise characters of this species, obtained by Busk from the English Crag. It appears still to live, though as a rare species, in the Gulf of St. Lawrence.
10. " *Belli.* New species. Description. In large patches. Young cells granular, semihyaline, confluent; mouth immersed, sinuated, with a vibraculum or avicularium inside the middle of the lower lip; ovi-cells rounded, granulous like the cells. Old cells white, opaque, flat above, and separated by a deep sinuous furrow. Cells having a strong tendency to form rows radiating from the centre of the patch. I can find no described species possessing the above characters. It is allied to *L. concinna*, Busk, but differs in essential points from his description and figure.

11. *Lepralia plana*. New species. Description. Cells flat, confluent, shallow; walls deeply and irregularly furrowed; mouth rounded above, straight below, often with a narrow sinus in the middle. Young cells hyaline; old cells, opaque and deeply furrowed in a stellate manner. Forms very thin and flat expanding crusts. *L. adpressa*, Busk, from Chiloe, resembles it more nearly than any other species known to me.
12. *Membranipora Lacroixi*, Busk, or a nearly allied species.
13. " *lineata* *, Busk, *Flustra lineata*, Fabricius, "Fauna Groenlandica."
14. *Cellepora pumicosa* *, Ellis.—On Sertularia.
15. " *cervicornis*, Borlase.
16. " *ramulosa*, Linn.,—or allied species.
17. *Carbasea papyrea*, Gray.—The frond is narrower than in British examples, but the cells are of the same form.
18. *Diastopora obelia*, Fleming, or closely allied species.
19. *Tubulipora flabellaris*.* Fabricius.
20. " *hispida*.* Johnson.—It is the *Madrepora verrucaria* of Fabricius.
21. " *phalangea* ? * Couch—Of the form of *T. flabellaris*, but dotted with pores and having larger tubes, which are grouped in bundles. Perhaps it is *T. densa*, Stimpson. Its colour is often light blue. Fabricius seems to have seen it and placed it with *T. flabellaris*.
22. *Cellularia* (species undetermined.)

Many more species were dredged but have not yet been determined.

RADIATA.

CLASS ECHINODERMATA.

Order Asteroidea.

1. *Ophiocoma bellos*, Link.—Ste. Anne and Marsouin; abundant.
2. " *Gordsiri* ? Forbes.—Marsouin.
3. *Astrophyton scutatum*, Link.—Green Island; Gaspé Bay; St. Nicolas (north shore). Said to be common on the coast of Rimouski.
4. *Cribella oculata* (?) Pennant.—Near Ste. Anne.
5. *Solaster papposa*, Linn.—Marsouin.
6. *Asteracanthion polaris*, Müll.—Very abundant along the whole coast below Rimouski.
7. " *rubens*, Linn.—Les Islets.

Order Echinoidea.

8. *Echinarcahnius Atlanticus*.—On muddy and sandy bottoms, along the whole coast below Rimouski.
9. *Echinus granularis*, Lam.—Whole coast below Rivière du Loup.

Order Holothuridea.

10. *Cucumaria communis*, Forbes.—Between Cape Chat and Ste. Anne; abdt.
11. *Psolus phantapus*, Linn.—Various localities between Metis and Ste. Anne.

CLASS ACALEPHÆ.

Order Hydroidea.

1. *Sertularia polyzonia* *, Johnston.—Dredged off Marsouin.
2. " *argentea* *, Ellis.— " "
3. " *filicula*, Ellis.— " "
4. " *latiuscula*?, Stimpson, or a closely allied species.

None of the above have ovicapsules.

Six or more different Sponges, some of them beautiful forms, were collected.

PLANTS.

I am indebted to Mr. D'Urban, late of the Geological Survey, for preparing the following catalogue of Plants collected by me in the eastern peninsula of Lower Canada. Numerous species, about which Mr. D'Urban was in doubt, were kindly determined by George Barnston Esq., of the Hudson's Bay Company.

Ranunculaceæ.

1. Anemone Pennsylvanica, Linn.—F. F.*, August 12th, Metis.
2. Thalictrum cornuti, Linn.—F. F., July 16th, Ste. Anne.

* The species marked thus were found by Fabricius in Greenland.

