

Before the canals through New York State and Canada were even laid out, the inland seas of the continent were regarded as of so great importance, that a full and adequate ship canal from them to the ocean was looked upon as absolutely necessary. To obtain this has been the dream of commercial men during the last three-quarters of a century. That it has not been realized is due largely to the fact, that the natural water-way lies through two countries that have, as political divisions, nothing in common. There has not existed the union of action necessary to fully carry out the great projects desired by commerce. These projects have therefore never been taken up as a connected whole and pushed forward to legitimate conclusions.

It is well known that between the important ports on Lakes Michigan and Superior and Liverpool there are over four thousand miles of water navigation, and that only about 71 of them are restricted by natural obstacles in the channels. The object of this paper is to ascertain, if possible, how these natural obstacles placed here and there in the pathway of commerce may be removed, and steamships may be built on the Great Lakes to ply between their ports and the ports of the Atlantic seaboard and of the Old World.

The scope of a paper discussing so broad a subject, and one, withal, so important to the commerce and industry of great nations, must not be too circumscribed. The discussion must not be limited to certain special questions, but must canvass the entire situation, and, if possible (being given the privilege of selection), point out the best route and give convincing evidence of its superiority.

The question is not one that interests engineers alone, and there are other than engineering principles involved. We are led at once into an important commercial discussion and into the whole history of the great Northwest, particularly of the vast country tributary to the Great Lakes and the St. Lawrence River. It has to be borne in mind, also, that artificial lines of transportation—that is, constructed highways of commerce—have covered the country in every direction; that the methods of transportation upon these constructed highways have been vastly improved over those of a quarter of a century ago, and that still greater improvements will be made in the near future. We shall, therefore, be obliged to take up the subject something as follows:—

1st. Its historical features, showing the development of commerce and the increasing capacity of the channelways by water and by land;

2nd. The physical conditions of the present and proposed routes;

3rd. The financial and political questions involved;

4th. The commercial features of the subject.

In reference to the historical, a brief sketch will be of interest, showing the changes in the dim history of the past, made in the Great Lakes, adapting themselves finally to present conditions for the benefit of man. Briefly, though not perhaps bearing directly upon our main subject, a sketch will be given of the commercial improvement southward of the Great Lakes to the Gulf of Mexico. We will then take up the present canals and channels built between the Great Lakes and the Atlantic seaboard in relation to their history; the history of the railroad system and the growth of railroad transportation will be briefly outlined. It will be necessary, also, to give a brief history of the harbour improvements upon the Great Lakes, and then in some detail the history of commerce shown by the increasing size of vessels, the increase in tonnage, the movement seaward on the Great Lakes of the productions of the Northwest. A history, also, of the gradual reduction in freight rates, both by railroads and canals on East and West routes, must be given. It will be necessary to trace briefly the growth in population, productions and commerce of the country tributary to the Great Lakes, and particularly of the more important lake ports, such as Chicago, Duluth, Cleveland, Buffalo, Toronto and Montreal. In discussing the physical features it will be necessary to state the topographical conditions of present and proposed routes, with estimates of costs and the capacity of these routes when completed, and give a comparison of the length of routes now existing and projected. The author having found it necessary to discuss the feasibility and desirability of constructing at certain points on the routes ship railways, a