knowledge, however, that the market value of sludge is below par is common property.

The average cost to authorities for pressing sludge amounts to from 93 cents to \$1.50 per ton. Out of the twentyone cases quoted by the Commissioners, it is noted that in ten cases it is given away free of charge and in the remainder the prices obtained range from 12-25 cents per ton. There is certainly not much encouragement here for installing expensive sludge pressing machinery.

Pars. 241 and 243 deal with the question of burial of sludge in land. The cost being from 8 cents to 14 cents per ton of wet sludge. This process, however, is practically only available on sewage farms, or where farmers contingent to the works are willing to take the sludge.

Par. 244.—Lagooning or air drying is described. This process is applied at many sewage works. It can be carried out either in beds made in the land for the purpose drained with clinker, or in special tanks constructed to receive the sludge, when lime is added to the sludge it is usually spadeable in two or three days.

Other methods of disposal are also mentioned, but no recommendations or conclusions on the subject are provided, and engineers and authorities are left pretty much as they were to be guided by the local circumstances of each place.

Effect of Trades Effluents on Sewage Purification.

Par. 270.—Here we have the important statement, "All the trade effluents of which we have had experience interfere with or retard processes of purification to some extent, but we are not aware of any case where the admixture of trade refuse makes it impracticable to purify the sewage either upon land or by means of artificial processes, althoug in certain extreme cases special processes of preliminary treatment may be necessary." Details are given of cases where some modifications have had to be adopted in consequence of the presence of trade wastes, such as those from breweries, woolscouring, galvanizing works, dye works, tanneries and other industries. There are really no points, however, made evident which are not already familiar to sewage engineers.

Nuisance from Smell at Sewage Waters.

Par. 273.—"All sewage works are liable, at times, to give off unpleasant smells, and they should, therefore, be situated away from dwelling houses." "The extent of the risk of nuisance depends, however, not only on the character of the sewage, but also on the method of treatment."

Par. 274.—"Septic tank treatment is more offensive than simple sedimentation. During sludging operations, sulphuretted hydrogen is given off."

In this connection the practice in the United States of America may be noted, where it is considered advisable to reduce the risk of smell by using septic tanks of a capacity of eight hour flow, providing coarse grain filters which allow a large amount of suspended matter in the liquid to pass through into the filtrate, arresting it in the final effluent.

Par. 278.—It is an acknowledged fact that percolating filters are generally attended with smell. Especially is this the case when the foul liquor from septic tanks is treated. The Commissioners deal very fully with various suggestions for overcoming the difficulties by adding chemicals as deodorants to the septic liquor. Engineers will probably prefer to avoid the use of chemicals as the difficulty has been overcome elsewhere by other means.

Choice of a Method of Sewage Treatment.

Par. 282.—"The selection of a method of sewage disposal, and the settlement of details in connection with any method which it is proposed to adopt, should depend primarily on local conditions." The Commissioners then proceed to make several observations based upon the conclusions they have already come to, and attach an elaborate "genealogical tree," showing the various degrees of purification effected by the various processes already named, on sewages of different strengths. The final settlement of any one scheme, however, within the lines of the Report is left to the discretion of those responsible for any particular work.

Storm Water.

Par. 295.—"That special stand-by tanks (two or more) should be provided at the works and kept empty for the purpose of receiving the excess of storm water which cannot properly be passed through the ordinary tanks," as regards the amount, "the rate of flow through the ordinary tank may usually be increased up to about three times the dry weather flow, without serious disadvantage." Engineers will at once see the value of the first part of this paragraph. It is usually with the first rush of storm water that the strongest sewage is discharged owing to the extra flush after dry weather.

Standard for Sewage Effluents.

Par. 322.—"For the guidance of local authorities we may provisionally state that an effluent would generally be satisfactory if it complied with the following conditions:—

(1) That it should not contain more than three parts per 100,000 of suspended matter.

(2) That, after being filtered through filter paper, it should not absorb more than:---

(a) 0.5 part by weight per 100,000 of dissolved or atmospheric oxygen in twenty-four hours.

(b) 1.0 part by weight in four hours

(c) 1.5 part by weight in five days.

"At many sewage works which we have under observation effluents of this class are uniformly produced."

Pollution of Estuaries and Tidal Waters.

This question is dealt with very shortly in pars. 330-331 as it was treated with fully in the fourth Report. There is one point, however, which the Commissioners do not deal with, and that is the practicability of the sterilisation of effluents. This is much to be regretted as important conclusions have been arrived at by the United States Department of Agriculture dated 1907. In the case of discharging sewage into tidal basins when there may be shell fish beds, some method of sterilisation apart from mere purification as understood appears essential.

The remaining portion of the report is taken up with legislative suggestions with which it is unnecessary to deal with here. We will, therefore, conclude with the general conclusion of the Commissioners:—

"We are satisfied that it is practicable to purify the sewage of towns to any degree required, either by land treatment or by artificial filters, and that there is no essential difference between the two processes, for in each case the purification, so far as it is not mechanical, is chiefly effected by means of micro-organisms. The two main questions, therefore, to be considered in the case of a town proposing to adopt a system of sewage purification are, first, what degree of purification is required in the circumstances of that town and of the river or stream into which its liquid refuse is to be discharged; and, second, how the degree of purification required can, in the particular case, be most economically obtained.

The question of the removal of snow from the streets of Montreal in the winter has been discussed before the Road Committee times without number. The refusal of the Street Railway to pay its proportion of the cost of removal, last winter, for the reason that the service had cost too much and almost twice what the company would have performed the work for, resulted in the opening up of the whole subject once more. It is possible that the work will now be divided between the company and the city, thus furnishing a means for comparing costs. A few days ago, however, the suggestion that the snow be melted was again made. The proposal came from Alderman Ward, who offered further details of the scheme. It was his idea that wells should be sunk at intervals. These wells should be connected with the sewers. The snow would be dumped into the wells and melted with steam. This, he claimed, could be done at a lower cost, everything considered, than that of the present service. The suggestion received attention.