

only require cheap transportation but cheap motive power, it behooves us to not loose any time in making the fullest possible inquiries as to the feasibility of such an important factor in the progress of our country.

From reports made and statistics published we not only find that we possess untold advantages, but that they can be utilized at a comparative small cost. In 1887 the subject of our waterways was one of much discussion and much valuable correspondence was published in our favor. Of the many articles published at the time perhaps the most pertinent appeared in the *Monetary Times* from His Honor Lieut. Gov. Shultz, at that time Senator, who, in an excellent resume of the facilities of this great North-west, said:

"Professor Agassiz characterized as the 'flattest portion of the earth's surface' that part of this continent which lies between the Coteau du Missouri on the south-west and the Laurentian chain on the north-east; and through this bottom of a once great inland sea turn and wind the Red, Assiniboine and some smaller rivers, which drain it into Winnipeg, Winnipegosis and Manitoba, the three shallow lakes which form the bottom of the Winnipeg basin.

The navigation and utilization for power purposes of these sluggish and shallow waterways is now receiving much attention in Manitoba and the North-West, and I shall therefore confine my observations to them, and leave the consideration of the Great Saskatchewan River to another time. Now the physical peculiarities of these streams are unlike most others in older Canada. For instance, the Red River drains an extent of country equal to three-quarters the size of England, and yet at Winnipeg it is no wider and not as deep as the Thames at London bridge, the apparently small size as compared with the extent of country drained being due to the fact that evaporation from the surface of the soil is rapid in that dry climate, and equality of level causes slow movements towards central channels. It is quite true that the quick transition from winter to summer in these regions fills all natural drains to the brim, and ships of war might float where fords usually exist; but this

spring flood is of short duration, and the streams in question rapidly subside to their normal canal-like condition, where the sluggish flow allows easy navigation against the stream, which is indeed only a series of gently descending levels, broken where some limestone or boulder barrier crosses its course.

While little is to be learned by analogy from the rivers of older Canada, valuable information is to be had from the reports of U. S. engineers, who for the past decade have been employed by the Federal Government in the retention of spring levels in the water of the numberless northern Minnesota lakes, which are the sources of the Red and Mississippi rivers alike. These great reservoirs have already been the means of equalizing and extending the enormous water power of the Falls of St. Anthony at Minneapolis, and have materially aided the flotation of timber on the Mississippi above that point and steamboat navigation below. They have also been mindful of the navigation of their portion of the Red River, having built a dam and lock at a point where a ledge of limestone forms "Goose Rapids," the dam giving a uniform depth of five feet at low water to the head of the Red River, while dredging and boulder blasting has secured an equal depth northward to the international boundary line, and this gives free navigation from the boundary line southward, 264 miles, on which American companies carried last year 60,000,000 pounds of freight.

We thus have had the experience of the Americans, and we have also had a share in such advantages as may accrue from their husbanding the water of the sources of the Red River, and the project of damming the Red River at Winnipeg is to effect first, a communication with the American system of improved navigation; and secondly, the great water power which will be thus obtained. Such a dam, in the opinion of competent judges, only requires to raise the level twelve feet above low water to give five to seven feet of navigation to the U. S. boundary, while, should it be somewhat more raised, navigation might be extended to Brandon on the Assiniboine, at which city valuable water power might be obtained, and certain works further up