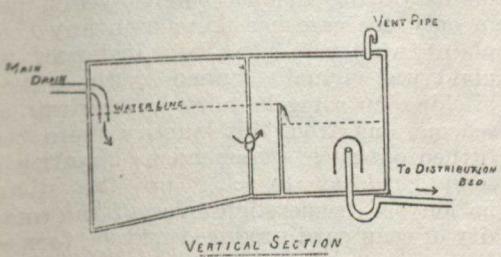
itself without being tended in any way.

So much then for the septic chamber—its work being to render into liquid form most of the solid organic matter in the raw sewage. The effluent from the tank differs markedly from the original raw sewage. It is a slightly turbid fluid, of a somewhat brownish or yellowish hue, containing only a moderate amount of solid matter in suspension, and this finely particulate. Its composition is fairly constant, being more or less the average of 24 hours and has most of the decomposable organic matter in solution, thus rendering the ultimate breaking up of this matter more easily attainable.

The process thus far has been "anaerobic" in character, and we can now dispense with the services of the anaerobic germs—at the same time we desire to call into requisition the "aerobic" bacteria, these germs requiring air (oxygen) in order to live and thrive.

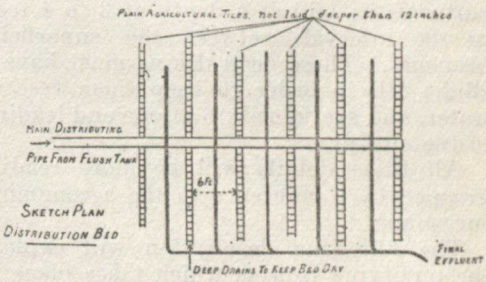
It is to be borne in mind that both of these classes of germs are ever present in the raw sewage, and all we have to do is to place the sewage under conditions which will exclude the air, or allow its free admission, to encourage either the anaerobes or the aerobes respectively. In the septic tank we practically allowed only the anaerobes to flourish by the rigid exclusion of air.

The next step after the septic chamber, is to allow the aerobes to thrive, and this we do by simply admitting fresh air to the sewage in the aerating chamber, which incidentally is made to do service also as a flushing reservoir. This flushing process is a very essential part of the mechanics of the system and provides for the complete and even dosing of the distribution bed with the septic tank effluent.



Vertical Section

A moment's consideration of the scheme of the septic chamber will show that the effluent will only flow out of the tank at precisely the same rate as new sewage enters it from the main drain, and as many people know, the flow of sewage from any dwelling varies enormously at different periods of the day, sometimes being only a mere trickle, and when this is the case, the effluent will be but a trickle also, and if allowed to run to the bed, would find its way entirely into the first part of the distributing area nearest the tank, so preventing an even distribution all over the bed.



The size of the flush chamber is therefore directly governed by the size of the distribution bed, and the best results are obtained when the bed is flushed once or at the most twice, in the 24 hours.

The capacity of the flush tank would, under such circumstances, be either the same as that of the septic tank, or half its size.

An automatic valve is placed in this chamber, which will release the fluid in full force, as soon as the flush tank is full.

There are several good makes of these valves on the market but those having no moving parts are the best, because any hinges, etc., quickly clog up owing to the corrosive properties of the effluent.

From the flush tank the effluent is conducted to the distribution bed by means of a water-tight tile pipe.

The main distributing pipe lies in the centre of the bed, and the branches come off on each side of this at intervals of not less than 6 feet—each branch should not be longer than 25 feet.

The whole of these branches, together with the central distributing pipe, are laid dead level.

The branches consist of plain agricultural tile, one foot long each, the joints being left open about a quarter of an inch, laid in a trench 12 inches deep, and two to three feet wide. The trench is then filled with small clinker cinders.