

In fact, the desirability and importance of an ample supply of pure water on every farm can hardly be over-emphasized. Perhaps more than any other food element, it determines the healthy development of the family.

Water, as we see it every day, is a very simple looking substance; but in reality, it is never found pure. The moment water comes in contact with the atmosphere, it dissolves a certain amount of carbon dioxide, which increases its solvent powers. Because of its great solvent power, water dissolves some of the constituents of the soil or rocks over which it passes.

These dissolved substances frequently make water which we secure from our wells unfit for domestic use, although some of the impurities found actually make water more palatable for drinking. The most dangerous impurities found in water, however, are those which owe their origin to decaying plants and animals, seepage from barnyards, sewage, etc. The presence of organic matter in water is extremely dangerous, since it introduces many species of bacteria and provides food for their growth. From the specific germs that may be carried in sewage at any time, there may result typhoid fever, tuberculosis, cholera, dysentery, diarrhoea, or other dangerous ailment. It is not improbable that certain obscure maladies may be traced eventually to the poisonous effects of drainage from human waste. The causal organisms of these diseases are so small that they are invisible to the naked eye, and they may be unsuspectingly received into the human body. Sometimes the presence of organic matter discolors the water or imparts to it an undesirable odor, but this is not always the case, and often the clearest sparkling water may be dangerously polluted. For this reason, the **appearance of water cannot be relied upon as a test of its freedom from organic matter**, and a chemical examination should always be made.

Disinfection

For domestic purposes, small quantities of water may be purified by **boiling**. This kills the dangerous bacteria, drives off bad odors and renders the partially decayed organic matter inert. Water containing organic impurities may also be rendered palatable by the use of a **disinfectant**, the most suitable being hypochlorite solution. This solution may be prepared and applied as follows:

Hypochlorite Solution

- (1) Dissolve 13 oz. of washing soda in 2 qts. of hot water, then add sufficient water to make a gallon.
- (2) Mix one-half pound of Chloride of Lime (33% available Chlorine) with one pint of water and then add sufficient water to make a gallon.
- (3) Mix these two solutions in a crock and allow the sediment to settle over night.
- (4) Pour off the clear liquid and bottle carefully and keep in a cool, dark place.