

University, Kingston; Mr. R. S. Lea and Mr. John Kennedy, civil engineers, both of the city of Montreal; Professor C. H. McLeod, Vice-Dean of the Faculty of Applied Science in McGill University; Dr. Bryce, Medical Inspector of the Immigration Branch, Department of the Interior. These gentlemen were examined at some length, and were all agreed as to the necessity of legislation of this kind.

Although this Bill was very thoroughly discussed on a former occasion, I think it is due the House that I should refer for a few moments to some of the findings of the committee appointed to look into that matter. To that end I wish to read some of the evidence given by Mr. White of the Conservation Commission. The following is part of Mr. White's evidence:

Q. Have you any data or information as to how wide an expanse of water would be necessary to prevent pollution on this side, or can you rely at all upon the distance?—A. The Great Lakes undoubtedly act as great sedimentation basins. The public health authorities of Ontario have gone half way across Lake Ontario from Toronto collecting samples of water all the way. They found bacteria right out to the middle of the lake. Of course, we can concede that the chances of the sewage of a city like Rochester infecting the supply of a town like Port Hope or Cobourg are somewhat remote; but you cannot say that it will not. The most important point of all is that the population on the shores of the Great Lakes and the St. Lawrence is increasing, and, as the population increases, the danger of infection also increases.

Q. What is the distance between Rochester and Cobourg?—A. The distance across the lake is approximately 40 miles, I should say.

Q. Is that sufficient to purify the water?—A. We have traced the pollution half way across the lake. Of course we assume that the pollution they get in the middle of the lake is Toronto's pollution, because, of course, Toronto is the largest city on the shores of Lake Ontario, and the pollution was found practically opposite that city. They were trying to discover whether by extending their intake pipe out a reasonable distance they would get beyond the polluted area; and they came to the conclusion that they could not.

Q. Is the water from the Great Lakes used for domestic purposes by the city? A. Yes, that is what the city of Toronto depends upon. They have installed a very large filtration plant, but other cities along the lakes are using the unfiltered water.

Mr. Joseph Race of the city of Ottawa was also examined. He gave the following evidence:

The effects of the pollution of navigable waters have chiefly been reflected in the abnormal death rates from enteric diseases, and it is these rates that have attracted public attention to this serious problem. At the outset it should be remembered that it is the use

of such water for drinking purposes without purification that is the cause of so many deaths, and that the sewage problem has become acute on account of the failure of communities to realize their responsibilities in that direction.

We come now to the other aspect of this problem. If the sewage pollution of navigable waters is allowed to continue and the population continues to increase, a stage must ultimately be reached when they become impossible as a source of domestic water supply.

Q. What is your opinion regarding the whole question of the prevention of the pollution of streams?—A. I think that all sewage pollution and trade wastes ought to be prevented from running into the rivers unless thoroughly purified.

Q. Do you agree with other scientists that typhoid is a water borne disease almost entirely?—A. Not almost entirely, but a large proportion of it is.

Q. You believe that it is a disease that is preventable?—A. Yes, certainly.

Q. What percentage is preventable by legislation?—A. I should say at least 75 per cent.

Q. Then according to your statement your opinion is that if we had proper sewage protection in the city of Ottawa we would have had at least 75 per cent fewer typhoid cases and deaths during these epidemics?—A. Undoubtedly.

The evidence of Mr. Race is, I think, particularly important, inasmuch as he gives it as his opinion—and this opinion is corroborated by the opinions of a great many other scientists—that typhoid fever is largely preventable, and that it is a water-borne disease.

When we think of the awful ravages that typhoid fever has caused throughout Canada, we must realize the importance of passing some legislation that will protect our great fresh-water supplies in this country. Dr. W. T. Connel, one of the scientists connected with Queen's University, Kingston, was the next witness examined by the committee, and in connection with the pollution at Kingston he gave the following evidence:

Q. If there were typhoid fever at Kingston, would that not increase the danger of infection at the towns below?—A. I think that we can say that either typhoid fever cases or typhoid carriers are constantly present in every town and city, hence that a certain number of typhoid bacilli are being daily discharged with untreated sewage into the rivers and lakes by practically every town and city in this country.

Q. If there were anything of an epidemic, of course that danger would be increased?—A. Provided the excreta were not disinfected, as they are supposed to be by law.

Q. Speaking generally would there be any suggestion you could make which would be applicable?—A. Every city should treat its own sewage in such a manner as to render it harm-