

and the effluent from all works must pass over and through land before being turned into a stream. This rule was adopted some years ago, and before the results of the experiments at Barking, Sutton and Exeter were known.

In many places, however, there has not been a sufficient area of suitable land available to treat the crude sewage by broad irrigation, and other auxiliary methods have been adopted. Sedimentation tanks were introduced by which a part of the solids in suspension were separated, the proportion depending upon the tank capacity.

The liquid part was then applied to the land or discharged into a stream, but the solids deposited in the tank, known as sludge, remained to be disposed of. In some places the neighboring farmers would remove it or a portion of it, but such removal was intermittent, thus demanding storage at the works. Sludge, however, decomposes rapidly, and storage meant nuisance. By adding lime, copperas, alumina ferric or other precipitants, the amount of sludge deposited in the tanks was greatly increased, and its decomposition delayed, thus permitting of storage for a limited time. By the introduction of sludge presses with air compressors and other machinery for operating the same, the wet sludge was compressed into cakes that could be handled and the volume was reduced to about one-tenth of that of the wet sludge, but pressing cost money and did not dispose of the cakes.

At Glasgow about ninety tons of cake is now produced daily from 13,000,000 gallons of sewage from the east portion of the city only. At London, Manchester and Salford pressing has been abandoned and the wet sludge is now carried out to sea by specially constructed steamers, and doubtless this is the most satisfactory and the cheapest way for sea-coast cities.

At Sheffield, Birmingham and many other places the sludge is partially dried, then deposited in trenches and covered with earth, while in some places it is run into pits or lagoons and allowed to dry out slowly. Sludge is an abomination everywhere.

At Glasgow and a few other places, a portion of the cake is manufactured into "poudrette," a marketable manure, which in other places is made from the contents of tubs and middens. This is however exceptional, and it must be borne in mind that