

sample will block up the small opening, and only the fat will be drawn into the pipette. This can be avoided by breaking the end off the pipette, or, when small sample-bottles are used, the cream may be poured directly into the test-bottle.

#### ADDING THE ACID.

When using a 9-gramme sample 9 c.c. of water is added, and a full charge of acid is used. With a little experience the added water may be used to great advantage in getting a good clear reading. By its use the temperature can be regulated to suit the strength of the acid.

If an 18-gramme sample is used, less acid is required, as there is less material for it to work upon than with milk.

Personally, I have always been able to get a much clearer "fat" column when using a 9-gramme sample than with an 18-gramme. This is no doubt due to the fact that in an 18-gramme sample of 50-per-cent. cream there are 9 grammes of fat and only 9 of milk serum, while in a 9-gramme sample of the same cream with 9 c.c. of water added there are  $4\frac{1}{2}$  grammes of fat and  $13\frac{1}{2}$  of water and serum. Should the mixture appear too dark after shaking the acid and cream together, a little chilled water added will sometimes check the action of the acid.

I have found it a good plan to shake the bottles again after the first whirling, as it helps to clear the fat from any dark specks. For the same reason I prefer to whirl three times instead of twice, as is sometimes done.

#### READING THE TESTS.

If the water added to the test-bottles has been up to 200, the samples will be about  $140^{\circ}$  in a turbine machine when finished. They must be at once removed to a water bath at this temperature, the water reaching to about the top of the "fat" column.

There is perhaps no point in cream-testing about which there is a greater difference of opinion than the reading of the "fat" column. Some managers read the extreme points, the same as in milk-testing, some to the middle of the meniscus or curve, and others again to the bottom of the meniscus, or, rather, to where they think it is. Others read to extreme points and deduct 1 per cent. when using 30-per-cent. bottles, and 2 per cent. when using 50-per-cent. bottles, with a 9-gramme sample. This last plan comes very close to being correct, but is not reliable.

The depth of the meniscus depends on the diameter of the neck of the test-bottle, and ranges from 0.5 in a small 30-per-cent. bottle to 1 and even 2 per cent. in a very wide 50-per-cent. bottle.