great importance, though the proportion has fallen to one-sixth. About one-twelfth is square timber and logs, the remainder being sawn humber, shingles, etc. The total value of lumber exports in 1903 was \$36,386,015, nearly one-half going to Great Britain. Thirty-five mills are in operation, converting spruce into wood pulp. These large mills will soon influence more largely the markets of the West, and Canadian forests are now looked upon as the great source of supply of pulpwood. The manufacture of furniture, vehicles, matches, and other wood products besides paper is making rapid progress.

FISH CANNERIES.

On Canada's world-famed fisheries rest many important indusries. Eighty thousand men and a capital of \$11,000,000 are employed in them. The fish are smoked, canned, or pickled for export, or shipped in cold storage to Canadian cities, to the United States, and to the West Indies. The salmon canning industry on the Pacific Coast is very important, the exports in

1902 aggregating over 49,000,000 pounds. Lobster canning on the Atlantic Coast is a considerable industry.

INDUSTRIES CONNECTED WITH MINING.

Great natural advantages, such as location at an ice-free port, proximity to the coal mines, and consequent low cost of ore at the smelter, make it possible for the Nova Scotia ironmasters to produce steel as cheaply as the great plants in the United States. A large amount of capital has been invested at Sydney and Ferrona, Nova Scotia, and at Sault Ste. Marie on Lake Superior. There are also important rolling mills

and foundries, and special lines of machinery are manufactured, such as agricultural implements and electrical and mining machinery. Among other industries are cotton and woolen mills, tobacco factories, sugar and petroleum refineries, breweries, and distilleries.

XVII.

Canadian Water Powers.

Canada's water powers are certain to play a tremendous part in her industrial development.

If water could be employed to turn the wheels of every factory one of the chief elements in cost of production would be eliminated. Already in Canada many industries get power in this way. Many more will follow in time, for Canada is the country of running waters. The Laurentian Highland constitutes "a gathering ground for many large and almost innumerable small rivers and streams, which, in the sources of power they offer in their descent to the lower adjacent levels, are likely to prove of greater and more permanent value to the industries of the country than an extensive coal-field."

WATER POWER IN USE.

So many companies are already making use of water power that only a few examples can be given. In Sault Ste. Marie the largest pulp mill in Canada and a number of important industries are operated by electricity developed at the local rapids. One hundred and seventy-five thousand horsepower has been developed thus far. At Rat Portage, 100 miles east of Winnipeg, a dam across the Winnipeg River gives a head of twenty feet with a storage area — the Lake of the Woods — of about 2,000 square miles. In time, not only Rat Portage and its mills, but Winnipeg and other places, with their industries, will be supplied with power from these works, which have a capacity of about 30,000 horsepower.

At Niagara Falls extensive power companies and many large chemical industries have been established, with an aggregate capital of \$20,000,000. Up to 1903 about \$3,000,000 had been expended by three companies that have franchises for power development. The completion of works to produce the full power authorized—425,000 horsepower—will involve an additional expenditure of \$17,000,000, making the total invested capital \$20,000,000. Great tunnels have been blasted through the solid rock under the river bed and along the shore, but the

volume of water is so enormous that the quantity diverted has produced no visible effect.

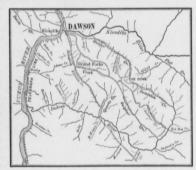
Large electrical works have also been constructed at the Lachine Rapids just above Montreal and at Chambly on the Richelieu River. These plants supply electricity for the operation of the street railway and for domestic and street lighting in Montreal. The streets of Quebec are lighted and the Quebec street railway operated by electricity developed at Montmorency Falls. Thirty thousand horsepower has been developed at Shawenegan Falls, on the River St. Maurice. The Chaudière at Ottawa, with a fall of about forty feet at low water, has been used for many

years for driving mills, pumping the city water supply, and generating electricity for lighting and for operating the street railway. Eight thousand horsepower has been developed here, while another 1,000 horsepower has been developed at rapids five miles above the city. Twenty-seven miles farther up, at the Chats Falls, there are magnificent water powers. Within a radius of fifty miles from Ottawa, the capital of the Dominion, there is an available water-power energy equivalent to 900,000 horsepower.

In Northern British Columbia and in Yukon, water power is used to wash the gravel in the placer mines. When "hydraulicking" a bank of gold-bearing gravel, a jet of water under the enormous pressure of, say, 200 feet, is thrown upon the bank, tearing it away and washing the gravel down into the sluices.

These instances are only examples of the water powers abounding in Canada. It is estimated that the St. Lawrence system places 10,000,000 horsepower at the disposal of Canadian industry. The power at Niagara Falls is estimated at 5,500,000 horsepower.

In Switzerland water power is called "white coal." Canada's supply of "white coal" is not equalled by that of any other country, and is inexhaustible. As soon as cheaper methods of transmitting electricity have been perfected, the utility of Canada's running waters will be indefinitely increased.



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