

THE LAKE ST. JOHN REGION WITH REFERENCE TO THE PULP AND PAPER INDUSTRY.*

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THE hydrographic basin of which Lake St. John constitutes the centre embraces within its extreme limits nearly 175 miles from south to north, and about 225 from east to west. The area comprised within these limits or the superficies of the territory drained by the rivers whose waters flow into the great lake, is about 30,000 miles, or 19,200,000 acres. The area of Maine is equal to that of all the other New England States. Nevertheless, it does not exceed by 2,000,000 acres that of the territory of Lake St. John, which exceeds by 1,808,640 acres that of New Brunswick, by 5,819,520 that of Nova Scotia, is double that of Denmark and of Holland, and nearly three times that of Belgium. Lake St. John forms the hydrographic centre of this vast region. Its elevation is about three hundred feet above the level of the sea. In its greatest length between the mouth of Belle Riviere and the estuary of the Mistassini, it measures 27½ miles and 20 in its greatest width from the estuary of the Peribonca to that of the River Ouatchouan. The perimeter of this lake forms a line 85 miles long and its superficies is 365.4 miles or 263,856 acres.

The principal rivers that fall into Lake St. John are: On the South-east the Belle Riviere, about a hundred feet wide, 45 miles long, and whose chief tributary brings the waters of Lake Kinogamichiche and forms a water-fall sixty feet high at a short distance from the village of Hebertville; on the south the Metabetchouan or riviere du Poste, about 50 yards wide and 50 miles long; on the south-west the Ouatchouan, about 60 yards wide and 68 miles long; on the west the Chamouchouan, which divides into branches 92 miles from Lake St. John, continuing under the same name to the south-west to 170 miles from its mouth, while the branch called la riviere du Chef, which is larger than the other, runs towards the north-west; on the north-west the Mistassini, whose main course is over 200 miles long without counting its three great tributaries, the Assiemska, the river aux Rats, and the Mistassibi; on the north the Little Peribonca, about sixty yards wide and 50 miles long; on the north-east the great Peribonca, which is over 350 miles in length, and the largest of all the rivers that flow into Lake St. John.

WATER POWERS.

It would be difficult to imagine a region where in the superficial conformation and the surface elevations of the soil are better adapted for producing water power than that of Lake St. John. Starting from the shores of the lake on the north and north-west, the land rises by steps from one plateau to another. These steps are marked at several places by ridges forming so many obstacles to the course of the rivers which overcome these obstacles and, descending from one plateau to another, they form cataracts frequently of considerable height.

A line drawn around Lake St. John, a dozen miles to the north of the lake, thirty to the north-west, fifty to the west, two to the north and ten to the east, would circumscribe the water-powers set forth in the following table:

| Rivers. | Motive Power. |
|-----------------------------------|----------------------|
| Great Peribonca | 301,025 horse power. |
| Little Peribonca | 1,500 " " |
| Mistassibi | 75,000 " " |
| Mistassini | 60,000 " " |
| Au Rat | 22,723 " " |
| Assiemska | 15,000 " " |
| Chamouchouan | 100,000 " " |
| Au Sammon, aux Iroquois and Auln- | |
| ichouaniche | 2,000 " " |
| Ouatchouan | 33,000 " " |
| Metabetchouan | 2,500 " " |
| Belle Riviere and Aulnaes | 500 " " |
| Little Discharge | 25,000 " " |
| Grand Discharge | 15,000 " " |

Total... 653,248 " "

FORESTS AND TIMBER.

We have seen above that the territory of Lake St. John covers an area of 19,200,000 acres. Of this less than 500,000 acres is under cultivation or cleared, and the remainder is covered by forests. The principal kinds of timber are spruce, balsam fir, white birch, cypress and pine. White, black and red spruce constitute more than 75 per cent. of the timber. Fire has ravaged this territory, in many places. The disastrous effects of the great fire of 1875 in the Mistassini region are no longer visible; the second growth is as fine as the first, as regards the size of the trees, while the wood is sounder and less knotty. In the Peribonca region the timber is rather small for saw logs, but is of the best kind for pulp.

The quantity of pulp wood in the Lake St. John region is practically unlimited. Taking only 5 cords to the acre as the average, we obtain fabulous results, which clearly show that this immense territory can provide an almost inexhaustible supply of raw material.

The basin of the Great Peribonca covers an area of 8,320,000 acres. There is certainly no exaggeration in estimating at five cords per acre the quantity of black and white spruce suitable for pulp making in this region, which would make 41,600,000 cords.

The basin of the Mistassini covers about 4,800,000 acres of wood-land, which, at five cords per acre, would give 24,000,000 cords of pulp-wood.

The region drained by the Chamouchouan contains at least 3,200,000 acres of forest, which would also give 16,000,000 cords of pulp wood at the same rate of five cords per acre.

