

### To Test Cheese.

Obtain a representative sample of cheese by taking a plug extending from the outside well to the centre of the cheese; cut this into small strips extending from end to end of the plug—strips that will easily pass through the neck of the test bottle. Weigh out from four to five grams and put into the test bottle, and to this add 12 to 15 c. c. of hot water to dissolve the cheese. After shaking the bottle sufficiently to dissolve the cheese, cool the sample down and add 17.5 c. c. or the usual amount of acid, and proceed as in the testing of milk.

To obtain the percentage of fat in the cheese, multiply the reading by eighteen and divide by the number of grams taken in the test. If other than six grams of cream be taken in a test, apply this rule to determine per cent. of fat.

### THE LACTOMETER AND THE DETECTION OF ADULTERATIONS IN MILK.

The lactometer is a specific gravity measure for milk. There are different kinds of lactometers; but as the Quevenne is the most suitable for milk testing, it is the one that we shall here describe.

By means of the Quevenne lactometer we compare the density at sixty degrees F. with that of pure water at sixty degrees. It has a scale graduated from 15 to 40, and indicates a specific gravity of from 1.015 to 1.040. For example, milk with a lactometer reading of 32 has a specific gravity of 1.032, or a vessel which would hold 1,000 pound of pure water (at 60° temp.) would hold 1,032 lbs. of this milk. As it is not always convenient to have milk at a temperature of sixty degrees when taking a lactometer reading, corrections for temperature are made as follows: To obtain the *corrected* lactometer reading, or reading at sixty degrees, add .1 ( $\frac{1}{10}$ ) to the lactometer reading for each degree in temperature above sixty, and subtract .1 ( $\frac{1}{10}$ ) from the reading for each degree in temperature that the milk is below sixty degrees. Thus, if the lactometer reading of milk at a temperature of sixty-five degrees be thirty-one, the corrected reading is  $31 \times .5 = 31.5$ ; if the lactometer reading be 32.5, and the temperature fifty-seven, the corrected lactometer reading is  $32.5 - .3 = 32.2$ . This rule is practically correct, if the temperature be kept within a range of from fifty to seventy degrees.

The lactometer reading of whole milk usually ranges from 30 to 32.5, although it may fall as low as 27, or go as high as 34. The lactometer reading of skim milk varies from 33 to 38.

The composition of milk is about as follows:

|                     |                          |
|---------------------|--------------------------|
| Water.....          | 86 to 88 per cent.       |
| Fat.....            | 3 per cent. and upwards. |
| Solids not fat..... | 8.5 to 9.5 per cent.     |

#### *Solids-not-fat (Or Solids Other Than Fat.)*

In determining the percentage of solids-not-fat in milk, we require both its corrected lactometer reading and the percentage of fat in it. It is the solids-not-fat of milk that cause its specific gravity to exceed that of water, and consequently its lactometer reading to be greater than that of water. Since the presence of fat in milk lowers its lactometer reading, the first step in determining the percentage of solids-not-fat is to obtain what the lactometer reading of the milk would be if the fat were not present to interfere, i. e. the first step is to deter-