

South Island.

Takaka County: M 283, 93 (soft limestone); M 293, 97; M 294, 99; M 295, 96; M 296, 94; M 297, 95; M 298, 72; M 405, 85 (finely divided carbonate of lime); M 863, 89 (sinter).
 Waimea County: M 174, 95; M 175, 91; M 695, 96; M 696, 88.
 Sounds County: M 520, 53 (shell deposit).
 Buller County: M 34, 61; M 162, 86; M 163, 97; M 164, 94 (sinter); M 410, 97; M 411, 98; M 412, 98; M 413, 94 (sinter); M 414, 98; M 415, 94.
 Murchison County: M 157, 89; M 288, 90; M 289, 89; M 290, 70.
 Kaikoura County: M 702, 82.
 Amuri County: M 625, 96; M 626, 96; M 627, 47 (soft carbonate of lime); M 515, 70 (soft carbonate of lime); M 516, 86 (soft carbonate of lime).
 Waipara County: M 623, 68; M 624, 68; M 825, 62; M 826, 55; M 827, 72; M 828, 58; M 829, 70 (soft carbonate of lime); M 831, 57 (soft carbonate of lime).
 Geraldine County: M 96, 86.
 Levels County: M 95, 63 (marl).
 Peninsula County: M 109, 74; M 110, 83.
 Tuapeka County: M 199, 76 (sinter); M 313, 86.
 Clutha County: M 714, 92 (ground limestone); M 715, 93 (ground limestone).
 Southland County: M 481, 94 (limestone boulder); M 757, 57; M 870, 87; M 870A, 91; M 870B, 91.

BIOLOGY SECTION.

REPORT OF THE BIOLOGIST.

The Director-General.

Wellington, 28th September, 1921.

HEREWITH I submit my annual report dealing with the main operations of my section during the year ended 31st March last.

A. H. COCKAYNE, Biologist.

REMOVAL OF LABORATORY.

Subsequent to my return from the United States in March, 1920, it was decided to remove the Biological Laboratory from the Central Development Farm, Weraroa, to Wellington. After considerable difficulty a house was purchased in Fairlie Terrace, some twenty minutes from the Head Office. This building has been converted into excellent laboratories devoted to seed-testing, agronomy, plant-pathology, mycology, and entomology. The new quarters are in every way convenient and appropriate for the work performed by the Section, and represent a great advance on any previous accommodation provided. With but slight alterations, that could later be easily effected, they should remain suitable for the biological work of the Department for many years to come.

SEED-TESTING.

During the year 8,800 seed-samples have been tested for purity and germination. This is the largest number that has been dealt with in any one year, and clearly indicates the importance that the seed trade attaches to this work of the Department. As 10,000 samples per year represents about the maximum capacity of our present seed-testing equipment, increase both in staff and apparatus will shortly be necessary.

Compared with the results of previous years the standard of the 1920-21 grass-seed crop is high. Especially is this the case with cocksfoot, which for some years had shown a falling-off in quality.

A very thorough investigation with regard to loss of germination of Chewings fescue exported has been carried on in co-operation with the United States Department of Agriculture. This investigation has not yet been completed, but it has already been shown that if shipments are made of new season's seed as early as possible in the autumn no deterioration occurs. This fact is of great significance and importance, and means that if merchants ship early an excellent and lucrative trade can be secured with the United States, where Chewings fescue is in the highest repute for lawns and golf-links. Provided satisfactory germination can be assured there is a market for some thousand or more tons annually in that country.

During the year a considerable amount of experimental work on seed-testing has been carried out, and modifications have been devised that render the work far more reliable and efficient than has previously been the case.

PLANT-PATHOLOGY.

During the past year over a thousand specimens have been sent into the Laboratory. These specimens cover a wide range of economic plants, including fruit-trees, vegetables, flowers, field-crops, cereals, and forest and ornamental trees. The mycological herbarium of the Section has been increased largely during the year, and reflects great credit on Mr. G. H. Cunningham. As a publication on the diseases of fruit-trees is in preparation a great deal of attention has been paid to orchard fungi, and many hitherto unknown and unrecorded diseases have been studied.

Fireblight.—The outbreak of fireblight in the Auckland Province has resulted in a steady stream of specimens into the Laboratory either infected with or suspected of being infected with the disease. In the course of the work of examination it has been found that certain diseases such as "black-rot" are far more widespread and injurious than was currently supposed. Since its appearance in