

MUNICIPAL DEPARTMENT

TO MUNICIPAL OFFICERS.

The CONTRACT RECORD is desirous of publishing, as far as possible, advance information regarding projected works of construction in all parts of Canada, such as sewerage and waterworks systems, railways, street pavements, public and private buildings, etc. Municipal officers would confer a favor upon the publisher by placing at our disposal particulars of such undertakings which are likely to be carried out in their vicinity, giving the name of the promoter, character of the work, and probable cost. Any information thus furnished will be greatly appreciated.

SEWAGE DISPOSAL BY BACTERIA BEDS AND THE SEPTIC TANK.

Concluded.

In view of the present interest in the possible use in the United States of these methods of treatment for handling the effluent from small sewerage systems, what Mr. Thudichum says of such plants in England is particularly timely. "For dealing with the sewage from a small community, such as a public school or an asylum, or a small hamlet, one of two biological methods may be employed, according to the fall available. In the first method, which may be on the lines of either the Sutton or the septic system, or a combination of the two, the sewage is passed through the tank, or for 24 hours on to a coarse bed, and then on to fine beds, where it remains for two hours and is then discharged. If bacteria beds only are employed they should be four in number, two coarse and two fine, each of sufficient capacity to take a whole day's flow. The sewage, or the overflow from the cesspit, where such exists, is allowed to pass into one of the coarse beds for 24 hours and is then diverted to the second bed, the effluent from the first being discharged into the corresponding fine bed. Here it is allowed to remain during two hours and is then finally removed. By this method there is no doubt far more anaerobic action in the coarse bed than is the case where the system is worked normally; but the rest, which is given every alternate day, gives an opportunity for the destruction by oxidation of the organic matter retained by the bed. The attendance required is very slight, and can be readily given by a gardener. It consists merely in turning a few valves, with an interval of three hours between the first and second operations, and in an occasional raking of the surface. If the fall be insufficient to admit of the employment of two sets of beds, the septic tank and the fine beds only can be employed; and in this case the alternating gear used with the latter is essential, as otherwise the attendance would prove a severe tax,

"In the second method it is presupposed that the sewage cannot be delivered at or sufficiently near the surface to be passed on to a bed. In this case the best plan is to provide a storage tank, a coarse-grain and a fine-grain bacteria bed, each of three being capable of containing the sewage of an entire day of 24 hours. At a fixed time on each day the sewage should be pumped from the storage tank into the coarse bed, should remain there two hours, and then be passed into the fine bed, and after a similar period of rest in the latter be finally discharged.

"The sewage from the Claybury Asylum of the London County Council has been treated by a single pair of coarse-grain bacteria beds with perfect success for over three years. At Radley College an installation has recently been completed in which the overflow from a cesspit is treated by two pairs of beds, two coarse and two fine grain. These beds were constructed by excavating, the sides being of brickwork and the bottoms of clay puddle. The coarse beds are each 16 x 10 feet by 3 feet deep. The bed material is coke, that in the coarse beds being all rejected by a screen having a half-inch mesh, and that in the fine having all passed a mesh of three-eighths of an inch, with the fine dust removed. The water capacity of each bed is 160 cubic feet, that being the maximum quantity of sewage which they have to deal with daily."

The discussion on this paper brought out some valuable information. According to the report in the "Surveyor," Mr. Baldwin Latham stated that the effluents from a system of biological filters or contact chambers, to use his name, with which he was experimenting, were equal to the best effluent obtained from irrigation in England. The sewage of Bilston is charged with salts of iron and is the color of mahogany. When it had all been liquefied by an arrangement corresponding to the septic tank, which need not be closed, it is passed through a contact filter, with surprising results. The amount of albuminoid ammonia has been reduced to 0.03 and 0.028 grain per imperial gallon, even though the sewage contains the refuse from galvanizing works and as much as 28 grains of chlorine per imperial gallon. At Friern Barnet the results were not quite so good as those at Bilston. The sewage showed 1.16 grains of albuminoid ammonia per imperial gallon and the effluent 0.05 grain. In the

case of Manchester the sewage contained a great quantity of manufacturing effluents of every description, especially those from chemical and dye works, but after treatment by contact filters the amount of albuminoid ammonia per imperial gallon was only 0.07 grain.

Dr. Rideal referred to the lack of definiteness in such terms as coarse and fine beds. In one case what was termed a coarse bed was made of material which would not pass through a half-inch screen, and a fine bed was made of material which would pass through; in another case the fine material had to pass through a three-eighths-inch screen. At Exeter the bed used to treat the effluent from the septic tank was made of material intermediate in size between Mr. Thudichum's coarse and fine sizes. Then again, it was important to notice that the fine screening of the Sutton process produced 30 barrow loads of refuse per million gallons of sewage in the case of the Worcester Park works, and this refuse must be dealt with in some other way.

Mr. E. G. Mawbey stated that the sewage of Leicester was treated on clay land for eight years, but during the last four years the population had been increasing at the rate of 6,000 a year, and it became necessary to buy more land or adopt some means of clarification. The system finally constructed for preliminary treatment comprised a detritus tank, a settling tank and coarse filter beds. Since the construction of these works it was found that the amount of land necessary for the final treatment was reduced to a little more than half the original area.—Engineering Record.

Mr. W. E. Binning has been appointed town clerk of Listowel, Ont.

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It is reported that Mr. E. A. Wilma, city engineer of Vancouver, B.C., has been dismissed by the city council.

Mr. David Mansell, who for 17 years was treasurer of the counties of Leeds and Grenville, retiring last summer, died on January 27th.

A meeting of the Surveyors of the Province of Quebec was held in Quebec on January 25th and 26th, under the presidency of Mr. J. E. Sirois, of Ste. Anne-la-Pocatiere. The chief business was the revision of the Surveyors' Act.

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