3. Ranunculus repens, Linn. " " "
4. " acris, Linn. " " "
5. " (undetermined).—No flower, September 1st, River Restigouche.
6. Caltha palustris, Linn.—F. F., June 5th Rimouski.
7. Aquilegia Canadensis, Linn.—F. F., May 16th, L'Islet.

Nymphæaceæ.

8. Nuphar advena, Ait., (a very small form.)—F. F., August, west end of Lake Matapedia.

Sarraceniaceæ.

9. Sarracenia purpurea, Linn.—F. F., June, Ste. Anne.

Fumariaceæ.

10. Corydalis aurea, Pursh.—F. F., August 30th, Restigouche River.

Cruciferæ.

11. Sinapis arvensis, Linn.—F. F., July 11th, Ste. Anne.

Violaceæ.

12. Viola cucullata, Ait.—F. F., May 30th, St. Simon.

Cistaceæ.

13. Hudsonia tomentosa, Nutt.—F. F., August 31st, River Restigouche.

Parnassiaceæ.

14. Parnassia Carolinianum, Michx.—F. F., August 30th.

Caryophyllaceæ.

15. Silene inflata, Smith.—F. F., July 6th, Ste. Anne.
16. Mœhringia lateriflora, Linn.—F. F., July 23rd, Portage between Martin and Marsouin rivers.
17. Spergula arvensis (?), Linn.—No flower, August 12th, Metis.

Oxalidaceæ.

18. Oxalis acetosella, Linn.—Very abundant up the River Marsouin.
19. " stricta, Linn.—Going to seed, August 30th, River Restigouche.

Anacardiaceæ.

20. Rhus Toxicodendron, Linn.—Fruit ripe, August 31st, River Restigouche.

Sapindaceæ.

21. Acer spicatum, Linn.—Abundant everywhere on low land; just out of flower, July 5th, Ste. Anne. In seed, Sept. 11th, mouth of the Awaganasees Brook.
22. " saccharinum, Wang. (Hard Maple).—On rich soil only.

Leguminosæ.

23. Trifolium repens, Linn.—Abundant round clearings, &c., throughout the district.
24. Desmodium Canadense, D. C.—F. F., August 12th and 31st, River Restigouche.
25. Vicia Cracca, Linn.—F. F., July 11th, Ste. Anne.
26. Lathyrus palustris, Linn.—F. F., August 4th, mouth of the Marsouin.
27. Oxytropus Lamberti, (?) Pursh.—F. F., August 31st, River Restigouche.

Rosaceæ.

28. Prunus pumila, Linn.—Fruit nearly ripe, August 31st, River Restigouche.
29. " Pennsylvanica, Linn.—Abundant throughout the Counties of Rimouski and Bonaventure.
30. " Virginiana, Linn.—Fruit ripe, Sept. 1st, River Restigouche.
31. Agrimonia Eupatoria, Linn.—In seed, August 21st, fifteen miles up the River Matapedia.
32. Potentilla anserina, Linn.—F. F., August 4th, mouth of the River Marsouin.
33. Fragaria Virginiana, Ehrhart.—Grass land throughout the district. Fruit ripe beginniug of July, Ste. Anne.
34. Rubus triflorus, Rich.—Fruit ripe, July 12th, Ste. Anne; mouth of the Awaganasees.
35. " strigosus, Miche.—Extremely abundant on burnt land and about fences throughout the district.
36. Rosa blanda, Ait.—In blossom, July 5th and 20th at Ste. Anne, and August 12th at Metis.
37. Cratægus tomentosa, Linn.—River Restigouche.
38. Pyrus Americana, D. C.—Moderately abundant throughout the district.

Onagraceæ.

39. Epilobium augustifolium, Linn.—F. F., July 16th, Ste. Anne.
40. " coloratum, Muhl.—In seed, July, three miles up the River Marsouin.
41. Œnothera biennis, Linn.—F. F., July 11th, Ste. Anne; August 30th, mouth of the River Matapedia.
42. Circæa Alpina, Linn.—In flower, July 31st, mouth of the River Marsouin.

Saxifragaceæ.

43. Mitella nuda, Linn.—Seed ripe, July, 3 miles up the River Marsouin.

Umbelliferæ.

44. Heracleum lanatum, Michx.—F. F., July 16th, Ste. Anne.
45. Sium lineare, Mich.—F. F., August 12th, Metis.

Cornaceæ.

