

SPECIMENS RECEIVED.

As in past years, a very large number of specimens, both botanical and zoological, have been received and reported on. This work occupies a very considerable portion of my time. In all cases an effort is made to make the replies as practical as possible, and in order that this can be satisfactorily carried out correspondents should in all cases clearly indicate what type of information they require with regard to the specimens sent.

Apart from the examination of specimens, a great deal of correspondence on all phases of agriculture has had to be undertaken.

SEED-TESTING.

During the year 4,900 samples were tested for germination and purity. This represents the largest number that has been dealt with in any one year since the work was taken in hand. Nearly the whole of the samples are received from seed-merchants, and this gives a good indication of the value placed on testing by the seed trade. The majority of the leading firms now deal only in tested seeds, and this has had a remarkable effect in raising the average quality of seeds sold. The majority of the seeds tested are those of grasses, clovers, and farm crops other than cereals. Very few cereals are tested for germination, although it is significant that at the seed-testing stations in Great Britain cereals, especially wheat and oats, represent the bulk of the seeds tested.

This development of the use of tested seeds has been secured without the adoption of any seed-control legislation, and were it generally followed by all merchants there would be little necessity for the passing of any legislative measures controlling the sale of seeds. Unfortunately, certain merchants still persist in selling very inferior seed without in any way detailing its quality with regard to germination and purity. An accurate knowledge of the quality of the seed sown is one of the most potent factors in successful crop-production, and in consequence it should be made obligatory for all sellers of seed to state the purity and germination of the seed they offer their customers. Many of the crop-failures occurring both in annual crops and the more permanent pasture ones can be directly attributed to the use of seed the quality of which has not been known by the farmer at the time of sowing.

During the year the prices of all agricultural seeds have been exceedingly high. With the exception, however, of certain classes of seed that are not usually grown in New Zealand, the prices were on the whole lower than that for similar seed in other parts of the world. The lack of labour, coupled with high prices, had a very considerable effect on restricting the amount of bush-burn sowings, and it is probable that not more than 100,000 acres were added to the total acreage under this type of grass land. This is a very considerable drop from the quarter of a million acres which has been the yearly average for many past years. In addition to a falling-off of bush-burns a great deal of succession growth of fern and scrub has been burnt and not properly sown down, owing to the abnormal price of grass and clover seed. This is a disastrous policy to adopt, and unless the ground can be adequately sown the cleaning-up of such country by burning alone should not be carried out.

SEED-GROWING.

The irregular supplies of certain agricultural seeds due to lessened production in other countries affected by the war have given considerable prominence to the desirability of what may be termed special seed-growing in New Zealand. An effort was made to induce farmers to save considerable amounts of turnip-seed, the production of which has hitherto not been attempted in the Dominion. Many of the crops that were grown have turned out highly satisfactory so far as yield is concerned, but merchants are generally adverse to purchasing locally raised turnip-seed without an adequate guarantee that the cropping characters of the seed are satisfactory. Tests that have been made of locally produced seed show that the bulbing-qualities are quite as good as are those of imported seed, but there is always the danger that unless proper supervision has been exercised the seed produced will be unsatisfactory. As far as turnip-seed production is concerned, very excellent crops were produced in Central Otago, and that district appears to be admirably situated for the purpose.

The question of special seed-raising in New Zealand does not depend at all on the ability to produce seed of the very best quality, as this has been abundantly proved, but on whether the costs of production are sufficiently low to compete successfully with imported seed. There is, however, no doubt that a very considerable extension in agricultural-seed production could be made in New Zealand, especially with regard to those crops the imported seed of which is not only always dear but is often of inferior germination quality.

Again, there appears no reason why New Zealand should ever be an importer of grass or clover seeds, as these crops do not require the large amount of labour involved in the growing of many other types of seed crops, and their yield and quality compare more than favourably with similar crops grown in any other part of the world.

PLANT PATHOLOGY.

In the early part of this calendar year my assistant, Mr. R. Waters, returned to the laboratory from his military duties and took charge of the plant pathological work. A small laboratory has been equipped for this work.

The etiology of the yellow-leaf disease of flax (*Phormium*) has been the subject of considerable study. It has been shown that a fungus attacking the young rootlets and causing a general rotting of the roots is one of the main factors involved. It, however, appears as if this fungus causes destruction only when the plants have been weakened by adverse soil conditions. A peculiar feature noted now for two seasons is the regular recovery of affected plants during the late autumn and winter