

## EXPERIMENTAL AREAS.

The experimental areas at Puwera, Albany, Marton, Ashburton, Winton, Gore, and Galloway have been carried on during the year, and I think it can fairly be claimed that the work done at each of the areas has been of great benefit to the surrounding districts.

The two subsidized demonstration farms—at Manaia and Stratford—have continued to do good work, but the time is arriving when work on these farms should be put on modern experimental lines if correct deductions are to be drawn from their work.

## HEMP.

The production of hemp for the twelve months ended 31st March, 1924, showed an increase of 5,921 bales when compared with the production for the previous twelve months. The production of tow showed an increase of 589 bales. The average f.o.b. Wellington prices obtained for our fibre during the past year were: Hemp—Good-fair, £29 11s. per ton; high-fair, £27 11s. per ton; fair, £25 7s. per ton. Tow—First grade, £14 11s. per ton; second grade, £13 11s. per ton.

The quality of the fibre has not, on the whole, been of a high standard, the main fault being badly scutched tails. It may be that men not properly trained to the work and employed on the strippers at the mills are responsible. An endeavour was made during the year to detail one of the Hemp Graders for instruction work round the mills, but the services of the Grader concerned could not be conveniently spared, as he was wanted at the grading-sheds, owing to shortage of staff. It is considered that if another Hemp Grader is appointed one of the present staff could be appointed "Instructor and Grader" and a fair proportion of his time devoted to instruction work. That this would result in great benefit to the hemp industry is evidenced by the fact that in every case where instruction was given at the mill during the past season the quality of the fibre produced since has graded from one to two grades higher than formerly.

"Yellow-leaf" disease was formerly very prevalent, especially in the flax swamps in the Manawatu District. It appears, however, to have run its course, and areas that were rather badly affected are now comparatively free from the disease. During the year a new method of cutting the green leaf has been adopted by several millers. The system is known as "side-cutting." In this system the outside leaves only are harvested, leaving the two centre blades, and thus allowing the leaf to be cut every year instead of every four years as formerly. It is estimated that the "side-cutting" system will produce over a given period at least two and a half times as much leaf to the acre as the old system. In addition to this increased yield the leaf secured will be of a superior quality. It will thus be recognized that the new system will be of immense benefit to the industry.

Grading: The total number of bales of hemp graded in the Dominion for the year ended 31st March, 1924, was 63,779, as compared with 57,958 for the previous year, an increase of 5,921 bales. The quantity of tow graded was 15,563 bales, as against 14,974, an increase of 589. Of stripper tow 1,204 bales were graded, as compared with nil for the previous year. The number of bales of stripper-slips graded was 161, as compared with 129, an increase of 32.

## BIOLOGICAL LABORATORY.

*Pasture Experiments.*—There are large tracts of hill country in the North Island on which the pasture originally sown on the bush-burns has deteriorated, and the country is rapidly reverting to fern, manuka, and other secondary growths. Experimental work to try and devise some means of bringing this country back to a good state of production was started during the year. Nearly 100 acres have been laid down for experimental study, and there is good reason to hope that results of great value to the future prosperity of New Zealand will be secured.

*Blackberry Investigation.*—The extent to which blackberry is spreading in certain parts of New Zealand is a matter of rather national importance, and a comprehensive set of experiments to discover means for the eradication or control of the blackberry was commenced during the year. These experiments are in the main being conducted in the Wairoa County. Blackberry control constitutes a problem different in kind from that presented by any other weed in New Zealand, and it involves a careful study of the plant in the field. It is quite possible that before long the services of more officers will be required in connection with the investigations. The work being carried out includes the ploughing and regrassing of certain areas with a view to the replacement of the weed by useful grasses. On unploughable country an intensive study of the effects of goats is being carried out, and these animals certainly give evidence of being most valuable in some localities in eradicating blackberry. Besides these experiments others are being devised, employing (1) chemical methods, and (2) biological means against the weed. Under the heading of (2) come insects and fungi, and all that are likely to be in any way valuable are being studied.

*Agrostology.*—Research work in the establishment and maintenance of pastures has been continued, and a bulletin on the "Grasslands of New Zealand: Principles of Pasture-establishment" (Series I) has been published. A second series, dealing especially with the grasslands of the Taranaki back-country is now appearing in the *Journal of Agriculture*. Reports received at the Biological Laboratory from many farmers and teachers of agriculture in colleges and secondary schools indicate that these publications are proving very useful in the agricultural education of the country. The position of the *Agrostis* species in New Zealand has now been fully dealt with, and an illustrated article appeared in a recent issue of the *Journal*. The completion of this work clears up a general confusion as to the identity and agricultural significance of these species. There are, however, many important problems regarding the grasslands of New Zealand that are greatly in need of investigation; at present only a single officer is available for this work.