

Lake Ontario—a total navigation of 216½ miles.

The Ottawa River forms the boundary between the Provinces of Ontario and Quebec, from the eastern end of Ontario westward.

After leaving the Lachine Canal, the works constructed to overcome the difficulties of navigation are:—

The Ste. Anne's Lock;
Carillon Canal;
Chute a Blondeau Canal;
Grenville Canal;
Rideau Navigation.

The united length of these five works is 134½ miles.

The following table exhibits the intermediate and total distances from Montreal harbor to the principal points on the route:—

| Sections of Navigation. | Intermediate distances. | Total from Montreal. |
|--|-------------------------|----------------------|
| The Lachine Canal Montreal to Lachine | 8½ | 8½ |
| From Lachine Canal to St. Ann's Lock | 15 | 23½ |
| Ottawa River..... | 27 | 50½ |
| St. Ann's Lock and Piers..... | 21 | 71½ |
| From St. Ann's Lock to Carillon Canal.. | 21 | 92½ |
| The Carillon Canal..... | 4 | 96½ |
| From the Carillon Canal to Chute a Blondeau..... | 1 | 97½ |
| Chute a Blondeau Canal..... | 11 | 108½ |
| From Chute a Blondeau Canal to Grenville Canal..... | 51 | 159½ |
| The Grenville Canal..... | 56 | 215½ |
| From the Grenville Canal to entrance, Rideau Navigation at the City of Ottawa..... | 120½ | 336½ |
| Rideau Navigation, ending at Kingston. | | 456½ |

The St. Ann's Lock, with guide piers above and below, enables vessels to surmount the St. Ann's Rapids, between Ile Perrot and the head of the Island of Montreal, at the outlet of that portion of the River Ottawa which forms the Lake of Two Mountains, 23½ miles from Montreal Harbor.

A new channel has been excavated 1200 feet in length, 120 feet wide, from deep water at the foot of the lock across the shoal to deep water at Ile Perrot. Its sides to be protected by crib work.

From St. Ann's Lock to the foot of the Carillon Canal, a navigable interval of twenty seven miles, through the Lake of Two Mountains and the River Ottawa occurs.

The Carillon Canal 2½ miles long, enables to avoid the Carillon Rapids.

Between the Carillon and Chute a Blondeau canals there is a navigable stretch of four miles. This canal ½ mile long, is cut through solid rock: it is only used by vessels going up the river, all down vessels run the rapids, and avoid the Canal, to the foot of the Grenville Canal, there is a navigable section of 1½ mile.

This Canal 5½ miles long, is situated about sixty miles below the City of Ottawa, and enables vessels to avoid the Long Sault Rapids, its locks are to be enlarged to 200 feet, between the gate quoins, width 45 feet, with 9 feet water on the sills.

The Canal itself is to be deepened to 10 feet.

The passenger steamers used between Montreal and Ottawa for a day and a night service are too large to pass through the Grenville and Carillon canals, the line is there composed of one set of steamers between Montreal and Carillon and another between Grenville and the City of Ottawa, connections being made by a short railway between Carillon and Grenville.

From the Grenville Canal to the City Ottawa, a distance of 56 miles, the navigation is unobstructed.

The region of country adjacent to the Ottawa River is rich in iron, lead, plumbago, marbles, ochres and copper.

At the City of Ottawa, the River Ottawa is about half a mile in width, with a considerable depth and volume of water; but navigation is impeded by the 'Chaudiere Falls' and rapids: there being no canal by which vessels can pass the city.

A crossing is effected between the cities of Ottawa and Hull in the Province of Quebec, by means of ferries and by a suspension bridge near the falls where an Island divides the river.

This great river, although not yet adapted for continuous traffic by vessels above the City of Ottawa, is used for a distance of more than 300 miles for purposes connected with the pine timber trade of the locality, slides and booms, constructed by the government on the Ottawa and its principal tributaries, enable the lumbermen to run their rafts past the rapids and falls, and finally to reach Quebec by water.

