

Editorial

THE GOOD ROADS CONGRESS.

If the Governor-General, the leader of the opposition and the Minister of Trade and Commerce back up their spoken pledges of co-operation with any tangible support, federal aid to the good roads movement will certainly have been benefitted by the fourth annual Canadian and International Good Roads Congress held last week at Ottawa.

Federal aid is a necessity if any comprehensive scheme of highway development is to be carried out from coast to coast. There are many municipalities in our sparsely populated country where the total assessed value of the municipality would scarcely exceed the cost of the permanent highways that might have to be built through them as a part of any highway scheme. There are hundreds of municipalities whose borrowing power is entirely too small to permit of costly roads unless aided by province or dominion. Maintenance also is partly a national question, as many of these municipalities could not maintain a highway system even if so much as ten mills were to be added to their tax rate.

The Duke of Devonshire was a leader in the good roads movement in England. Not many years ago the two houses of the British Parliament formed a joint committee for the discussion of road problems throughout the United Kingdom, and the Duke of Devonshire was the committee's chairman.

It will be fortunate for the good roads movement in Canada, and fortunate for the future development of this Dominion, if His Highness takes the same interest in Canadian road work that he did in English highway affairs. And what finer or more practical monument could he leave behind in this country, when his term of office will have been completed, than at least the nucleus of a national, transcontinental scheme of highways that will make more readily accessible the farms, the orchards, the ranches, the mines, the industries and the natural glories of Canada?

By interesting the high officials of the government and the opposition, the Ottawa convention probably did more good than any other convention ever held by the Dominion Good Roads Association. Considering the war and attendant circumstances, the congress was most successful. The attendance was not so large as at some former meetings, but it was more enthusiastic and more earnest, and the discussions were probably better than ever before.

Mr. Duchastel and Mr. McNamee are to be congratulated upon succeeding in holding the congress at all this year. Mr. McNamee, the secretary of the association, has been one of the most untiring good roads workers in the Dominion, and the movement owes a great deal to his initiative, foresight and ability. Mr. Duchastel made an excellent president. He ran the meetings in a most businesslike manner, keeping the discussions well in hand yet bringing out all valuable points, and his re-election to the presidency of the association was well-merited.

The chief reason for Mr. Duchastel's re-election as president, however, was to permit him to finish the work of incorporation of the association. At present the Do-

minion Good Roads Association is largely a myth. It has officers and directors but no roll of membership, no by-laws, no official prestige and no legal existence. It has "carried on" entirely on good-will—largely the good-will of the manufacturers who have most generously supported the exhibitions, often at very great cost.

This condition of affairs could not continue. The number of exhibitors and the size of the exhibits appeared to decrease each year. This year there was almost the irreducible minimum of exhibits despite the efficient and energetic work of Mr. Leach, the superintendent of the exhibition. It was seen that some other mode of support would have to be found if the congress were to be continued. It was decided, therefore, to incorporate the association under Dominion charter, and to have a paid membership list.

Fees will probably range from \$1 a year for ordinary members to \$100 a year for manufacturing members. This will distribute the cost of the propaganda more equitably and will give everyone a chance to pay toward the good work, making the congresses more independent of the support of exhibiting manufacturers.

It is expected that the new association will in time have a permanent staff of secretaries who will be able to carry on the work steadily and consistently, probably devoting their whole time to it. The province of Quebec has promised an annual grant to the association, and it is presumed that Ontario and other provincial governments will make similar grants.

CHEMISTRY IN ENGINEERING.

Slowly but surely the field of the chemist is comingling with many branches of the engineering profession. Since war broke out the science of chemistry has more nearly come into its own as a factor in engineering work. With the possible exception of mathematics and physics, the science of chemistry stands closest to engineering, and as the manufacture of materials used in engineering approaches perfection, the more pronounced becomes the handiwork of the chemist.

The production of iron, steel and the alloys for varied and special purposes serve as examples. The constituents of each of these are selected in percentage by the chemist, and the rules of thumb are no more. The chemist furnishes the data by which the engineer varies the chemical content of his materials to obtain the particular physical characteristics desired. The manufacture of cement is another striking example of the important part played by the chemist in relation to engineering.

In the realm of water supply and sewage treatment the position of the chemist is a most important one. What he finds in the nature and extent of impurities determines the policy of the engineer in the methods to be adopted so far as treatment of the water supply is concerned. The utilization of nitrogen, ozone or chlorine to destroy bacteria, the introduction of copper sulphate to dispose of algae,—these are instances in which the sanitary engineer, at least, is dependent upon the chemist.

In the province of highway work, too, the chemist comes into close contact with the engineer. In the