

## An Opinion of Our Waterways.

Edward C. O'Brien, who was Commissioner of Navigation under President Harrison, and who has just been appointed Commissary-General on Gov. Morton's staff, has given a great deal of attention to the study of canals and internal waterways, not only in New York, but in other States and other countries. The report that he published just before he retired from office was considered one of the ablest maritime papers ever sent out from Washington. A reporter for the New York Times asked him to talk about the State canals, as they are to-day, their capacity for transportation, and the necessity for immediate improvements.

"It has always been the aim of British-Canadian statesmen," said Mr. O'Brien, "that Canada should realize her geographical advantages and become to the United States what Venice, the Hanse towns, and Holland were to Europe, and what England is to the world at large; namely, a commercial parasite, feeding on our activities and fattening on our export and import trade, which she means to divert to Montreal. To accomplish this end, the Canadian Government has expended on its canal system (up to 1893) the enormous sum, considering its population, of \$72,079,899.76, and has under construction and contract additional works, which will cost \$6,400,000. This will swell the total outlay of the Canadian Government, on canals and interior water systems, to \$78,500,000. In addition to this, the city of Montreal and the Dominion Government have executed and under contract river and harbour improvements at and below Montreal, which are designed to give a channel 80 feet in navigable depth from the ocean to Montreal, and to provide at Montreal a deep and commodious harbour, fully protected from the ice shoves. The latter works, when complete, will have cost \$5,000,000, making the total outlay of our energetic neighbours on the St. Lawrence and their canal system upward of \$83,500,000.

"The geographical arguments which prompt and encourage these ambitious projects are obvious to anyone who will take the trouble to look at a map of North America. To quote the valuable work of the late George H. Ely, 'For one half the distance across a continent the waters of the St. Lawrence system divide the Dominion from the Great Republic. These great American lakes contain more than one-half the area of all the fresh water on the globe. They make up the largest system of deep water inland navigation on the globe. The water area is 95,460 square miles. No other inland waterway bears upon its bosom so vast a commerce, or touches, as this does, the vital interests of so many millions of men.

"The topographical relations of these connected waters," continued Mr. O'Brien, "are very remarkable. Lying, in general direction, east and west, between the forty-first and forty-seventh parallels, they penetrate from tide water 1,400 miles into the heart of the continent. The western extremity of the system, the head of Lake Superior, is 1,700 miles only from the waters of the Pacific.

"To span the 1,700 miles between the great lakes and the Pacific the Canadians have built the Canadian Pacific railroad, at a cost to their Government of \$210,000,000 and 25,000,000 acres of agricultural land, and have extended its influence to trans-Pacific ports by heavily subsidized steamship lines.

"To realize their topographical advantages to the eastward they are spending, as I have said, \$83,500,000 to perfect a deep water route from Lake Superior to the Canadian seaboard.

"They have subsidized trans-Atlantic steamship lines, and are now about to put on

a first-class trans-Atlantic express mail and passenger steamship line, which is to receive an annual subsidy from the Canadian Government of \$750,000 in addition to large subventions from the British Government.

### ADVANTAGES OF OUR ROUTE.

"From Liverpool to New York is 3,040 miles. From Liverpool to Montreal is 2,790 miles. From New York to Duluth (via railroad to Buffalo) is 1,487 miles, and via the Erie canal 1,517 miles. From Montreal to Duluth, via the St. Lawrence, is 1,351 miles. From Liverpool to Duluth, via Montreal and the St. Lawrence, is 4,144 miles, which will shortly be unbroken deep water navigation. From Liverpool to Duluth, via New York, is 4,477 miles, or 4,557 miles, according as the route be via the New York Central railroad or the Erie canal to Buffalo. Montreal is 250 miles nearer Liverpool than New York is, and 83 or 168 miles nearer Duluth. From Liverpool to Duluth the route, via Montreal, is 393 or 413 miles shorter than the route via New York.

Let us translate these distances into dollars and cents and see what commercial advantages the Canadians will realize on the completion of the great eighty-three-and-a-half million dollar water route from the great lakes to the seaboard. Let us compare the relative costs of taking a ton of freight from Duluth to New York and from Duluth to Montreal.

"On the lakes and the St. Lawrence we can, without serious error, assume freights to average 1 mill per ton per mile, and on the Erie canal 3 mills per ton per mile. Five hundred and twenty miles of barge transportation at 3 mills equals \$1.56, and 997 miles of steamship transportation at 1 mill equals \$1, making transportation to New York cost \$2.56, to which must be added 47 cents, port, commission, and transshipment costs at Buffalo, making the total freight from Duluth to New York equal to \$3.03 a ton.

