

# THE Sanitary Review

SEWERAGE, SEWAGE DISPOSAL, WATER SUPPLY AND  
WATER PURIFICATION

## SEWER-DISCONNECTING TRAPS.

An important sanitary question with reference to house drainage (bearing on sewerage) is receiving a great deal of attention at present, viz., the advisability (or otherwise) of trapping the house drain from the public sewer.

Ten years ago the question would have received an emphatic answer in the affirmative. To-day, however, there are scores of sanitarians, who hold that any trap placed on the line of the house drain is a useless and objectionable obstruction to the flow of sewage, as well as a means of cutting off a desirable method of sewer ventilation.

In trapping a private drain from the public sewer it is usual to fix a syphon trap on the line of drain at a point before it connects with the sewer. There are many varieties of this trap on the market, the trap being essentially a bend in the drain below the mean gradient. Sewage is retained in this bend, thus cutting off all air communication between drain and sewer. Above the bend, on the house side of the trap, an air pipe is connected with the drain. This supplies an inlet for fresh air, the outlet being (generally) the projection of the soil pipe to above the roof of the building.

The chief advantages claimed for this system of trapping are as follows:—

(a) Isolation from the public sewer, thus guarding against the transmission of disease germs from house to house by means of the sewer gases.

(b) In case of plumbing defects in connection with sanitary fittings, the air drawn into the building will be fresh air fouled only to the extent of contact with the short length of house drain.

These claims are based upon the assumption that disease germs are transmitted in sewer air—an assumption, however, which appears to have no basis in fact, as clearly shown by the experiments recently made by Prof. Winslow, published in the issue of this Review of August 25th last.

Apart, however, from the truth, or otherwise, of the theory of sewer air transmission of pathogenic germs, the sewer trap appears to be an apology for defective plumbing, which in any case should not exist. If we grant the transmission theory, then in the case of a single outbreak of typhoid in a house with defective plumbing, there is no reason why the house drains and down pipes should not be a means of distributing the germs to the whole household. In any case, it would appear important that all sanitary appliances should themselves be trapped and allow of no drain air connection to the building.

The argument, however, may be used: "After all, the sewer trap is an extra safeguard and can do no

harm." This brings us to the crux of the whole question raised against the sewer traps. Does it do no harm?

Again granting the sewer air germ transmission theory and defective plumbing requiring a sewer trap, so as to minimize the dangerous character of foul air leaks, we must ask the question, What of the sewer air itself? The insertion of a sewer trap to every house drain means the confinement of the sewer air to the sewers. If the ordinary method of ventilation be adopted, viz., by means of open manhole gratings in the roadway surface, then these germ-laden gases will be eliminated, when they will be readily breathed in by the outside public. On the other hand, if airtight manhole covers be adopted, then it will be necessary to provide at great expense to the community sewer ventilation by means of special pipes carried from the sewers to points of safety.

Is it necessary to incur this extra expense of special sewer ventilation as an excuse for defective plumbing arrangements, or would it not be better, from all points of view, to insist that just as much attention be given to sanitary fittings as to gas fittings to ensure against leaks.

The removal of the sewer trap means that every house soil-pipe will tend to act as a sewer air outlet ventilator, and that the open street manhole covers will act as fresh air inlets to the sewer. Sewer air being as a rule warmer than outside air has a tendency to rise and pass off at the highest points, drawing upon the lower openings for equilibrium of supply.

Apart from the transmission theory of disease infection by sewer air, it is acknowledged that the gas products of decomposing sewage are objectionable. Emanations of foul odors from street gratings are common causes of public complaint in most towns, especially at high levels. It would, therefore, appear that where the cost of special sewer ventilation bars its adoption, the most efficient method is to be obtained by insisting upon:—

(a) Efficient and airtight plumbing and house drainage.

(b) That the local building authorities test all drainage and plumbing fittings by some test, such as the smoke test.

(c) The non-adoption of any trap between the house drain and the public sewer.

(d) The utilization of all soil-pipes and house drain ventilators as sewer air ventilators.

(e) The utilization of street manhole gratings as fresh air inlets.

(f) That all soil-pipes and drain ventilators terminate well above the eaves of buildings and away from windows.