

Editorial

NON SIBI, SED PATRIAE.

In the last Weekly Bulletin issued by the Department of Trade and Commerce, Sir George E. Foster voices an appeal for the co-operation of various public bodies, including engineering associations, in the practical solution of the problems which will undoubtedly confront us as a people after the war is ended. While it is questionable how soon the war will end, there can be no question as to the wisdom of bringing to bear on this important subject the best intellects that can be found in the country.

Unusual conditions are bound to prevail immediately following the cessation of hostilities, when between fifteen and twenty million men will lay down their arms and flood factory, office and field. In addition, thousands of men who have been strenuously engaged in the production of munitions of war, will be thrown out of employment and will have to look for work in other lines. In view of these facts there is an urgent demand that leaders in all branches of industry, commerce, engineering and finance get together and, in a spirit of service, deal with these problems in a statesmanlike manner.

The engineer, who up to the present has been over-modest so far as his part in the direction of national affairs is concerned, must in the future "find himself" in a far larger degree. By reason of his training and talents he is well able to measure up to what can reasonably be demanded of him in the effort to work out satisfactorily the problems which will follow the war. This war has brought the engineer suddenly to the front—he must stay at the front, even after the war is over. Not only on the firing-line, but in the industrial organization back of the world-struggle the genius of the engineer is seen everywhere.

Surely, in view of the fact that the war has been almost entirely determined by engineering principles, it is not too much to expect that after it is over the engineer should do his part in helping to solve the great reconstruction problems, both abroad and at home.

It is most desirable that the engineering profession should have an important part in the programme outlined in Sir George E. Foster's circular, and it is to be hoped that engineers, individually as well as collectively through the various technical societies to which they may belong, will accept the challenge and contribute their quota,—not for their own personal benefit, but for the good of their country.

UNDERGROUND POWER TRANSMISSION.

On another page of this issue there is a letter from Mr. H. F. Clayton, which he entitles "The Fetish of Overhead Power Transmission."

We assume that Mr. Clayton has in mind the laying of underground cables from Niagara Falls to the various manufacturing centres in Ontario. Theoretically, the idea is good, and Mr. Clayton's letter may stimulate research work in that direction. Practically, however, the suggestion is considerably ahead of the times, and

must await the production of a dielectric that will stand up under pressures up to 100,000 volts a.c. before underground construction for high voltages could compete with overhead line construction in either cost or efficiency.

A short length of cable is being operated in Switzerland at 40,000 volts a.c., but with that exception no cable has yet been designed, so far as *The Canadian Engineer* can ascertain, to withstand a working pressure over 33,000 volts a.c.

Several years ago a prominent Canadian hydro-electric engineer considered the possibility of constructing a 44,000-volt, three-phase cable for a comparatively short portion of a transmission system. But, we believe, he could not find a manufacturer who was prepared to submit a price and install the cable under a guarantee.

LETTER TO THE EDITOR.

"Another Water Powers Investigation."

Sir,—I note in your issue of June 1st, an editorial entitled "Another Water Powers Investigation," which, I think, does less than justice to the work of the Commission of Conservation.

In 1910, one of our engineers, Mr. A. V. White, examined all the powers in the province and in Nova Scotia. In New Brunswick, he examined all the powers except on the Restigouche and Upper Miramichi and procured data from other sources respecting the latter.

In Quebec, our hydro-electric engineer, Mr. Leo Denis, examined many powers and procured data respecting others from the engineers of the hydro-electric companies and others.

In Ontario, we utilized the comprehensive reports of the Hydro-Electric Commission and Georgian Bay Canal Survey.

The foregoing were all published in our "Water Powers of Canada," 1911, which also included the available data respecting water powers in Prairie Provinces and British Columbia.

Since 1911, Mr. Denis has examined the rivers to the east of Lake Winnipeg and the Nelson, Hayes, Upper Churchill, Athabaska, Peace and other rivers in Manitoba, Alberta and Saskatchewan. As the Winnipeg and Saskatchewan and their tributaries had already been examined under the direction of Mr. J. B. Challies, he courteously agreed to supply the data re these streams. The foregoing have been incorporated in our report on "Water Powers of the Prairie Provinces," which will be issued to the public at an early date.

In British Columbia, Mr. A. V. White has been engaged in field examinations for three years, and has prepared an exhaustive report, which is now in the hands of our editorial staff. It covers the field in great detail, and, like the two above-mentioned reports, will be authoritative for many years.

JAMES WHITE,

Assistant to Chairman, Commission of Conservation.
Ottawa, Ont., June 2nd, 1916.