

# The Canadian Engineer

Established 1893

*A Weekly Paper for Canadian Civil Engineers and Contractors*

Terms of Subscription, postpaid to any address:

One Year	Six Months	Three Months	Single Copies
\$3.00	\$1.75	\$1.00	10c.

Published every Thursday by

The Monetary Times Printing Co. of Canada, Limited

JAMES J. SALMOND  
President and General ManagerALBERT E. JENNINGS  
Assistant General Manager

HEAD OFFICE: 62 CHURCH STREET, TORONTO, ONT.

Telephone, Main 7404. Cable Address, "Engineer, Toronto."

Western Canada Office: 1208 McArthur Bldg., Winnipeg. G. W. GOODALL, Mgr.

## Principal Contents of this Issue

	PAGE
Hydro-Electric Power Development and Pulp Manufacturing Plant at Smooth Rock Falls, by James Dick..	485
"Lump Sum" vs. "Cost Plus" Contracts, by Fred. A. Jones .....	491
Cost of Oiling Hamilton's Streets, by E. R. Gray:.....	493
Comparative Designs of Plate Girder Viaducts, by O. H. Ammann .....	494
St. Lawrence River Power, by Arthur V. White.....	495
Engineering and Finance of Public Service Companies, by Herbert A. Wagner .....	499
Lines and Grades in Tunnels of Small Diameter, by Henry B. Pratt .....	501
Cost of Garbage Removal and Street Cleaning at Saskatoon .....	502
Production of Iron and Steel in Canada.....	502
United States Federal Shipbuilding Yards.....	502
Editorial .....	503
Personals .....	504
Canadian Society of Civil Engineers .....	504
Canadian Society Civil Engineers Manitoba Branch....	504
Coast to Coast .....	42
Construction News .....	44

## PROVINCIAL CONSULTING ENGINEERING

The Commission of Conservation has just issued a report on "Rural Planning and Development," by Thomas Adams, town planning adviser to the commission. Much excellent information is to be found in the volume, and if most of Mr. Adams' recommendations are followed by the provincial and Dominion government authorities, it will be for the general good of Canada. Mr. Adams gives eight general recommendations for solving the five specific needs of the nation in regard to rural planning and development. With seven of these recommendations we are in hearty concurrence, but it is a question whether the eighth recommendation was entirely necessary. It reads as follows:—

"Provincial governments should reconsider their systems of administering colonization highways, municipal affairs and public health, with special regard to the need of securing more co-operation and efficiency in connection with land and municipal developments than is possible under present conditions and for increasing the responsibilities and powers of municipal authorities under the advice of a skilled department of local government in each province."

In explaining these recommendations more in detail, Mr. Adams further on in the report says in regard to the above recommendation that "until there is a skilled municipal department in each province to advise and help local authorities with engineering advice, we cannot expect satisfactory improvement in the status of the municipal

and sanitary engineer nor effective local administration of public works and sanitation."

Mr. Adams may be right, but it seems to us that this recommendation, and particularly the more detailed explanation of it, is a caustic slight upon the present efficiency of the work of the municipal and sanitary engineers in Canada, and also upon the work of the consulting engineers who are employed in an advisory capacity. Compared with other countries, at least in North and South America, the local administration of public works in Canada is decidedly effective, and it is a matter of great doubt whether municipal and sanitary engineering anywhere else in America has been so efficient and free from politics as in Canada.

Most Canadian municipal engineers are trained technical men, appointed for their ability and in a more or less permanent capacity. They are studious and ready at all times to investigate and adopt improvements in sanitary practice, and it is a matter of doubt whether any provincially organized department is necessary to stir them to effective work.

The consulting engineers of Canada probably have had more experience along municipal and sanitary lines than in any other field, and have done very efficient work in this direction. We believe that any municipality in Canada will be as safely guided by the advice of almost any Canadian consulting engineer as by the advice of a provincial body.

Too frequently provincial bodies are even more affected by politics than are municipal bodies, and where politics does affect a provincial body, the results are far more sweeping and dangerous than in the case of the more restricted municipal affair. Great care should be exercised in the creation of provincial bodies having wide powers. One incapable or dishonest official, or one engineer with queer and impractical ideas, can do much harm if afforded the scope of provincial authority.

Is it not probable that engineers may be entrusted to surmount the obstacles of rural planning and development by individual and competitive effort, with greater satisfaction than would be obtained by the more machine-like, "steam roller" methods of an autocratic provincial body?

## CONSERVATION OF RESOURCES

Much of the national organization of most countries is to-day engaged in systematic efforts to promote conservation of essential commodities. In Canada, however, we have not yet arrived at a proper conception of the economic utilization of our resources. In an unusually valuable address before the Commission of Conservation at its recent annual meeting, Sir Clifford Sifton, chairman of the Commission, reminded us of our persistence in the crude and wasteful methods naturally characteristic of a country where resources are abundant and where many of those who are engaged in their exploitation are totally lacking in the scientific education which is necessary in order to make the best use of that which is placed in their hands. "We are still largely dominated in Canada," said Sir Clifford, "by the idea that any ordinarily capable amateur can do the work which ought to be done by a trained scientific man, and until we eradicate this fallacy thoroughly, and in its place implant the view that men who are technically trained are the only men competent to deal with technical problems, we shall not begin to