

depth, by the foul fluids of four years accumulation, it must be apparent that the work of purification was but commenced. This *manure* was removed, to the amount of some hundreds of cart loads, and it was replaced by a layer of fresh gravel. Under the centre of the long corridor a tile drain, with proper outlet, was laid to receive and carry off all surface water which might in time to come ooze into the basement. The floors of the kitchen and various other parts, amounting in all to not less than fifteen thousand feet, were entirely rotten, and of course required relaying. The under surface of these presented in some parts the most gorgeous fungoid growths ever beheld; one of these rivaled the antlers of an elk.

No provision had been made for sub-ventilation, without which no basement whatever can be healthful, nor its timbers lasting. We found, indeed, that apparent precaution *against* the free circulation of air beneath the floors had been taken, by building up the stone walls of every compartment to the door sills, or very near them, and no external openings had been made for entrance of fresh air.

These walls, underneath every door, were removed, and the jambs properly built, so that a sub-atmospheric community was established throughout the entire extent. In the eastern half, where the surface is deep below the flooring, a year old heifer might now play hide-and-go-seek from one compartment to another.

The next step was the opening of some five and twenty air shafts, from the basement compartments, sloping upwards to the outside, which they reach at the underside of the cutstone heavy plinth. These openings are protected against entrance of rats by strong close-barred iron gratings. By means of these shafts, which are fifteen to eighteen inches in diameter, every fresh breeze finds ingress and egress, and thus keeps up a constant change of air. But in the winter these openings are closed, to prevent the entrance of very cold air. It was therefore necessary to introduce some form of vicarious sub-ventilation. The building is abundantly provided with fires and chimneys of powerful draft. To utilise these chimneys, by converting them into air-pumps, drawing their supply from beneath the basement floors, it was merely necessary to cut round holes in the floors, in the corners or at the sides of the chimney pieces, or in other contiguous parts, and place over them seven or eight feet of stove-pipe, with an elbow entering the nearest flue. Sixteen of these cheap pumps were set to work. Their efficiency was well demonstrated by placing in one a revolving valve, working on an axle, to one end of which, outside, was fitted an index resembling the needle