46. Cornus Canadensis, Linn.—F. F., July 5th, Ste. Anne.
47. " stolonifera, Michx.—F. F., June, Ste. Anne.

* F. F. in full flower.

Caprifoliaceæ.

48. Linnea borealis, Gronov.—F. F., June, Ste. Anne, and abundant everywhere.
49. Lonicera ciliata, Muhl.—In fruit, July 30th, Marsouin river.
50. Diervilla trifida, Mænch.—F. F., August 30th, River Restigouche.
51. Sambucus Canadensis, Linn.—Abundant on low land.
52. Viburnum opulus, Linn.—F. F., July 16th, St. Anne.

Compositæ.

53. Eupatorium purpureum, Linn.—F. F., Sept. 3rd, mouth of the River Patapedia.
54. " ageratoides, Linn.—F. F., July 31st, mouth of the River Marsouin, and August 30th, River Restigouche.
55. Aster miser, Linn, Ait.—F. F., August 12th, Metis.
56. " simplex, (?) Willd.—" " "
57. " longifolius, (?) Lam.—" " "
58. Diplopappus umbellatus, Torr. and Gr.—F. F., June 30th, mouth of the River Matapedia.
59. Solidago bicolor, Linn.—Going out of flower, August 30th, River Restigouche.
60. " Canadensis, Linn.—F. F., August 12th, Metis.
61. Achillea millefolium, Linn.—F. F., July 11th, Ste. Anne, and mouth of the Awaganasees, September.
62. Leucanthemum vulgare, Lam.—F. F., July 4th, Ste. Anne, and August 30th, River Restigouche.
63. Cirsium Muticum, Michx.—F. F., August 30th, mouth of the River Matapedia.
64. " pumilum (?), Spreng.—Out of flower, August 30th, River Restigouche.
65. Hieracium Canadense, Michx.—F. F., August 30th, River Restigouche.
66. Nabalus racemosus, Hook. ("variety with truncate and obcordate leaves." G. B.)—August 30th, River Restigouche.

Lobeliaceæ.

67. Lobelia Kalmii, Linn.—F. F., August 30th, River Restigouche.

Campanulaceæ.

68. Campanula rotundifolia, Linn.—F. F., August 4th, mouth of the River Marsouin, and August 30th, River Restigouche.

Ericaceæ.

69. Vaccinium Pennsylvanicum, (?) Lam.—In great profusion on hills which had been burnt over.
70. Chiogenes hispidula, Torr. and Gr.—In great abundance throughout the district.
71. Andromeda polifolia, Linn.—F. F., July 16th, Ste Anne.
72. Pyrola rotundifolia, Linn.— " " "

Plantaginaceæ.

73. Plantago maritima, Linn.—F. F., August 4th, mouth of the River Marsouin.

Primulaceæ.

74. Primula farinosa, Linn.—Abundant all along the southern shore of the Gulf. F. F., end of May and June.

Lentibulaceæ.

75. Utricularia vulgaris (?) .—Linn.—Metis.

Scrophulariaceæ.

76. Chelone glabra, Linn.—F. F., August 12th, Metis.
77. Veronica Americana, Schweinitz.—Nearly out of flower, July 12th, Ste. Anne.
78. Pedicularis Canadensis, Linn.—F. F., August 10th, Matan.

Labiatæ.

79. Lycopus Virginicus, Linn., (a very coarse form).—In flower, August 30th, River Restigouche.
80. Brunella vulgaris, Linn.—In flower, July 11th. Ste. Anne.
81. Scutellaria nervosa, Pursh.—In flower, August 12th, Metis.

Borraginaceæ.

82. Mertensia maritima (?), Don.—In flower, beginning of July, Ste. Anne.

Apocynaceæ.

83. Apocynum androsæmifolium, Linn.—F. F., August, between Metis and Lake Matapedia.

Asclepiadaceæ.

84. Asclepias cornuti, Decaisne.—Abundant all along the Restigouche.

Oleaceæ.

85. Fraxinus sambucifolia, Lam., (Black Ash).—In valleys, and along the shores of the Lakes.

Polygonaceæ.

86. Rumex acetosella, Linn.—Coming into flower, July 16th, Ste. Anne.

Urticaceæ.

87. Ulmus Americana, Linn., (Swamp Elm).—Very abundant, and of large size, along the River Restigouche.

Cupuliferæ.

