

important feature is that the adults will attack the foliage of economic Rosaceae, such as raspberry, strawberry, and apple, although the larvae seem to confine their attention to blackberry and rose. In addition to *Coraeus*, attempts are now being made to utilize certain species of insects selected in North America.

Gorse.—During the year *Apion ulicis* was successfully reared in New Zealand and a considerable number of progeny secured. It is to be noted that this insect reproduces more freely under New Zealand conditions than under British. Since the researches showed that *A. ulicis* is not a menace to important Leguminosae, a permit for its release was secured. In February, 1931, the available New Zealand-reared material, consisting of 560 weevils, was liberated on gorse in the Cawthron Institute grounds at Nelson, and at Alexandra in Central Otago. Close observations are being kept upon these areas to ascertain the behaviour of the insect under natural conditions. In order to avoid delay in rearing in New Zealand weevils for liberation, and to ensure that only *A. ulicis* is liberated, future supplies of the insect from Farnham Royal will be secured from infested gorse-pods, and not collected free in the field.

Ragwort.—During the past season a total of 1,670,600 eggs of *Tyria jacobaeae* were liberated in the field throughout the Dominion. These eggs were secured from moths developing from large consignments of pupae sent from Farnham Royal. Field surveys show that *T. jacobaeae* is gradually becoming established, and where it already has become so its influence upon ragwort is noticeable. In order to more completely check the weed, other species of the ragwort-insect complex have been selected and are being sent from Farnham Royal. There is every indication that these insects will become an important factor in checking the weed, especially in places beyond the influence of farm-management and from whence infestations spread.

Piripiri.—During April of 1930 a small consignment of *Antholcus varinervis* pre-pupae was received from Brother Claude Joseph of Temuco, Chile, but these insects failed to develop. However, Dr. Miller visited Chile and studied the insect there, bringing with him to New Zealand a large consignment of the pre-pupae. The latter, which arrived in Nelson without damage of any kind, were carried under different conditions, in order to ascertain the best means of transport. By the end of March pupation of the *Antholcus* pre-pupae had set in, and it is expected that this insect will prove a great success.

PHORMIUM RESEARCH.

Advisory Committee: Mr. A. Seifert (Chairman), Mr. H. A. Seifert, Mr. B. B. Wood, Mr. E. E. Frost, Professor G. S. Peren, Mr. A. H. Cockayne, Mr. H. Vickerman, Dr. J. S. Maclaurin, Professor T. H. Easterfield.

REPORT BY DR. J. S. YEATES.

During the past year the work has suffered considerably as a result of the depression in the fibre industry. Nevertheless, the work had reached a stage at which it was able to progress for a time at no great expense.

The total area planted in phormium is now about 8 acres. This is made up as follows: 1 acre of Ngaro; 1½ acres of fans of various strains; 3 acres of pedigree three-year-old seedlings; ½ acre of two-year-old seedlings; giving a total of 6 acres in main area.

In the smaller area at the Batchelar Homestead are a further 2 acres planted in fans of varieties, hybrid and pedigree seedlings.

Growth on all of these areas has been good, except in the two-year-old pedigree seedlings. These had to be set out in most unsuitable soil and were sadly neglected owing to labour-costs. An abundance of labour during the past month or two has made it possible to thoroughly clean these plants. They are as good as average commercially-grown plants of the same age.

During the year under review the main development has consisted in the planting-out in some 3 acres the seedling plants obtained from pod-by-pod plantings of seed from strains in the nursery. The age of the seedlings when planted was two years. No selection was exercised, every plant being set out in order to see exactly how much need existed for culling. The spacing was 10 ft. by 4 ft., and planting was done in April. Through an excess of grass, which was not grazed down by sheep, this area suffered rather badly during the spring and summer. At one stage the plants were hidden by the grass. When the motor-cultivator was purchased this area was in too bad a state to be handled by the implement. During February, however, the area was cleared by mowing the grass and hoeing around each plant. In spite of the ill-treatment and absence of culling, the death-rate has been less than ½ per cent., and growth has been excellent, many plants being as high as 6 ft.

The whole 6 acres of the main area was mole-drained in the winter of 1930. The drains were spaced 5 ft. apart. Two tons of lime per acre has been applied to the 3 acres of three-year-old seedlings.

The area at the Batchelar Homestead has grown well. The first plants set out there were single small fans and were planted in June, 1928. Many of these are now large bushes of millable flax.

The hybrid seedlings have grown very well. These are all from crosses in which S.S. was one parent, and are now three years old from the sowing of the seed. Several of the plants are large bushes as high as 7 ft. to 9 ft. The object of the crosses was to combine the excellent fibre and the disease-resistance of S.S. with greater tallness and other desirable qualities. Some of the plants appear likely to fulfil these requirements. A number of yearling plants, hybrids between S.S. and Ngaro, are growing well.