

The significance of the multiplication of vendors and producer-vendors, each with few exceptions, acting as a separate collecting agency, may be appreciated on a consideration of the following facts. There are 153 vendors and producer-vendors in Christchurch. All were asked for particulars of their rounds, but only 56 complied with the request. Of the 56, 23 were producer-vendors and 33 are vendors. Between them they deliver 2,442 gallons of milk per day and travel to and from their rounds 627 miles. The average daily delivery per business is less than 44 gallons and the milk delivered per mile spent on collecting alone less than 4 gallons. One lorry can carry 900 gallons of milk, so that the 2,442 gallons quoted represents less than three lorry loads. Yet fifty-six vehicles were used each with its separate driver. That does not mean that the three lorries carrying one load each would collect the whole daily supply of 2,442 gallons. In any one lorry load many cans would not be full, and the load that any one lorry would carry would largely depend on the distribution of the dairy-farms along the principal roads. What is illustrated is that no less than fifty-six different vehicles are used to collect a quantity that could, so far as quantity is concerned, be carried on *three lorries*. Only seven of the returns showed the total distances travelled on collecting and distribution combined. These seven men travel 128 $\frac{3}{4}$ miles and deliver 253 $\frac{1}{2}$ gallons each day. The average daily delivery per business is thus less than 36 $\frac{1}{2}$ gallons and the average number of gallons delivered per mile travelled is less than two. And each distributor is equipped with vehicle and cans. In Wellington the roundsmen of the Municipal Milk Department deliver 120 gallons per man per day and travel from 5 miles to 11 miles on the round, in addition to the distance to and from the depot to achieve this.

Cost of Collection

It is impossible to compute the costs of collection by vendors and producer-vendors, but they must be high. The costs of the large companies, however, compare favourably with those in other areas. From the returns available that cost is the same as the lowest cost disclosed in the investigations in Auckland and in Dunedin. The average is equal to 0.68d. per gallon.

TREATMENT

Proportions of Milk: (1) Pasteurized and (2) Bottled

Both raw milk and pasteurized milk is distributed in Christchurch. The proportion that is pasteurized is much lower than the proportion in Auckland or Wellington. Of the total returned gallons sold daily, both in wholesale and in retail quantities, 4,728, or 37 per cent. of the total, is pasteurized. Of the quantity that is delivered retail 1,169 gallons, or 15 per cent., is pasteurized. Not all the milk that is pasteurized and sold in retail quantities is bottled. All except one of the milk-shops sell only bottled milk. A portion of the milk that is sold raw is bottled. The one large producer-vendor who pasteurizes one-half of his milk, bottles all that he distributes. Three other large vendors and producer-vendors bottle about half their supply and forty-two smaller vendors and producer-vendors bottle small quantities. In addition to that distributed to milk-shops, a small quantity of milk sold at wholesale rates is also bottled.

Plants and Methods

There are three pasteurizing-plants in Christchurch. One is of the most modern type and is thoroughly efficient. One is old-fashioned, but is kept scrupulously clean and the milk is always pasteurized while fresh. The third plant is out of date and has little to commend it. The methods employed leave room for much improvement. In one case an analyst is employed and samples are taken daily and the results of the tests recorded. There is no analyst in either of the other houses. In no case is there any attempt to grade each supplier's milk and to attach to every fall in grade the penalty of a reduction in the rate of payment. Moreover, in at least one case a faulty system of collection results in milk sometimes being stale before being put into the pasteurizer. Pasteurizing ought never be used to cover avoidable defects in milk, and therefore steps should be taken to ensure that milk is clean and fresh when it is pasteurized. If it be true that a purchaser purchasing pasteurized milk is entitled to assume that only fresh, clean milk was pasteurized and that the processing was efficient, then the rights of the purchaser in Christchurch are often defeated. It cannot be said that the bottling is always, or even generally, satisfactory. In the first place, the sterilizing is sometimes neglected and often inefficient. One large producer-vendor informed the Commission that he used his sterilizer only when there was an epidemic. A few large vendors have bottling-machines. A number of the sterilizing units are inefficient. They have no recording thermometers, and in this important respect sterilizing is a matter of guesswork. Some vendors fill the bottles by hand. The Commission saw crates of bottles that had been cleaned and sterilized open and exposed to the atmosphere standing on one side waiting to be filled. Bottling is, or ought to be, used for the purpose of protecting milk from contamination. Unless the bottles are properly cleaned and sterilized and, immediately on sterilization, filled and sealed they may themselves become effective media of contamination.

DISTRIBUTION

As already stated, 3 vending companies and 153 vendors and producer-vendors distribute a quantity of approximately 13,000 gallons of milk daily, of which 37 per cent. is pasteurized and the greater part of that distributed in retail quantities is bottled.

The scale of prices is as follows:—

Retail	..	..	..	3d. per pint; 6d. per quart.
Wholesale	..	..	..	14d. to 18d. per gallon.
Special contracts	..	..	..	9 $\frac{3}{4}$ d. to 11 $\frac{1}{2}$ d. per gallon during summer period; 13d. to 14d. per gallon during winter period.

To the sales of milk for consumption as whole milk must be added the sales of milk used to produce cream. No returns are available that give a reliable guide to the quantities utilized in this way. The following show the prices for the milk paid to the producer and the prices for cream charged to the consumer:—

Price paid to producer for milk (average)	..	..	..	11-17d. per gallon.
Price charged to consumer for cream	..	..	..	16s. per gallon.

To compare these prices and to compute the margin to the vendor it is necessary to have in mind that the quantity of milk required to produce 1 gallon of cream will vary with the butterfat content of the milk and that with milk testing 4 per cent. butterfat it would require 10 gallons of milk to produce 1 gallon of cream.