88. Corylus rostrata, Ait., (Hazel-nut).—Marsouin River.

Betulaceæ.

89. Betula papyracea, Ait., (White Birch).—The most abundant deciduous tree throughout the eastern peninsula, and reaching a large size.
90. " excelsa, Ait., (Yellow Birch).—Most abundant round Lake Matapedia, and in the valleys of the Rivers Marsouin and Restigouche; generally associated with Hard Maple on rich soil.
91. Alnus incana, Willd., (Alder.)—Everywhere bordering the streams and rivers, forming dense thickets.

Salicaceæ.

92. Populus tremuloides, Michx., (Common Poplar).—Abundant on high lands.
93. " balsamifera, Linn., (Balsam Poplar, Balm of Gilead).—Abundant on the borders of rivers and lakes.

Coniferæ.

94. Pinus resinosa, Ait., (Red Pine).—Abundant, but of small size, along the upper part of the River Patapedia.
95. " strobus, Linn., (White Pine).—Abundant everywhere.
96. Abies balsamea, Marshall, (Balsam Fir).—Very abundant.
97. " nigra, Poir., (Black Spruce).—The principal, and in many places the sole tree covering the hilly country of the eastern peninsula.
98. " alba, Michx., (White or "Sea Spruce" of the Indians).—The commonest tree along the coast and rivers.
99. Larix Americana, Michx., (Tamarack).—Rather scarce, but occurring in every variety of situation throughout the district.
100. Thuja occidentalis, Linn., (White Cedar).—Very abundant in the vallies of all the rivers, reaching a very large diameter, but no great height.
101. Taxus baccata, Linn., var. Canadensis, (Ground Hemlock).—Abundant amongst trees on low ground.

Alismaceæ.

102. Sagittaria variabilis, Engelm.—F. F., August 15th, Metis.

Orchidaceæ.

103. Platanthera flava, Gray.—F. F., September 1st, River Restigouche.
104. " psycodes, Gray.—F. F., August 17th, West end of Lake Matapedia.
105. Spiranthes decipiens, (?) Hooker.—Coming into flower, July 30th, Marsouin River.
106. Corallorhiza Macræi, Gray.—Going to seed, July 31st, three miles up the River Marsouin.

Iridaceæ.

107. Iris versicolor, Linn.—F. F., July 4th, Ste. Anne.
108. Sisyrinchium Bermudianum, Linn., (variety mucronatum, Gray).—In flower, July 16th, Little Ste. Anne.

Smilaceæ.

109. Trillium erectum, Linn., (very large).—Fruit ripe, July 31st, three miles up the Marsouin River

Liliaceæ.

110. Smilacina stellata, Desf.—F. F., June, Ste. Anne.
111. " bifolia, Ker.—In seed, but not ripe, July 20th, Marsouin River.
112. Clintonia borealis, Raf.—Throughout the district.

Melanthaceæ.

113. Streptopus roseus, Michx.—F. F., June, Ste. Anne.
114. Tofielda glutinosa, Willd.—Seed ripe, August 30th, River Restigouche.

Cyperaceæ.

115. Eriophorum vaginatum, Linn.—Ste. Anne.

Gramineæ.

116. Phleum pratense, Linn., (Timothy).—Table-topped Mountain, 3800 ft. above the sea; upper part of Magdalen River, growsluxuriantly along roadsides in openings in the woods, &c.
117. Calamagrostis Canadensis, Beauv.—Shickshock Mountains.
118. Elymus Canadensis, Linn.—River Restigouche.
119. Avena striata, Michx.—(Trisetum purpurascens, Torr.) Shickshock Mountains.

Equisetaceæ.

120. Equisetum pratense, Ehrh.—Metis.

Filices.

121. Asplenium felix-fœmina, R. Br.—Mouth of the Awaganasees Brook.
122. Aspidium spinulosum, Swartz.— " " "
123. Osmunda regalis, Linn.—Round Metis Lake, &c.
124. Botrychium Virginicum, Swartz.—Fertile fronds ripe, July 28th, River Marsouin.

Lycopodiaceæ.

125. Lycopodium lucidulum, Michx.—In fruit Sept. 1st, River Restigouche.
126. " dendroideum, Michx.— " " "
127. " clavatum, Linn.,— " " "
128. " complanatum, Linn.,— " " "

Musci.

