

# Editorial

## THE ENGINEER AND PUBLIC SERVICE.

It remained for the war to bring into proper perspective the real worth of the engineer, and to show the world in an adequate manner the important part the profession has had to play in such convulsions as those through which we are now passing.

Not alone in times of war is the engineer a most necessary element in the world's conduct, but in times of peace the part he has to play in the carrying on of governmental administration is becoming more and more patent to all observers. When one considers how large a proportion of the money spent by federal, provincial and municipal governments is spent on work which either directly or indirectly calls for engineering supervision of some kind or another, it will easily be seen that the engineer must continue to take an ever-increasing interest in the affairs of governments. Public health, city planning, water supply, lighting, roadways, sewerage and sewage disposal, street railways and many other branches of government, all come directly into the realm of the engineer.

In view of all this, it is but reasonable to expect that the engineering profession, alive to the problems with which governments of all kinds are confronted, will respond to the challenge and assume that share of responsibility that rightly belongs to it. If this is done, more effective results in public administration are assured. The trained engineer, with his analytical mind, his power to obtain facts and his determination to stand by them, his tendency to act with precision, all fit, or should fit, him for a larger and more important part in public service.

Looking backward, it must be admitted that during the past few years the engineer has been coming into his own more and more, so far as governmental and administrative affairs are concerned. For instance, there is the introduction of the city manager form of government, the manager or commission-manager in the great majority of cases being an engineer by profession. The growth of bureaus of municipal research and many other developments suggest the possibilities which public service is opening to the engineer who, with a trained mind, an inventive genius, the creative instinct fully developed, is anxious to place at the disposal of his fellow citizens all those qualifications which eminently fit him for a larger place in administrative affairs of the community.

## INDUSTRIAL RESEARCH IN CANADA.

In an address before the Royal Canadian Institute, Professor J. C. McLennan, of the University of Toronto, last week advocated more systematic and intelligent efforts to develop and encourage industrial research in Canada after the war. He said that the three chief sources of wealth in the Dominion are agricultural lands, electrical power and mineral deposits. He cited some instances of firms in England having imported raw material which was found, after the war had cut off the other supply, to be at their very doors. He thought the same thing might be applicable to opportunities in Canada.

Prof. McLennan advocated a consolidation and correlation of the research work now being carried on at Ottawa in different departments and under different ministers. He also urged that the facilities afforded by the universities should be supplemented by the establishment of physical and chemical bureaus in the centre of those localities where industrial activity is greatest.

If industrial research in Canada is to be effective, there must be a more sympathetic attitude on the part of manufacturers, scientific institutions and the government toward this important work.

## EXPORT TRADE

One month after war commenced, our merchandise exports for the 12 months previous, had a value of \$468,000,000. At the end of September last, the year's export trade had increased to \$1,053,000,000. When war commenced our total trade for the previous year was \$1,061,000,000. At the end of the 12 months ended September last, it was \$2,014,000,000. The importance of permanent and steady export trade is becoming recognized here only slowly. The growth in this trade by 103 per cent. during the war period is due chiefly to war orders in Canada, the value of which has exceeded \$1,000,000,000 since the commencement of the struggle. The large crop last year also contributed to the expansion of trade.

How our exports were made up for the 12 months ended September, 1914, and 1916, is shown in the following table:—

	1914.	1916.
Canadian produce.		
The mine .....	\$ 57,174,939	\$ 77,436,746
The fisheries .....	19,964,899	23,274,772
The forest .....	42,191,112	53,952,950
Animal produce .....	62,034,576	111,331,332
Agricultural products .....	179,110,844	396,455,537
Manufactures .....	63,355,893	361,381,410
Miscellaneous .....	224,830	8,107,248
Total Canadian produce.....	\$424,057,093	\$1,031,940,004
Foreign produce .....	44,152,917	20,985,647
Total exports (merchandise)..	\$517,982,240	\$1,052,925,651

The increase of 473 per cent. in the export of manufactures is a direct result of war orders. The production of our factories during 1916 will probably be at least \$2,000,000,000 as compared with \$1,110,000,000 in 1910. While factories are working at full capacity now, the demand is abnormal and will to a large extent cease shortly after peace comes. The domestic market will absorb a substantial part of our factory products after the war, but it is the marketing of the surplus which requires the serious consideration of manufacturers, and now. The success or failure in placing this surplus in foreign markets will maintain or depress Canadian export trade. The maintenance of export trade during peace times is one of the most important questions of the day. Competing in the home market, and filling foreign war orders, are entirely different things to competing abroad in normal times.