

large diameter. In these days of structural steel, and "Ferris" wheels, this difficulty could be overcome; but, with the turbine, the conditions are reversed, the higher the head the less the size and cost of wheels, so that the most valuable water powers were the most cheaply utilized in this respect.

A previous check to the greater extension of water power was given in the latter part of the last century by James Watt's discovery of the steam engine, which by bringing the power to the work, to the city, and to the mine, revolutionized industrial conditions.

A still greater revolution has recently occurred which brings water power to the front again, by its amalgamation with electricity, whereby its economical power is transferred to the work, over many miles of distance, upon a single wire.

Within the last ten years high voltage electricity has been firmly established with annually increasing power of extension, and this has brought Canada into the first rank of economical power producing countries. Water is thus represented by a power to which it can give birth, but which is superior to its own, in that, where ever transplanted, it can do nearly all the parent power could do, as well as give light, heat and greater speed: moreover it has given rise to industries only possible with abundant cheap electricity. What is more important to us is that such industries are those for which Canada possesses the raw material, but which, without water power, she could not engage in.

There are important industries in which we have for some time utilized water power—for which electricity is not indispensable—but which equally require large amounts of cheap power, and are capable of indefinite extension: but while these may not need the intense electric current necessary for electro-chemical industries, they will find electrical transmission of inestimable value in many situations; while, for lighting and heating purposes, water power is invaluable to all.

Heretofore we have cut our spruce into deals and exported it to Europe, and more recently into pulp wood and exported that to the United States; but, manufactured by our water power into paper, the raw material would yield this country ten times the value it is now exported for.

The extension of railways combined with electrical transmission, will promote the local manufacture of such wood products (including all valuable hard wood) as can bear transportation; thus giving the largest amount of local employment, as well as tonnage to the railway; and delivering us from the position of "hewers of wood" for other countries.