

organisms of this group are suggestive of manurial contamination, or unclean methods, or high temperatures, or aged milk, or the sum total of these factors. The milks represented by the upper chart are of excellent quality.

From the lower chart it will be seen that the samples clotted in a much shorter time, and that the numbers of bacteria were greater. Out of sixty-nine samples, forty-nine contained bacteria of the *colon* group in 1 c.c. The period of usability of the milk here represented was considerably shortened; hence the relation between the numbers and the varieties of the bacteria, the time taken by milk to clot, and the period of usability of the milk; i.e., the number of bacteria per c.c. multiplied by 562½ gives the number per pint.

FARMS AVERAGE CONDITIONS

AGE	ON ARRIVAL IN LAB.	3 HOURS	
TEMP		66° - 85° F.	
		60° - 68° F.	1-2 DAYS
NO CLOT		56° - 59° F.	1-3 "
		ICE - CHEST	6 " (AVE)
		18 OF 69 SAMPLES OVER	200,000 PER CC
BACTERIA		27 " 69 -	10,000-200,000 " "
		24 " 69 -	UNDER 10,000 " "
COLON		49 " 69 -	LACTOSE POS.

The influence of temperature has also been demonstrated by Stocking, of Cornell. He took duplicate samples of the same milk. One portion held at 40° Fahr. for twelve hours contained 9,000 bacteria per c.c. and took seventy-five hours to clot.

The other portion held at 80° Fahr. for twelve hours contained 55,000,000 bacteria per c.c. and took twenty-eight hours to clot. The temperature influenced the rapid multiplication of bacteria and limited the length of period of usability of the milk.

With assistance I am conducting experiments throughout our own Province in the hope that we shall have data secured under local conditions. On one farm Miss Mounce and I have found that milk from the mixed herd took seventeen hours to clot at 68½° Fahr.—an average of a series of observations. At ordinary room temperature these milks would have taken from thirty to forty hours to clot. Delépine, in Manchester, has found that milk should keep perfectly sweet for twenty hours at 80° Fahr. The variation in time taken to clot is due in these cases to the variation in numbers and types of bacteria present.

Again, the using of unsterilized utensils and receptacles—utensils and receptacles which have not been steamed to kill the bacteria—lessens the period of usability of the milk. Delépine, of Manchester, has drawn milk into sterile bottles and into the usual farm utensils respectively. In the former he found 100 bacteria per c.c. and in the latter 4,300 bacteria per c.c. The former contained 800 bacteria per c.c. and was still sweet twenty-three hours later; the latter contained 236,000,000 bacteria per c.c. and had clotted. The milk here referred to was from the same group of cows, milked by the same milkers, at the same time, under the same conditions.

The differences shown were entirely due to the utensils. The length of time this period of usability is lessened is directly responsible for loss in dollars and cents and loss in food. It should further be remembered that every householder and consumer shoulders a grave responsibility wherever the care and control of milk is involved.