129. Polytrichum commune. Linn.—Collected on the River Marsouin.
130. Hypnum splendens, Hedw.— " " "
131. " Schreberi, Willd.— " " "
132. " Crista-Castrensis, L.— " " "
133. " reptile, Michx.— " " "

Lichenes.

134. Peltigera aphthosa (?) Hoffen, infert. River Marsouin.
135. Sticta pulmonaria, Ach.— " "

TABLE OF CONTENTS.

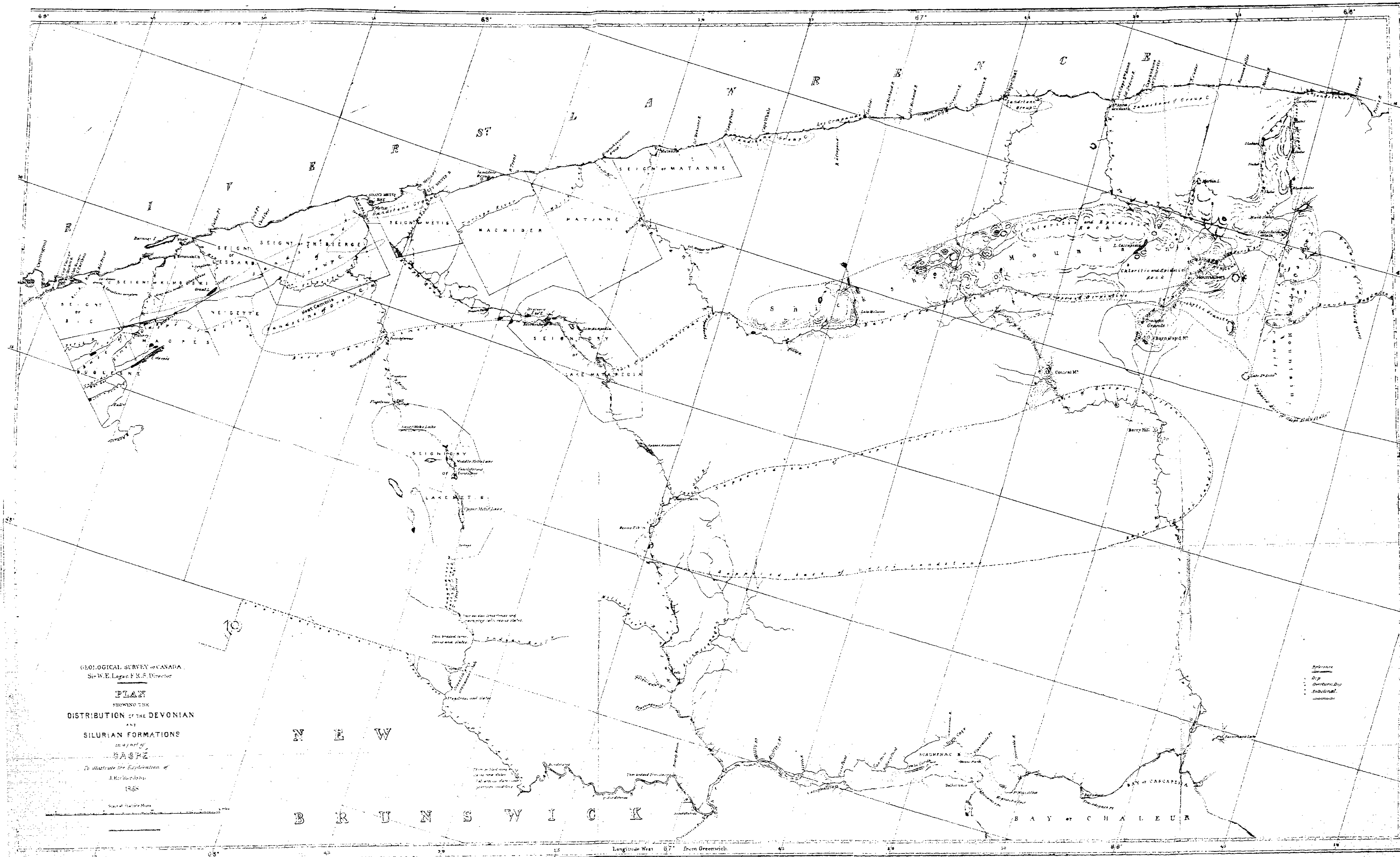
FOR THE

REPORT OF PROGRESS OF THE GEOLOGICAL SURVEY OF CANADA.

