

sediment included—is removed by a separate system of pipes altogether, the peculiar feature of which is, that in order to avoid as much as possible the dilution, which makes transport, utilization, and disinfection next to impossible, air pressure is used instead of water to remove the excreta out of the closet pipes.

The causes of river pollution are:—

1st. Excrement (solids and fluids), chamber slops, and the refuse of kitchen sinks.

2nd. Manufacturing refuse.

3rd. Street dirt.

4th. The dirt contained in house water.

All of these Captain Liernur keeps out of the sewers, and, consequently, out of the stream. His mode of doing so will be briefly described in turn.

First, as to the excrement (solids and fluids), chamber slops, and the fatty and sedimentary products of kitchen sinks. These are never allowed to enter the sewer, but are collected by a separate pneumatic system of cast-iron piping, nowhere exceeding five inches in diameter. Briefly this may be described as follows. The town is divided into drainage complexes of from 20 to 50 acres, according to circumstances. Each house is provided with a Liernur improved water-saving closet, or a Liernur closet without water; and these are connected by branch pipes through a main or street pipe with an iron tank placed under the pavement somewhere about the centre of the drainage complex. Into this tank all the closet pipes are emptied every day by pneumatic pressure, and then the contents of the tank, and of others similar to it, are in their turn emptied in the same manner, but through separate and independent pipes to a central reservoir, serving perhaps for ten or twenty tanks, of 250 to 500 acres, also according to circumstances. The motive power for all the operations is obtained by a stationary air-pump engine at the central reservoir. Every large town may thus be divided into several districts, each independent the one of the other, and served by a separate engine. The contents of