

fresh and pure. It is a very simple process. It costs a trifle to be sure to warm the fresh cold air from out of doors, but as we have said repeatedly on former occasions it is better to pay a fuel bill for warming pure air than either a "butcher's" or a "doctor's bill." Provide at once an opening through the wall of every occupied room into a chimney flue that will be usually warm, or cut an opening into a stove pipe, if one pass through the room. This will draw off the foul air. Even if you use a grate or open fire, such an opening into the chimney above the grate will be very useful. If you have but one fire, probably a stove, in the dwelling, have a good sized opening (say 4 by 6 inches) cut in the pipe, with a sliding door to partly close it in very cold weather when you have on a large fire. In many houses in severely cold weather, with this outward

draft creating a vacuum within, enough pure air will come in through the cracks and crevices about windows, doors, etc. Often a window should be opened a little too. This is not a first-class method of ventilating, but if it alone were commonly practiced, it would prevent a vast amount of sickness and save very many lives. When there are outer or storm windows, have them so arranged as to open wide (the so called small "ventilator" in the lower bar of the sash is hardly worth naming or using) and open all doors and windows once a day and flush the rooms. Do this for just a minute or two or longer, daily, when the fires are good and walls all warm, and little or no discomfort will be felt, even by an infant. Whatever you do get the fresh air to breath constantly in some way.

ON THE BEST MANNER OF SEWAGE DISPOSAL—AN AGRICULTURAL QUESTION.

IT has been well said that sanitation is purely an agricultural question. Sanitation consists mainly, almost wholly, in the proper and safe disposal of all the waste used-up matters of individuals and communities, and in so far as this disposal is concerned, it is, or should be, purely an agricultural question. In like manner, *en passant*, as we have herein stated, the physical man, that part of man to which sanitation directly relates, is a direct product of the soil, just as are any of the lower animals, and that, therefore, the subject of public health administration is more properly associated with the State Department of Agriculture than with any other of the Departments.

Soil purifies the sewage, while the sewage fertilizes the soil. The soil purifies sewage partly by filtration, partly by oxygenation and partly by the action of growing crops. The oxidation process, called also nitrification, depends on the presence and action of multitudes of microscopic vegetable organisms. The black mould on the surface of the earth consists very

largely, in fact mainly, of these organisms—a million of them being found in about 25 grains of earth. The dead, waste excremental matters thrown on the surface of such soil become the food of—are consumed by—these saprophytic fungi which so abound in the soil. Solid matters, even pieces of wood and leather, upon the surface of the earth, become softened and permeated by these fungoid growths and finally crumble away and become the fertile "humus" which "is the only source of permanent wealth in any country;" the source whence we derive all materials for our food and clothing.

The living vegetable mould on the surface of the earth forms a filter of the most perfect kind, and sewage filtered through it in proper proportions is purified in the most perfect manner. The oxygenation and purification of sewage in the soil is a process analogous to fermentation. Cobbett has told us that "the earth begins to ferment in the spring," and that before sowing the seed a thorough tilling and mixing of the upper strata of soil is very necessary,