

be considered as its lung, is made the vehicle of contagion, all the impurities of the house discharging into it. Cupboards for soiled linen and other impure matter, are generally found in dark places, such as spandrels of stairs, and being unventilated contribute their quota to the infection of the air, and by their position promote its distribution. Thus, some of our greatest conveniences are rendered dangerous nuisances by position and construction.

We have so far been alluding to town houses, where water is supplied from the city reservoirs—but in country houses, the position of the cisterns next claims our attention. Generally speaking, they will be found located in the most out-of-the-way and inaccessible parts of the house, and consequently, from this cause alone, become neglected and unclean, the water being fouled by sedimentary sludge and feculent matter, which quickly accumulate therein. In the basement they are usually situated in the vaults and over the scullery sinks, the scullery itself being a narrow ill-ventilated slip, inadequately proportioned for its work. The waste-pipe from the cistern is usually carried into the drain, where it is supposed to be trapped. The result of the arrangement is this, that as regards the waste it conducts the sewer gas into the water, where it is absorbed; that the impure air proceeding from the sink, with its generally defective overflow, is also imbibed by the water in the cistern; and that a similar process goes on from the supply of the servants' water-closet, which is also generally connected therewith. When you consider that the whole of the potable water of the establishment is usually drawn from this supply, you cannot wonder at the lethal effects which are produced. In the upper portion of the house, more often than not, the cistern is placed on the roof, in connection with the ventilating pipes or closets (if any be provided), fully exposed to all the contaminating influences of the dirt and filth which congregate there; the wastes and water-closet apparatuses are connected therewith, as just mentioned, and with the same lamentable results.

The facts above enumerated are perhaps the most salient sanitary defects of the internal arrangements of the houses of the middle and upper classes, although many other imperfections might easily, if time permitted, be adverted on, such as position and plan of landing, want of ventilation, not only of drains and conveniences, but of houses generally; method of heating, and carelessness as to disposition of aspect of rooms with regard to the purposes they are destined to fulfill.

Now, how are these defects to be remedied and prevented?

1. We require additional compulsory, not permissive, sanitary enactments. A Building Act is required so as to confer authority and large powers on the city surveyor, and local authorities should be amenable to a central board to carry out with strictness the provisions of the Acts of Parliament.

2. The clauses of the present Municipal Acts should be carefully utilized and strictly enforced, and not rendered inoperative by the prefatory manner in which their obligations are construed, amounting to avoidance thereof.

3. It should be imperative that local authorities should appoint well-qualified and well-paid officers to interpret and to carry into effect the laws relating to the health of the people: men whose professional attainments, scien-

tific knowledge, and social position will command respect and insure obedience; men who have the *fortiter in re* to insist, and the *suaviter in modo* to persuade. The best prevention, however, will be by educating the people to a sense of their own danger and ignorance. We shall never succeed in making them wise, cleanly, temperate, or pious by Act of Parliament; if we cannot appeal to their higher and better qualities, we must address ourselves to their lower and meaner natures,—we must indisputably prove to them how their individual interest and welfare are combined with a due regard to sanitary precautions. If once it becomes an acknowledged fact that people will not inhabit houses deficient in the essentials of life—fit air to breathe, fit water to drink, fit drainage for health—depend upon it houses will be erected with due regard to sanitary considerations, unsanitary houses will be altered and their defects rectified; the supply will soon equal the demand.

The points to be observed, and the precautions to be adopted, in building healthy urban dwellings, happily need no great amount of intelligence for their comprehension, require no scientific skill for their procurement, and involve no large expenditure in their execution; they are but few, simple in the extreme, and only accord with common-sense observation.

The foundations of drainage of old houses should be carefully examined and made perfect.

All houses built on ground made up of noxious soil should have concrete floors, and damp courses should be inserted over the footings. Earth should not rest against the wall, but be kept back by either dry areas, loose stones or coal ashes, and should be well sub-drained.

The main drains should not be carried through the centre of the house, but wherever possible through the back yards, and they together with their branches should be so constructed, that they could be easily inspected. No basement should ever be allowed to be constructed at such a level as will not permit of the pipes having good steep gradients to the sewer.

All pipes should be of glazed earthenware having joints made of Portland cement, and not of blue clay as is too frequently the case; they should rest on good solid foundations.

The connexion with the sewer should be direct. It is a most important question as to the insertion of a syphon between the house-drain and the sewer. We have very frequently found this to silt up and become a nuisance. If the ventilating pipe to the sewer works perfectly in all weathers, no syphon is necessary.

Our space will not permit of continuing to a greater length our remarks; sufficient, however, has been stated to point out the causes so often wondered at why houses for the middle and upper classes are so unhealthy, and we fear will so continue until the direction of the sanitary affairs of cities in Canada is placed in the hands of competent and well paid officials who will see that the law is carried out, not only with the utmost rigour, but with the strictest impartiality.

The streets of London, if placed in one line, would form an avenue of 7,000 miles in length. In the daily cleansing of the streets about 14,000 men find employment, and 6,000 horses and 2,400 carts. The engineer-in-chief has a salary of £2,000. The work goes on day and night, but the actual sweeping does not commence until 8 P.M.