

pots of each variety left uncovered to act as controls. All the potted plants were then removed to the field and placed alongside wheat plots in the Wheat Research Institute area. The pots were sunk into the soil to prevent excessive drying out. After being exposed to insect attack for two months the plants were returned in late December to the insectary and the covers removed from the scrim-covered pots. The data supplied by these experiments are expected to throw light upon the problem of tiller mortality and show the effect of insect attack on the ultimate number of tillers which form ears.

Wheat Crop Survey.—A number of wheat crops in the Darfield-Hororata area were inspected during the last week in January, 1944. A fairly severe infestation of Hessian fly was found to have occurred. The great majority of the crops in the area were Cross 7. The infestation was evidently due to the second generation of flies which would attack the plants in early December, for the insects were located chiefly at the third node above the ground. Much straw-break had resulted from the strong nor'-west winds which prevailed during the latter half of the month. It was estimated that the amount of straw-break varied from slight up to approximately 5 per cent.

A short article dealing with the attack and the methods which should be adopted in controlling Hessian fly was prepared and forwarded to the various newspapers throughout the South Island.

ANIMAL PRODUCTION RESEARCH

MR. J. W. MCLEAN

Progeny Test Studies in Sheep.—This work was continued in the stud flocks, particular attention being paid to a fairly large scale trial with Southdown Rams.

Carcass Quality of Canterbury Fat Lamb.—This work will be continued by comparisons of the carcass quality of the following crosses of lambs raised under the same conditions: Southdown × Romney × Corriedale; Southdown × Corriedale; Romney × Corriedale. Also measurement of growth and carcass quality of Southdown × Corriedale lambs raised under high nutritional conditions, associated with the progeny test work above.

Teeth Studies in Sheep.—This is a continuation of work commenced some years ago at Ashley Dene. Important data have been collected concerning the influence of pregnancy and lactation on tooth structure and development and rate of attrition. This work is being continued, particular attention being paid to (a) the accurate establishment of the times of eruption of the incisor teeth and the factors that influence them; (b) the determination of the causes of variation in the rate of attrition and the onset of dental disease from the point of view of prenatal nutrition, early and late post-natal nutrition, the influence of parasitic infestation and mineral supplements, and the physical nature of the food. Further work is also required on the influence of pregnancy and lactation.

Inbred Strain of Romney Sheep.—Work on the establishment of an inbred line of Romney sheep for experimental purposes is being continued.

Control of Contagious Abortion in Dairy Cattle.—This work is being done in collaboration with the Animal Research Division of the Department of Agriculture. It consists of the calfhood vaccination of all cattle entering the herd and the collection of all data relating to abortions in the herd.

Mastitis Studies in the College Herd.—This work is being done in collaboration with the Animal Research Division of the Department of Agriculture and the New Zealand Dairy Board. It consists of the application of various forms of treatment to clinical and sub-clinical cases of mastitis as diagnosed by the leucocyte smear technique.

Pig-breeding.—Work in establishing a pure-breeding red strain of pigs derived from a Large White-Tamworth cross is being continued. The initial difficulty of colour variation has been overcome, and the work of multiplication and selection with a view to fixing productive qualities is to be proceeded with. Results so far have been promising.

WOOL METROLOGY LABORATORY

DR. P. R. McMAHON

Wool Survey.—Fleeces have been weighed and graded during the past shearing season at the majority of the locations previously visited in the Hawke's Bay and Canterbury Districts. Difficulties arising from the man-power situation prevented extension of the work. In the South Island a few steeply-sloping curves for fleece weight against count have been found on environments which must be regarded as giving a relatively low plane of nutrition, and one relatively flat curve where plane of nutrition is high. It is suggested that breed and perhaps strain modify the simple picture, presented in earlier reports, found in North Island Romney flocks. Thanks are due to the New Zealand Wool-buyers' Association, who have recently provided facilities for the expression of curves for wool count against fleece weight on a value-per-sheep basis. The results indicate that much North Island hill country could utilize a slightly finer grade of ram with profit, even at the present time. Stud-sheep data have been analysed to discover the effect of such a change on the fat-lamb industry. In over 813 dam-offspring pairs in a Romney stud flock no significant difference in fleshing grade of hoggets was found between the progeny of fine-wool ewes and the progeny of strong-wool ewes. The investigation is proceeding.

Progeny Tests and Strain Trials.—Data collected on the Canterbury Agricultural College flocks and on the Romney stud flock of Mr. R. Oakley, of Ashburton, have been analysed. Progeny-test graphs and breeding programmes have been prepared for these two flocks. Progeny-test investigations are being undertaken at the request of three other breeders.