

pared for it, leaving a thick crust to be ploughed into the land in the spring. About thirty feet from the conduits the sewage often freezes. During the months of extreme cold, though the sand is so porous that the sewage sinks into it readily at all times, filtration alone can be depended upon. Nevertheless, if the plots of land are large and frequently changed, the purification of the sewage is, even in winter, more complete than can be accomplished by any of the chemical processes."

The experience of the State Insane Asylum, Augusta, Maine, has further tested the practicability of this method of sewage disposal in winter. "When the mercury stood at nearly 0° Fahr., and the ground was frozen hard, the sewage was found to disappear very soon after it was put on the land. In the spring the early rains wash any refuse that there may happen to be deep into the soil and no offensive odours are noticed. The surface of the ground is then sometimes found covered with a brownish scum."

In the smaller towns and villages of Canada, where there is usually a sufficient supply of garden space attached to each house in the suburbs and outskirts, similar methods to those described above may be employed on a small scale by householders. Care must be taken to lead the sewage by a tight drain pipe through the ground where there is any danger of its contaminating the drinking-water; it may then be discharged into the garden by a system of open-jointed drain-pipes, placed ten inches or a foot below the surface. If the soil is not very porous it should be under-drained.

In the winter it may be discharged on the surface of the ground if the underground drains are found to choke with ice. Any method of disposal on the surface of well under-drained ground provided it be at a sufficient distance from the house is better than depositing sewage in cess-pits, which experience has shown to be almost invariably in a leaky condition.

The central and more thickly populated portions of the town should be sewered as previously described.

If in any case a cess-pit is considered an absolute necessity it should be built of brick laid in cement with both bottom and top arched. It should be surrounded with a clay puddle and lined inside with a coating of cement. The drain emptying into it should be well trapped, and both drain and pit ventilated at a safe distance overhead. The pit should not be more than six or seven feet deep and should be emptied periodically by the odourless process.

In some public institutions in England where earth closets are used the slops are collected in tanks and sold as manure.

In bringing this subject to a close it may be well to recapitulate some of the facts upon which the above proposed methods of sewage disposal are founded. These are as follows:—Solid organic refuse if kept sufficiently dry does not undergo a putrefactive and offensive decomposition. Coal and wood ashes and most kinds of earths possess great deodorizing properties, and when mixed with solid fæces in the proper proportions will in a short time, through a process of inoffensive fermentation, form a valuable manure. Soils may be repeatedly soaked with liquid sewage provided they are well underdrained and a sufficient time is permitted to elapse between each application so as to allow the soil to fill up again with air, which of course takes the place of the water as the latter filters through. This air oxidises the organic portion of the sewage, and if the under-drains are