

In yonder glorious monument a tall one and a grave, (11)  
But the proudest tribute to his name is the flag  
which waves to-day  
O'er men at work in Canada and little boys at play.

Now Zack my son be off to school and when time  
comes to play  
Tell all the other school boys lads what you have  
learned to-day  
And add that while I think upon't I'll put in  
back and white,  
A tale which, if I judge them well, they will  
dwell on day and night; (12)  
And when I go to "Little York," (13) I'll do now  
and then,  
I'll see if I can't light upon some of those print-  
ing men,  
And if I can, for your good sakes, I'll get it put in  
print,  
And if I can't, in either case, why then, the devil's  
in't.

(11) The remains of General Sir Isaac Brock and of his Provincial Aide de Camp, Colonel John Macdonald, were removed from the Cavalier in Fort St. George and deposited in the case of the monument on Queenston Heights—31st October, 1821—a tabular monument by Westmacott was erected to the memory of Sir Isaac Brock, by the nation in St. Paul's Cathedral, London.

(12) *Nos exemplaria, str. Nostarna versato manu versata diurna—Hor.*

(13) Old Gaffer Stearns can't mind any of our new fangled names; "Little York" was a little York in Brock's time, and so must remain to the end of his chapter.

### Lakes, Rivers and Canals, Postal and Telegraphic Communications of the Dominion.

(BY COLONEL W. POWELL, A. D. C.)

The inland water communications of the Dominion are striking physical features of the country—their extent in rivers and lakes is remarkable. The principal rivers in the older settled portions have been utilized for purposes of trade and communication, by constructing canals or deepening channels. In Nova Scotia, the St. Peter's canal, having a depth of water on the sills of 13 feet, crosses an Isthmus of half a mile, connecting St. Peter's Bay, on the Southern Coast of the Island of Cape Breton with the great and little Bras d'Or Lakes, possessing a natural outlet into the Atlantic Ocean. The Shubenacadie, a principal river, is also connected with Halifax and its harbour by a canal 30 miles in length.

In New Brunswick the River St. John, 450 miles in length, emptying on the South Coast into the Bay of Fundy, is navigable for steamers to a distance of 81 miles from the Bay up to Fredericton, and from thence to Woodstock and Grand Falls by boats of smaller capacity, and for purposes connected with the extensive timber trade of that portion of the province. The Miramichi River emptying into the Ocean on the East Coast, is navigable for ships of 1000 tons, for (25) twenty-five miles from its mouth, and for schooners (20) twenty miles further, above which for (30) fifty miles it is navigable for tow boats. The Restigouche River, also emptying on the East Coast, is (3) three miles wide at its entrance into the Bay Chaleur, and is navigable for large vessels for a distance of (18) eighteen miles.

In British Columbia the Fraser River 700 miles long empties into the Pacific, is navigable for steamers to Yale, about 120 miles from the sea.

In Ontario and Quebec the principal inland carrying trade, during seven months of each year, is by water, by means of the Saguenay, St. Maurice, Ottawa, Trent, Thames and Grand Rivers, and of the River St. Lawrence and its other tributaries. In order to make the principal rivers and the inland lakes forming the routes available for through and subsidiary communication, the government has expended con-

siderable sums of money, in making canals and slides where falls and rapids exist on the rivers: and in deepening channels in other places. With the exception of the Saguenay and that portion of the St. Lawrence from its mouth to a distance of about (90) ninety miles above Quebec, where the water is salt, or brackish where the fresh mingles with the salt water brought in by the tide, the whole of the inland lakes and rivers are of fresh water.

The St. Lawrence canal system affords uninterrupted navigation from the straits of Belle Isle to the head of Lake Superior, a distance of 2,384 miles; of which 71½ are artificial or canal navigation, constructed by Canada, except the short link by which communication is made between lakes Huron and Superior, at Sault Ste. Marie, at this point a canal is constructed on the United States' side of the boundary line by the Government of that country to avoid the rapids. The canal is 1, 17-100 miles long, has eighteen feet lockage with a depth of water on sills of twelve feet, and is now being enlarged and improved.

The River St. Lawrence is of sufficient depth to enable Ocean ships drawing 20 feet of water to pass upwards as far as Montreal. From Montreal to Prescott the depth of the canals enables vessels drawing 9 feet of water, and from Prescott westwards for those drawing 10 to 12 feet of water to pass through.

