

testing laboratories of one kind or another, the larger universities are well equipped for testing up to 75 tons, and there does not seem to be any occasion for the establishment of a testing laboratory unless it is on a very much larger scale than private individuals or institutions of learning already have. We have instances now before us in connection with the Quebec Bridge, as heavy tests must be made on the other side, and it seems to me if we are to have a testing machine of any use, it should be one of at least 1,000 tons capacity instead of such, as quoted in the report, of 200 tons capacity. In other words, it does not seem to me to be worth while to get the Government to establish a laboratory which would simply duplicate existing laboratories. I think, Mr. President, there ought to be some definite recommendations to the Government rather than a mere request to establish a testing laboratory. (Hear. Hear.)

MR. MOUNTAIN: In reference to this matter I am sure that the Chairman of this committee, Mr. Keefer, will take note of what Mr. Duggan says. Mr. Keefer has certainly done a great deal of hard work in getting this matter brought to the attention of the Government.

MR. KEEFER: I might say, in reference to Mr. Duggan's remarks, that in endeavouring to get the Government to establish such a laboratory, the committee recognized the necessity of having something much larger than existing laboratories, and our idea was to get them to establish a laboratory of as great a capacity as possible; but we did not feel that we could dictate to them exactly, as they were going to spend the money. We did not feel we could tell them what capacity they should establish.

MR. HARKOM: I happened to be in somewhat close touch with the executive of the Canadian Manufacturers Association, and I was going to say that I brought this matter to their attention the other day, with a view that perhaps this meeting might suggest that our Council work in harmony with the council of the Canadian Manufacturers Association. Of course, the laboratory with which this report deals is an exceptional one, but there are a very great number of manufacturers in the country who would be benefited by that and there are also a very great number who would like to see something more general than that. I am able to say, sir, that if this Society sees fit to co-operate with the Canadian Manufacturers Association, that in all probability we will get better results in approaching the Dominion Government in recommending the establishment of a general testing laboratory on such lines, as the laboratory established near Berlin in Germany, which has had a great deal to do with the rapid advancement in German manufactories. There, if a man wants a piece of steel tested, he can get it tested. If a man thinks he has too much sand in his sugar he can get it tested, and if another man is making cotton shirts he can have his cloth tested. This laboratory was established by the Government, and it is looked upon and regarded in the courts as authoritative, and the reports from that laboratory are accepted by the judges of the courts. Now, it so happened that quite recently, in a rather important matter, I had before me for consideration certain reports and there were certain analyses and tests submitted, and I found them varying to such an extent that I was unable to form a really satisfactory opinion on the matter. Now, if this Society can join hands with such an association as the Canadian Manufacturers Association, which is recognized as being an influential one in the country, and if we could also get the co-operation of some other societies, it seems to me we would stand a far better chance of getting what we want, than by approaching the Government single-handed, as we have done in the past.

I understand that Mr. Keefer has seen the Minister, and that the Minister has expressed his appreciation of the recommendation, but I understand they cannot do anything more this year; but it seems to me that in the meantime, if some concerted action were taken, we would have a far better chance of getting what we want, and if it is order, I would move that the executive or a special committee of this Society be instructed to co-operate with other bodies in bringing the attention of the Dominion Government to the desirability of establishing a National General Testing Laboratory.

MR. SKAIFE: I second the motion.

MR. DUGGAN: I am afraid I was not very clear in my statements. It seems to me that we already have a number of laboratories, such as Mr. Harkom speaks of. The universities have testing machines for testing cement, and large contractors have testing machines also for that sort of work. There are also commercial concerns who make analyses and tests, but what I supposed this Society had in view, and speaking from my own point of view as a structural engineer, is the installation of testing machines such as are not to be found in this country, and are beyond the reach of any private corporation or institution of learning. The cost of the installation of these machines is much too great for a university to take up, or for any corporation, for that matter, to install. Speaking from my own point of view, we have a 75-ton testing machine, which is about the size of this one, and McGill University has two of about the same capacity, and there is no reason why that class of testing cannot be done in a number of places in Canada, but I think we ought not to have to go to the United States or elsewhere in order to get our heavy testing done, which we have to do now. We have to go to the United States now when we want this heavy testing done.

It was simply to suggest the lines on which we should approach the Government to get it tested that I brought this matter up. My own views are quite opposed to Mr. Harkom's views in this respect. I think we should try to get machines which cannot be got otherwise rather than to establish a general testing bureau.

MR. JAMIESON: As a member of that committee, although I have not taken a great part in it yet, in the beginning when we took the matter up with the Government, I attended meetings that the Government had at Ottawa, and our idea was to impress upon the Government the necessity of putting in large machines—larger than those at present available or owned by the different universities and testing firms in Canada, and in other respects to co-operate with the universities in Canada to utilize their testing appliances wherever possible. We tried to impress them with that fact at the time, but progress, of course, was slow, and they had to go through the ordinary method of appointing somebody to investigate, but it seems to me that unless we can get the Government to realize the importance of this matter and the magnitude of the work that they have to do; namely, the putting in of large machines and a sufficient number of them to make them useful, and the putting of proper men in charge of them, of course, we will not accomplish the object we have in view. I think that now probably it will all have to be taken up again with the new Minister, and I think we might again impress upon him as strongly as possible the points we wish to have taken up, and also those that have been suggested by the other members present at this meeting.

MR. KEEFER: I think if we can get the co-operation of the Manufacturers Association and other bodies to draw the attention of the Government to the necessity of the establishment of a laboratory with very full equipment and the largest possible machines for testing steel and structural materials, and testing all classes of materials, it will be a very good thing and strengthen our position very much.

Mr. JOHN KENNEDY: I think, Mr. President, that Mr. Duggan has touched upon the fundamental question. It seems within the province of this Society to make a recommendation to the Government, not exactly in the way of establishing some sort of a testing laboratory, but to make a definite recommendation as to what is wanted and to point out to the Government what kind of a laboratory to establish, because they do not know what sort of a laboratory is wanted. It seems to me it is within the province of the Canadian Society of Civil Engineers to do that. I cannot recall what this committee was empowered to do. If they were empowered to go to the Government simply and ask for a laboratory, it seems to me their instructions might be enlarged, and that it would be safer for the committee to get information and report to the Society, and then we should make a definite recommendation, either on the lines suggested by Mr. Duggan, or perhaps on a