Red Clovers.

Certification and Broadcast Trials.—Twenty-three lines have been sown for certification purposes. The majority of these are Montgomery type or else once-grown Montgomery lines which have been sent in for test.

Single Plants.—Seasonal growth notes have been recorded for all single plants. Although heavy mortality occurred last year amongst those plants which had reached their second autumn, the plants that remain now seem to have better persistency qualities, although many of them are not good producers. Some more recent plants, which have just passed through their second summer, are now dying off, so it would appear that this dying-off might well be regarded as a natural selection aid towards procuring a more persistent strain. Under our conditions the single plants from Aberystwyth selected material have made relatively low growth, although they are moderately leafy and dense. One thousand nine hundred and eighty seedlings of a particularly good extra-late-flowering line have been planted out so as to give more good plants for future selection work.

Elite Strain.—Seventy plants, selected by eye from a block of extra-late-flowering type single plants were isolated in a block and allowed to set seed under open pollinating conditions. The seed from these plants has now been harvested.

Subterranean Clovers.

The sowing of single rows of twenty different lines of subterranean clovers last spring has served to show that wide and important strain differences exist in this species. In order to study these differences further, fifty single plants of each of the above lines are being propagated.

Lotus Major.

Strain differences in this species have been apparent for some time. In order to study these further, fifty plants of each of thirty-two lines have been sown in boxes for autumn planting as spaced plants.

Odd Species.

Altogether nineteen lots have been included in the spring sowings. These represent samples of the lesser clovers and assorted species which have been sent mainly from overseas for trial under New Zealand conditions.

Genetical Work with White Clovers.

A small amount of elementary work has been carried out in order to gain experience which should prove useful for future work. This year's work has consisted of controlled hand-crossings with white clovers, and also some bee crosses with caged pairs of plants drawn from selected material.

Field Trials and Field Demonstrations relative to Strain in Herbage Plants.

In addition to field trials at Puwera, Dargaville, Ngakuru, Katere, Stratford, Manaia, Marton, Feilding, Oroua Downs, Irwell, Amberley, Dunsandel, Winchmore, Horarata, Waimate, Carterhope, Gore, Waikaka, Tapanui, Winton, and Wanaka, twelve new areas have been laid down spread throughout the Wairarapa, Manawatu, Taihape, Waikato, Westland, Nelson, Marlborough, and North Canterbury. 943 samples of grasses and clovers have been sent overseas for trial and report.

Suppression of Annuals in Hawke's Bay and Poverty Bay Pastures.

This work has been continued and detailed reports submitted by Instructors in Agriculture and my specialist staff. Owing to the abnormally dry season, full effect of manurial applications was not secured, and little, if any, reduction in annuals was obtained. The indication is that constant manuring with a mixture of phosphate and nitrogen will build a denser sward and control in large measure re-establishment of the annual. The present season should give much better results owing to the early autumn rains experienced.

REGRASSING SECONDARY-GROWTH COUNTRY, WHANGAMOMONA.

This work has been continued, and results to date have been written up during the year in the *Journal of Agriculture*. Apart now from work in regard to spraying of hard fern with arsenic pentoxide there is but little work necessary as far as grass-seed mixtures are concerned until such time has elapsed to more thoroughly test out the seed mixtures sown, and until improved strains of the hill country grass and clover species are available for field trial.

ECOLOGICAL WORK.

A certain amount of detailed analytical work in connection with field trials at Marton, in Poverty Bay and Hawke's Bay, and at the Research Station has been carried out.

GREEN-KEEPING RESEARCH.

A comprehensive scheme of green-keeping research has been instituted on behalf of the New Zealand Golf Association. An area of land, 1½ acres in extent, has been donated by the Manawatu Golf Club on their course at Hokowhitu, and the research is now in operation. All costs in connection with the scheme, apart from supervision, are borne by a grant from the New Zealand Golf Council. Commercial research in fine lawn-grasses is of the utmost importance in the definite bid that New Zealand is making to gain a world trade standing in the export of fine-lawn seeds. In 1930–31 the export value of New Zealand brown-top and New Zealand chewings was well over £100,000 sterling. Playing-greens, owing largely to the green-research activities of America and Great Britain, are improving rapidly, and each year the standard of excellence demanded by players the world over has become higher. Improved types of the standard fine-lawn seeds are being bred to cater for this demand.

DEMONSTRATIONS, LECTURES, AND CORRESPONDENCE.

Visitors to the Plant Research Station have increased greatly, and the actual time spent in conducting visitors around has been considerable. Correspondence from overseas as a result of the publicity given to the New Zealand work in plant-breeding, strain-selection, and the perpetuation and multiplication of these by certification, has greatly increased. No publicity campaign could have advertised New Zealand and its herbage-seed products as well as seed certification is doing at the moment.