

portions have been deepened. A 20-foot Canadian system would be impracticable, having been estimated to cost \$79,000,000 additional; while deep-water navigation, among its Thousand Islands and its thousands of submerged rocks, would require most skillful pilotage in clearest weather.

These dangers to navigation on the St. Lawrence increase vastly in number for any additional draught.

Twenty-foot vessels which might pass our canal, and desire to transfer at Kingston to barges for Montreal, would be prevented by the same rebate system which now operates so effectively against us on the Welland Canal.

So that there are both physical and financial sureties that New York, as well as the West and Northwest, could lose nothing, but must gain much, by the proposed Niagara Ship Canal.

It is now fortunate that its construction was not begun in 1867, upon the inefficient scale then proposed, which is practically that of the present Welland Canal, which was outgrown before it was finished. The canal, when built upon the present project, will pass the largest steamers which can navigate the lakes.

These steamers will be able to place their cargoes at Oswego twenty hours after passing Buffalo; this assumes a much quicker passage of the proposed canal than is possible, or is permitted, in the Welland Canal, whose passage is not allowed to be made in less than twenty-two hours. This appears to be fixed on a basis of 5 miles per hour speed and forty minutes per lock.

The shorter time here estimated for is based upon the improved methods proposed. The lockages will be fewer, and each will be quicker by reason of the hydraulic appliances and the methods of filling and emptying, which have proved so perfect at the Sault Saint Mary lock. This, at the Sault, requires the movement of five times the water moved in a Welland lockage, but it is effected, quietly, in an average of twelve minutes for each filling or emptying; while an additional twenty-eight minutes is required to haul in and to place the two to four vessels which fill the lock, to close and open the gates and to haul the vessels out—in all, an average of forty minutes per lockage.