

BIOLOGY SECTION.

REPORT OF A. H. COCKAYNE, BIOLOGIST.

Central Development Farm, Weraroa, 3rd July, 1917.

The Secretary of Agriculture, Industries, and Commerce.

I FORWARD herewith a brief report concerning this Section for the year ended 31st March, 1917.

A. H. COCKAYNE, Biologist.

REMOVAL OF SECTION TO WERAROA.

So far as the Biology Section of the Department is concerned the decision to transfer it to the Weraroa Experimental Farm, now known as the Central Development Farm, is the most important that has been made since its inception. The work of the Section, although purely scientific in its general aspects, is so closely connected with many phases of the practice of farming that its work was much handicapped by being carried out in a city rather than in a rural environment. It is to be hoped that by the carrying-out of the transfer much of the work of the Section will be of immediate value and its significance to agricultural practice recognized, owing to the close co-operation of actual farm operations and scientific investigation. Plenty of scope for testing the practical application of laboratory study will be available, and this alone fully justified the removal of the section to a centre of practical agricultural activity such as the Central Development Farm. (The Section was transferred to Weraroa on the 1st May, 1917.)

In addition to the carrying-out of the ordinary routine and scientific duties of the Section, its location at the Central Development Farm renders possible its close co-operation with the Fields Division in rendering instruction in agricultural botany and agricultural entomology to the student-assistants in residence on the farm. Again, for many years past the Section has identified itself very closely with many of the problems of pasture-production and pasture-management, and its advice on those matters is now freely taken by the Fields Division. The removal of the Section to the Central Development Farm and the opportunities thus provided for thoroughly studying pasture problems must greatly enhance the value of such advice, based as it will be on the actual scientific observation of pastures themselves. So far as I am personally concerned, I cannot refrain from expressing my gratitude to the great Service to which I belong in removing my Section to a location that should render easy its work becoming of great value to the farming interest of the Dominion.

GENERAL ROUTINE WORK.

A very large number of specimens, both botanical and zoological, have been dealt with during the year. Especially numerous were the inquiries regarding pasture plants, and the great interest shown in this subject clearly shows that the importance of pastures in the maintenance of our productive capacity is fully realized.

SEED-TESTING.

During the year 3,259 samples of agricultural seeds were tested for seed-merchants, and in addition some 600-odd received from private individuals and the Fields Division were dealt with. The system of charging fees for testing commercial lines of seed has been extremely popular.

It appears as if the time were ripe for the introduction of some system of seed-control legislation, especially with regard to imported seed, but it is perhaps unwise to adopt any system until after the war. It is interesting to note that although Germany had a very strong hold on the New Zealand seed trade in 1914 her trade has been found to be quite unessential, and it is to be hoped that in the future there will be no necessity to rely on her for the production of any seeds.

NEW ZEALAND FLAX DISEASES.

Mr. David Miller has continued his investigations regarding flax-pests during the year, with the exception of two months when his services were loaned to the Department of Internal Affairs to study mosquito conditions in North Auckland. Mr. Miller has secured much valuable information on the life-history and habits of the flax-caterpillar, but owing to the very heavy floods experienced in the Manawatu district it has not caused any appreciable damage this season.

ROOT-KNOT.

In co-operation with Mr. C. C. Brittlebank, Plant Pathologist to the Victorian Government, and Professor Champtaloup, an investigation of the causative agent of root-knot was carried out. An organism morphologically identical with *Bacterium tumefaciens* was isolated, but gave negative reinoculation results.