

prepared for your consideration, these including—(a) In the case of leased premises, making the owner under certain conditions liable for the cost of permanent improvements necessitated by the provisions of the Act; and (b) more clearly defining what constitutes a co-operative dairy company.

Herd-testing has become firmly established in the dairying districts, and the large amount of it which has already been done has resulted in a number of unprofitable cows having been taken out of the herds and disposed of for food purposes. This practice could be further extended to the advantage of producers. Side by side with it, though, should go good methods of animal husbandry, particularly as regards feeding and the rearing of heifer calves from good milking-strains on both sides. It is worthy of note that cases have been observed where cows regarded as unprofitable have with good feeding and good management proved themselves to be good milkers.

The need for a special laboratory and experimental factory as a necessary part of the Dairy Division's equipment becomes more pressing as time goes on, and it has really become urgently necessary to take steps to provide these. The staff at the present Wallaceville Laboratory carry out all investigations possible for the Division, but the many difficulties met with in factory-work, and by the Division's Instructors, render separate premises and staff necessary in order to enable the Division to carry out its instructional services with complete efficiency. This work has been authorized, and the sooner it can be carried out the better.

The quality of both butter and cheese manufactured has continued at a high standard, but it is a matter for regret that cases have occurred where butter has been held too long in store, and has deteriorated in consequence.

AGRICULTURAL INSTRUCTION AND INVESTIGATION.

The Fields Division has had a year of strenuous work, and all its officers have carried out their duties with zeal and energy. Details of the work done will be found in the Director's report. It is satisfactory to note that the advice of the Instructors in Agriculture is freely sought by farmers, and that already methods necessary for meeting present-day conditions are being adopted, both as regards the improvement and maintenance of pastures and crop-production. A great advance has been made in the use of top-dressings for pastures, and this is bound to show practical results in the shape of increased carrying-capacity and increased output of produce. A considerable volume of exact experimental work, both as regards pastures and field crops, is in hand, and this should yield good information in the form of established principles which can be adopted generally, varied only by the necessities created by differences in soil and weather conditions.

The instructional staff of this Division can be further increased with advantage, and recommendations to this effect will be made. In those districts where Instructors have been established for some time the calls upon their services are constant, and, moreover, are extending in volume; while in other districts where, so far, we have been unable to establish Instructors a strong desire for them is expressed. Given the right type of men, which is essential, good results would accrue from an extension of this service.

Among the other activities of the Fields Division may be mentioned the following: A capable officer has been specially detailed for work in connection with farm economics, and he is making good progress, this being greatly aided by the cordial co-operation of those farmers who have been asked to furnish data for him. Investigation work is also being carried on by specially detailed officers in (a) the effect upon the milk-yield of the feeding of concentrates to dairy cows; (b) the control and eradication of blackberry; (c) the pasture grasses best suited for areas reverting to second growth of native plants. A considerable amount of specialized work is also being done in connection with the effects of fertilizers, under varying conditions, upon cereal crops. The Fields Division officers are co-operating with the Lincoln College authorities in the cereal-seed selection and breeding-work being carried on there. In connection with the general question of how best to deal with country reverting to second growth, particularly in the west central portion of the North Island, the Department is, principally through the officers of the Fields Division, co-operating with the Lands Department in devising a scheme of demonstration work co-ordinating with the experimental work already done and that still in progress.

The Biological Laboratory has dealt with a large volume of useful work, and, while much of it has necessarily been of a routine nature in connection with the field activities of the Department, a good deal of research has been carried on. One result of this has been the elaboration of a system of treating seed wheat with copper carbonate in finely powdered form as a preventive of the development of smut. A considerable quantity of the seed wheat sown during the present season has received this treatment, the Lincoln College authorities and the Canterbury seed-merchants co-operating in the necessary arrangements. Following preliminary laboratory experiments, extensive field experiments are being carried out in the treatment of seed oats as a preventive of rust-development. Work is also being done in endeavouring to find better methods of controlling disease in