

504. There are two kinds of packages, the keg and the firkin, which is the best?—As far as carrying the butter is concerned, there is nothing in the package. It is just what a man likes here; one may like a tub, and another may like a cask.

505. You think there is nothing in that?—No, nothing in it. When Home last I was asked to ship casks to one firm. Another firm on the same market wished me to get boxes for him. In different districts they have different preferences.

Mr. WILLIAM D. SUTHERLAND examined.

506. *The Chairman.*] You have had considerable experience in the dairy industry?—Yes.

507. The Committee would like you to make a statement regarding any points you think of interest. After you have made your general statement the Committee will ask you some questions upon any points upon which they may think you have not made yourself clear?—The experience I got in the first place was in Canada, and you will quite understand the disadvantages of attempting the manufacture of butter under any circumstances there in the summer time as compared with the advantages this colony possesses. The facility for making butter in this colony was one of the chief reasons that induced me to remain here. In many of the big gullies in New Zealand, where the settlers could not get sufficient inducement to start a factory, they might adopt the system which has been in operation in Canada. There they have Cooley made cans, with a cover, which prevents the water getting into the can. The can is covered with water, the weight of which on the lid forces all the air that may be on the top of the milk out. The result is, the milk is kept perfectly cool; the temperature of the water and the milk becomes the same; the sudden chilling causes all the cream to rise in a very short time. The water flows into the vats in which the cans are immersed. They sink an open vat in the floor of their dairies, and wherever they can find a creek to divert and allow the water to pass through the dairy they do so. Sometimes they would simply set their cans in the water, when they had no means of covering them. The manner of treating milk just mentioned is after the Cooley or Schwartz systems, which are well known, and might be adopted in New Zealand with advantage in places where there are not a sufficient number of settlers to start a factory. Where butter is made of inferior quality by people outside the factories it goes into the market, and, of course, it is all called New Zealand butter. It spoils the market. The factories, so far as they have gone yet, have disappointed me very much. When the frozen-mutton industry was commenced I was asked by Mr. Larnach what amount of support could they possibly get from the dairying industry to induce owners of sailing-vessels to put freezing machinery in their ships. My reply was that the value of the dairy export should exceed that of mutton. The disappointment I feel as to the result of the factories established is chiefly owing to the inexperience of those who have their management. Those in charge of them work by "the rule of thumb." I have been at the different shows held at Dunedin and elsewhere, and have been called upon to act as judge, and the quality of the dairy-produce exhibited was very disappointing. The cause of failure is simply through the inexperience of the manufacturers; they do not recognise the fact that it is pure butter-fat that is required. If the butter is kept in a pure atmosphere, in a cool temperature, and surrounded with pickling it cannot go wrong. The manufacturers have the appliances, but they lack the skill. I have advised them to go to Dr. Black to get lessons in chemistry, for it is really the work of a chemist manipulating milk into butter or into cheese. When the milk comes from the cow the atmosphere has an effect one way or another on it, and this fact the manufacturers do not seem to realise. Attempts have been made to give lectures on dairying, but the population we have to deal with have come with their little experience from other countries, and they will not learn. They are flooding our markets with inferior stuff. To find a market beyond our shores for the article made is the trouble at the present time.

508. Do you consider that there should be some tuition of these people by experts?—Yes; say, colleges, taught by professors at the several centres. If pure butter-fat is put up in proper packages, surrounded with pickle, and the temperature kept even and cool, there is no fear of it not keeping its quality. The shipping companies, when they put freezing machinery in the ships, declined to find a cool space for butter. They did not see the necessity of it; they insisted that the dairy-produce should go with the mutton. Captain Boyd telephoned me to see him, and he stated that he had instructions from the head office at Home to supply the ships with anything I recommended. He sent me down to the port to see what space we wanted, and said it would be supplied.

509. You recommended that cool-space should be provided outside the refrigerating-chambers?—Yes.

510. That recommendation has been carried out?—No, it has not been carried out. They found cool-space, but it is a small chamber.

511. You consider that additional cool-space should be provided?—Yes. The cool-space is not properly regulated as to temperature.

512. What temperature should be kept in the cool-space?—I would simply keep it above the freezing point—from 35° to 40°. The frost makes the butter good for nothing, as the thawing takes all the nutty flavour out of it, and leaves the mass like so much lard in texture.

513. You think that freezing butter destroys it?—Yes, it destroys it completely; it alters its character entirely. The appliances used in the making of butter here have a great tendency to spoil it. Many of the churns used have a tendency to make it greasy.

514. Do you think the separator system is the best to adopt?—Yes, if it is properly worked.

515. You consider that would insure uniformity of production?—Yes.

516. Are there not cool-stores provided in Dunedin to receive butter when it comes in from the country?—I do not think so; it just goes into the ordinary stores with other goods.