

Spraying experiments for various orchard pests and diseases, which have been a leading feature of the Division's work for some time, were in particular directed towards control of brown-rot of stone-fruit, a serious fungus disease comparatively new to New Zealand. Special schemes of control were initiated in co-operation with individual growers and growers' associations, as well as at the Department's stations.

The horticultural stations continue to be developed on improved lines. At Te Kauwhata the planting of commercial orchards for future disposal proceeded, and the planting of a special orchard with commercial varieties of apples for demonstrating various matters in connection with commercial fruitgrowing was also carried out. At Arataki the main feature of the work was a series of spraying experiments and tests of spraying compounds, for which the whole of the fruit-trees of the station were utilized. The Tauranga station is still under the process of thorough rearrangement, and several new features are progressing, such as a fruit-tree nursery, testing stocks, citrus-fruit culture, and lemon-curing.

As regards beekeeping, an important feature of the Division's work has been the reorganization of the apiary at the Ruakura Farm of instruction on experimental lines. This should prove of great usefulness to the industry. The establishment of a queen-rearing apiary at the Tauranga Horticultural Station has been put in hand. During the year regulations for the registration of all apiaries, from one hive upwards, came into force, and should prove of much help in controlling disease, &c. Large quantities of export honey came forward for grading by the Division's graders.

Assistance to viticulture was maintained by the services of the Vine and Wine Instructor, together with the usual inspection work. The vintage was on the whole light. The vinehouse branch of the industry was stationary, largely owing to the very high cost of constructional materials.

DAIRY DIVISION.

The question of instruction as affecting the dairy-farmers and the raw material of the industry calls for early action. Hitherto the manufacturing stage has claimed the first attention of the small staff of instructors, and only a limited amount of service has been accorded to the milk- and cream-supplying side. The condition of large numbers of dairy-farm premises and the practice of the suppliers are very faulty, undoubtedly constituting the weak link in the industry. It is considered that the farmers are now decidedly more in need of instructional assistance than are the men in charge of the factories, and failing the appointment of an extra number of qualified men to visit the farms it is open to question whether the services of the officers now principally engaged in factory instruction would not be more profitably spent in supervising the farm end of the business.

With the extension of the cheese industry the production of whey butter is steadily increasing, but a large proportion of it is of inferior quality, and it would be in the interests of the butter industry in general if a minimum standard were set for whey butter below which its manufacture would be prohibited.

Grading of butter and cheese has been maintained without alteration in standards. The proposal to raise the minimum points for first-grade creamery butter to 90 was not carried out, it being doubtful whether the majority of the industry supported the change, and the factory staff difficulties owing to military service calls, &c., making the time inopportune for such a change. The matter is deferred until more normal conditions obtain.

Casein-production made further progress, and the instructors in charge of this branch of work have succeeded in working out an improved method whereby the casein from buttermilk can be recovered at small expense. Steps were taken to protect the process by patent rights, the intention being to place it at the disposal of the dairy industry free of any royalties.

The service of semi-official testing of purebred dairy cows was continued with well-sustained support from breeders and others. Association testing continued to receive assistance from the Division at several dairying centres.

CHEMISTRY SECTION.

A fair amount of soil-survey work was carried out in connection with deficiency diseases of stock and otherwise, and a large number of soils have been analysed. It is hoped to publish a systematic account of the soils of one area shortly.

In addition to a full measure of routine analytical work, matters connected with limestone and lime, phosphates, and potash supply have continued to receive a large measure of attention. A special investigation of indigenous tans and dyes was made, and is proceeding. A considerable amount of work was also carried out for other Departments.

BIOLOGY SECTION.

Many plant-diseases have been specially destructive during the period, and a special investigation of dry-rot of swedes was initiated. Brown-rot of stone-fruit also received attention.

The appointment of an Entomologist has strengthened the Section in that branch, and a considerable amount of work in the life-history of many insects in New Zealand is being undertaken.

The seed-testing service has been kept very busy, and the time seems ripe for the enactment of pure-seed legislation similar to that adopted by many other countries, including now the United Kingdom.

The study of pastures and pasture-management has continued a strong feature of the Biologist's work. A regular course of agricultural botany was given to the student-assistants at the Central Development Farm.