

may cause the collapse of a steel pipe. It is thus evident that careful attention must be given to the size of air valves. It is therefore necessary to calculate the velocity and volume of water that could be discharged by a possible rupture at every low point in the pipe line, so that the air valve or a cluster of them at the summits on each side of the supposed rupture may be large enough to admit a volume of air equal to the volume of water discharged. It must be borne in mind that one side of the line will probably have no water to run (except that which is in the pipe) whilst the other side will be supplying a certain amount from the source of supply. Nothing less than 4-in. air valves were used on this line, and where required clusters of 4-in. air valves were installed. These were supplied by Glenfield and Kennedy.

[NOTE.—The above article was originally prepared by the writer for the Journal of the Institution of Municipal and County Engineers of Great Britain, and was published in that journal earlier this year. It has been revised for publication in *The Canadian Engineer*.—AUTHOR.]

(To be concluded in an early issue.)

### REPORT UPON MONTREAL AQUEDUCT.

Reporting upon the Montreal Aqueduct, a committee of Montreal engineers stated that the project will cost \$10,000,000; that the sum of \$5,200,000 has already been spent; and that the latter sum is regarded by the engineers as having been wasted. The city is warned that if the remainder of the money called for by the scheme is spent, it too will be wasted. They find that the city entered upon the work without making sufficient preliminary study. The engineers who made this report are a committee who were appointed by thirty-one engineers, all members of the Canadian Society of Civil Engineers, all citizens of Montreal and all ratepayers in Montreal. The report was presented free of any cost to the city, as a result of the offer which was made by the engineers after the Board of Control had refused to make an appropriation to pay for an independent report upon the project.

### BRITISH COLUMBIA INSTITUTE OF CIVIL ENGINEERS.

A new local society of civil engineers has been formed in British Columbia under the name of "The British Columbia Institute of Civil Engineers." It has no connection with any other engineering society and is wholly provincial. It will include land surveyors, architects, draftsmen, etc., as well as civil engineers.

At the organization meeting the following officers were elected: Chairman, E. N. Horsey; secretary-treasurer, L. P. MacRae, Jr. Can. Soc. C. E.; under-secretary, F. M. Preston, A. M. Can. Soc. C. E.; council, Wm. M. Stokes, Jr. Can. Soc. C. E., J. H. Devey, A. M. Can. Soc. C. E., Mr. Noakes, A. K. Mitchell, A. M. Can. Soc. C. E., Mr. Lambert and Mr. Todd.

It is proposed to apply to the provincial legislature for a charter. Branches will be opened in Vancouver and other provincial centres. The present membership is forty-two, but the officers state that they expect to double this number within the next few months. A clause in the constitution says all members must be British subjects.

Among the avowed purposes of the new society is the intention to prevent the importation of civil engineers for any work in British Columbia when qualified engineers are available in the province; to secure employment of engineers in British Columbia in order of merit; to secure

equitable remuneration for professional services; to assist members to obtain employment by recommending them to employers seeking the services of competent men; and to give professional advice and assistance to all members whenever desired, for the purpose of increasing the efficiency of the members.

### CANADIAN SOCIETY OF CIVIL ENGINEERS, REGINA BRANCH MEETING.

Mr. J. N. de Stein, secretary-treasurer of the Canadian Society of Civil Engineers Regina Branch, kindly forwards the following report of a recent regular meeting of that branch:—

"The main discussion referred to the recent appointment of the 'Commission of Enquiry into Railways and Transportation,' and the action of this commission in choosing American engineers to organize their valuation work. In the first instance, the Dominion government was sharply criticized for appointing such a commission, which to a large extent will influence the whole financial future of Canada, and in which a number of important engineering questions will occur, without giving the engineering profession of the Dominion a representation on this commission.

"In the second place, the act of this commission in appointing alien engineers to such prominent positions was discussed, but no final decision was reached. This matter was left with the executive of our branch with power to prepare a resolution in this respect, and forward a copy of same to every member of the Federal Parliament for the province of Saskatchewan."

### EDMONTON BRANCH MEETING.

Prof. John A. Allan, of the Department of Geology, University of Alberta, gave a very interesting paper on "Some Geological Problems of the Petroleum Resources of Alberta" at a regular meeting of the Canadian Society of Civil Engineers, Edmonton Branch, held November 15th. Prof. Allan gave a short historical sketch of the development of the petroleum industry, dealing with theories held by geologists as to sources. He remarked upon the various kinds of petroleum and dealt with the geological formation of Alberta in regard to petroleum resources. His lecture was fully illustrated by earth sections and maps.

### ANNUAL EXCURSION, TORONTO BRANCH.

At least seventy-five members of the Canadian Society of Civil Engineers Toronto Branch accompanied City Engineer Geo. Powell, and Chief Engineer Wm. Storrie of the John ver Mehr Engineering Co., on the trip of inspection to Toronto's new mechanical filtration plant.

Mr. Wm. Gore, consulting engineer of the company, together with Mr. Powell, Mr. Storrie, Mr. King of the Cowlin Co., and others, explained the operation of the plant in detail. Every portion of the works was visited and trial runs of some of the units were witnessed.

The plant, which has been described in previous issues of *The Canadian Engineer*, was of great interest to the members of the society, who expressed their appreciation of the ingenuity of the many automatic features, and also of the substantial materials and high-grade workmanship utilized throughout by the Cowlin Co.