tion. But as it is they are often situated in the yard in close proximity to the barn and manure heap.

How can we expect such a water to be free from contamination It is not infrequently situated at a lower level than the manure heap, and thus the filth gradually soaks away through the more or less porous soils, and as the contents of the well are pumped out they are replenished from the surrounding soils. The wells thus in many instances is simply a drain for the surrounding soils.

The distance within which a well draws water when its level has been depressed by pumping depends on the amount of depression and the nature of the soils. The distance is usually expressed in terms of the depression. In fine sands and gravel the distance varies from 15 to 39 times the depression. In chalk, where fissures facilitate the passage of water, the distance may be 57 times the depression. In dry, coarse gravel which allows free passage of water it is from 68 to 160 times. We thus see the conditions which determine the freedom of a shallow well from sewage and other pollution are :—

1. Its position with regard to the flow of the underground water.
2. The depression of water levels produced by pumping.
3. The nature of the soil.

As to the other precautions to ensure purity of water in shallow wells it is beyond the reach of this paper to discuss. But very frequently the consumers of water from such wells are indignant at any suggestion of impurity. Their water is all right because the water is always clear, sparkling, and of a pleasant taste. Unfortunately, liquids containing excremental matter, especially after soaking through a few feet of porous soils, do not impair the palatability of the water, and thus polluted water may be consumed from year to year without the slightest suspicion of its character, while water far less likely to act as an agency in carrying disease may on account of its unpleasant taste and unsightly appearance be absolutely condemned. This is especially so where there is much vegetable matter in the water. I had a good instance of this during the past year. A number of samples were forwarded to me from a district, and one sample, out of nearly a dozen other, was turbid, muddy and contained a good deal of vegetable matter, while other samples looked much more innocent on naked eye appearances. And yet on examination, both chemically and bacteriologically, the water of so objectionable appearance was the second best as regards sanitary purity.