

tubes of milk are pasteurized by immersion for ten to fifteen minutes in a bath of water the temperature of which has been raised previously to 145° F. (63° C.). Then, after the tubes have been cooled by immersion in cold water, three drops of a well-mixed starter from a vertically held pipette and 1 c.c. of ordinary methylene-blue solution are added to each. The tubes are inverted once (with finger over mouth of tube) to mix the contents, and are incubated in a bath at 98° F. (37° C.). An occasional examination is made to find the time taken for the blue colour to disappear. With a normal starter the colour in the control sample should disappear in about two hours and a half. If "non-acid" organisms have been present in sufficient numbers before pasteurization in any of the samples, the colour in such tubes will persist for several hours longer than in the control. Sometimes the colour in a tube may remain only an hour or two longer than in the control. This indicates a border-line case. Such a milk would probably not cause any slowness in the vat, especially if mixed with a reasonable quantity of normal milk, but it is a potential source of trouble, and may be worse on some days than on others. Where there is actual trouble in the vat, however, at least one sample will be found in which the blue persists for several hours longer than in the control.

#### SUMMARY OF METHOD.

Measure 20 c.c. of various milks into test-tubes.

Pasteurize by immersion of tubes in water at 145° F. for ten to fifteen minutes.

Cool the tubes in cold water.

Add three drops starter and 1 c.c. methylene-blue solution to each tube.

Incubate tubes at 98° F., and note time taken for blue colour to disappear.

#### *Precautions.*

- (1) The tubes should be clean, but they do not need to be sterilized.
- (2) The dipper used for transferring milk to the tubes should be washed each time before use.
- (3) The starter should be well mixed by pouring from one vessel to another several times.
- (4) The finger used for clothing the mouth of the tube when mixing the contents should be wiped, so as to avoid mixture of one milk with another.

#### EXPERIMENT SHOWING SENSITIVENESS OF THE METHOD.

In order to find the sensitiveness of the method for detecting "non-acid" organisms, the following experiment was carried out in the laboratory.

Raw whole milk was collected at the Massey Agricultural College milking-shed late in the afternoon, and was distributed in flasks. These flasks were then inoculated with various amounts of a known "non-acid" culture, and were incubated overnight at 68° F. (20° C.). A flask of milk to which there was no addition was also incubated as a control. Next morning tests were carried out on the various samples. These samples would correspond more or less with various uncooled evening milks delivered at a factory the next morning by farmers.