

*Cool Storage of Cheese.*

The cool storage of cheese has shown a further advancement during the year, and, fortunately, space has been available at the various refrigerated stores in the North Island for all cheese received for grading, with the exception of a small portion of the large quantity dealt with at the Port of Wellington. In Canterbury the whole of the year's supply of cheese has been treated in a similar manner. The cheese received from the factories in Otago and Southland has been held in specially constructed buildings, which can be maintained much below ordinary summer temperatures and low enough to prevent deterioration of the produce for a reasonable length of time while awaiting shipment. It would, however, be more satisfactory if mechanical refrigeration were provided at the Dunedin and Bluff stores in order that the temperature of the cheese could be regulated in accordance with the conditions now obtaining at other grading-ports. The total capacity of cool stores, including those in use in the southern districts, is 600,000 crates of an average net weight of 160 lb. each; and the quantity actually in store at all ports at 31st March last was 474,754 crates.

The temperature aimed at in the refrigerated stores was 45° to 50° F., but where sufficient cooling-power has been supplied the range of temperature has been lower. Experience has shown that better results are obtained when the cheese is held at 36° to 40°, which prevents the development of cheese-mites, and also regulates the growth of mould. Unfortunately, 13,000 crates of cheese were damaged by a breakdown in the system of cooling at one of the temporary grading-stores in the North Island. At all other stores the work in this connection was well done. The mite pest became so troublesome at several of the stores that it was found necessary to fumigate the buildings with carbon bisulphide for the purpose of destroying this pest. With one exception the fumigation was successful; but as the cause of the failure in this instance is known, it can be avoided in future when treating other compartments, some of which are to receive attention at an early date.

In view of the heavy stocks of the season's cheese now on hand and the probability of a large portion of this still being in store when the new season opens at the beginning of August next, it seems essential to consider the question of providing some extra storage accommodation for cheese. Shipping-space is, unfortunately, far short of the requirements, and no less than twenty-five vessels, each carrying approximately twenty thousand crates of cheese, will be required to convey the present stock to the market. It is too much to expect that these cargoes can be moved in the time desired to make room for the whole of next year's output of cheese. Furthermore, it is obviously the duty of the producers to see that the interests of the buyers of the produce are protected in regard to its safe preservation while it is in their possession.

**BUTTER INDUSTRY.***Creamery Butter.*

It will be seen from the table of figures included in the report that the production of creamery butter has decreased by 8.3 per cent. as compared with the total quantity for the preceding year. This reduction is due to several causes, such as further quantities of milk being manufactured into cheese, the preparation of an increased quantity of whole-milk powder, and the effects of unfavourable weather for a portion of the season in the butter-producing districts. Present indications point in the direction of a further reduction in the amount of butter to be made in future as long as the market prices procurable for cheese rule higher than those for butter. If, however, the movement to establish factories for drying skim-milk on a large scale develops as anticipated there will be a corresponding increase in the quantity of butter manufactured for export.

With regard to the quality of the butter which came forward for grading and export during the year, it has to be admitted that this was not quite up to the standard of that received during the 1917-18 season. Moreover, the percentage of second-grade was higher than usual at the Port of Auckland, where the quantity dealt with is now larger than at all other grading-ports added together. Numerous consignments when opened for examination at various grading-ports proved to be defective in flavour, and showed unmistakable evidence of having been manufactured from faulty cream. While some of this butter was so inferior as to make its classification into second-grade a matter of no doubt whatever, a large portion could not be so classified on the basis of the existing standard for grading. Therefore it had to be accepted as the lowest-scoring first-grade, which is by no means a satisfactory article to the average consumer. On the other hand, the majority of the factories sent forward regular consignments of good butter which were sound in flavour and of uniform quality. As a general rule the butter was well made, the body and texture showing careful workmanship on the part of the makers. It was noticed, however, that at several of the larger factories the makers continued to overwork the butter, thereby spoiling the body and texture in their attempt to incorporate the maximum amount of water in the finished article.

This and other defects were brought under the notice of those responsible from time to time, and in cases where the defects were of a mechanical nature no difficulty was experienced in demonstrating the method which should be applied for correction; but where the flavour of the butter was found to be unsatisfactory it was not always possible to effect a remedy, owing to the cream being wrongly handled prior to its delivery at the factories. This phase of the year's operations is referred to in another part of the report.

*Whey Butter.*

The manufacture of whey butter is now recognized as one of the profitable branches of the cheese industry, and at many of the factories modern plant and machinery have been provided for this purpose. At the smaller factories, however, the companies have usually contented themselves with the installation of separating machinery only, preferring to dispose of the whey-cream to a cheese or butter factory of larger dimensions.