

and larger supplies of vells will be collected during the beginning of next season, for it would be unwise to allow this valuable material to be wasted, notwithstanding the fact that pepsin is at present much cheaper than rennet.

CASEIN.

It has been estimated that prior to the war about 10,000 tons of casein were used annually in Europe, the bulk of this supply being produced in France, Scandinavia, and Argentina. The production having fallen off after the outbreak of war, and that from Argentina finding a market in the United States, it was to be expected that more inquiries would be received in New Zealand to make up this shortage. That expectation has been realized, and the price has risen in sympathy with the increased demand.

So far this industry has been confined to the North Island, where nine raw-casein factories and one drying-station have been in operation during the year. Other factories have been running for a portion of that time. Altogether 3,932 bags of casein, weighing 280 tons, have been exported during the year, and, in addition, some fourteen boxes of food casein. The export of this product for the preceding year amounted to 118 tons.

At the present time only one drying-factory (where the green curd is treated and prepared for the market) is available, which means that those factories situated a considerable distance away are put to some inconvenience in forwarding the raw material to the drying-station. The question of providing more facilities for drying the casein has been under consideration, and it is expected that some provision will be made for this extension in the near future.

The officer of the Division (Mr. Pedersen) who has a special knowledge of the preparation of casein has devoted a good deal of his time to assisting those who have commenced this work without any previous experience, and the help thus given has resulted in the production of a more uniform article. Some experiments in connection with the saving of casein from buttermilk have also been undertaken, and this work will be taken up again later on. The whole of the casein exported has been officially graded and the packages marked to denote the quality of the contents.

If the present market values of casein be maintained an extension of the business can be looked for during the coming season.

DAIRY INSTRUCTION.

For many years the instruction at cheese and butter factories as carried on by the officers appointed for this purpose has formed a special branch of activity in the Dairy Division. The recognized value of this work has never been appreciated to a greater extent than during the past year, as indicated by the number of applications received for the help of the Instructors from those engaged in the industry. A reduction in the number of Instructors, as the result of illness and of other causes, has, however, curtailed the good work to some extent. Moreover, this has meant some delay in attending to urgent calls for assistance which would otherwise have been avoided.

The number of officers who devoted the greater part, if not all, of their time to this duty was seven, and in addition four others spent whatever time they could spare in this important work. The total aggregate number of days on which these officers gave instruction in cheese and butter making and other features of the work incidental thereto amounted to 902. Apart from the instruction afforded on such occasions these officers paid a total of 661 visits to factories in the course of the year. The main object of these calls was to give advice to the makers of cheese or butter where required, and also to inspect the factory premises and plant and utensils in daily use.

Frequently meetings of dairy-company directors were attended to discuss matters of importance relating to the industry, and thus much useful knowledge was imparted to those concerned. On other occasions the Instructors gave addresses on dairy subjects to farmers by special arrangement. They invariably received a good hearing from the settlers, many of whom took the opportunity of asking questions in order to gain further information.

INSPECTION OF DAIRIES AND DAIRY UTENSILS.

While the inspection of dairies from which the supplies of milk or cream are delivered to factories is under the control of the Dairy Division, it has only been possible to undertake this work to a very limited extent. The reasons for this limitation have been already so fully explained in previous reports that there is no need to again refer to them here. It is sufficient to add that as far as time would permit the Instructors have visited those farms which were sending inferior milk or cream to be made into cheese or butter. Altogether 788 farms were visited on this account during the season, when the cause or causes of deterioration in the raw material were, as a rule, easily located. The main source of the trouble in this connection was unclean milking-machines; in fact, quite a number of these installations were found to be in a filthy, not to say disgusting, condition. In extreme cases the owners were called upon to cleanse the various parts immediately, or, as an alternative, to discontinue their use forthwith; but it is to be regretted that in some cases a later inspection disclosed an equally unsatisfactory state of affairs.

As the number of mechanical milkers has increased enormously owing to the scarcity of hand milkers since the war began, it will be seen that the risk of contaminating a larger quantity of milk has also been increased. This is confirmed by the Instructors' reports from every dairying district in the Dominion. Furthermore, the past year's experience has proved the absolute necessity of some drastic remedy to prevent the use of milking-machines which are allowed to become foul and insanitary through the neglect or ignorance of the owners. Unless some such step is taken in the near future the dairy industry of New Zealand will undoubtedly be placed at a serious disadvantage in competition with that of other countries on the open markets where our produce is sold.