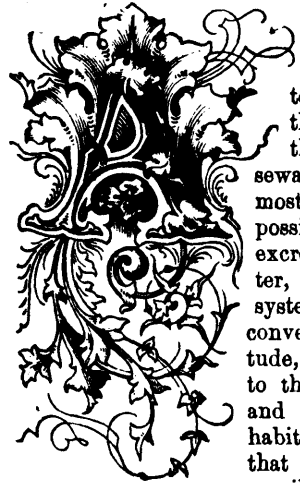


THE AMERICAN MECHANICAL MAGAZINE AND PATENT OFFICE RECORD

OBSERVATIONS

ON THE SANITARY CONDITION OF CITIES—THE WATER-CARRIAGE SYSTEM THE CHIEF CAUSE OF DISEASE.



ALTHOUGH many of the most eminent engineers and physicians who have written on this subject, endorse the assertion we now make, that the water-carriage, or sewage system for cities, is the most objectionable that could possibly be devised for removing excreta and all other sewage matter, yet, for large cities that system is attended with so many conveniences, which, from habitude, have become so necessary to the comforts of the wealthy and to all those who become habituated to it in early life, that it would be almost an impossibility, particularly in a cold

climate like Canada, to prevail upon a community to submit to any other system which would entail upon it less personal comfort; the preference would be given to it, even at the risk of disease; all that can be done then, where such systems are in full operation, or about to be adopted, is to devise means to stop, as far as possible, the evils arising therefrom. The most prominent of these evils arise from gases evolved from putrid matter which accumulate from different causes and to which the water-carriage system is always liable; these gases find access to our dwellings either through imperfect workmanship, imperfect traps, or inferior materials used in the construction of house drains.

Next in importance is the contamination of the atmosphere in our streets from the gases rising up in large volumes through the gratings of the catch-basins.

It would be a work of mere supererogation in a short dissertation on this important subject, to go over the different arguments used by professional men of the highest standing, in favor of one system over another, or, to enter into a disquisition on the deadly character of the different gases which are evolved from putrid sewage, these being facts well established in chemical science.

We need therefore, only confine our remarks to the water-carriage or sewer system, which will include also all connections with dwelling-houses. The pros and cons regarding this system have been already so ventilated in scientific papers, that the public are, in a general way, pretty well informed about these matters; the principal errors they are likely to fall into being the supposition that, because a certain system has been found to work well in one locality, it will answer equally well in all; or, that pure water constantly passing through sewers and drains must wash out of them all impurity; or that if the street sewers are large and well built there ought to be an exemption from disease—such is not the case.

It is a popular error to suppose that good sewers are all that is necessary to ensure the freedom of a city from zymotic diseases. That good sewers and house drains are essential to carry off the sewage in so short a period that they can have no time to putrify, is patent to all, and that drains imperfectly constructed are a curse to a city it is almost unnecessary to assert; all statistics, carefully taken, go to prove the fact that, since the introduction of water-closets, the mortality in cities has increased.

Dr. Stewart, who was one of the first to point out the difference between typhoid and typhus, states that, "*in Edinburgh typhoid fever was unknown (1838 to 1842) before the water-closet system was introduced.*" This is confirmed by Dr. Murchison, in the second edition of his work on Fevers, pages 443 and 444, in which he states that, "*typhoid fever did not exist in Edinburgh until the introduction of water-carriage.*" He also says: "*It is remarkable that the increase of enteric fever in London was contemporaneous with the completion of the main drainage scheme.*"

Dr. Fergus, the President of the Health Section of the Glasgow Philosophical Society, points out the startling fact that, "*according to the returns of the Registrar General, the death rate of Britain from cholera, diarrhœa and dysentery, which are recognized as diseases more or less arising from excremental pollution, was nearly four times what it was thirty-five years ago.*"

The water-carriage system a few years back was looked upon as the great triumph of modern science; it was a system which it was supposed would bear rapidly away from us every impurity. But the faith