Seed-testing.—During the year 9,100 seed-samples were tested for germination and 1,600 for purity. The fees received amounted to approximately £800. The seed trade has shown every confidence in the work, and is looking to the station more than ever for information and advice. New Zealand produces approximately £1,000,000 worth of grass and clover seed annually, and practically the whole of this is handled upon the certificates issued from the Department's seed-testing station. In addition, a large percentage of the £250,000 worth of seed annually imported is tested and reported on. New Zealand possesses all the characteristics of a seed-growing country, and were such an industry fostered a very valuable export trade could be permanently maintained. The question of reducing the present comparatively high fees for seed-testing should be seriously considered. This year's seed harvest has turned out to be a very light one, and after our domestic requirements have been fulfilled there will be very little left over for export. Last year considerable quantities of white clover where shipped from New Zealand, and in many cases serious complaints were received of the presence of small quantities of dodder. Such a reputation may do considerable harm to this promising export commodity. It would appear that some form of seed-crop inspection is necessary, as is successfully carried out in the United States of America. The merchant could then buy under a guarantee that the crop was clean and free from dodder. Agriculturally New Zealand white clover is looked upon very favourably in all countries. Work on the investigation into the loss of vitality of Chewings fescue is still being carried out, and the results received on the latest parcels to England are very encouraging.

Some research work affecting the routine methods of testing various seeds have been carried out, but shortage of staff has prevented more being undertaken during the year. Work on the relation between ordinary germination tests, soil tests, and field tests of various agricultural seeds requires attention. For this and other purposes, such as the determination of the species of Brassicas, the satisfactory testing of certain vegetable, forest-tree, and other seeds, and the checking of certain doubtful germination tests, a portable glasshouse should be erected as soon as possible.

In addition to ordinary work, 500 seed-cards have been prepared for distribution by sale, numerous individual weed and other seeds identified, statistical information collected and issued to all merchants, and information and advice given to farmers and the trade generally.

Staff.

It is a source of great satisfaction to be able to report that, without a single exception, the staff of the Fields Division of the Department have carried out their duties during the year in a most exemplary manner, and any success that may have attended the work of this branch of the Department is largely due to the earnestness and hearty co-operation of the officers.

CHEMISTRY SECTION.

The Chemistry Section, under the direction of Mr. B. C. Aston, F.I.C., F.C.S., has dealt with a large volume of work during the year, and has maintained a high standard of efficiency.

Following is Mr. Aston's report:—

Introduction.

The past year has been the busiest since the inauguration of the Chemical Laboratory, which has now been in active operation for a quarter of a century. Chemical work is unlike many other kinds of scientific work—it cannot be dropped and picked up again at a moment's notice without suffering in quality. The amount of work now coming in necessitates that it shall be done in series as far as possible. This often necessitates the holding of samples until such time as a number can be done at the same time. 1,235 samples were received during the year, but arrangements were made by the Director of the Dairy Division whereby most of the butter-testing for the Wellington District which was done in this Laboratory during the previous year should be done at the grading-rooms of his Division, check samples, where necessary, being examined at this Laboratory. This arrangement has enabled the officers who formerly performed the whole of this work in the Laboratory to be employed in work requiring greater skill.

Soil Survey.

This work, which was interrupted by the war and the financial stress resulting thereafter, has been resumed, and 225 samples of carefully selected samples have been collected by the officers of the Laboratory in the field. An article was published in the *Journal of Agriculture* for September, 1923, explaining exactly what was meant by a soil survey. Other soil articles published during the year included one on "The Soils of the Otago Peninsula" (October, 1923), one on "Mica-schist Soils of Central Otago" (June, 1923), one on "Littoral Soils" (November, 1923), and one on "The Organic Matter of the Soil" (August, 1923). Other departmental officers have submitted fifty-four soil-samples, and eight miscellaneous soils have been received from other sources. The soil-survey work has been confined to two areas upon which some work had previously been done—the thermal district and the south-western portion of the North Island.

Yellow-leaf Disease in Flax (Phormium).

In connection with the occurrence of yellow-leaf in the different flax-growing areas of the Manawatu, thirty-two samples of swamp soils were collected and analysed. Most of these soils were found to be adequately supplied with the usual plant-foods, but in some cases flax affected with yellow-leaf was found to be growing on soils in a lower state of oxidation than is usual: this points to lack of aeration in the soil as a possible contributory cause of this disease.