FOR 1858.

This volume contains the following maps and diagram:

1. Distribution of Laurentian limestones.
2. Section of Thessalon trough.
3. Distribution of Huronian rocks.
4. Distribution of formations in a portion of Gaspé.



GEOLOGICAL SURVEY of CANADA
Sir W. E. Logan F.R.S. Director
PLAN
SHOWING THE
DISTRIBUTION OF THE DEVONIAN
AND
SILURIAN FORMATIONS
in a part of
GASPÉ
To illustrate the Exploration of
J. Richardson
1858
Scale of Statute Miles
RIVER ST LAWRENCE
NEW BRUNSWICK
BAY of CHALEUR
SHICKSHOCK MOUNTAINS
SEIGN

SECTION OF THESSALON TROUGH.

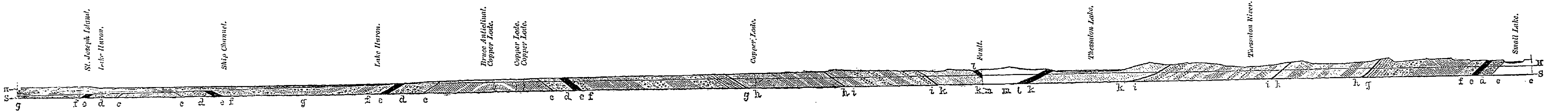
REFERENCE.

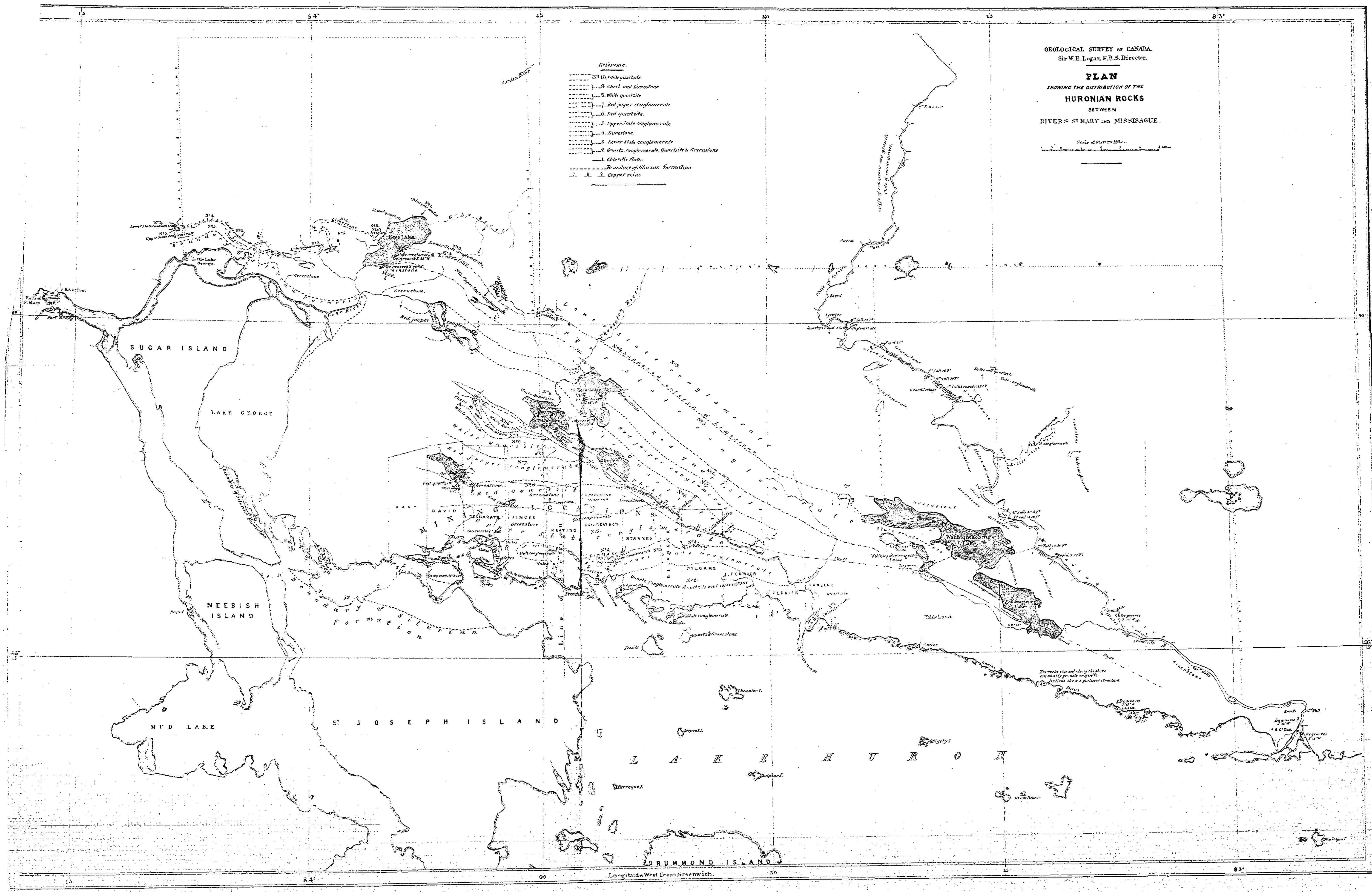
	H	*Level of Lake Huron.*
	S	*Level of the sea.*
	s′	*Lower Silurian series.*
10	m—m	*White quartzite and greenstone.*
9	l	*Chert and limestone.*
8	k—k	*White quartzite and greenstone.*
7	i—i	*Red jasper conglomerate and greenstone.*
6	h—h	*Red quartzite and greenstone.*
5	g—f	*Upper slate conglomerate and greenstone.*
4	e	*Limestone.*
3	d	*Lower slate conglomerate and greenstone.*
2	c—c	*White quartz conglomerate and greenstone.*
1		*Greenish chloritic slates. These do not come into the section.*

