

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
Overland Pipe System, Ottawa Waterworks, by L. McLaren Hunter	505
Notes on the Uses of Concrete, by A. E. Eastman.....	508
Government Water Conservation	510
Hard-Surface Pavements for State Highways, by Charles J. Bennett	511
Report of Committee on Service Pipes	512
Evaporation from Water Surfaces and River-Bed Materials, by R. B. Sleight	515
Pulsations in Pipe-Lines, by H. C. Vensano.....	516
Water Departments and the Public Health, by H. E. Barnard	517
Expenses and Costs, by H. L. Gantt	518
Electric Smelting in Canada	519
Canada Must Conserve Coal	520
Criticizes Ontario's Power Commission	520
Trinitro-toluol to Supplant Dynamite?	520

TORONTO BRANCH QUESTIONNAIRE

The special committee appointed by the Toronto Branch of the Canadian Society of Civil Engineers to consider the matter of drafting new by-laws and how best to promote the prestige and influence of the branch, has issued a questionnaire to the members. It is to be hoped that the members will assist the committee by sending in early replies, as it is anticipated that the information to be obtained by means of the questionnaire will materially help the branch executive to formulate a course of action.

Judging from the replies already received, there appears to be a desire—although not a very definitely expressed one—that the Canadian Society of Civil Engineers should do more to enhance the position of its members in the opinion of the public. The members should bear in mind that the Society is exactly what they, themselves, make it. The Society cannot reform itself,—if it needs reformation. The Society is fully representative of the members at large; that is, that its activities, its development, its aggressive attitude in various matters relating to the engineering profession, are simply reflections of what the majority of the members are doing.

A steamship depends upon stokers for its progress and upon its captain for its destination; but navigation officers would be helpless unless the stokers were providing the steam. In a like manner, the Council of the Society, or an Executive Committee of a Branch, must depend upon the body of members to furnish the "steam" without which the Society's "Ship of State" cannot be guided to any harbor of contentment.

If, then, the Toronto members of the Society desire that the prestige and influence of the Toronto Branch

should be increased, it must be done by their indicating the methods that they consider advisable for adoption. The prestige and influence of any body of men are inevitably the products of their own personal and collective aspirations and efforts.

OUR SERIOUS COAL PROBLEM

A serious warning as to the necessity for national organization was uttered by Sir George Foster at a Victory Loan meeting in Toronto last week. Just as we are now dependent on our own financial strength, so we may, as the war continues, be thrown upon our own resources in other directions. Sir George mentioned the multiplicity of regulations governing exports, including coal, from the United States to Canada. The time might come, comparatively soon, he said, when the United States, because of the exigencies of war, might have to ask us to depend upon our coal resources. As the neighboring republic assumes a larger share of the conflict, it would require more and more of its resources for carrying on the war. The lesson for Canada is the immediate organization of national resources for application to war conditions.

The statement of Sir George follows closely a similar plea of Sir Clifford Sifton at the recent annual meeting of the Commission of Conservation. War conditions have brought home to the people the critical position in which they stand with regard to fuel and the necessity for applying intelligent study to the whole question. Sir Clifford said that upon the whole question of coal, Canada is woefully behind the times. "Wasteful methods of mining are permitted throughout Western Canada," he said, adding: "No serious attempt has been made to grapple with the problem of preventing the serious and irreparable waste which is constantly going on in the mining of our coal areas. Provisions for inspection to prevent the loss of human life has been made by the provinces; but the permanent waste of very large quantities of valuable coal still goes on. What is required is a competent public service of technically trained men who will undertake the supervision and control of the mining of coal upon Dominion lands and put an end to the waste."

This waste, in peace time, is bad enough; in war time, it is almost criminal. In national organization, the Dominion government must lead the way. The question of our coal supply is a matter for their immediate attention in co-operation with technically trained men.

ENGINEERS AND CONTRACTORS

One of the most frequent causes of trouble between owners, engineers and contractors is the neglect of some engineers to express themselves clearly. As a result, uncertain specifications are introduced and these in turn are followed by controversy and litigation between the parties concerned.

While it is frequently impossible for the engineer to know in advance of construction exactly what will be required, the contractor very naturally objects to the attempt that is sometimes made to shift the burden upon the contractor by the introduction of ambiguous clauses which, in most cases, are unfair to all concerned and lead to misunderstanding all along the line.

A great deal of trouble of this kind can be attributed to the practice of copying specification provisions from