

all it will be loaded with watery vapour, and therefore of less value, in a sanitary point of view, than it would be with only its normal proportion of moisture. Besides this evil there is the more serious one of the water actually reaching the joists and other wood, such as 'doaks' and wall plates and straps, and causing these to decay, and so interfere with the stability of the structure. Coating the stone with oil, paint, silicate of soda solution, or other means of rendering it impervious to water, prevents the absorption of rain; but it also, at the same time, destroys the valuable property of diffusing pure air into and impure air out of the house. The only way that I know of securing the advantages of the porosity of the stone and preventing the injurious action to which I have referred is to have double walls, with a space of a few inches between, into which air is freely admitted by openings in the wall at top and bottom placed in such a manner that rain will not enter them or lodge in them. The openings may be about three inches square, and placed about six feet apart, and they should be sloped upwards for the reason I have above stated. The inner wall may be of brick, either  $4\frac{1}{2}$  to 9 inches thick, according to the height of the building, and it should be tied into the outer wall by pieces of thick iron wire with angled ends. The system of building with concrete blocks pursued in Sandown, Ventnor, and other places in the Isle of Wight, is well adapted for constructing walls on the principle I have indicated. The blocks of concrete are about 18 inches wide by about 12 inches, and are of two thicknesses, those for the outer wall being 4 or 5 inches, and for the inner about 3 or  $3\frac{1}{2}$  inches in thickness, and these are tied together by pieces of iron wire, with a space of about 3 inches between them. This forms what looks, to those accustomed to the 2-feet thick solid walls of Scottish houses, a very flimsy wall, but it appears to be sufficiently strong for a building of two storeys in height, and with a few openings above and below for the admission of air into the space between the outer and inner walls, it would form a structure

which, in a sanitary point of view, would be perfect, although I would prefer to have the inner wall of brick, which is more porous than the blocks of concrete, formed of fine gravel and cement, which are used in the Isle of Wight.

It is a common observation that, in spite of every care being taken in the construction of a building, the joints of the stone are often imperfect and admit water freely, especially when the rain is accompanied, as it often is, by high wind, especially when the wind comes from the south-west. To prevent the rain penetrating it is customary in some districts to build, not on a flat bed, but one sloping slightly upwards. This is a system highly to be commended; and if it be objected to on the ground of giving less stability to the building than working upon a perfectly level bed, this objection might be overcome by making the greater part of the bed level, with about two inches of the stone on the exterior side of the wall slightly bevelled.

In the case of rubble walls the best thing that can be done, probably, is to point them with a mixture of Portland cement with twice its bulk of sand, taking care that the sand is not too fine; and then to whitewash the entire walls with Portland cement, a process which may be repeated with advantage. But the pointing should not be done until the walls have had a summer's sun and are practically dry; otherwise the greater part of the water in the walls will evaporate inwards, that is, into the house, and so keep the atmosphere damp for a longer time than is actually necessary. A two-foot wall will not dry thoroughly, however, even under the most favorable circumstances, in less than two years.

As regards the interior of houses, plaster, whether on brick or lath, is exceedingly porous, and permits of a ready diffusion of gases; and a wall merely whitewashed or colored with distemper is better in a sanitary point of view than one that is covered with oil paint, which becomes by this process practically impervious to the passage of gases. Wall papers are probably not so bad in this