In the remainder of the Lake St. John territory, that is the southern part drained by the Ouatchouan, Metabetchouan and other rivers, there are also 3,200,000 acres of forests of coniferous trees, which could also give 16,000,000 cords of pulpwood and even more.

All these data may be resumed as follows:

| Region | Area. | Quantity of Pulpwood. |
|--------------------|---------------------|-----------------------|
| Peribonca | 8,320,000 acres.... | 41,600,000 cords. |
| Mistassini | 4,800,000 " " | 24,000,000 " " |
| Chamouchouan | 3,200,000 " " | 16,000,000 " " |
| Ouatchouan | 3,200,000 " " | 16,000,000 " " |
| Total | 19,520,000 acres | 97,600,000 cords. |

These figures represent only the product of the first cut. It is well known, however, that if carefully attended to, spruce forests grow up again in twenty years.

PULP INDUSTRY.

Wood and motive power are the principal elements needed for making pulp. Now, in examining the foregoing data, we must conclude that there is no country or region better adapted to this industry than the immense territory of Lake St. John, especially the northern and north-western portions. Estimating the quantity of wood required to make a ton of pulp at 1½ cord, the maximum figure, the 97,600,000 cords of wood in this territory would permit of the manufacture of 65,666,666 tons of pulp, or 1,000,000 tons per annum for 65 years. The CANADA LUMBERMAN on the faith of reliable statistics said

in December last that the paper mills of the United States consume 1,000,000 cords of wood annually. The Lake St. John territory could supply this quantity for 65 years merely with the first cut of its forests of coniferous trees; this will give an idea of the importance of this territory with reference to the pulp and paper-making industry.

In Europe, Sweden, Norway and Germany are the foremost in the making of wood pulp. They supply the greatest quantities of this material to England and to France, besides what is sent to other large centres such as those of Belgium, Spain and Italy. According to the statistics published in the Forestry Magazine in October, 1884, the total area of the forests of each of those northern countries at that date was as follows:

| | |
|-------------|---|
| Sweden.... | 40,636,883 acres, or 40.43% of whole territory. |
| Norway.... | 17,279,000 " 22.30% " " |
| Prussia.... | 20,097,014 " 23.35% " " |

During the fourteen years that have elapsed since then, the wood pulp and other similar industries must have disposed of a considerable portion of those forests. This does not prevent the Scandinavian countries from continuing to export yearly about 500,000 tons of pulp in the shape of raw material or of paper, after supplying all the needs of domestic consumption.

The coniferous forests of the region of Lake St. John exceed in extent those of Norway, are nearly equal to those of Prussia and to half those of Sweden. It is acknowledged that our timber—black and white spruce—is of superior quality to that of Scandinavia and Prussia.

All the above gives an idea of the possibilities of the pulp and paper industry in the Lake St. John region. If the requisite capital be devoted to it there is enough wood there and enough motive power to supply wood pulp to half Europe.

FACILITIES FOR ESTABLISHING FACTORIES.

The great water powers of the Peribonca and Mistassini are connected with the railway by means of the steamboats running regularly on Lake St. John. The transportation of building materials, and especially of heavy pieces of machinery, could therefore be easily effected without heavy expense.

Most of the products of the factories, pulp and paper, would be exported chiefly to Europe. In summer the shipments could be made with advantage from the port of St. Alphonse at the head of Ha! Ha! Bay. This bay, which measures 8 miles in depth by 2 in width, is beyond a doubt one of the finest seaports in Canada. Protected against the south, west and north winds by the mountains that surround it on those sides, it is exposed only to the easterly winds, which seldom blow, and which are in great part kept off by the high capes at the entrance of the bay. The depth of the latter is considered everywhere, varying from 5 to 80 fathoms at low water, and its clay bottom affords good holding ground for anchors. At the St. Alphonse wharf the water is 29 feet deep at low tide in spring tide and 47 at high water. The entrance of the bay is only 53.59 miles from Tadoussac.

From the mills on the Great Peribonca and Mistassini, pulp and paper could be carried in steamboats to Roberval and thence shipped to Chicoutimi or Quebec. These means of transport already exist. But if the undertaking were in the hands of a powerful company with the requisite capital, it would be much more advantageous to connect the mills themselves and the port of St. Alphonse by means of an electric railway which would be about 30 miles long.

With the water powers and the wood in the Lake St. John territory, it would be possible to produce over 500,000 tons of paper a year, and this ad infinitum. The annual value of this product would exceed \$20,000,000, which gives an idea of the resources and wealth we possess in that corner of the province, if its forests are wisely preserved and intelligently utilized. It is doubtful whether the Yukon, with its gold, can produce as much for as long a time.

* Abstract of a report submitted to the Department of Woods and Forests of the Province of Quebec.