

with an average grade of 91.564 points, and reached fifth-highest place in order of merit in the same group. Other instances could be quoted to show the benefit of the system.

At the beginning of the season two of the Instructors carried out some preliminary experiments in the treatment of milk by this process, which enabled them to pass on the information thus obtained to the factory-managers who were starting the new work. When this system was first introduced considerable difficulty was experienced in obtaining as close a body in the cheese as was desired, but the experience of the Instructors has helped in a large measure to overcome this disadvantage, and many cheese clean in flavour and close in body were made at the factories where pasteurization of the milk has been adopted.

Dairy companies generally are much interested in what has already been accomplished, and many of them have shown their confidence in the process by placing orders for the necessary machinery, which is to be installed before the opening of another season. The new method is particularly applicable in those districts where the flavour of the milk is causing anxiety at the factories, for it has been clearly demonstrated that the proper application of heat to the milk and the rapid cooling of same involved in the process effectually drives off some of the objectionable flavours found in the raw material, thereby producing a cheese which will retain its keeping-quality for a longer time.

There need now be no hesitation in recommending the principle of pasteurization as relating to the manufacture of cheese, and where faults in the flavour of the milk are common dairy companies would be well advised to procure the necessary appliances and proceed with the work without delay.

CASEIN.

The preparation of casein in New Zealand, which was commenced on a small scale some years ago, has not yet shown much development.

Prior to the outbreak of the war practically the whole of the casein prepared in New Zealand was marketed in Germany. With the close of this market it appeared as if the preparation of casein in the Dominion would have to be discontinued for a time, but fortunately it was found that sales could be effected in England, and all the casein exported during the past year has been sent to that market, where good prices have been realized.

The decrease in the supply of casein from France, together with the prohibition of exports from Denmark, are factors which made higher prices available in England, but apart from these influences there has been a remarkable increase in the demand owing to this product being used for technical purposes. It is claimed that this demand is steadily increasing, and that the present remunerative prices are likely to continue. There were altogether 162 tons of this product exported during the year, and the quality has been reported by the users as being excellent and in every way suitable for the requirements of the trade.

In view of the favourable outlook for casein, there is likely to be a considerable increase in the production for next year, and some attention is now being given to the extraction of casein from buttermilk. The Instructor of the Division who attends to casein work has carried out some experiments in connection with buttermilk, and it was found that the quality of the casein saved was very satisfactory indeed.

The New Zealand Casein Company, Wanganui, is the only concern at present devoting attention to this minor industry, but provision has been made for handling large quantities of casein at its central drying-station. The cost of erecting the necessary buildings and providing the plant for precipitating the green curd being somewhat inexpensive, a number of dairy companies have been induced to enter into an agreement for the disposal of the green casein, which is forwarded by rail to the drying-station.

While it is not expected that the casein industry will ever assume large dimensions in New Zealand, there is reason to believe it has now reached a stage where it will continue to be profitable, and thus ensure support from those dairy-farmers who find it convenient to dispose of their skim-milk and buttermilk for the preparation of casein.

SHIPMENT OF DAIRY-PRODUCE.

Owing to the reduced number of ships trading to New Zealand and available for carrying dairy-produce to the Home markets much inconvenience has been caused to shippers. This shortage, of course, was due very largely to the war. From the very beginning of the shipping season considerable uncertainty as to cargo-space created much anxiety amongst the dairy companies and factory-proprietors. It subsequently turned out, however, that the butter offering for shipment was accepted with little or no restriction. This export was therefore continued with almost the same regularity as in normal times. On the other hand, there was considerable delay in regard to the shipment of cheese. As the season advanced stocks began to accumulate at the different grading-ports, more particularly in Wellington, where at one time there were awaiting shipment over 45,000 crates.

The stores used for holding the cheese at the various ports became much congested, and in Taranaki it was found necessary to advise the dairy companies not to forward any more cheese until the accommodation had been reduced. Even in these stores a quantity of the cheese remained for over two months, and as the congestion prevented the proper circulation of cold air where it was available the cheese suffered considerably. In some cases much discoloration took place.

Then, again, at those factories where the cheese had to be held as instructed, many of the curing-rooms are of the old-fashioned type, no provision whatever being made for regulating the temperature. When the hot weather arrived the temperature in some instances rose to