

My experience has taught me that in a large number of cases wood block floors, or boards nailed into breeze concrete, can be provided at very little extra cost, and when properly laid on good concrete they are durable, sanitary, and in every way preferable. Most new houses in my district have these solid floors, and they are a real success.

"4. Building by-laws leave the provision of coal place, wash house, larder or pantry, and bathroom optional. I think it is time that each and every one of these necessary adjuncts to healthy domestic life should be made compulsory, in all new houses at any rate.

"I hate to see the coals stored under the staircase, or in some other corner of the house adjacent to the milk and butter, and it will not be much use spending money to teach children domestic and personal cleanliness unless provision is made for their practical applications at home.

The storage of food in a house becomes increasingly important as we realize the dangers of the common house-fly, those carriers of filth and disease, and we cannot regard any house as hygienically complete unless sensible provision be made for food storage.

"5. Drainage.—The by-laws as to house drainage in the various districts throughout the country are by no means uniform; they vary a great deal, but not more than the general practice. It should not in these days be necessary to point out the desirability of having a separate connection to the sewer for each house. This can be done without exception if the Local Authority so decide. The idiotic state of the law on "drain" and "sewer" makes this essential in the public interest, although in some districts a combined drain is allowed under an agreement absolving the Council from liability. But the separate drain is the correct thing and should be insisted upon. A very important item in house drainage is omitted from the by-laws in many districts, viz.: the inspection chamber. This is provided for in the Local Government Board's Model Series, and ought to be uniformly adopted.

"The very controversial question of the intercepting trap must here be referred to briefly. I am of opinion that there is a real danger of having too many traps on the house drainage system. According to the

Model By-laws of the Local Government Board, each house drain must have an intercepting trap, and all the other connections must be trapped, including bath and lavatory waste pipes. This means that all the dirty water, generally containing much grease or fat, from the bath or scullery sink, etc., must pass through three traps before reaching the sewer, viz.: waste pipe trap, gully trap, and intercepting trap. Having regard to the first principle underlying the water-carriage system—that of prompt and unimpeded removal of all sewage matter, I think one may with some justification question the real value of this triple obstruction to the flow of sewage, and in suggesting and modification of this point I would begin with the 6 inch intercepting trap. Whether any intercepting trap is required at all depends upon purely local conditions. I can easily imagine a district having a modern system of sewers, laid at self-cleansing gradients, and constructed throughout in such a manner as to reduce the formation of sewer gas to an absolute minimum, where the primary object of interception need not be considered, sewer gas being non-existent. I am associating a rapid flow of sewage, an absence of obstruction and accumulation with a plenitude of ventilation. Given these conditions, then I think the intercepting trap can safely be abolished, taking care, of course, that the house drains themselves are sound, efficient and well ventilated.

"If the Local Authority permit the existence of foul and insanitary sewers, then sewer gas will be abundant, and must be guarded against. In such cases I suggest that a 4 inch interceptor will be preferable to a 6 inch, and I would here put in a word in favor of the 4 inch drain. For any house under £80 rental a 4 inch drain is quite sufficient, having a discharging capacity, when laid at a gradient of 1 in 30, of 175 gallons per minute, when running full. My further observations on house drainage may briefly be summarized thus: Gradient (ideal), 1 in 30; size, 4 inch; inspection chamber inside curtilage; inspection chamber, minimum size, 3 feet by 2 feet 6 inches; brought to surface; drain laid on concrete; drain tested with water test; Stanford joints to be used in water-logged ground; plain joints to be made with Portland cement; gullies provided with channel tops and waste pipes to discharge therein at least I