

near the watershed of the State, like Canton, Mansfield, Crestline, Galion, Marion, Bellefontaine, Urbana, Lima, and a score of others, ought to turn their attention immediately to this line of inquiry, and all growing towns in this belt should hasten to adopt this or some other adequate system by which the ground-water and ground-air can be saved from pollution.

2. *Sewage irrigation farms* have proven very successfully in various parts of the old world, and on a smaller scale in the United States. The Gennevilliers farms below Paris now utilize one-sixth of all its sewage, which does not, however, at present receive all the products of excremental waste. Provision is being made to extend the system of application to a much larger acreage, so as to comprehend the whole outfall. The Edinburgh farm has long been successful in its comparatively narrow line of operations. The Berlin farms are reported as giving altogether satisfactory results, and Dantzic, the first city on the continent to introduce the system, finds in it all that can be demanded on the score of health and economy. In England many towns are making very successful application of the system, and among them may be named Oxford, Leamington, Bedford, Croydon, Doncaster, and Wrexham.

There is no reason why such farms should not be made equally successful with us. The details of the Pullman system I am not familiar with, but I understand the results to be very satisfactory and encouraging. There are many Ohio towns that ought to be compelled to treat their sewage in this way. Among them may be named Columbus, Springfield, and Dayton.

3. The *separate system of sewers* offers great possibilities. Small sewers, glazed inside, to be periodically flushed, confined to the carriage of *household waste alone*, in such a shape as to respond readily to chemical treatment and utilization, are an immense advance on these great underground rough channels, always and necessarily unclean.

The *Liernur pneumatic system* appears to me worthy of more attention than it has hitherto received. The utilization of the sewage is measurably accomplished by this scheme. The *von Podewils system* of Augsburg I have already referred to as a new claimant. If its claims are made good, it carries us a long step ahead, and leaves it possible for us to utilize sewage while still holding to water-carriage by the combined system.

4. There is one thing that all persons who recognize in any degree the demands of sanitary science, can agree upon, viz., the *careful exclusion of human excrement from the soil which they occupy*. We can all unite in insisting that, in cities and villages, *all vaults and cesspools can be thoroughly cemented and that their contents shall be systematically and frequently disinfected and removed*. This one step may be made the beginning of an extended reformation. It does not involve great outlay. It can be made to commend itself to the good judgment of any Ohio community. But if we should at once be freed from several threatening evils. If, at the same time, the value of these disinfected excrements when applied to our wasting soils could be practically demonstrated, another factor of great moment in the solution of our problem would be added.

FEARFUL PRACTICAL LESSON—DIRT TO DEATH.

The following history of the late terrible typhoid epidemic in Pennsylvania, which was unusual only in its *extent*, is from the *Detroit Lancet*, and is reliable :

The town of Plymouth, Pa., has been the scene of an epidemic of typhoid fever fearful in the extreme. Many also have been attacked with malarial poison. Out of a population of some eight thousand about one-third have suffered from the disease, many dying.

The local physicians have been unable to attend the sick, and so volunteers have been called for. Hospital accommodations have been provided, and proper measures for suitable treatment. The origin of the epidemic is also clear. The town is situated on the alluvial soil of hills, which slope towards the Susquehanna river. The water supply is from reservoirs made by damming a brook running through the town. This water has become polluted to an extreme degree. Prof. R. C. Kedzie, of the Michigan State Agricultural College, has made a careful examination of this water. He reports it the very worst drinking water he ever examined.

The town has no sewerage system. Hence, all the water polluted by being used for household and other purposes, is left to find its own way through the soil to the river. The population, also, is so full of ignorance that it paid no attention to sanitary laws. As to the origin of the epidemic in this