Equivalents in sections of Huronian Rocks, 1857 and 1858.

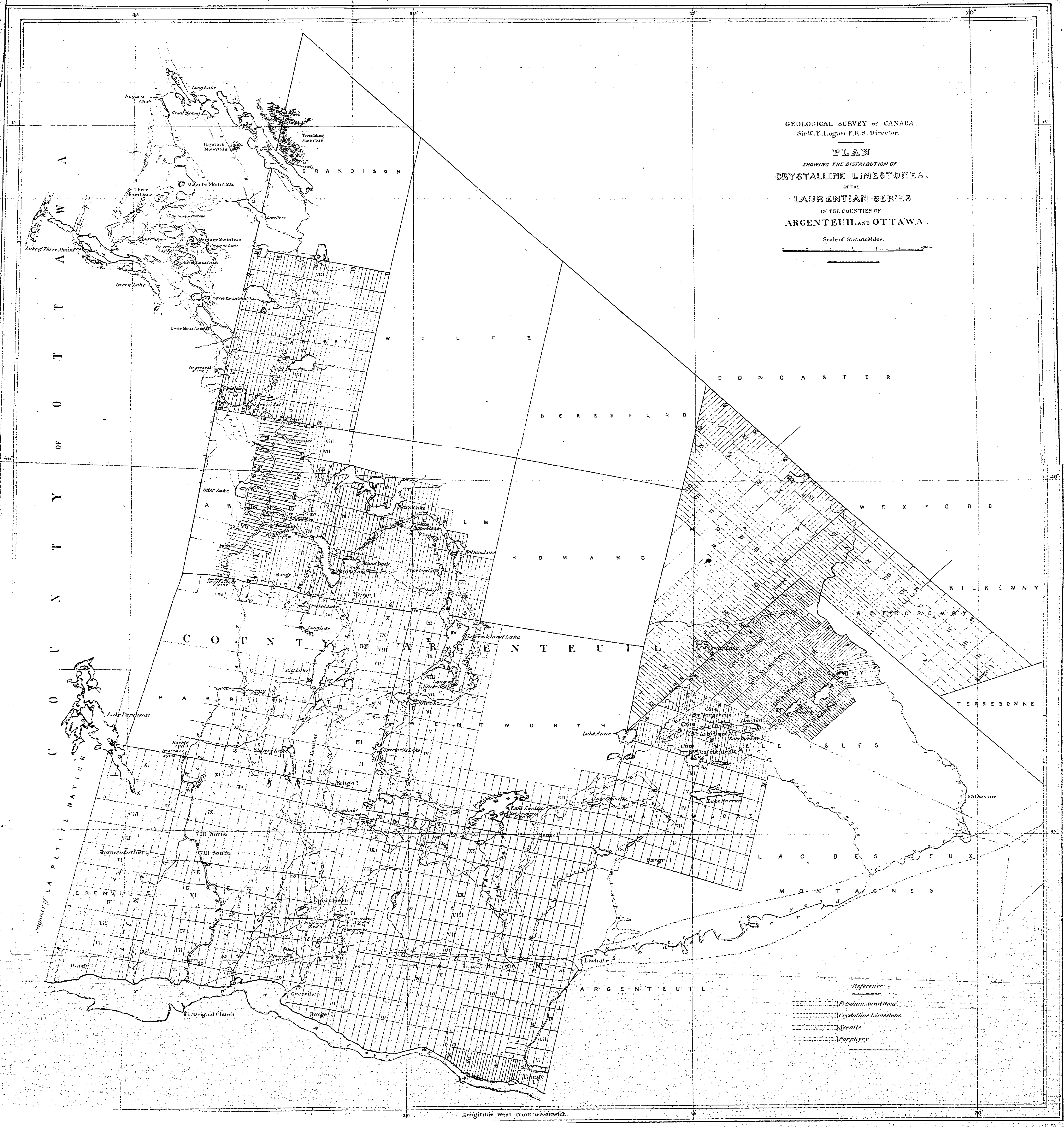
1858. Thessalon Trough.		1857. Echo Lake.
s′	=	i
m—m	=	*Wanting.*
l	=	
k—k	=	
i—i	=	
h—h	=	h
g—f	=	g & f
e	=	e
d	=	d
c—c	=	c & b
Wanting.	=	a

