

river of steady, even flow, and not subject to sudden rise or extraordinary floods. Its rise never averages over three inches in twenty-four hours for any number of days in succession, and is commonly one inch per day, while its rise to high-water mark and subsequent fall occur every year at nearly the same dates. The most prominent characteristic of the Ottawa is its great volume, even in its upper reaches. Draining an area of 80,000 square miles, and fed by countless lakes, it furnishes water supply ample in the time of lowest water. The French and Mattawa Rivers, through which the course is continued, are of the same general character—namely, consisting of a series of lakelike expanses, separated by rapids.

The summit level is obtained by bringing to the same height Trout Lake and Lake Nipissing, the latter a fine sheet, 60 miles in length and from 15 to 30 in breadth. Thus the summit supply will be practically inexhaustible, or, as expressed by the engineer, Mr. Clarke, "sufficient for any scale of navigation and for all time to come." According to a paper read last month before the Royal Society of Canada by Dr. R. W. Ellis, LL. D., M. A., of the Geological Survey of Canada, recent examination has disclosed a line where the summit ridge, between three and four miles in length, nowhere rises more than four feet above the level of Trout Lake. The mouth of French River, according to the report of Walter Shanley affords ideal facilities for a terminal harbor. The hydrographic survey of Georgian Bay was completed in 1894, and lighthouses are already in position, marking the channel to the entrance of the river.

Experienced forwarders advocate the use on the route of strong tugs conveying fleets of three barges, each with a capacity of 50,000 bushels, and estimate that grain can be profitably carried from Lake Huron to Montreal at a rate of 1½ cents per bushel, making possible a through rate from Chicago to tidewater of less than 4 cents per bushel, as against 6½ by the cheapest American route, and 7 by the St. Lawrence. According to the report of the New-York Produce Exchange, 2-3 of a cent per bushel is enough to turn the current of trade, so that the Ottawa route could command a large share of the through grain trade. The items chiefly conducive to lower cost of transportation are the

great saving of distance already shown; the saving of time on the journey, estimated to be nearly five days over the Erie route, and consequently the larger number of trips possible in the season, which, for the whole Ottawa system, would be practically the same as that of the Sault Canal; decreased cost of towing from employment of the most economical form of vessel known, discharging directly over the ship's side in harbor, and the small amount of canalling to be done. In addition to these, there is the greatest security of the route to be considered, tending to lower insurance rates, the risks being the minimum possible. Grain passing in so much shorter time through the cooler, deeper waters of this northern route would reach its destination in good condition.

As the Canadian Northwest fills up with settlers, the centre of the wheat-growing area will move steadily northward year by year. J. A. Taylor, United States Consul at Winnipeg, says in his report of 1892: "The day is near at hand when American farmers must meet such competition as they never met before, and such as few of them have ever dreamed of. The parallelogram included between longitudes 100 and 170 west of Greenwich and latitudes 50 to 70 degrees is identical in climate with and as rich in resources as an equal area in Europe included between the same meridians of latitude and extending 68 degrees east and 10 degrees west of Greenwich. The European parallelogram includes England, Ireland, Scotland, Denmark, Norway, Sweden, Belgium, Holland, and most of Germany and Russia in Europe. Over all the territory included in the North American parallelogram the opening of Spring occurs at the same time almost to a day. When once the conditions of soil and climate which there exist are supplemented by facilities for transportation, unsurpassed if equalled by those of any other region, I believe that the Canadian Northwest will settle up with a race of hardy, intelligent, and prosperous people, and will become the granary of the world."

The Illinois and Michigan Canal, little more than a ditch, transported 5,000,000 tons of freight from 1880 to 1885. If made a ship canal, serving as the link between two great systems of navigation, it would develop an enormous traffic, the benefit of which any system of waterway to the ocean must share. Besides the im-