12$ miles (the three forming with their intervening 15 miles of river navigation what is called the 'Williamsburg Canals), the “Cornwall,” 11 1/2 miles long, the “ Beauharnois,” connecting Lakes St Louis and St Francis, 111/4 miles long, and the “Lachine,” 81/2 miles long. The locks of the first five canals, constructed in 1845-18, are 200 feet in length, with a depth of from 7 to 10 feet on their sills at exceptionally low water, and, with the exception of the “Galops” and “Cornwall,” which are 55 feet wide, their width is 45 feet. The Lachine Canal was begun in 1821 and completed in 1824 for the navigation of vessels drawing 4$ feet, but it was not until 1843-48 that it was widened and deepened to the dimensions of the upper canals. It has lately been still further enlarged, and is already provided with locks 270 by 40 feet, with an available depth of 14 feet. The canal was closed on 1st December

1. and opened on 1st May 1883,—the navigation having been interrupted as usual by the ice for a period of five months. The cost to the provincial and Dominion Government of the six canals, including their maintenance to 30th June 1883, was $14,454,508. The five upper canals are now being enlarged to the dimensions of the improved Lachine Canal.

Near Cornwall, on the left bank, 50 miles below Pres­cott, the intersection of the parallel of 45° determines the point where the St Lawrence and its lakes (Lake Michigan excepted), having been an international boundary from the head of Lake Superior, become exclusively Canadian. Immediately below Cornwall the river flows through Lake St Francis, which has a length of about 30 miles and a width varying from 2 to 5 miles. In the long reach of the river below the lake it has been calculated by the Canadian canal commissioners that the mean volume of water discharged is 510,000 cubic feet per second. Ten miles below the foot of Lake St Francis, near the head of the island of Montreal, the river flows into Lake St Louis, which receives the main body of the Ottawa river, a small fraction of whose waters is delivered into the St Lawrence at the foot of the island 35 miles lower down the stream.

The Ottawa river, which is 600 miles long, drains 60,000 square miles, and contributes a volume of 90,000 cubic feet per second to the St Lawrence, of which it is the largest tributary. Between Lake St Louis and the city of Ottawa, the capital of the Dominion, and perhaps the largest market for lumber in the world, the St Anne’s lock (231/2 miles from Montreal), Carillon Canal, Chute-à- Blondeau Canal, and the Grenville Canal (631/2 miles from Montreal) have been constructed, and are now enlarged to 200 by 45 feet, with a depth of 9 feet on their sills, except the Chute-à-Blondeau Canal, whose single lock has still its original dimensions of 130 by 32 feet with only 6 feet on its sill. The total lockage between the Lachine Canal and Kingston by the Rideau Canal (the entrance to which is 1191/2 miles from Montreal) is 509 feet (345 rise, 164 fall) and the number of locks is 55. On the upper Ottawa—the Culbute Canal and L’Islet rapids—there are two locks 200 feet long, 45 wide, and 6 deep, with a lift of 18 to 20 feet. The cost of the Ottawa canals, including the Rideau Canal, to 30th June 1883 was $9,126,125.

After leaving Lake St Louis the St Lawrence dashes wildly down the Lachine rapids, a descent of 42 feet in 2 miles, and 8 miles farther on, after passing beneath the 25 spans of the Victoria Tubular Railway Bridge, which has a length of 9144 feet, reaches the quays of Montreal, 198 miles below Kingston. In the beginning of the pre­sent century vessels of over 300 tons burden were unable to reach the city, but by deepening Lake St Peter and the shoals in the St Lawrence between Quebec and Montreal the latter has been made accessible to vessels of 4000 tons burden and drawing 25 feet of water. Work is being steadily continued and will not cease until a depth of 271/2 feet is attained, so as to enable the largest vessels afloat to reach the long stretch of new deep-water quays. In

1. the tonnage of the 660 sea-going vessels which visited

the port was 664,263 tons, of which 605,805 belonged to 264 steamships, so that only 9 per cent. of the freight arriving from sea was carried in sailing vessels. The St Lawrence has an average width of 13/4 miles for 46 miles from Montreal down to Sorel on the right bank, at which point it is joined by the Richelieu river, a tributary that drains 9000 square miles.

