

tupped with 6 Southdown rams and grazed together from the commencement of tupping until the lambs were removed for slaughter. Lambs were picked as "fats" in the normal manner, slaughtered, and relevant carcass measurements to assess quality accurately were obtained.

Results indicate that the type of fleece of the ewe, in so far as wool count is concerned, has no effect upon the carcass quality of the fat lamb. It is therefore unlikely that breeding for either strong or fine wool within the Romney breed would adversely affect the use of cast-for-age Romney ewes for fat-lamb production.

The Effect of Non-castration on the Quality of Southdown × Romney Fat Lambs.—This project has been completed, and the results over the past two seasons may be summarized as follows:—

- (a) The carcass quality of 280 entire (ram) lambs, 255 castrate (wether) lambs, and 286 (ewe) lambs, comparably bred and reared, has been determined by detailed carcass measurements.
- (b) In each season ram lambs have produced heavier carcasses than wethers and wethers heavier carcasses than ewes under the same conditions.
- (c) This superiority in weight was less in the poor season of 1945–46 than in the good season of 1944–45.
- (d) Non-castration increased bone size and muscle and reduced fat as compared with castration. Rams were wider in gigots, but longer legged and deeper in crutch, and thus were inferior in conformation to wether lambs.
- (e) Ram lambs graded slightly poorer than wether lambs under existing grading standards. Under standards calling for a more meaty carcass this situation would be reversed.
- (f) Despite the poorer grading, the extra weight enabled the ram lambs to command a premium over the wether lambs.

Influence of Breed of Ram on Carcass Quality of Fat Lambs.—Though the pre-eminence of the Southdown breed as a sire of fat lambs has been firmly established in New Zealand, a number of other fat-lamb ram breeds is also used by a proportion of farmers. Some of these are relative newcomers in the field. Experiments have been designed to compare the relative merits as fat-lamb sires over the Romney ewe of the following breeds: Romney, Southdown, Ryeland, Dorset Horn, English Leicester, Border Leicester, Suffolk, and Cheviot. Rams of these breeds have been paddock-mated during the present tupping season with even groups of 60 ewes. From tupping all ewes will be run together until lambs go away fat. Lambs will be individually measured on the hooks. The experiment will be continued for three seasons to measure any seasonal effects and to obtain adequate numbers. The work will parallel investigations that have been carried out by the same workers in the South Island for typical breeds and crosses of that area and will provide factual information on a subject upon which only opinions can be offered at present.

DAIRY CATTLE RESEARCH

Mastitis.—The milking season, 1945–46, was utilized to carry out a bacteriological survey of milking-herds in the North Island as a preliminary to instituting a mastitis-control scheme on an experimental basis. Milk samples from approximately 2,500 cows were examined from herds chosen at random in the Hutt Valley, Wairarapa, Manawatu, Taranaki, Hawke's Bay, and Waikato areas.

A limited amount of work was done in connection with treatment of mastitis. Studies on normal cows showed that udder infusions of sulphonamide-in-oil preparations had the least depressant action, while infusion with acriflavine caused considerable reduction in yield for a few days. Promising results were obtained by collaborators in the field from treating clinical cases with sulphanilamide by mouth and by infusion of acriflavine emulsions. Supplies of penicillin have now been obtained and its value in treatment of mastitis will be thoroughly studied.