

Sewage Disposal.

The septic tank treatment for the disposal of sewage has for some time attracted the attention of civil engineers, and recently City Engineer Rust, of Toronto, after inspecting a system in Champlain, Ill., has recommended that \$3,000 be placed at his disposal for the construction of an experimental tank. Small plants have been in use in the United States for large public institutions during the past couple of years, at Verona, N. J., and near Chicago, Ill.; while an experiment for the city of Columbus, Ohio, has met with success. If the plan is feasible, it may offer a solution of Toronto's sewage problem, of which that city stands greatly in need.

The following description of the method of treatment in Exeter, England, where it was first applied, appeared in a Scotch paper and presents a very clear idea of the system.

"In a pleasant riverside meadow on the outskirts of Exeter, is a small railed-off area, within which has been put to a practical test an invention of the city surveyor for dealing with the sewage of the borough. All that the visitor sees is a mound covered with grass and a shallow concrete lake, neither being larger than the dining or drawing-room in an ordinary house. Yet for two years the sewage of a district containing a population of two or three thousand people has, after passing through the works, flowed into the river colorless and absolutely innocuous, and that without having received any mechanical or chemical treatment whatever.

The whole of the work is done by the merry microbe. The grass covered mound referred to is the roof of an airtight and light-tight tank into which the crude sewage flows. There it remains for a number of hours. The conditions are highly favorable for the multiplication of the bacteria which fatten on corruption, and so rapidly do they increase, and so voracious do they become, that in a comparatively short time all the solid organic matter in the sewage is dissolved into liquid. A valve automatically opens and allows the contents of the tank to escape into a little channel, which conveys it to the concrete lake, the bed of which is covered with small coke or "breeze." The channel and the lake are the microbes' Nemesis, for light and air are fatal to them, and consequently by the time the stream from the tank has filtered through the coke dust it has become clear and inoffensive. As a matter of fact, it is purer than the river into which it merges, and fish may occasionally be seen swimming in it right to the edge of the filter.

As further evidence of the efficacy of the system it may be mentioned that the effluent has on more than one occasion been drunk by human beings without any disagreeable results. The whole of the process is carried on without any attention

whatever. The tank is divided into two parts, filling alternately. The filter lake is also divided, so that each section may in turn have a period in which to recover itself. The alterations, however, are entirely automatic, being controlled by an ingenious piece of mechanism actuated by the flow of the sewage itself.

The whole scheme is so simple that the inventor has had some difficulty in persuading some scientific men of its merits. The local government board, has, however, after an exhaustive enquiry, sanctioned a loan for the treatment of the whole of the city's sewage on the new principle, so that the official mind may be said to have been convinced. Deputations from all parts of the kingdom, as well as from abroad, have visited the works, with a view to the adoption of the system in their towns; indeed, so numerous has this class of visitors been, that the path leading to the meadow in which the works are situated has been christened "Deputation Walk." Having been in constant and successful operation for over two years, the system is to be regarded as having passed the experimental stage, and as being a serious factor in the administrative economy of communities large or small. Of course the method has been patented, but authorities are likely to look upon the payment of a royalty as a highly satisfactory method of getting rid of the nightmare of sewage treatment.

Electric Railway Franchises.

Municipalities in Ontario have from time to time discovered that electric railways have been granted privileges upon the public highways which develop into a serious menace of the rights of the people. One of the latest of these to create a stir was when the Metropolitan Railway, running from Newmarket to Toronto along Yonge street, asked for the privilege of uniting its line with the Canadian Pacific Railway in North Toronto.

Comment has frequently been made upon the nature of the franchise held by this company, which is a perpetual one. That is, the franchise is perpetual until the people of the townships and counties interested awaken to the understanding that no council elected to office for a year or two, has any shadow of right to give or barter away the freedom of the people of the next generation, in the use of the Queen's highway.

The last move of the Metropolitan Railway, whereby it is now endeavoring to convert into a thorough freight line, what was originally supposed to be but a route of passenger traffic, or at most, a freight service of a merely local nature, will, it is to be hoped, enlighten the people of the province, to some extent, as to the safeguards which must be imposed upon electric railways when granting franchises. The time is approaching when these electric railways will form a network throughout the

country, and there is the greatest need of foresight when agreements are being entered into with regard to the use of the public roads for this purpose.

Electric roads, it is true, confer benefits upon the country served. They are very much to be desired in most localities. But there are, on the other hand, certain demerits. Electric roads occupy a portion of the Queen's highway, which may interfere with ordinary vehicular traffic. They are a source of danger at times to persons using the road. They add to the difficulty and expense of building and maintaining a good macadam road, by interfering with drainage, and concentrating traffic upon too narrow a line.

The Queen's highway is intended primarily for the use of the travelling public. Where the installation of an electric road serves the public, the use of the highway for this purpose is perfectly right and wise. But unrestrained privileges, perpetual franchises, taking away the rights of our children, and children's children, and giving up the road allowance to an electric railway, to the serious detriment of ordinary travel is gross stupidity or worse.

Electric railways should be restricted in many ways, and the whip hand must be that of the people or their representatives. The regulation of speed and service, the location of the track, the grade, the methods of track construction, the number of cars in a train, should all be subject to the will of the people, as changed circumstances may require. And above all, the absurdity of perpetual franchises should be done away with.

Electric railways are a monopoly. If they cannot be operated solely by the people, they should be operated for and in the interests of the people, not in the interests of the company which has secured the monopoly. A franchise, which when being sought by the company, is of no value, suddenly looms into enormous worth when the company has obtained it. These franchises are more easily and cheaply given away than restored. There is an invariable tendency for councils to value them too lightly, forgetting the future in the immediate results.

Mr. A. W. Campbell, Provincial Instructor in Roadmaking, will shortly pay a visit to Pittsburg and other large centres of Pennsylvania for the purpose of studying the effects achieved by the use of crude petroleum in constructing clay roads. American engineers claim that oil in connection with clay roads sheds the water and prevents rutting. Mr. Campbell will make a careful investigation into the matter, and if he finds these statements borne out by the facts will recommend that recourse be had to crude petroleum in Western Ontario.

The village of Preston was incorporated from a village into a town, with appropriate ceremonies on Saturday, the 30th Sept. 1899.