

REPORT OF COMMITTEE ON WATERS AND WATER POWERS*

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DURING the year two important reports were published under the direction of the Committee on Waters and Water-powers, namely the reports on the "Waterworks and Sewerage Systems of Canada" and the "Water Powers of Manitoba, Saskatchewan and Alberta."

The report on "Waterworks and Sewerage Systems" is the second edition of this publication, and includes much more detailed and extensive data than the first. The main portion of the report is devoted to physical and financial data of all waterworks and sewerage systems of the Dominion. There are, in addition, a number of tables, summarizing the most salient points extracted from the information contained in the body of the report. Thus, some 528 waterworks and 279 sewerage systems are described in as much detail as space would allow, while the tables reveal data, throwing light on the importance of these systems in Canada. For instance, the 528 waterworks plants represent a capital outlay of nearly \$124,000,000, while the 279 sewerage systems have cost over \$77,000,000.

Water filtration is being used in connection with many of our domestic water supplies, but not as generally as might be expected; for instance, out of 216 systems obtaining their supply from possibly polluted sources, we find that only 72 have adopted filtration. Most of the unfiltered systems disinfect the supply with hypochlorite, or similar treatment, but this cannot be considered satisfactory, except as a precautionary measure pending installation of filtration. The importance of the gravity system, where the supply is obtained from distant lakes or streams, is also to be noted. There are over one hundred of these systems; among the larger cities thus supplied are Halifax, St. John, N.B., Quebec, Fort William, Calgary, Victoria, Vancouver and New Westminster, while Winnipeg will also soon be included.

Excessive Water Consumption

Excessive water consumption in most of our cities is another important point. The average daily consumption is 111 gallons per capita, while individual centres of fairly large size reach as high as 292 gallons. These figures could unquestionably be lowered; in many municipalities in Great Britain the consumption is as low as 25 gallons, and in but few is it more than 70 gallons per capita.

As stated in the first edition of this report, the pollution of our inland waters by untreated sewage is becoming a serious problem. More than 60 of our inland water systems receive sewage without the least attempt being made to prevent it spreading disease; 180 municipalities contribute to this very undesirable state of affairs. It is to be noted, however, that conditions in this respect are rapidly improving, particularly in the western portions of the Dominion. New sewerage systems have either been constructed with treatment plants, or are being designed and installed with a view to having treatment plants added in the near future, at the minimum expense.

*From Eighth Annual Report, 1917, by the Commission of Conservation, Canada.

The report on "Water Powers of Manitoba, Saskatchewan and Alberta" was published during the latter part of the year, its publication having been delayed to allow of the inclusion of later data which had become available, thus adding greatly to the value of the report, and bringing it up to date. This additional information was obtained principally through the Water Power and Irrigation branches of the Department of the Interior, the organizations charged with the administration of water power and irrigation, respectively, in the Prairie Provinces.

The report contains a complete compendium of all available information on the subject and will prove most useful as a reference book, especially to anyone contemplating the development of, or who is, otherwise, interested in, water-powers in this portion of the Dominion. An important fact brought out is that, while portions of the territory in the south are deficient in water-powers, the northern portions abound in this very desirable natural resource, and the information contained in this report should correct the erroneous opinion sometimes expressed that similar conditions obtain in the north as are found in some of the better-known portions of the provinces.

With the publication of the report, now in press, Mr. A. V. White, on "Water Powers of British Columbia," complete preliminary information on the importance and possibilities of even our remotest water-powers will have become available, while, from accompanying maps, the position of each power may be ascertained. This survey was of great importance, one of its principal objects being to pave the way to further and more detailed investigations of these natural resources.

In this connection it is gratifying to note that the measures which the Commission of Conservation has consistently urged since its creation, relative to the disposal of water-powers by the Crown, to stream flow and to other investigations regarding them, are enforced and being practised in almost every province.

Nova Scotia, in 1914, appointed the Nova Scotia Water-Power Commission, with power to make regulations regarding the disposal and administration of water-powers. The commission has been very active during the past two years in systematic investigations of detailed power possibilities, and in the establishment of stream gauging stations, this work being carried on in co-operation with the Dominion Water Power Branch, Department of Interior.

It is expected that similar action will shortly be taken by New Brunswick.

In Quebec the government has two organizations working in co-operation in connection with its water-powers. The Hydraulic Branch of the Department of Lands and Forests has charge of leasing and administering them, while the Quebec Streams Commission, organized in 1912, is actively pursuing water-power investigations and undertaking important conservation storage projects, such as at La Loutre, on the St. Maurice, the third largest in the world, as well as on the St. Francis and other rivers. Regulations for the disposal of water-powers in Quebec are now adequate, and the emphyteutic, or conditional long term, license given for periods of from 25 to 99 years, assures development within a limited time under government supervision and provides for a fair remuneration to the Crown, thus encouraging bona fide projects.

Ontario was one of the first provinces to undertake proper regulation and administration of its water-powers. The administration, which comes under the jurisdiction