

Plant Research Station at Palmerston North.—In association with the Research Department a Plant Research Station has been established this year (1928) on an area reserved at the Massey Agricultural College farm at Palmerston North. The Biological Laboratory of the Fields Division has been merged in the new institution, of which it will be the nucleus. This station will be the centre of the Department's research work in connection with pastures and field crops, and it is confidently anticipated that results of great benefit to farmers will accrue from its investigations.

Crop Certification.—The object of certification is to render available to merchants and growers lines of seeds reasonably pure and free from disease. So far certification has been confined to wheat and potatoes, but it is contemplated to extend the work to include other crops, such as certain clover and grass seeds. By certification it is hoped to stimulate the production of such seed and establish the fact that its use will render yields more stable and the produce more readily saleable, and will bring about a marked improvement in the general standard of New-Zealand-grown seeds.

Field-crop Experiments.—Formerly field-crop experimental work was largely of a demonstrational and observational character. Recently, however, this work has been remodelled and placed on a basis which enables the results to be statistically examined. This feature is important as correct deductions can be practically assured.

Dry-rot in Swedes.—The matter of discovering a remedy for this serious trouble has been given very careful attention during the past two or three years. The Department's mycologists discovered that the disease is seed-borne; and, further, that it is capable of being controlled by the treatment of "mother" seed, and the gradual raising-up of sufficient seed for requirements from such "mother" seed. Various difficulties have to be surmounted, but it is hoped to have this method on a proper basis in the near future.

Elimination of Disease in Barley.—The mycological officers of the Department have also developed the hot-water treatment of seed barley for the smut and other diseases commonly attacking that cereal. This treatment has been put into actual practice in co-operation with the Canterbury Seed Co., of Christchurch, which largely controls the barley grown in Canterbury. The result has been that disease-free crops and also greatly increased yields have been secured.

Maize Improvement.—Maize, which is mainly grown for grain on the east coast of the North Island, has become badly mixed, and the Department is working, with the co-operation of farmers, to select strains most suitable for the district, and at the same time to keep the strains pure.

Assistance in connection with Deteriorated Lands.—The officers of the Agriculture Department closely co-operate with those of the Lands Department in putting into effect the recommendations of the various Deteriorated Lands Boards. In districts where deteriorated lands are located the staff has been strengthened, and in all cases the officers give prompt attention to any matters arising out of the Deteriorated Lands Act.

Regrassing of Deteriorated Lands.—Comprehensive experiments have been carried on in connection with the regrassing of deteriorated lands in the North Island. The work consists in the main of top-gressing of existing grassland, sowing of various grasses and grass-seed mixtures, top-dressing of new sowings, and experimental work in connection with the eradication of the very troublesome "hard" fern.

Instruction at Flax-mills.—Two instructors in the milling of phormium (New Zealand flax) were recently appointed to visit the various mills throughout the country and tender advice with a view to improving the milling of phormium. It is pleasing to note that a general improvement in the fibre coming forward from mills in the districts visited is becoming apparent.

Wheat Research.—An investigation of the milling properties of New Zealand wheats, and testing of the resultant flours, carried out by chemists of the Department, has been largely instrumental in the establishment of a Cereal Research Institute in Canterbury, which should greatly benefit wheat-growers.

Biological Control of Insect Pests and Noxious Weeds.—The introduction, breeding, and distribution of insect parasites to combat a number of troublesome pests is being actively continued. Considerable success has been attained with natural enemies of the pearmidge, sheep maggot-flies, gum-tree weevil, &c.

Instruction by Wireless.—During the past year or two frequent radio broadcast lecturettes for farmers, fruitgrowers, bee-keepers, horticulturists, &c., have been given by officers of the Department by arrangement with the Broadcasting Company. Much evidence as to the usefulness of this service has come to hand.

DAIRY INDUSTRY SYSTEMIZATION AND BETTERMENT.

New general regulations under the Dairy Industry Act came into operation in November, 1926, and were a complete revision of regulations dating back to 1899, with the addition of a number of new ones. The latter were mostly for the purpose of making general the best practices in vogue in connection with the handling of milk and milk products, and to give effect to provisions of existing Acts. Among the more important are—

- (1) Provision for an additional grade classification for export butter and cheese, to be known as "finest" grade.
- (2) The national brand is to be used on packages of "finest" grade and "first" grade butter and cheese.
- (3) Milking-machine plants are to be properly installed and operated under such conditions as will effectively prevent contamination of the milk. Adequate supply of hot water to be available for cleaning the machines and other dairy appurtenances.