

uppermost story of the house; and the necessity obviated of carrying the earth upstairs. In that case two men can take out and remove the contents of a vault of a family of five persons, accumulated during six months, in less than an hour.

I must not omit to mention here the application of the DRY EARTH principle to URINALS, especially for *schools and railway stations, and other public places*.* The contrivance is simply a pit or vault four or five feet wide, of any length required, and of that depth which will admit of easiest removal, not less than three feet. Over 12 or 18 inches of the width of this pit or vault, there is an iron grating, on which those using it stand, this grating being as wide as may be without allowing the foot to get into it. From the inner end of this grating rises an iron railing. Of course the blocking off into compartments would be the same as where water is used. It must be sheltered from rain. If the urine be thus kept from falling on stone, or slate, or wood, and fall entirely on the earth, and if this earth be well supplied, and not allowed to become very wet, all offensive smell is prevented, and a valuable manure manufactured. There are public urinals frequented by 2000 persons a day. Is it too much to say that the manure saved from them by the use of earth would be worth from 2*l.* to 3*l.* a day? A week or two ago I was requested to look at the privies and urinal of a national school of 400 children. The offensiveness was so great I could not bear to stand within ten yards of them. Now these places may, by the use of dry earth, be made perfectly inoffensive; and I am myself disposed to estimate the value of the manure that is now wasted, but which then would be saved, at certainly not less than 5*s.* a day.

IV. THE INTRODUCTION OF THE DRY EARTH SYSTEM INTO TOWNS.†

For some time after my discovery of the principles stated in a former chapter, and of their general applicability, I was quite disposed to yield to the difficulties which seemed to stand in the way of their application to towns, and to confine my attention exclusively to detached houses, and some large institutions and villages. But every year has helped to remove those difficulties. The first of these was the vast amount of earth that seemed to be requisite. But gradually we have reached this point, that for the removal of excrementitious matter alone, an average of 4 lb. a day for one person will be sufficient. This would be $\frac{1}{2}$ a cwt. a fortnight, or for a family of five persons $2\frac{1}{2}$ cwt. a fortnight, or 1 ton for sixteen weeks, or $3\frac{1}{4}$ tons a year. What family thinks of the trouble of taking in so much coal every year? The removal need not be more frequent, nor would it require much more labour. But then this labour would not devolve on the family itself.

* For a design for Urinals and as above described see Appendix B.

† For important information as to the use of this system in gaols, see Appendix C.