Vertical and Horizontal Scale: One mile to one inch.





GEOLOGICAL SURVEY OF CANADA.
Sir W.E. Logan F.R.S. Director.
PLAN
SHOWING THE DISTRIBUTION OF THE
HURONIAN ROCKS
BETWEEN
RIVERS St MARY AND MISSISAGUE.
Reference.
No 10. White quartzite.
9. Chert and Limestone
8. White quartzite
7. Red jasper conglomerate
6. Red quartzite.
5. Upper Slate conglomerate
4. Limestone.
3. Lower Slate conglomerate
2. Quartz conglomerate, Quartzite & Greenstone
1. Chloritic slates
Boundary of Silurian formation
Copper veins.
SUGAR ISLAND
LAKE GEORGE
NEEBISH ISLAND
MUD LAKE
St JOSEPH ISLAND
LAKE HURON
DRUMMOND ISLAND
Echo Lake
Little Lake George
Wahbiquekobing Lake
Boundary of Silurian Formation
Longitude West from Greenwich.
84°
83°
46°



GEOLOGICAL SURVEY of CANADA.
Sir W. E. Logan F.R.S. Director.
PLAN
SHOWING THE DISTRIBUTION OF
CRYSTALLINE LIMESTONES.
OF THE
LAURENTIAN SERIES
IN THE COUNTIES OF
ARGENTEUIL AND OTTAWA.
Scale of Statute Miles.
Miles.
Reference.
Potsdam Sandstone.
Crystalline Limestone.
Syenite.
Porphyry
COUNTY OF OTTAWA
COUNTY OF ARGENTEUIL
GRANDISON
WOLFE
DONCASTER
BERESFORD
WEXFORD
HOWARD
KILKENNY
ABERCROMBY
TERREBONNE
HARRINGTON
WENTWORTH
GRENVILLE
CHATHAM
CHATHAM GORE
LAC DES DEUX MONTAGNES
ARGENTEUIL
SALABERRY
Long Lake
Trembling Mountain
Haystack Mountain
Quartz Mountain
Three Mountains
Green Lake
Silver Mountain
Cone Mountain
Otter Lake
Round Lake
Balsam Lake
Long Lake
Big Lake
Lake Louisa
Lake Anne
Lake Barron
Lake Papineau
Lachute
Grenville
L'Orignal Church
St. Jerome
Longitude West from Greenwich.