

Sanitary Matters.

REMARKS BY A CORRESPONDENT

To the Sanitary Engineer.

In the August 1st number of your paper I notice an editorial on the recommendation of Commissioner Campbell, for the ventilation of the city sewers through our house drains. The comment upon it in the article quoted appeared complete and well put.

If gentlemen who stand in authority and possess the power to have such recommendations carried out were first to devote a few hours to the careful perusal of such standard works as Bailey Denton's and Baldwin Latham's *Sanitary Engineering*, I doubt very much whether they would often be guilty of such grave errors as are frequently committed.

What can possibly be the advantage of admitting the very elements of contagious and preventive disease into every ramifications of a system of house draining to lurk there, impatient of restraint at every trap-overflow and waste, ready to enter at the first opportunity into the living and sleeping rooms of our houses? It is like admitting an enemy within the one main entrance of a city and trying to overcome him when aided by every sheltering barricade and redoubt.

The germs of disease have the dreaded power of multiplication to a frightful extent in a short space of time; and the object of traps and sanitary appliances is not the mere exclusion of the majority of these germs, but it is the single germ which must be debarred from effecting an entrance. That the simplest and best method of accomplishing this, is by a total disconnection from the sewer by a trap outside of the house, and as near the sewer as possible, is now a pretty well established fact. This trap is very properly considered the main safeguard of the house. Is there anybody who has not been annoyed by the nuisance, at some time or another, of running water on the upper floors of our brown stone houses and how often after a summer drought, do we not discover that the water from the mains refuses to rise to its accustomed height? In every such case we can be sure that the traps in waste and overflow pipes have dried out by evaporation, and then where would our safety from the infection of tainted sewer air be were the soil pipe doing duty as a shaft ventilator for the public sewer after the fashion recommended by Messrs. Campbell & Towle? A condition is almost always found at some time or another during the day, which tends to draw the air from the drain or soil pipe into the room, were it not prevented by the interference of the water seal. Take as an example, the case where there is an insufficiency of air supplied to the open grate fire, through open doors, etc. Here it would be the simplest thing for the open trap to supply the deficiency to the imminent risk of the very lives of the inmates of the rooms.

On the other hand it requires but little reflection to understand that the trap in the main drain is the least liable to become dry of all the traps in a house, since it is placed in such a position that every drop of liquid wastes of the house is compelled to pass through it. It requires but a few gills of water each week to prevent unsealing by evaporation, and when this is not supplied there is probably not much need of any trap at all, since the house would in that case be empty probably. Besides this, the rain falling upon the roof tends to keep the trap sealed. But the use of this trap need not be discussed here; its utility is too well understood and admitted by all sanitarians, to require any additional testimonial.

I have not the slightest doubt that the introduction of numerous manholes with perforated covers into the sewers of the city, have been found to have a "marked effect." In the present state of sanitary knowledge, it is pretty generally admitted that the system of open manhole ventilation for sewers, on a plan somehow similar to the London method, is both the simplest and best as well as most economical. If, as in some few cases, the sewer is under the edge of the walk, there is no reason why inclined manholes extending to the middle of the street from the crown of the sewer, should not be employed as in some other cities under similar circumstances.

In any event it is to be sincerely hoped, that it will be impossible to "obtain legislation that will require owners of property to make such provision for ventilation (of the sewer), as may be necessary.

W. G. E.

The trap outside we do not recommend for this climate.

—Ed. *Scientific Canadian*.

SANITARY SCIENCE AS APPLIED TO WORKSHOPS.

The greatest discomfort in our workshops in summer is caused by exposure to an excess of sunlight and a deficiency of ventilation. The first may be corrected by awnings, shades, curtains, or, what is best of all, by foliage, when the circumstances for its growth are favorable; and all this may be accomplished at so trifling an expense as to be nothing compared with the resulting benefit to the workmen. The second may be corrected by the use of fans or blowers, which, notwithstanding they are more expensive by reason of first outlay and continuous cost of running, pay their expenses many times over and over again when we consider the advantages derived from an increase in the products of labor, as well in quantity as in quality. A workman cannot possibly do his best in a hot and stagnant atmosphere, and it is useless to expect it. A blower like Sturtevant's, or any other good blower, changes all this. Fresh air blown into a workshop is a great advantage, and in many instances this can be done at no great expense. Workshops are often made very uncomfortable on account of low ceilings, or low roofs upon which the sun beats down, converting the room beneath into a furnace. Sometimes this can be remedied by roof tanks, sometimes by a false roof on top, or, in other cases, by a space between the roof and the ceiling of the room below. In mills where there are furnaces, water screens are a great advantage, and we are pleased to state that their use is spreading, as well as many other little contrivances, which, trifling as they seem, may add greatly to the improvement of the material as well as the mental condition of the workmen.

Employers begin to realize more and more that it does not pay to treat their employees as mere machines, and that besides wages, there ought to be another incentive to encourage the workmen if the maximum value of the products of labor is desired. We, therefore, again call the attention of owners, managers and foremen of workshops to this important subject.

COMMON DEFECTS IN HOUSE DRAINS.

BY ELIOT C. CLARKE, C.E.

[The following interesting paper is from the Tenth Annual Report of the Massachusetts State Board of Health for 1879.]

The purpose of this paper is to state what are the common defects in house drains, and to show the usual forms and condition of such drains as they exist in our cities and towns to-day. The statement is chiefly based on observations made in Boston while constructing intercepting sewers; but it is assumed that examinations in other cities and towns of the Commonwealth would reveal a condition certainly no better, and probably worse. Some testimony will be offered from those whose occupation has given them opportunities for observation; and, while it is not intended to cite exceptional cases of defective arrangement or construction, a few characteristic examples will be given, such as investigation would prove to be very common.

What are the essential conditions of an efficient house drain, one or more of which must be violated to constitute a defect?

Briefly stated, they are: That the drain must be of size and shape to concentrate its flow, smooth inside, suitably inclined, tight, properly connected with the house pipes and sewer, strong and durable in material. It is of great importance that the portion of the drain within the house should be always in such a position as to admit of ready inspection at any time; it should be in sight,* and not concealed. Let us see what proportion of Boston drains reasonably fulfill these conditions.

Existence is perhaps the most essential condition of a drain; and, by a Hibernicism, non-existence may be termed its most serious defect. Naturally, non-existence was not observed in digging for the intercepting sewers, but there is sufficient evidence that it is not unknown.

The writer has seen a case where a drain pipe from a dwelling ran through the walls and there ended; several similar cases have been reported to him; and another, where a block of six expensive houses, occupied for months with all the customary apparatus in the way of plumbing and waste pipes in full operation, had no drains beyond the walls to the street sewer. Such cases are rare, and generally reveal themselves quickly; but it is more common to find drains which are so solidly filled with earth, grease and other matter, to exist only in name, and which, for any good they accomplish, might just as well not exist at all. One, examined by the writer some months since, had apparently had nothing through it for years, the whole waste from the soil pipe having

* The same rule applies, of course, to soil pipes, although that part of the subject does not come within the scope of the present enquiry.