

that out of 900 samples some 600 samples represented milk which could not have been sold in New York, Boston, or Chicago on account of the high bacterial content. In other words, had the law in Montreal been the law in existence in the cities mentioned, the milk represented by 600 of the 900 samples we took would have been totally lost to the community; and that loss would have been the price paid for the bacteria—the high cost of bacteria. The farmer pays it; the consumer pays it; the community pays it; the country pays it.

The experiments conducted by Dr. North, of the North Laboratories, New York, have confirmed the postulate that 95 per cent. of the success or non-success in fighting the high cost of bacteria is the man engaged in the business.

As you know, certified milk is milk produced from herds free from disease on the authority of a veterinarian, managed and handled by people subject to medical inspection, and produced and handled under such conditions as are authorized by a medical commission. Such milk is to contain not more than 10,000 bacteria per c.c. at the time of sale in the summer, and not more than 5,000 bacteria per c.c. at the time of sale in the winter. And it is possible, under ordinary conditions, with the greatest care, to produce milk with a content almost as low.

TWO TYPES OF COMMERCIAL MILK

FREEAR, BUCKLEY AND WILLIAMS

READING, ENGLAND

FARMS CERTIFIED MILK CONDITIONS

AGE	ON ARRIVAL IN LAB	22 TO 26 HOURS	
TEMP	"	40 " 70 F	
		60 " 68 F	1.75 - 6.75 DAYS
NO CLOT	AT	56 " 59 F	1.75 - 18.25 "
		ICE CHEST	7.75 - 32.75 "
BACTERIA	"	71 " 73	10000 OR LESS PER CC
TOTAL		38 " 73	500 " "
COLON		8 " 73	LACTOSE POS.

The charts here shown demonstrate the relationship of the bacterial content of milk to the length of period of usability of the milk. It will thus be seen readily that diminution of period of usability is the price paid for the bacteria. Further, the effect of temperature on the rate of growth of bacteria and on the comparative rate of growth of the different varieties of bacteria is a factor of the utmost importance. At the higher temperature the bacterial growth is increased and the rate of growth of the gas-producing bacteria—the *colon* group—is also increased. Hence, with high temperatures increasing the bacterial population, and thereby limiting the period of usability of the milk, we see the relationship of temperatures and the high cost of bacteria.

These charts have been prepared from data published by the Dairy Research Station, Reading, England. When produced under satisfactory conditions the milk did not clot for some considerable time (*see details of upper chart*); there were few bacteria, and hence the period of usability of the milk was accordingly long. Only eight of the seventy-five samples contained bacteria of the *colon* group in 1 c.c.;