The Richelieu river is made navigable from its mouth to Lake Champlain, a distance of 81 miles to the United States boundary, by a dam and lock at St Ours, half a mile long (14 miles above Sorel), and a canal of 12 miles in length 32 miles farther up the river, known as the Chambly Canal. These give a navigable depth of 7 feet, allowing vessels 114 feet long, 23 broad, and drawing 6$ feet of water, to pass through the canal from end to end. The cost of the works to 30th June 1867 was $756,249. The total length of navigation between Montreal and New York by the Richelieu Canal, Lake Champlain, the Champlain and Erie Canal, Albany, and the Hudson river is 456 miles. The Richelieu Canal, which already carries a freight of 350,000 tons annually, is to be enlarged, and a canal is to be constructed from Lake St Louis at Chaughnawaga, above Lachine, to St Johns on the Richelieu river, in con­nexion with the Chambly Canal, to connect the St Lawrence with Lake Champlain by a new channel, which it is proposed should have the same dimensions as the improved Welland Canal. The cost of the proposed Chaughnawaga Canal, which would have a length of 32 miles and a lockage of only 29 feet, is estimated at $5,500,000.

Immediately below Sorel the river flows into Lake St Peter, 20 miles in length by 9 in width, through which prior to 1851 no vessel drawing more than 11 feet could pass. Since then a cutting 300 feet wide has been dredged to a depth of 25 feet. At Three Rivers, 86 miles below Montreal, the St Lawrence first meets the tide and receives from the north the waters from the St Maurice, which drains about 16,000 square miles. Nearing Quebec, the river, which maintains an average width of 11/2 miles from Lake St Peter, narrows into a width of three-quarters of a mile at Cape Diamond, on the left bank, 160 miles below Mont­real. The depth here is 128 feet and the rise of spring tides 18 feet.

The lower town of Quebec, which has extensive harbour accommodation, is built on reclaimed land around the base of the cape, one of its sides being washed by the river St Charles, which here flows into the St Lawrence. At the mouth of the St Charles the Princess Louise embankment, 4000 feet long by 300 wide, encloses a tidal area of 20 acres, having 24 feet of depth at low water. Connected with it is a wet dock, which is to have a permanent depth of 27 feet with an area of 40 acres. On the opposite side, at Pointe Levis, the Lome graving-dock is nearly completed. Its dimensions are 500 feet in length, 100 in width, and 25 1/2 feet depth of water on its sill. During the year ending June 1884 the departures for sea of vessels from Quebec were 698, with an aggregate burthen of 686,790 tons.

The Canadian Government have sanctioned the proposal to con­struct a railway bridge across the St Lawrence within a few miles of Quebec, at a point where the river narrows to a width of 2400 feet at high water. The area of the waterway at high water is 200,000 square feet and at low water 160,000. For a width of about 1400 feet in the centre of the channel the water shelves rapidly from either shore into deep water, until it attains a maximum depth of nearly 200 feet. The proposed bridge, as designed by Messrs Brunlees. Light, & Claxton Fidler, will consist of three principal spans, entirely of steel, resting on masonry piers founded on the rock. The central span will have a clear width of 1442 feet, the underside of the superstructure being 150 feet above high water.

Seven miles below Quebec the St Lawrence is 4 miles wide and divides into two channels at the head of the Island of Orleans, nearly opposite which, on the north shore, are the celebrated falls of Montmorency, with a perpendicular descent of 240 feet and a width of 50 feet. At the foot of the island, which is 22 miles long, the river expands to a width of 11 miles. This width increases to 16 miles 90 miles farther on, at the mouth of the river Saguenay, which drains an area of 23,716 square miles.