Another canal system overcomes the difficulties of the Ottawa River, between Montreal and the City of Ottawa, and a further system opens navigation between the city of Ottawa and Kingston on Lake Ontario. This route passing, as it does, at a considerable distance in rear of the boundary line between the United States and this portion of Canada, is of great value for military purposes in case the navigation of the St. Lawrence route between Montreal in the Province of Quebec, and Kingston in the Province of Ontario is at anytime obstructed. The depth of the canals on this route will, however, only permit the passage of vessels drawing 4½ to five feet of water.

A still further system connects Lake Champlain with the navigation of the St. Lawrence.

In all the Provinces additional important lakes and rivers exist, many of them navigable for considerable distances and used for purposes of commerce, but their number is too great for an accurate or even general description here. Lovell's Gazetteer of British North American mentions upwards of 1500 of them.

The St. Lawrence canals requisite to complete the navigation from East to West having locks of cut stone 200 feet long by 45 feet wide fitted for vessels drawing 9 feet to pass through, are described herewith in detail, in the order they may be found in proceeding up the river. The distances and measurements being those contained in the report of the Department of Public Works for the year 1875 viz.

The Lachine canal 5½ miles long extends from the city of Montreal to the village of Lachine, thereby enabling vessels to avoid the St. Louis Rapids, the first series of rapids which bar the ascent of the River St. Lawrence, for a distance of 936 miles from the Straits of Belle Isle.

The new works now being constructed will contain locks 270 feet long by 45 feet in width between the gate quays; permanent structures to have a depth of 14 feet, with the view of finally establishing the canal at that depth.

Suitable swing bridges have been constructed across this and other canals where needed

to enable teams and railway trains to pass over.

The Beauharnois Canal 11½ miles long lies on the south side of the St. Lawrence, 15½ miles from the head of the Lachine Canal, and runs for some distance inland from the river, connecting Lakes St. Louis and St. Francis, and avoiding the three dangerous rapids known respectively as the "Cascades," "Cedars," and "Coteau."

It may be considered unfortunate, on account of its proximity to the United States boundary line, that this canal was not originally constructed on the north instead of the south side of the river, more especially as a line of country better suited to the purpose exists on the north shore; it is however, not necessary to call attention now, to the reasons which induced the government of the day, to cast aside the superior military, economic, and natural aspects of the question.

The canal enters into Lake St. Francis, which is 25 miles long by 5½ miles wide, where the navigation is uninterrupted to Cornwall.

From its mouth to Cornwall in the Province of Ontario the River St. Lawrence is within the Province of Quebec, and from Cornwall the River St. Lawrence and the River and Lakes immediately connecting it with and including Lake Superior, form the boundary between the United States of America, and that portion of Canada lying to the north of these Rivers and Lakes.

The Cornwall canal 11½ miles long, enables vessels to avoid the Long Sault Rapids.

From the head of the Cornwall canal to the foot of Farran Point Canal, the distance on the St. Lawrence, is five miles, this canal 5½ miles long enables vessels ascending the river to avoid Farran Point Rapids, descending vessels run the rapids with ease and safety.

From the head of the Farran Point Canal to the foot of the Rapid Point Canal there is a navigable stretch of 10½ miles, this canal 4 miles long enables ascending vessels to avoid the rapid Point Rapids, descending vessels run the rapids safely.

Leaving the Rapid Point Canal the St. Lawrence is navigable for 4½ miles to the Galops canal, this canal 7½ miles long enables vessels to avoid the rapids at Point aux Iroquois, Point Cardinal and the Galops. Passenger steamers passing down the river in day time run all the rapids between this point and Montreal.

Leaving the Galops canal the navigation is uninterrupted through the remaining portion of the St. Lawrence and Lake Ontario. It is questionable if these four last named canals will afford a safe means of communication at all times in case of war, but for present commercial purposes they are most valuable, and in addition the country can safely rely on another route, by way of the Ottawa River and Rideau Canal, between Montreal and Kingston. By a reference to the map it will be seen that the Niagara River is the natural connecting link between Lakes Ontario and Erie. This river, although navigable for a considerable portion of the distance between the two lakes passes in its course over a fall about 165 feet in height, known as the "Niagara Falls," and presenting a barrier to navigation which it was not considered desirable to overcome, in view of the greater ease with which a canal could be constructed on another route. There are only four bridges across the main rivers and lakes composing the St. Lawrence route viz., the first, that at Montreal known as the Victoria Railway Bridge, constructed by