

lake surface, due to withdrawing such a volume of water, could not exceed one inch." "When we consider that hourly fluctuations of the lake surface of from 6 to 30 inches in amplitude are constantly taking place, it is evident that the withdrawal annually of a volume of water from Lake Michigan, equivalent to 3 inches in depth over the surfaces of the two lakes, would not be appreciable in any ordinary set of gauge readings, and would certainly have but little effect upon the depth of water in the connecting water-ways." Somewhat similar artificial conditions have been produced by the deepening of the St. Lawrence rapids below Ogdensburg from 10 to 16 feet, adding from 6 to 8 per cent. to the free channel of the river. The question was considered at that time, and was referred to the United States Engineer Department, and the conclusion from the investigation was, that the effects would extend to no great distance, and that the level of Lake Ontario would not be impaired. The deepening at the Lime Kiln Crossing of the Detroit River where the depth has been increased from 13 to 20 feet, and at the St. Clair Flats which have been deepened from $9\frac{1}{2}$ to nearly 20 feet, are cases generally similar to what is practically the deepening of the channel now existing between Lake Michigan and the Illinois River, and yet no injurious results have been experienced or are they anticipated. We may, therefore, dismiss any fears that may exist in regard to the deleterious effects of this channel-way upon the harbours and the connecting water-ways of the lakes.

Taking up again, after this diversion, the general features of our subject, with the intention of following it through in its logical order, we should look upon the Great Lakes, so called, or really inland seas of fresh water of immense magnitude, as simply the enlargement of the St. Lawrence River into which they pour their surplus waters. This chain of lakes, or the river, has its source in Eastern Minnesota at the head of St. Louis River, and almost coincident with the source of the Mississippi and the Red River of the North. The river ends at Cape Gaspé at the head of the Gulf of St. Lawrence.

We are contemplating the most magnificent inland navigation in the world. The basin of its drainage is 457,000 square miles. Lake Superior, the largest body of fresh water on the globe, has an area of 31,200 sq. miles. It is 412 miles in length and 167 miles in breadth, with a maximum depth of about 1000 feet. Its surface is 602 feet above mean high tide of the ocean. The outlet of this lake is the St. Mary's River, 55 miles in length. The difference of elevation between Lake Superior and Lake Huron is 22 feet, of which 18 feet is in the St. Mary's Rapids which are one half mile in length. Lake Huron is 265