

## CHAPTER XIII.—WATER POWERS.

The fresh-water area of Canada is officially estimated at 228,307 square miles—an area nearly twice as large as the whole land area of the British Isles, and certainly larger than the fresh-water area of any other country in the world. As many parts of this well-watered country are situated at considerable heights above sea-level, there are great sources of potential energy in the rapids and waterfalls of the rivers conveying the waters from these areas to the sea. Water power, therefore, is among the chief natural resources of Canada, and its development has in recent years contributed materially to swell the volume of Canadian production.

This chapter of the Year Book is divided into three main sections: the first describes our water powers, their development and use in industry; the second deals with the Canadian central electric station industry, which is based almost wholly upon hydro-electric power; the third treats of the public ownership of hydro-electric power in Ontario, the chief manufacturing area, and also describes the policies of the Hydro-Electric or Power Commissions in other provinces.

### Section 1.—The Water Powers of Canada.\*

The progress of civilization in its material aspects may be measured by the extent to which the resources of nature are adapted to the uses of mankind. These resources yield, in the first instance, raw materials such as coal and iron, cotton and lumber, hides and wool, which enter into so many things that they are spoken of as basic commodities. Energy, until comparatively recently, was secured largely by the combustion of coal and was therefore looked upon as a secondary product, whereas, when produced from falling water, it is just as much a primary product as coal itself. Energy now enters so largely into the scheme of modern existence that it is recognized as basic. Statistics are published, just as with the production of pig iron, coal or cotton. In this case they show the kilowatt hours of electric energy produced and take note of undeveloped water power as being a source of raw material, just as important as uncut forests or untapped oil fields. The relationship of power to production is now so vital, that those associated with power development in any country are keenly interested in methods and progress in other parts of the world. To facilitate a study of world power conditions, three Plenary World Power Conferences have already been held to consider the technical, economic, and statistical aspects of power development. The latest of these Conferences, held at Washington in September, 1936, was composed of representatives of more than fifty member States. Following these Conferences, sectional meetings were held to consider special problems related to the production and supply of energy. Tentative arrangements have been made for the holding of a fourth World Power Conference at Tokyo, Japan, in 1942.

Canada is richly endowed with water-power resources and is in the forefront as regards their utilization. In fact, practically every large industrial centre throughout the Dominion is now served with hydro-electric energy and has within practical transmission distance substantial reserves for the future. More than 95 p.c. of the total main-plant equipment of the central electric stations of Canada is hydro-power, and this equipment generates more than 98 p.c. of the total electrical output.

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