These differences are due to the different breeds of cow used for milking. In Auckland and Wellington Jersey and Jersey crossbred cattle predominate. In Christchurch and in Dunedin the Friesian is prominent. The selection of breed in any metropolitan area seems to follow to some extent the practice prevailing in the district to which the area belongs. But the choice made is also influenced by the basis on which the price is calculated. In Wellington milk is purchased mainly on its butterfat content. This is not the rule in any other centre, but in Auckland two of the five pools pay on butterfat. It should also be noted that the minimum butterfat content allowed is raised in Auckland from 3·25 per cent. to 3·5 per cent. In Christchurch and Dunedin, where payment is wholly on gallonage, the minimum remains at 3·25 per cent. These bases of computing price encourage, in one case, the selection of cows giving a rich milk and, in the other case, a selection assuring quantity. As a result of payment on gallonage only difficulties have been and are being experienced with milk testing below the minimum legal standard, and supplies from several straight Friesian herds in Christchurch have created a serious problem for at least one large distributing firm. On the other hand, the effect of continuing to pay on the basis of butterfat content, accentuated by the purchase of high-testing milk from accommodation sources was illustrated by the statement made on behalf of the Milk Department of the Wellington City Council that had they last year paid on a test of 5 per cent. only for all milk testing above 5 per cent. they would have saved £3,000 in the one year.

Freshness and Cleanliness

The questions of freshness and cleanliness are closely connected and arise at every stage of the activities associated with supply. Cleanliness is a question of the health of the cows in milk and the condition of the milking-sheds. Freshness depends upon the absence of delay in collection and distribution. The Commission visited a number of dairies and depots and examined plants installed. Some cow-sheds are still in use that were modern and well equipped when erected, but which now need replacing. Other sheds have never been up to standard. The Inspectors of the Live-stock Division of the Department of Agriculture are continually pressing for improvement and, as the large number of a modern type of shed evidence, great advances have been made in recent years. In this connection it is noteworthy that the personality, interest, and diligence of the Inspectors is of extreme importance. It was made clear to the Commission that the industry is exceptionally fortunate in the officers of the Department selected as Inspectors. The difficulty and cost of rebuilding and re-equipping during the war period have checked progress. Reasonable cooling systems are in use in most dairies, and in some few cases refrigerating equipment is provided. But the practice is not uniform.

In the systems of collecting there is room for considerable improvement. Three features are noted in our survey: First, there is often much too long an interval between the time of milking and the time of collection. The attention of the Commission has been directed to cases in which a night's milking and the following morning's milking have not been collected until the afternoon, and then has been uplifted from the gate instead of from a cool room. In the cases of some dairy-farms covered stands are provided at the gate, while in other cases the milk has stood in cans exposed to the direct rays of the sun as well as the dust raised by traffic. In an least one case there was reason to believe that persistent complaints concerning pasteurized milk were due to the milk being stale before being treated. Secondly, the milk has been carried in uncovered vans, often along dusty roads in the heat of the day. Thirdly, the distances over which milk is conveyed frequently are great enough not only to increase cost unduly, but also to allow the milk to become stale.

Probably the matter calling for the strongest comment in this connection is the condition obtaining in some depots and the conditions under which the milk is distributed. The Commission has inspected depots that were models of cleanliness and coolness. They have been shown over others where the conditions obtaining ought not to be tolerated. Again, while some employers and roundsmen exercise all the care that can reasonably be expected, the vehicles and containers used in loose milk delivery by others do not show any appreciation of the ease with which such a commodity as milk can be contaminated and become a source of danger to the consumer.

Pasteurization and Bottling

The purpose of pasteurizing milk as explained by medical authority is to render milk safe for consumption by destroying the pathogenic organisms contained in it. There is only too good reason to believe that the main purpose of some treating-houses is solely to improve keeping-quality. A number of the plants inspected by the Commission are out of date; little, if any, attempt is made to ensure that only clean, fresh milk is treated; and the conditions under which they are operated expose the milk to immediate recontamination. Perhaps the most striking evidence that the purpose is the maintenance of keeping-quality rather than ensuring a safe supply is provided by the fact that after pasteurization large quantities of milk are delivered to households loose by can and dipper. The readiness with which milk can be and is contaminated by human contact, through insanitary conditions of utensils and vehicles and by the atmosphere, suggests that safety of milk is not the determining consideration in the installation and operation of expensive pasteurizing plants. This comment does not apply to the Milk Department of the Wellington City Council, and there are other treating-houses that do make an endeavour by testing to ensure that milk that goes into the pasteurizer is good milk and that the pasteurizing is efficiently carried out. But the distinction between efficient pasteurization and pasteurization as frequently carried out is marked. And the criticism that the methods of treatment adopted too often justify the lack of public faith in pasteurized milk has much basis in fact.

There are striking differences in the percentages of milk pasteurized and of milk bottled in the four areas. Detailed information is not available, but reasonably reliable approximations have been made on the data submitted. The following position is disclosed: In Auckland 84 per cent. of all milk (including retail milk, wholesale milk, and milk sold under special contract) is pasteurized and 70 per cent. of milk delivered retail is pasteurized. In Wellington the corresponding figures are 86 per cent. and 77 per cent; in Christchurch, 37 per cent. and 15 per cent.; in Dunedin, 50 per cent. and 31 per cent. Of milk delivered retail in Auckland 46 per cent. is bottled; in Wellington, 77 per cent.; in Christchurch, 21 per cent.; and in Dunedin, 22 per cent. In Wellington, as already indicated, pasteurization and bottling is a method of ensuring that the high standard of the milk delivered is maintained until it reaches the consumer. No raw milk and no loose pasteurized milk is distributed retail by the Milk Department of the City Council. All such milk distributed is distributed by the nearby farmers. As already indicated, there are treating-houses that are endeavouring to ensure