

BOTANY DIVISION

Director: Mr. A. L. POOLE

The Director, Dr. H. H. Allan, retired at the end of 1948, and a new Director and Assistant Director were appointed at the beginning of 1949. The total staff is now twenty-four. One member attended the meeting of the Australia and New Zealand Association for the Advancement of Science, in Hobart, and afterwards visited a number of places in Australia; a London University graduate, on two years' post-graduate botanical work in New Zealand under a Goldsmith's Scholarship, has been attached to the Division; and one member of the staff is on two years' advanced cytological work at the John Innes Institute of Horticulture, London.

TAXONOMIC BOTANY

The flowering plant and seaweed herbaria have been reorganized, and are now in good working-order. Substantial additions of specimens, including a number of water plants, have been made, bringing the number of sheets in the former to 62,000. The minute flowering plant *Wolffia* has been found in New Zealand. Exchanges with overseas herbaria have been increasing over the past year or two.

Special studies on the detailed taxonomy of New Zealand *Leptospermum*, *Agropyron*, and *Nothofagus* have been commenced or continued. In an experimental taxonomic study of *Agropyron scabrum* the breeding system and chromosome numbers have been determined and a knowledge of the ecotypes widened. This work is basic to the development of any tussock-grassland species for renovation of eroded areas.

Investigations on alien plants are being continued for the purpose of a revision of a previous publication by the Division, "A Handbook of the Naturalized Flora of New Zealand."

Extensive collections were made in part of the west coast sounds area—a locality rarely collected from—by members of the staff who accompanied the New Zealand and America Fiordlands Expedition. Other collections were made in the region of Mount Hooker and Otoko Valley, South Westland.

Some 2,000 specimens were identified for outside botanists or organizations, a few from commercial firms necessitating close scrutiny of the taxonomic position of the species involved. A number of specimens of saffron thistle (*Carthamus lanatus*) and Mexican poppy (*Argemone mexicana*) growing in fowl-runs have been received for identification, and these indicate contamination of imported poultry grain.

ECOLOGY

Tussock Grasslands.—A full report on five years' work carried out on the tussock grasslands of Molesworth Station is almost ready. In connection with this work, studies of the scabweeds (*Raoulia* spp.), one of the key plants, have been continued. Investigations were extended to the St. Helens Station, which has recently been taken over by the Government and is to be run in conjunction with Molesworth.

Continuing on with the work of a Canterbury College graduate, plant sociological methods have been used to study the difference between four major tussock-grassland communities at Blue Cliffs Station, South Canterbury. It is hoped that a development of this work will pave the way for some method of extensive survey of the tussock grasslands.

Beech.—The 1948-49 season has been a prolific flowering and seeding season for *Nothofagus* in many parts of New Zealand. This has been studied in detail and measurements of seed fall have been made in a Wairarapa beech forest. Seed has been collected for reseedling experiments for the Nelson District Committee of the Soil Conservation and River Control Council. It appears that these heavy flowering years follow hot summers