

may be thrown and near which the garbage heap with all sorts of refuse may be found, then contamination of the water is inevitable and unavoidable. It is quite true that most soils, and more particularly those which are porous and well aerated (gravels and sands), possess filtering and purifying properties, but the soil surrounding the wells located as we have described, must in time become impregnated and clogged with organic filth of a most objectionable character. Such soil is then no longer able to purify the water passing through it, but rather serves to contaminate it more seriously.

Emphasizing what has already been referred to, we strongly advocate the bored or drilled well, tapping a deep-seated source. It cannot be stated that such a well will necessarily yield a good drinking water, but nevertheless it is the source of supply to be generally recommended for the isolated household. If there are no fissures in the overlying strata and there is no opportunity for water to flow downwards between the piping and the sides of the boring, a good water will in all probability be obtained.

Protective Measures which are Safeguards.

To those who, for one reason or another, must rely on the shallow well, we would say that the area around the well, say for a radius of at least 50 yards, be kept free from manure and all filth. It may preferably be kept in sod. Another precaution of considerable value towards the protection of the well-water from organic filth, is to line the well to a depth of say 10 to 12 feet and to a thickness of say 6 inches with concrete or puddled clay. This lining should project some 6 to 12 inches above the mouth of the well. This will prevent the direct inflow of wash and of water from the surface soil and will in all probability ensure a certain amount of filtration through clean layers of soil. It will also protect against the entrance of rats, mice, frogs, etc., which so frequently find a watery grave in the farm well. Both measures are to be recommended as safeguards, but they do not remove entirely the objection to shallow wells placed in proximity to sources of contamination. These precautions are frequently insufficient to prevent the infiltration of organic filth. Many suppose because the barnyard, back door wells never go dry that they have a spring, but such is not necessarily the case; undoubtedly the majority of such wells receive soakage and are supplied from the rain and snow falling on the immediate surroundings.

What Should be Done.

The shallow well should, if at all possible, be abandoned. Where there is no natural pure source, the water for domestic purposes should be obtained from a deep-driven or drilled well so located as to be beyond the possibility of local contamination. Experience has shown that these are the wells that yield the safest waters. A careful survey of the farm should be made with the special object of locating the well, having in mind the practicability of piping the water to the house and buildings. However, convenience should not be a primary consideration; *the purity of the water is of the first importance.*

Further Safeguards.

If the water is offensive to sight, smell or taste, it is in all probability unsafe, or at least highly objectionable, for domestic use. In such cases boiling all the water required for drinking purposes is a great safeguard, for it will kill any disease germs that may be present, but it will not make the water a good one. Half a small teaspoonful of hypochlorite (chloride of lime), rubbed up with a little water and well stirred into a barrel of the water, is another precaution for the destruction of germ life, that is nowadays advocated. But a water impure from the presence of excretal matter is not to be recommended, even when one or other of these precautions is carefully carried out.