

MUNICIPAL DEPARTMENT

SEWAGE DISPOSAL IN WESTERN ONTARIO.*

BY W. M. DAVIS, C.E., BERLIN
(Continued from last issue.)

The bed was put in operation in August, 1900, and the beds later in the fall. The first noticeable effect was the abatement of the intolerable stench which at that time prevailed in the vicinity. The greater part of the suspended matter was removed from the sewage, the effluent looked like soap-suds and had a musty smell, a thin scum formed on the surface of the sewage in the tank. For the first five months the amount of sludge disposed in the main chamber was not more than 18". The beds were cropped as proposed and were irrigated at first with the raw sewage and afterwards with the septic effluent. The vegetables grown, chiefly mangel wurzels, were of excellent quality and the yield was good; some \$200 were realized from their sale, so that the work of 1900 may be considered as fairly satisfactory.

During the winter of 1901 it was observed that the deposit in the tank had seriously increased until in February there was so much sludge that the sewage in passing through the tank formed a narrow channel for itself and came out of the tank without any perceptible change. It is probable that this falling off in the efficiency of the tank was caused partially by antiseptics from the chemical and gas works which checked putrefaction in the tank, and partially by the tank being over-worked, but as no steps have been taken to determine the causes which have produced this result, it is impossible to speak with certainty. There being a demand among farmers for the sludge it was decided to put in a pump and clean out the tank as often as might be necessary, without bothering about the reasons for this necessity, or expending money in engineer's fees.

A recent measurement of the quantity of sewage shows the present dry weather flow to be 327,000 gallons per 24 hours, an increase of about 50% since the autumn of 1899.

The bacteria beds at present receive a dose of about 35,000 gallons each of the effluent per 24 hours or at the rate of about 420,000 gallons per acre per 24 hours, which, considering the nature of the effluent, would be rather a high rate. The beds have not decreased in capacity though in use nearly eight months; two or three inches of the gravel on top is sometimes clogged, but raking and a day's rest always relieves it.

The filtrate from the beds is colourless and almost odourless. The cost of the tank, which is built of concrete, was \$1,420, and of the beds \$1,025.

It would appear from these facts that in Berlin the solution of the disposal problem is in the extension of the existing works. The disposal plant in the city of Stratford,

consisting of a septic tank and 2 coke bacteria beds, was constructed by Capt. VanBuskirk, and has been in operation since 1899. This work was also of a tentative character, but too great demands were made on it and the results last winter were similar to those in Berlin.

The system at the Asylum for the Insane in London has long passed the experimental stage, having been in successful operation for 13 years. The sewage is collected in a tank in rear of the buildings and then pumped to the disposal field; vegetables of all kinds are grown with profit, and the sewage of a population of 1,500, amounting in volume to 100,000 gallons per 24 hours, is disposed of on a field of 6 acres.

There is absolutely no nuisance. The farm is an object lesson of the practical utilization of sewage. A large revenue is annually derived from the land, which is sandy loam and admirably fitted for the purpose.

The city of London is now carrying out a system designed by Mr. Willis Chipman. The sewage is carried to some distance from the city and is intended to pass through a detritus chamber and thence to coke filter beds, the filtrate being discharged into the Thames. The result will be watched with interest.

Work of this nature is in its infancy on this continent; but each year adds to our store of reliable data. We learn as much from the failures as the successes, though perhaps the latter are given more prom-

inence. In Europe, where they have had long experience, the conditions are different from ours that the results are misleading. For this reason our most trustworthy knowledge is gained in the school of our own experience.

THE ELECTRIC FIRE ENGINE

The new electric fire pump, which contains 100 gallons of water and is ready to start for a fire at any moment, is proving quite a success at Paris. It has an electric outfit on the Bouquet, Garcin and Schivro system, with the necessary storage batteries. The report of the colonel of the firemen's regiments points out an instance where the new fire pump rendered an important service. Owing to the fact that it arrived quickly at the fire with its water reservoir and its pumps all ready to act, it was the means of preventing the explosion of a cellar full of chemical products. The report states that the horse fire engine would have arrived too late, and that the hose could not have been coupled to the nearest fire plug in time to prevent the explosion.

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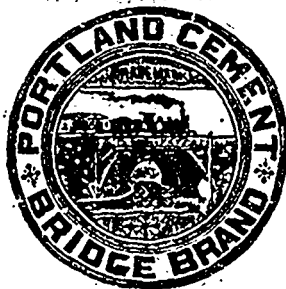
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