

On house drains without ventilation / by John Honeyman.

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On House Drains without Ventilation. By JOHN
HONEYMAN, F.R.I.B.A.

[Abstract of Paper read before the Society, 6th March, 1889.]

IN the course of the discussion which followed the reading of a paper by me at the Bolton Congress of the Sanitary Institute in 1887, on "The size of house drains and the use and misuse of traps," Mr. H. R. Newton proposed that, instead of increasing the ventilation of house drains—as I had recommended,—we should rather by all possible means keep sewage free from contact with air, which might be effected to a large extent by keeping the drains always full. (See *Transactions of the Sanitary Institute*, Vol. IX., p. 291.) This idea was not favourably entertained by the meeting, but I concurred with Mr. Newton to this extent, that drains should either be thoroughly ventilated or not ventilated at all, and that it would be distinctly better to have our house drains always full than to have them in the condition which is now generally considered satisfactory, with means of ventilation which are quite inefficient. On further consideration, I am inclined to think that, as a means of protection against sewage gas, a full drain is superior even to a well-ventilated drain. The question at least seems of sufficient importance to merit the careful attention of the members of our Sanitary Section, and I therefore venture to bring it before you.

At first our prejudices are strongly aroused against the idea of keeping our house drains full of sewage; but it is evident that sewage in a perfectly water-tight pipe cannot possibly do any person any harm: no one could tell whether it contained pure water or foul. But, as a matter of fact, there is no reason why the house drain which is kept full should not, as a rule, be full of pure, or nearly pure, water. The whole requirements are remarkably simple, and I can see no serious practical difficulty in the way of adopting the system. The first requirement is that the house drain should be so laid that it shall always remain full from end to end, the sewage overflowing at the end next the sewer. Of course the drain must be water-tight, as all drains ought to be.

The second requirement is that means be provided for flushing the drain periodically, either automatically or otherwise—such a volume of pure or waste water being discharged on each occasion as shall displace the whole contents of the drain. Nothing else is required except attention to some small matters of detail which present no special difficulty. For example, care must be taken that the drain does not syphon into the sewer, and that the flushing tank is not placed higher than the lowest sink or water-closet connected with the drain. The bottom of the tank should be at the same level as the highest part (the overflow) of the drain, but in most cases the top of it might be much higher, giving a good head for the flush. It is also important that the house drain should be no larger than is necessary to contain the house sewage. In hardly any case would this exceed six inches in diameter, and it will generally be advisable that the drain, so far as it is within the house, should be of iron.

In action, this drain would never be more than 24 hours without being thoroughly scoured, and its contents would always be comparatively pure and free from fermentation; so that no harm could possibly result from connecting waste or soil pipes directly with it; for, in the first place, the drain could contain no aërial microbes, and, in the second, each connection would be effectually sealed.

The difference between this system and that in ordinary use may be summed up thus: Under the present system the drains are always full of *air* more or less foul and favourable to the development of virulent microbes, whereas under the other the drains are always full of water more or less foul; and the essential sanitary difference is this—that, while many things prejudicial to health can come out of the one drain, nothing prejudicial to health can possibly come out of the other. The one is a constant source of danger, from which we attempt to guard ourselves by means which have often been proved to be unreliable; the other need give us no concern whatever. The balance of advantage therefore seems clearly on the side of the latter.







