(ii.) The very high temperatures really necessary to destroy the seeds of germs, as well as the germs themselves, can only be secured by apparatus not as yet available for home use; consequently, a false security may be enjoyed if boiling only be accepted as sufficient protection to our food.

Protection of Water by Boiling.

"What, then," you will ask, "about the protection of water by boiling?" In this case the difficulty can be overcome to a great degree, because, in the first place, every drop of water can be raised to boiling-point, given sufficient time. We know that the germs of disease which are conveyed to us by water are killed if boiled for at least half an hour. Therefore, where water is suspicious, the day's supply for drinking purposes can be boiled for that length of time.

"But how about the seeds of these germs," you will inquire; "should not they also be destroyed?" This further protection can be extended to water by allowing it to cool and stand for some hours and then boiling it for a second half-hour. In the interval the seeds of any germs, if present, will develop into germs, in which form a temperature of 212° Fahr. means death to them.

It is believed that the germs of disease most often carried by milk—namely, those of tuberculosis—are completely destroyed by a temperature rather below boiling-point; but, unfortunately, milk appears to suffer some change when cooked for the necessary time, which renders it less wholesome for children.

A Necessary Precaution for Boiled Milk and Water.

Please note the importance of covering all water or milk which has been boiled.

It must be understood that the whole universe swarms with micro-organisms, some of which are floating in the air, from which they fall upon our persons, our property, and our food. Happily, most of these invisible millions are our good friends, and not the least of their very valuable services is to protect our bodies and all forms of food against the invasion of disease and putrefaction.

(FIG. 5.)

Food-preservation by means of a layer of fat.

Sometimes these benign and kindly germs are overpowered by the invaders. If this occur in our bodies, we are sick: if it occur in our food, decay sets in. Now, the misfortune is that when milk or water is boiled, we kill our friends as well as our foes among these germs. Therefore, if the undesirable germs, occasionally present in the air, in dust, or in dirt, fall upon the surface of this defenceless milk or water, they can carry on their mischievous activity unchecked. Sterilized food is defenceless food; therefore it must be sheltered by covering of a suitable kind.

A slip of glass is to be preferred for this purpose. It fits closely to the rim of the jug or bowl, and shows every spot of dirt or greasy finger-mark. A cloth, however clean it looks, may have been exposed to much dirt or handled by many grimy fingers before it is used to cover a jug of boiled water or a bowl of boiled milk.

Exposure to High Temperature.

Exposure to a high temperature over a prolonged period alters in some way the character of the food so treated. While protecting it in one direction, the heat seems