"Via the St. Lawrence to Montreal the items of cost will be:—1,355 miles at 1 mill, equal to \$1.35; twenty-six hours' detention in the locks, equal to 26 cents; tolls, 10 cents; making the total freight cost from Duluth to Montreal \$1.91 a ton.

"It will be seen the natural and artificial advantages of Canada's location and her deep waterway to the sea will give Montreal an advantage over New York of \$1.32 a ton, or 85½ mills a bushel, on all freight received from the great lakes.

### TO WHAT PURPOSE.

"The Canadian statesmen realize fully that their commerce and commercial cities must, in the future, grow mainly on what substance they draw from the United States. Therefore these great, costly, ambitious and well-laid projects, the aims of which are, first, to provide a cheaper route outward for American exports and inward for American imports than any United States route; second, the extension of Canadian trade and Canadian-British influence into all the States bordering the great lakes, and commercially auxiliary to them; third, the building up of Montreal; and, fourth, of British supremacy on this side of the Atlantic, by making the great heart of this continent, and the richest and most prosperous States of our Union, commercially tributaries to and dependent on the Canadian gateway to the continent. Thus they plan to divide our States in interest, the interior against the seaboard, and by thus weakening us to strengthen British interests; for all experience proves that where trade goes there interests and sympathies follow and centre.

### NEW YORK'S WATERWAYS.

"In view of the profound statesmanship exhibited by our neighbors, what has our own Government done to meet the situation, and

by providing a cheap deep water route reaching the seaboard at an American port, to keep the trade and sympathies of our people within our borders? Our Government has done nothing! Absolutely nothing! It has expended upward of \$10,000,000 in general and local improvements on the great lakes, of which sum \$14,158,223 is to be the total cost of the twenty-foot channels connecting Lakes Erie, Huron, Superior and Michigan. These improvements are most important, both specifically and as parts of a grand general scheme to provide deep navigation from Duluth and Chicago to New York. They have proved most important to our internal commerce, and of the highest value to our people whose commodities are transported over them. But in default of provision made by our own Government by which the vast commerce of these waters can cheaply reach the sea at an American port, that commerce will go to those foreign ports which it can reach cheaply; that is to say, the vast commerce originating in our interior States will go to Canadian seaports, and Canada, by her foresight, will reap the advantages of the expenditures made by our own Government. Canadian commerce will be built up at the expense of American seaports, and our interior States will become separated in interest and in sympathies from our seaboard States. The State of New York is an Empire in itself. Our State is more populous and many times wealthier than Canada. What has our great State of New York done to preserve to our own cities the trade which is now ours? Nothing! Absolutely nothing! We look at our Erie canal, with its seven feet of water and its seventy-two locks, and lose ourselves in admiring its greatness. It has played a great part in the history of the State and of the nation. But boats carrying 250 tons on seven feet of water, at a speed averaging three miles an hour, cannot compete with boats carrying 1,750 tons on fourteen feet of water at a speed of ten miles an hour. The limit of capacity for transportation of our State canals is fixed by the amount of water which can be stored on the watershed from which it is supplied; and with the present system of locks the limit of tonnage which can be expeditiously and profitably handled is in the neighborhood of 4,500,000 tons per annum.

"To deepen the canals and increase the draught and tonnage of the boats would not materially increase the capacity of the canal, for the available water, if used in the present type of lock, will lock only a given number of tons, no matter whether these tons be carried in big boats or in little boats. It is the opinion of engineers who have made the subject a study, that to materially increase the tonnage and usefulness of the canal, the proper thing to do is to introduce some system of balance locks. Such locks have been in practical, everyday use for eight or ten years at La Louviere, in Belgium, at La Fountenettes, in France, and more recently, on the Manchester canal, in England. They lock boats of tons with one-fortieth the amount of water necessary to use in the type of lock now used in this State.

### FURTHER IMPROVEMENTS.

"It must be borne in mind that Canada has not realized the advantages of her great expenditure because her canal system is not complete. The strength of a chain is the strength of its weakest link; the capacity of a navigation system is measured at its point of least capacity. The weak link in the Canadian water route is the Beauharnois canal, with only nine feet of water. But this weak link will soon be replaced by a strong one, namely, the Soulages canal, with fourteen feet of water over the lock sills and seventeen feet in the stretches. This canal will be finished within three years, and then the Canadian fourteen-foot system will be in