

light on various phases of the production and marketing of sugar of milk, condensed milk, and casein, as well as on the dried-milk question. The effect on the latter business has been steady, but not discouraging.

Progress may be recorded in the work done on farms in connection with the raw material supplied to the dairy factories. Twelve Instructors appointed under the special arrangement with dairy companies as to payment of salaries were at work at the close of the period under review, with other appointments pending. The position, however, still calls for strong handling and further instructional action.

In view of the great importance of increasing the returns from high-priced dairying-lands it is satisfactory to note that the Department's propaganda work in the herd-testing movement is bearing good fruit. The system has shown a greater extension than in any previous period. During the year the Dairy Division had under its direct control twenty-seven associations, comprising 10,460 cows (an increase of over 200 per cent. in each case), while independently operated associations were estimated to be testing 14,744 cows. The "C.O.R." testing of purebred dairy cows, controlled by the Division, also shows a record number of certificates issued, and the beneficial influence of the system on the breeding of our dairy herds in general cannot fail to be more and more felt.

In connection with the grading of butter and cheese at the shipping-ports, a useful feature, apart from the routine work, has been that of gatherings of factory-managers at the grading-stores for educational and informational purposes in conjunction with the official Graders. This is found to be a valuable plan for promoting a knowledge of requirements in quality and uniformity, besides keeping the Division in better touch with the working heads of the factories. Among the dairy companies themselves the system of cream-grading was further developed, and several useful conferences have been held to promote the movement. The results on the quality of butter manufactured from home-separated cream are already very marked.

The varied activities comprised within the function of the Horticulture Division have given all concerned a very busy year. A leading feature of the work was that centring round organization of the fruitgrowing industry in its various phases. In dealing with this subject the Division was much strengthened by the visit paid by Mr. J. A. Campbell, Assistant Director, to the United States and Canada for the purpose of acquiring the latest information in all branches of the fruitgrowing industry, more especially in connection with standardization and marketing of output, together with the co-operative system. A basis for control of our fruit trade, both export and local, has been afforded by the issue of regulations providing for grading, marketing, &c.

The cool storage of fruit is receiving special attention, and the Division is carrying out a valuable series of experiments comprising all stages from the picking of the fruit onward. The State's financial interest in this branch of the industry is now becoming comparatively large, the advances under the Fruit-preserving Industry Act amounting at the close of the year to £84,500, the larger part of which has been utilized for the provision of cool storage.

The Division has had a heavy call made on its resources by the outbreak of the serious disease known as "fire-blight" in orchards over a wide area of the Auckland Provincial District. In order to cope with the position a special force had to be organized under the supervision of Orchard Instructors, and energetic and thorough work is being done in fighting the disease, which, so far as is known, has made its first appearance in New Zealand.

Arrangements were made for shipping a certain quantity of fruit (principally apples) to London this season, and the result of the shipments must, under the circumstances, be looked upon as satisfactory. The Government guaranteed a minimum return to growers, and apparently it will not be necessary to give effect to this, as the returns from the sales should be sufficient to render the payment of the guarantee unnecessary.

A busy year's work has been carried out by the apiary branch of the Horticulture Division in instruction, inspection, and honey-grading. The Tauranga Apiary is now well established, and queen-rearing and experimental work has progressed both there and at Ruakura.

The most important work of the Chemistry Section has been that dealing with soil-investigation, fertilizers, and lime and liming. Good progress has been made in these allied matters, although limitations of staff, equipment, and other resources still impose restrictions on work which is capable of very great expansion, and which, under existing conditions, has to be spread over a longer period than could be desired. The analysis of type soils of various districts has been carried out during the year, together with two or three abnormal classes of soil. The agricultural economic side of the survey is being kept well to the front in this work. In regard to Canterbury, an arrangement has been arrived at with the Lincoln College authorities with the object of avoiding overlapping, as the College is undertaking a soil-investigation of several districts.

It has become fairly evident that if the Dominion is not to fall behind other agriculturally advanced countries our fertilizers law will have to be amended and strengthened in several directions. The shortage and high price of standard fertilizers experienced for some time past has had the effect of bringing on to the market new low-grade proprietary mixtures, also certain phosphates of doubtful effectiveness.

In regard to the development of limestone resources, an official committee was formed during the year, consisting of this Department's Chemist, the Director of the Geological Survey, and the Assistant Chief Engineer of the Public Works Department. The main object is to better co-ordinate the information and advice placed at the disposal of bodies of farmers and others undertaking the supply of limestone and lime in the various districts. Legislation laying down compulsory standards of quality in connection with the sale of agricultural lime or ground limestone, with the idea of protecting consumers, has been suggested. Owing, however, to the extremely variable nature of the deposits and the variation in plant for handling the raw material, it is not improbable that such restrictions would largely defeat their object by involving a material increase in cost to the consumer. It would be feasible, however, to make provision for vendors to sell optionally under guarantee of purity.

Consideration of the important matter of the efficiency of sheep-dips in connection with proposals for some system of registration of these compounds has brought out a suggestion that the object sought would be best attained by comprehensive legislation, on the lines of the United States Insecticide Act, covering all such preparations, including orchard sprays. This idea is certainly worthy of favourable consideration.