If several samples are to be tested, each sample should be given a serial number and a test bottle marked with a corresponding serial number for each sample. A part of the bulb of the test bottle is usually frosted so that such a number may be written on with a lead pencil.

Adding the Acid.

The next step is the addition to the test bottle of the acid which is used in making the test. Commercial sulphuric acid with a specific gravity (Sp. Gr.) of 1·82 to 1·83 is used and should be at a temperature of 60° F. to 70° F. The acid is measured in the cylinder provided for the purpose which is graduated to contain 17·5 c.c. After measuring the correct quantity of acid into the graduate it is slowly poured into the test bottle. When pouring the acid into the test bottle the bottle should be held in a slanting position and if any drops of milk are adhering in the neck of the bottle, the bottle should be slowly revolved so that the acid will carry the milk down into the bottle. By holding the bottle in a slanting position the acid flows down the walls of the bottle and lies under the milk. The acid should never be allowed to drop directly on the milk, and after adding the acid to the bottle there should be a distinct line between the milk and acid. If the bottle is placed on the table after adding the acid, care should be taken not to jar the bottle which will tend to partially mix the milk and acid.

In case the acid burette is being used it is filled with acid to the top graduation mark. The test bottle is held in a slanting position underneath the burette with the top of the burette inserted into the neck of the test bottle. By opening the petcock the acid is allowed to flow into the bottle. When the surface of the acid in the burette is lowered to the second graduation mark, the petcock is closed and 17·5 c.c. of acid will have been delivered into the test bottle.

The sulphuric acid used in making the test is extremely corrosive. It is advisable to have, at all times, a bottle of liquid ammonia at hand, and in case of any acid coming in contact with the clothing, a liberal application of the ammonia will neutralize the acid and prevent the destruction of the cloth. Should the acid come in contact with the face or hands, wash immediately with cold water.

Mixing the Milk and Acid.

After adding the acid to the test bottle the milk and acid should be thoroughly mixed, shaking the bottle with a rotary motion. The neck of the bottle must not be covered with the finger while mixing the milk and acid and care should be taken to avoid splashing particles of milk or curd into the neck of the bottle. As the milk and acid are mixed the milk is first curdled, then the clots of curd are dissolved and disappear, the mixture turns a dark chocolate colour, and becomes hot, due to the action of the acid on the milk.

Placing the Bottles in the Tester.

The bottle or bottles should, at once, be placed in the tester in such a way that the machine will be balanced. If an odd number of samples are being tested an extra test bottle may be filled with water and placed in the machine to properly balance it. If the machine is not properly balanced it will not run smoothly and the bottles are likely to be broken.

Keeping the Bottles Warm.

If the bottles are allowed to become cool, previous to, or while whirling, an incomplete separation of fat will result and the reading will be too low. There is, of course, no difficulty in keeping the samples sufficiently warm when using a turbine tester. When using a hand machine in a cool room it is advisable to partially fill the frame of the machine with boiling water before commencing the whirling. When using the two, or four-bottle hand tester, which has no covering frame, the pockets should be filled with boiling water surrounding the bottles.