

engineer to the front, and with him the hydraulic and electrical engineer, because water power is almost universal in our mining regions from Labrador to Alaska. Our vast prairies, where is grown the most valuable quality of the most important cereal, have hitherto been unable to attract much foreign interest, though accessible to all nations; but the recent discovery of gold has been of such a character as to invite world-wide attention. Its influence (however temporary) cannot fail to produce increased agricultural development in our great North-West.

Since the birth of our Society water power has attained a position of immense importance owing to electrical transmission, which has given rise to new industries only possible where there is cheap and abundant water power, which also secures cheap intense electricity.

The rapid extension of the pulp industry in Canada is one of the results of cheap water power coupled with our abundant supply of raw material, easy reach of navigation, of rail, and the best markets; but the more recent electro-chemical industries are the exclusive products of cheap intense electricity. Here (as in mining) is a new field for the chemical, electrical, hydraulic and railway engineer. I include the chemist among the engineers, because I regard him as such, with the electrician, the hydraulic or mining engineer, producers though not creators of power, and, it may be, the chemical force is more potent than any other. If dynamite is a chemical compound, the power maker or discoverer is worthy to be numbered with the power user.

An electro-chemical industry of recent origin has been established in Canada by the discoverer, a Canadian chemical engineer, Mr. Thos. L. Willson. This is the manufacture of calcium carbide for the production of acetylene gas by means of electricity produced by the abundant water power of the Welland Canal at Merritton, where the manufacture in commercial quantity was first started in 1896, and from whence the product has already been shipped to England, France, Germany, Italy, Spain, Australia and South Africa.

Another electro-chemical manufacture in which our profession is interested (on water power ground), which also depends on cheap electricity, is that of aluminum, for which the raw material is so widely distributed, but for which, as with the carbide, abundant and cheap water power is indispensable.

In view of its importance, owing to its wide distribution over Canadian territory from the Atlantic seaboard to the Rocky Mountains, where no coal is found, and on account of its vastly enhanced value

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