

Surveys.—The vegetation and flora of the Reporoa Bog has been reported on, and a study of the vegetation and flora of the Ruahine Mountains is well under way.

Wild-life.—A detailed ecological study of the feeding habits of wapiti (*Cervus elaphus*) in the Fiordlands has been made. The growth of the important duck-food plants, *Ruppia spiralis* and *Potamogeton pectinatus*, was observed under varying conditions. A brief survey of the food of a number of lakes and lakelets in the Manawatu area was made. The plant food of a considerable number of blackbirds was identified for the Animal Ecology Branch.

ECONOMIC BOTANY

Plant Introduction.—Over 160 introductions from twenty sources were made for the Divisions of this and other Departments. Sixty new introductions are being grown this year at the Division's experimental area, Waiwhetu. Some of the more important introductions include a collection of *Lotus* spp. for the Grasslands Division and grasses and woody shelter-belt species for dry conditions. Some of these woody species introduced two years ago have been distributed for trial. Seed from a number of introduced grasses has been distributed to Soil Conservation Council experimental areas.

Pollen.—A number of inquiries concerning hay-fever and the identification of pollens in bee loads have been dealt with by the Pollen Section.

Tussock Grasslands.—Further broadcast and line sowings have been made at Molesworth. Tall oatgrass (*Arrhenatherum elatius*) has been conspicuously more successful than any other species. Establishment of all species fails on denuded areas carrying only sorrel.

Seaweeds.—Records of the Marketing Department show that for the sixth year of agar production a new maximum (of 140 tons) of weed harvested was reached, of which the Wairarapa coast provided 77 tons. Information about agar and other seaweed industries in Australia was looked into during the year. Inquiries have been received about alginate-manufacture from big brown kelps.

Phormium.—As the result of the decision that phormium research is to be regarded as a long-range project, it has been possible to implement the work at the Moutoa Phormium Research Station. A solution must be found for yellow-leaf disease if the industry is to survive. Specialist officers have been placed on this work, and will spend most of their time at Moutoa. Satisfactory progress has been made on a re-survey of the vegetation on Moutoa, on breeding and genetical work, and on growth studies. Increased use is being made of SS (334) in breeding-work in an effort to secure plants resistant to yellow leaf. It has been decided to use the nucleus stocks of this variety for further planting on Moutoa. Increased vigour of growth is being obtained from selected third-generation selfed SS plants and from *P. tenax* 301 × *P. colensoi* 5. Selected progenies of some varieties are being studied with a view to using these instead of clonal material for planting.

Vegetation surveys of Aickens area, near Featherston, and a phormium area at Otanemomo, in Southland, were made. A preliminary reconnaissance was carried out of an area in the Awakino Valley near Dargaville.

Forest-tree Dendrology.—Exotic forest trees are being studied with a view to building up a reliable herbarium. A particular study is being made of *Pinus radiata* and the natural variation of this species. It is hoped to be able to define types or strains. This work is being undertaken in the Nelson region for the time being.

Palynology.—The pollen slide collection of the Division can now be regarded as a national pollen herbarium available for reference on pollen taxonomy. The collection has been classified, and use of it is already being made by outside organizations.