

MUNICIPAL DEPARTMENT

SEWAGE DISPOSAL IN TORONTO.

(Continued from last issue.)

At the pumping station the sewage would be passed through a strainer, in order to prevent any possible danger of objectionable floating matter being found stranded along the shore in the vicinity of the outlet. If, however, the council object to turning crude sewage into the lake, Mr. Rust recommends as the most fitting alternative, the adoption of his second proposal—the construction of septic tanks and the purchase of some 500 or 600 acres of land to be used as filter beds, the sewage to be lifted to this point. As we stated above, the estimated cost is £480,000 and the annual cost £15,000. Incidentally Mr. Rust mentions that various engineers who have reported on the subject of the disposal of sewage of the city during the past twenty years have recommended that the sewage should be discharged directly into the lake, but at a point much nearer to the water intake than that proposed by himself. Nevertheless, they were all of opinion that there was not the slightest danger of any contamination of the water supply; and the risk is now considerably diminished, by the fact that whereas formerly the supply was taken from a depth of only 20 feet, the intake pipe has since been extended and the water is now procured at a depth of 50 feet. Mr. Rust points out that a bacterial treatment scheme would cost much more than that for discharging the crude sewage into the lake, and the annual expenditure would also be considerably greater. The second, third and fourth schemes are limited in the estimates to the treatment of 25,000,000 gallons a day, which is slightly in excess of the dry weather flow; but as the amount of sewage increases, not only the pumping plant but the septic tank, bacteria beds, filter area and force mains will also have to be increased. Here Mr. Rust mentions a peculiar point in connection with the water supply. He observes that it is somewhat remarkable that from 1 a.m. to 5 p.m. when it would be considered that the flow of sewage would be very small, it is as high as 15,000,000 or 16,000,000 gallons. Mr. Rust argues that as there is very little water used during these hours some 12,000,000 to 15,000,000 gallons must be going to waste somewhere, probably caused by innumerable leaks, bad plumbing fixtures, etc., and that, in comparison with the large amount of water used per head in Toronto as compared with European cities, it is self-evident that a large saving would be effected in connection with sewage disposal if the quantity of water used would conform more closely to European practice.

Mr. Rust anticipates that there will be some dissatisfaction among the citizens owing to the fact that he has recom-

mended that the crude sewage be discharged into the lake, but he reminds them that the difference in the cost of the schemes has to be considered, and also the difficulty of procuring land at a reasonable cost at a suitable distance from the centre of the city, and so situated that the construction of disposal works would not be detrimental to the surrounding property. It is pointed out that though disposal works would be comparatively free from smell, and would not, in Mr. Rust's opinion, be a nuisance, there is always a sentimental objection on the part of property owners to having sewage works located in their immediate neighborhood. In connection with the location of the outfall, should it be considered advisable in the distant future to dispose of the sewage by a different method than by turning it into the lake, there would be no difficulty in procuring a large tract of land at a reasonable cost in the neighborhood of the outfall, the only drawback being that the elevation of the ground in the neighborhood is so much above the lake level that the annual cost of pumping would be somewhat heavy. In concluding his report Mr. Rust remarks that in all probability the municipality of a European city situated on a large body of water would turn their sewage directly into it. Some distinction, however, in our opinion, should be drawn between turning the sewage into the sea and turning it into an inland fresh water lake, though in the case of Toronto the great area of Lake Ontario may be

urged in support of the scheme. Mr. Rust mentions incidentally that the city engineer of Manchester, an inland city, recommended in preference to any system of treatment that the sewage be carried by an intercepting sewer $1\frac{1}{2}$ miles in length and discharged into the Mersey. This recommendation, as our readers are aware, was not adopted, bacterial treatment being preferred. It is quite correct as Mr. Rust adds, that although bacterial treatment has been adopted by a large number of towns and cities in England the majority of these places are inland and so far only one or two towns situated on tidal waters are carrying out schemes of bacterial treatment. Although, for the present, at all events, Mr. Rust pronounced in favour of turning the sewage into the lake, he concludes his report with an emphatic commendation of bacterial methods, with two reservations. He says "If it were finally decided to adopt the bacterial method of sewage disposal for this city, it would be found thoroughly efficient and satisfactory. This is borne out by the experiments that have been carried on in England during the past six or seven years, but as I have already explained, at present there is not sufficient data upon which to base an estimate of the annual cost of operation, nor is there sufficient information to decide finally as to the lifetime of the beds." These are the two points upon which municipal engineers are now busily engaged in throwing some light.

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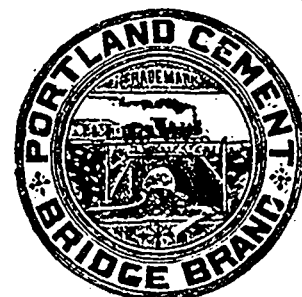
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