

# MUNICIPAL DEPARTMENT

## SEWAGE DISPOSAL.

Dr. John C. Thresh has prepared a report on his visit to the Sanitary Institute Congress, at Leeds, England, on September 14th to 18th last. The Surveyor gives the following summary of his remarks on sewage disposal :

With reference to the disposal of sewage, Dr. Thresh states that he is so constantly consulted with regard to the disposal of sewage that this subject received his chief attention. The questions most usually asked are : 1. What standard of purity should be adopted for sewage effluents, or, in other words, what is a satisfactory effluent? 2. Can any system of treatment be recommended whereby the use of land for irrigation purposes can be dispensed with? 3. Is it possible to adopt any system of treatment whereby no sludge will be produced? With respect to the first question, Dr. Thresh says he has obtained a large amount of information with regard to this subject, and that he is probably acquainted with all the provisional standards adopted throughout the country. Much of this information is of a private character, but it is generally held that at present it would be unwise to fix any definite standard. When this subject came up, incidentally, at the congress, this opinion was endorsed by all those who were conversant with the subject. The second question, he states, received a stereotyped answer. Many systems have been recommended by their discoverers as capable of so purifying ordinary sewage as to dispense with land filtration. So far, however, all the processes which have had a long and continuous trial have proved more or less unsatisfactory, and the Local Government Board will not give their sanction to a loan for any system of treatment which does not include land irrigation. Within the last year or so other systems have been advocated, which, it is claimed, will not only efficiently purify sewage without being supplemented by land filtration, but will also so affect the suspended matters that no sludge is produced. How far these claims will be justified by experience remains to be seen. This, at present, is practically the only answer which can be given to the third question. The papers read at the congress bearing on these points were, Dr. Thresh considers, of a very interesting character. They were contributed by Mr. Donald Cameron, Mr. Dibdin, Dr. Barwise and others.

Modern research has established beyond a doubt that the processes of purification of the future will be "bacteriological" rather than purely chemical. By the agency of bacteria the organic matter in the sewage can be broken up and most of it converted into two innocuous inorganic

bodies—nitric and carbonic acid. The problem, therefore, is—can artificial means be devised whereby this change can be brought about with sufficient rapidity and with sufficient economy to render irrigation unnecessary; and at the same time can the insoluble, as well as the soluble, organic matter be acted upon, or will it still be necessary to separate the former and have the trouble and expense of dealing with the sludge? Mr. Donald Cameron, the city surveyor of Exeter, claims that he has devised a process—the "septic" tank system—which prevents the formation of sludge, and so efficiently purifies sewage that the land irrigation is unnecessary. This system, however, can only be regarded as still on trial. Mr. Dibdin, who until recently was a chemist to the London County Council, has also conducted a series of experiments with the London sewage at Barking, and is decidedly of opinion that sewage can be efficiently purified by passing it through one or more coke- breeze filters, properly constructed and duly charged with proper organisms. At Lichfield and Wolverhampton filters have been constructed of fine coal, and Prof. Bostock Hill, who read a paper on the subject, regards the results as very satisfactory.

The conclusion which Dr. Thresh has arrived at is that we are within a measurable distance of the time when the purification of sewage by means of microbes will become an accomplished fact. Coarse straining to remove masses of solid matter will probably, he considers, always be necessary, or at least desirable, but the sludge nuisance will cease to exist. The sewage will be purified without the production of sludge, and land irrigation will no longer be required. At the present time, however, the experimental works have not been conducted on a sufficiently large scale or for a sufficiently long period of time to enable him to recommend any one process in preference to another, or to say with confidence that any process yet devised is certain to be satisfactory.

## NEW COMPOSITION FOR SIDEWALKS.

W. Scott Robinson, formerly of Hartford, Me., conceived the idea of making a new sidewalk material of iron and concrete, but before he brought his plan to a complete success he was called to England, says the Cement and Engineering News. During his absence his daughter, Winnie, took the matter up and studied it carefully, with the result that she success-

fully completed the formula. She has had the material patented in Canada, and has also applied for a patent in the United States. Miss Robinson lost no time in putting the new paving material to a practical test, and herself superintended the laying of the new sidewalk at the corner of Church and South streets, in her own town. She had this done to demonstrate the durability of the article, which, she says, will wear for ages, that nothing can destroy it, and that the action of rain and sun only tend to harden rather than injure it. She is confident that when its merits are known it will become popular. Those in Toronto, New Glasgow, Windsor and other places who know of the material believe in its success. Miss Robinson says its composition consists chiefly of sand and gravel, such as can be found everywhere. She does not intend to take contracts for paving, but will sell the formula if what she considers a fair price is offered for it.

## AMENDMENT TO THE MUNICIPAL ACT.

Mr. Crawford, M. P., introduced a bill in the Ontario Legislature to amend the Municipal Act. It provides as follows :

Notwithstanding anything contained in the preceding fourteen sections of this Act, or in any by-law of the municipality, the corporation of any city or town, by a two-thirds vote of the council thereof, may on the recommendation of the city or town engineer, authorize to be constructed or reconstructed a suitable pavement or sidewalk of a uniform character on any street or section of a street in the city or town, as a local improvement, where the said construction or reconstruction shall be accompanied by a statutory declaration made by the city or town engineer that in his opinion the work is necessary in the public interest, and by a statement from the engineer based upon the value of the property on which the assessment is proposed to be made showing why in his opinion he thinks a pavement of the character recommended is suitable for the locality; but the ratepayers interested therein shall be entitled, by a fully signed petition presented within thirty days from the adoption by the council of the recommendation of the engineer, to change the character of the pavement or sidewalk, and the cost of such pavement or sidewalk shall be assessed against the properties benefitted thereby according to the frontage of the said properties under the terms and conditions of the foregoing provisions of this Act.

The mayor of the city or town shall be, and he is, at the request of the council of such city or town by a two-thirds vote thereof, authorized to sign for or against the construction of any such local improvement work, which signature shall be counted as equal to one-fourth of the number entitled to sign the said petition and as representing one-fourth of the value of the land to be benefitted by the said improvement or work.

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