Passenger and freight steamers are maintained during the season on all the navigable reaches, connections are made at portages by means of stages for passengers, and ordinary land transport for stores, ample for all the present requirements of the industrious, hardy and thriving population employed in the timber trade. Two combined locks, each 200 feet in length, and 45 feet in width, having 6 feet of water on the sills, with a lift of 18 to 20 feet, are now in process of construction to overcome the Culbuto and L'Islet Rapids, not far from Pembroke.

The men employed in the Ottawa River timber trade, are physically splendid specimens of the material from which soldiers can be made: their knowledge of the axe and the rifle, the facility with which they can adapt themselves to meet emergencies, fit them in a high degree to be considered valuable auxiliaries in the defensive organization of the Dominion. Equally ready to build huts, construct bridges or rafts required in the pursuit of their present avocations, their mode of life is such that they can endure the fatigue and hardships incident to actual camp life, to a greater extent than any other class of the population.

Their training in everything requisite to make them soldiers, except actual military drill, is constantly going on without expense to the public—their organization in squads, and government by foremen and employers, assimilates closely to military practice. They are subsisted in camps, while driving the timber down the tributary streams to the rafting grounds on the Ottawa—moved from time to time to keep pace with the timber as it floats onwards to its destination, and when finally the timber is rafted, the kettles, equipment and supplies are transferred to the raft—camp life commences on the river, and continues until the timber arrives in Quebec, where the men are discharged, and from whence to return for another similar season's operation in the forest and on the river. The number of men employed annually at this work would be about 25 000.

The quantity of timber produced and reported at Ottawa, was for 1873—303,268 pieces of timber, 2,024,930 saw logs; 1874—330 390 pieces of timber, 2,611,126 saw logs; 1875—299,218 pieces of timber, 1,905,956 saw logs.

The Rideau navigation connects the River Ottawa at the City of Ottawa, with the eastern end of Lake Ontario, at Kingston, in the Province of Ontario. Length of navigation 126½ miles.

The summit level of the Rideau Canal is at Upper Lake Rideau. But several of the

ascending reaches are also supplied by the waters which have been made tributary to them.

Table showing the dimensions of the locks on the present canals in the Montreal, Ottawa and Kingston line of navigation; also the size of the largest vessel which may pass through them:—

| Name of Canal. | Dimensions of Locks. | | | Dimensions of Vessel. | | |
|-------------------------|----------------------|----------|-----------------|-----------------------|----------|--------------------------|
| | Length. | Breadth. | Depth of Water. | Length. | Breadth. | Draught of Water loaded. |
| Carillon and Grenville. | 100 | 19 | 5 | 110 | 18 | 5 |
| Rideau..... | 111 | 22 | 5 | 110 | 31 | 4 |
| | | | | | | 27 |

Returning again to the Province of Quebec where other important public works have been completed, leading south into Lake Champlain, and commencing at Sorel, at the confluence of the Rivers St. Lawrence and Richelieu, forty-six miles below Montreal, and one hundred and fourteen miles above Quebec, this navigation continues along the River Richelieu to the Basin of Chambly, where it takes the Chambly Canal to St. John's and again follows the River Richelieu to Lake Champlain, of which the Richelieu is an outlet. The distance of eighty-one miles is in the territory of the Dominion.

At Whitehall, in the State of New York, the Southern end Lake Champlain, the Champlain Canal is entered and a connection obtained with the River Hudson by which the City of New York is directly reached. The distance of three hundred and thirty miles is in United States Territory.

The artificial works in the Dominion, are the St. Ours Lock and Dam, and the Chambly Canal.

At St. Ours, fourteen miles from Sorel, the River Richelieu is divided by a small island into two channels. The St. Ours Lock of cut stone, and an earthwork dam are in the Eastern channels; in the western channel a large dam has been built of crib-work, filled with stone.

These works give a navigable depth of 7 feet between St. Ours Lock and Chambly Basin, a distance of thirty two miles. Length of canal ½ mile.

Succeeding the thirty two miles of free navigation between St. Ours Lock and Chambly Basin—a natural reservoir formed