

copting Russia and Siberia; and the bulk of this territory lies west of Lake Superior, with the city of Winnipeg as its natural market.—American Miller.

#### WATER POWER TRANSMISSION.

It is one of the ironies of nature, says the Montreal Herald, that the latest and most incomprehensible of material forces is likely to derive its chief importance from the oldest and most commonplace of them. When the pioneers came to this country some one or more of them in every section set up a mill

beside a waterfall. The pioneers brought their grain down rivers and across roads to the place where the fall chanced to be. Later, when steam engines came into fashion, the mills by the remote waterfalls were abandoned, and their ruins may be seen by the hundreds to-day in the older provinces. The mill moved into the centre of the grain-growing district, or near to the line of railway. The cities, too, may be said to have grown up around the steam cylinder. Steam made possible the effective use of machinery and machinery made possible the subdivision of labor. Out of this in time arose the

present crowded urban life, which embraces nearly half the population. Now, however, it begins to appear that, as a result of electrical research, the water power is again to become the chief motive force. The masters of electrical science are greater than Mahomet, for the mountain would not come to the prophet, but they bring the power of the falling water to the city—be the distance five or fifty or thrice the number of miles.

In discussing this subject at the Electrical Convention the other day, Mr. L. D. W. Magie showed how the combination of the world-old waterfall and the twentieth century electricity is working to take down a few pegs the reputation of steam, that wonder-worker of the nineteenth century.

"In mills and factories," he says, "where both sources of power have been tried, electric power is displacing the steam plant. Owners having experience with both invariably state that they would not be willing to return to their former power plants, even if power could be produced as cheap or cheaper than they are now obtaining it for electrically. The reasons for this are very numerous. The power is always on tap day and night, year in and year out; there is no waiting for boilers to be fired, nor shut-downs on account of strikes at some distant coal field; less room is required, and consequently floor space formerly occupied by belts and shafting can now be utilized for manufacturing purposes; also electric power can be easily sub-divided into any number or sizes of units, and thus independent departments and machinery can be worked separately, instead of from one big unit. Overtime work in any department is much cheaper, for by having departments separately operated they can be run independently at will, without running all the other machinery in the mill. The fire risks are less and rates of insurance less for mills operated electrically than by other means."

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