

APPENDIX No. 1

is not readily obtained at a moderate price, these particular processes afford the most suitable means of disposing of the water-carried sewage.

"It appears, further, that the sludge, in a manurial point of view, is of low and uncertain commercial value; that the cost of its conversion into a valuable manure will preclude the attainment of any adequate return on the outlay and working expenses connected therewith; and that means must, therefore, be used for getting rid of it without reference to possible profit.

"For health's sake without consideration of commercial profit, sewage and excreta must be got rid of at any cost."

In regard to the question of the interception of excretal matters, generally referred to as the "dry" system, as distinguished from the "water-carriage" system the committee passed the following resolutions:—

"1. That the pail system, under proper regulations for early and frequent removals, is greatly superior to all privies, cesspools, ashpits, and middens, and possesses manifold advantages in regard to health and cleanliness, whilst it results in economy and facility of utilization often compare favourably with those water-carried sewage.

"2. That hitherto no mode of utilizing the excreta has been brought into operation which repays the cost of collection.

"3. That the almost universal practice of mixing ashes with the pail products, though it applies these as a convenient absorbent, and possibly to some extent as a deodorant, is injurious to the value of the excreta as manure.

"4. That for use within the house, no system has been found in practice to take the place of the water-closet.

"8. That all middens, privies, and cesspools in town should be abolished by law, due regard in point of time being had to the condition of each locality."

5. EXTRACTS FROM THE REPORT OF THE COMMITTEE APPOINTED BY THE CORPORATION OF GLASGOW IN 1880 TO INQUIRE INTO THE VARIOUS METHODS OF SEWAGE DISPOSAL.

"Probably the only proposition of universal acceptance is that crude sewage cannot be disposed of anywhere, by any means without nuisance or risk of nuisance. Whether poured into a running stream, a tidal river, or the open sea, or distributed on an extended area of land, it is certain, that at some time or other, it will make its presence felt. Some clarifying process whereby the whole of the suspended impurities at least shall be removed, seems to be an indispensable preface even to discharge into the sea or to irrigation.

"There are processes of precipitation now in operation which give an effluent capable of being discharged into a river with perfect inoffensiveness, and without sensibly destroying its purity, provided always that the volume of sewage is small compared with that of the river.

"The successor otherwise of a precipitation process depends largely upon details in the arrangement, construction, and measurement of the various parts of the works. The best process may fail by neglect of these details.

"Whatever be the process of chemical purification to which the sewage is subjected, the effluent is still impure and will putrify and give off noxious gases if kept for some time; and we know of no way in which the purification can be completed but oxidation. Filtration through cultivated land—i.e., irrigation—is probably the best means. But oxidation of the effluent may in most cases be effected by the simple and natural process of running it into the nearest watercourse when, if the proportion of clean water be sufficient, the organic matter will be gradually oxidized, and the effluent water will not become putrid or offensive in any way even in warm weather.

"The sewage-sludge is the troublesome, not to say dangerous, element in all such processes, especially that from lime precipitation, which changes more rapidly than that produced by the action of alumina or oxide of iron. The first, and absolutely essential preliminary to the adoption of any method of treatment by precipitation, is