ordinary height. An impervious course between the foundation and the superstructure will prevent this capillary action; slates laid in mortar, tar paper laid in and well covered with tar and strips of sheet lead cut wide enough to turn down over the top of the foundation are suitable and efficient materials. Another method is to combine the area and the impervious course by building an area into the foundation and having two impervious courses, one at the bottom of the inside part of the foundation, the other at the top of the outside portion. This is a very successful method of keeping out dampness, and is especially applicable where there is not room for a wide area.

Concrete floors laid with about a foot of rubble under two or three inches of concrete, are the best for cellars. But on hot days it is noticed that they become damp, indeed sometimes very wet. The source of this moisture is doubtful, but the fact is very evident and very troublesome. There are two sources possible: (*a*) the air in the cellar, (*b*) ground air or ground water from beneath the floor. I am of the opinion that this moisture is the result of condensation from the ground air. In one case after the concrete was put down and the moisture showed on the surface, weeping drains were put in with little or no good being done; the moisture was as bad as before. This would exclude the ground water as a cause. In another case strips of cocoa matting, having the ends bound with lead, were laid on the concrete; there were no weeping tiles. The moisture was noticed to show first and most abundantly on the under surface of the strips of lead. From this I understand that the ground air came up through the concrete laden with moisture; as this ground air struck the lead surface its temperature was so reduced that the moisture was condensed. But on a fine dry day the atmospheric air, not being already laden with moisture, was able to carry off the moisture from the ground air and no condensation could take place. In this case the condensation was so bad and the general air of the cellar so muggy that two large extraction fans were put in. The result was most satisfactory. The rapid and continuous changing of the air carried off all moisture and left an atmosphere pleasantly cool. From these facts we learn that by having a continuous supply of fresh air to the cellar we will (1) remove the physical necessity for the rising of the ground air, and thereby keep the moisture out of the cellar; (2) have air sufficiently dry to carry off any moisture that may be in the cellar, either from the ground air or from scrubbing, leaks, etc.

This raises the question, Is it better to pump fresh air into or to pump the foul air out of a cellar? Theoretically, it is undoubtedly better to create a plenum of fresh air and thereby prevent any ground air from entering the building, but practically this is found to be very expensive, a very large amount of piping being required, and the friction of the air in these pipes requiring greater engine power. Therefore, by having a sufficient and free inlet for the fresh air and a good fan placed at a carefully selected outlet, the air of a very large cellar can be kept in a wholesome condition.

In private houses electric fans can be put in so as to give perfect satisfaction at very moderate figures, but where these are not available then out-door air must be freely admitted by ventilators made so that they cannot be completely closed, not even in winter.