Editorial

INDUSTRIAL PREPAREDNESS MEMORANDUM.

The memorandum on National Industrial Preparedness, which is printed on another page of this issue, evidently reflects much thought and labor. In solving the big problems that Canada must face after the war, the co-operation of the country's engineers will be urgently needed. The voluntary efforts of these five engineers in attempting to pave the way for the solution of some of the problems, should be emulated by more members of the profession.

WATER POWERS OF MANITOBA, ALBERTA AND SASKATCHEWAN.

The Commission of Conservation has just published a 334-page report on the water powers of Manitoba, Saskatchewan and Alberta. It is a compendium of all available data respecting this great natural resource and will form a valuable book of reference. To complete the information, Mr. Leo Denis, hydro-electric engineer to the Commission, made reconnaisance surveys in the less settled portions of Manitoba, Saskatchewan and Alberta. In southern Manitoba, the Commission, following its announced policy of avoiding duplication of effort, requested Mr. J. B. Challies, superintendent of the Water Power Branch, Department of the Interior, to contribute chapters regarding this portion of the area covered. Mr. Challies, whose name appears as joint author, also contributed the chapter on the Bow River above Calgary.

Incorporated in the report are also all available data procurable from reports by the Irrigation Branch, the Geological Survey of Canada and the United States Geological Survey.

Mr. Denis has added a considerable amount of new material (having examined personally the waters to the east of Lake Winnipeg, and the Nelson, Hayes, Upper Churchill, Athabaska, Peace and other rivers), and, what is perhaps more important, has correlated the whole information in such manner that it can be used for reference readily, the information being given in very condensed form. The facts are set forth in uniform style for every stream, in each case beginning with the head waters and drainage areas and giving the data regarding the various power sites in the order in which they occur, following the river down stream.

This style is similar to that followed in the volume, "Water Powers of Canada," which was published by the Commission in 1911, in which the subject was treated in a fairly complete manner in regard to the eastern provinces, the information covering the powers of the prairie provinces being admittedly very incomplete.

Following the policy enunciated in 1911, the Commission will, when the report by Mr. Arthur White on the British Columbia water powers is published, leave this field of investigation to the administrative branches of the public service. The Commission's object is to investigate, advise and inform. When its investigations have aroused the desired interest, its activities are directed to other fields. The "Water Powers of Canada," the volume under review, and the "British Columbia Water Powers," when published, will give in very handy form and in uniform style a thorough, condensed summary of the various water powers in Canada.

The information given is not so voluminous nor in so much detail as might be required by engineers proposing actual developments, but the circulation of these books will undoubtedly do much to interest Canadians and others in the development of these powers, and more complete information can then be secured by interested persons either from the Commission of Conservation or directly from the various departments more intimately connected with the administration of the water powers of the country, such as the Ontario Hydro-Electric Power Commission, the Nova Scotia Water Power Commission, the Quebec Streams Commission, the water power and irrigation branches of the Department of the Interior, etc.

The report is illustrated by sixty-three photographs and diagrams, besides two large maps, and has seven valuable appendices giving table of water powers on the Saskatchewan River and tributaries and streams flowing into Lake Winnipeg; tables of estimated flow and theoretical horse-power on streams where complete data on flow are not available; table showing descents on streams where lack of information prevents estimating flow; utilized water powers in the Yukon; monthly precipitation in prairie provinces; water power legislation; and bibliography.

In connection with these appendices it is interesting to note that the total available theoretical power, assuming most suitable conditions of regulated flow, amounts to no less than 865,000 h.p. on the Saskatchewan River and tributaries and streams flowing into Lake Winnipeg. Of this, only 109,000 h.p. has been developed. The estimated available theoretical power (May to November) on streams in the Prairie Provinces where complete data on flow are not available, totals about 5,500,000 h.p., of which approximately 240,000 h.p. is not favorable for development. (Naturally, this does not intimate, by any means, that all of the remainder can be developed economically.) Even this tremendous figure does not include streams where lack of information prevents estimating the flow. The utilized water powers in the Yukon are two in number, the power now being developed totaling 12,700 h.p.

The main portion of the report is divided into eighteen chapters, as follows:—

Winnipeg River; Red and Assiniboine Rivers; Western Tributaries of Lake Winnipeg; Eastern Tributaries of Lake Winnipeg; Nelson River and Tributaries and Hayes River; Saskatchewan River; North Saskatchewan River and Tributaries; South Saskatchewan River and Tributaries except Bow River; Milk River; Bow River below Calgary; Bow River above Calgary; Athabaska River and Tributaries; Eastern Tributaries of Lake Athabaska; Peace River; Slave River and Tributaries of Mackenzie River; Churchill River and Tributaries; Yukon River and Tributaries; Coppermine, Hood, Dubawnt, Ferguson and Kazan Rivers.

Mr. James White, Mr. Arthur White, Mr. Denis, Mr. Challies and the many other engineers who have had a hand in the preparation of these three volumes on Canada's water powers, are to be congratulated on the efficient manner in which this general survey of Canada's water power resources has been carried to completion.