Sheep Research

"*Bowie.*"—Following the success of the composite mineral lick in 1945–46, a trial was made in 1946–47 with a simple bone-flour salt lick. This was found to be ineffective in preventing the disease.

Progeny-testing: Romneys.—This project has yielded disappointing results. Progeny-testing as a method of selective breeding is based on the assumption that sires vary in the quality of their offspring, and that by selecting those individuals that have proven their capacity to leave superior progeny the rate of improvement will be accelerated. So far, 34 rams have been tested over the past three breeding seasons, and in no year has a really outstanding ram turned up. Equally, no really poor breeding-ram has been located; rather have all rams maintained a good performance level. A further series of rams is being tested this season, while a new sire, proven in the flock of one of the leading breeders of the Dominion and the sire of some of the highest-price Romney rams of recent years, has been brought into the nucleus stud flock for trial.

Inheritance of Count.—Two years' results from the experiments to test the inheritance of count in Romneys are now available.

Last year, count of the progeny followed the count of ewe reasonably well, but the two sires used did not breed in accordance with expectation, the stronger-woolled ram leaving lambs with a higher count than the fine-woolled ram. This year, results more in accord with expectations were secured; both sires and dams appeared to exert equal influence and a definite relation between count of parent and progeny existed. The experiment as designed is subject to the weakness that too few rams can be used, so that results tend to be confused by individual ram effects.

Inheritance of Carcass Conformation.—Further data on Romneys have been obtained during the season. Greater variation exists than in the Southdown cross, and it has become clear that more careful control of weight at slaughter will have to be obtained with the small numbers of sheep being employed. The same difficulty of ram individuality has been experienced as with the count experiment. A further test of good and poor carcass ewes with the Southdown ram is being conducted under field conditions on the property of a co-operating farmer.

Influence of Breed of Ram on Carcass Quality of Fat Lambs.—The experiments initiated last year have been continued. Some 50 lambs each from the eight fat-lamb ram breeds under study were bred and reared under the same conditions. Growth data were obtained and all carcasses were measured on the hooks. Results for two more seasons are required before analysis is attempted or any conclusions drawn.

Growth Studies in Hoggets.—The live-weight and carcass composition changes at monthly intervals of a flock of 150 hoggets over a twelve-month period have been measured. Four sheep were killed monthly and dissected for composition data.

Changes in live-weight with the normal fluctuation in seasonal feed supply were closely associated with changes in body composition; the sensitivity of bone was least, and fat most, in this regard; muscle occupied an intermediate position.

Nutrition of the Breeding-ewe.—As a background to experimental studies on ewe nutrition, an examination of live-weight changes of the breeding-ewes before and during pregnancy has been commenced at Ruakura. The work aims at determining whether live-weight changes during the period two to four weeks prior to mating affects the fertility level and whether subsequent changes are related to ewe losses during pregnancy, lamb mortality, and milk-production in the ewe. Practically the whole of the 1,800 breeding-ewes on the farm are involved in this project. No results are yet to hand.

Sterility of Two-tooth Breeding-ewes.—Accurate mating observations are being made on a flock of 100 two-tooth ewes, employing raddled rams. Ewes returning to service for the second time are being examined by laparotomy to determine whether failure to ovulate is the cause of infertility. If ovulation is occurring normally, more detailed observations on the timing of heat and ovulation will be made, and the tubes washed