the cause of which has not yet been determined. The abortion of sows in all groups excludes any common nutritional factor; moreover, from information gathered, abortion in sows was common in many districts at the time. Examination of aborted fœtuses and blood samples of the sows and boar did not show positive proof of any bacterial infection.

The autumn litters from the same sows have been normal in all instances, and the investigation is progressing satisfactorily, but has not yet advanced sufficiently to give definite information. Even at this stage, however, the advantages of good feeding at and after weaning are plainly seen. The sows which are well fed regain condition lost in the suckling-period, but sows turned out to pasture remain comparatively poor and are sometimes difficult to mate if a heavy boar is in use.

Winter Feeding of Store Pigs: In order that pigs may be profitably wintered as stores for fattening in the spring, the winter ration must be inexpensive and must consist largely of farm-produced root crops, pumpkins, carrots, &c. These crops are definient in protein, and this is best supplied in the form of meat-meal. Maize is commonly used in the Auckland Province, but is also protein deficient and should be supplemented with a protein meal for the best results. Winter-feeding trials with pumpkins, swedes, and carrots, together with various quantities of meat-meal, meat, and bone-meal and maize, are being conducted each year. The winter-feeding trials of 1938 were chiefly with pumpkins as the farm-grown crop. The results showed clearly the advantages of feeding small quantities of meat-meal with the pumpkins. Pigs receiving pumpkins only ate approximately 1¼ tons apiece in three months and gained only 7 lb. in live-weight. Pigs receiving ½ lb. of meat-meal per head per day in addition to pumpkins ate about ¾ of a ton of pumpkins and gained about 32 lb. in live-weight in the same period.

Trials with maize in place of the meat-meal gave less satisfactory results. The pigs did not thrive and put on the live-weight that was obtained with similar quantities of meat-meal, and pigs fed 1½ lb. of maize per head did not grow as fast as those receiving ½ lb. of meat-meal.

The value of cod-liver oil in the winter ration of pigs is also under investigation, and last season's trial will be repeated this year to confirm the results already obtained. Trials on winter feeding of maize and maize and meat-meal were also carried out at the Northern Wairoa Demonstration Farm, Dargaville.

Litter-production: The factors involved in the production of heavy weaning weights are under investigation, and all litters of the Ruakura herd are weighted at birth and at weekly intervals until weaning at eight weeks. Excellent weaning weights have been obtained, and the first fifty-five weaners born in 1939 average 45·6 lb. at eight weeks, the heaviest weaner being 62½ lb. The data will be examined statistically, and while such factors as birth weight, litter numbers, milking qualities of the sow, &c., play an important part in good litter-production, the chief factor is supplementary feeding by means of the creep from about three weeks onwards. Here management is all-important in having skim-milk and meals in a fresh condition, particularly in the early stages.

Cobalt Deficiency.—An investigation into the possibility of cobalt deficiency in Ruakura pastures was commenced in the autumn of 1938. The experiment was designed to see if pasture which at present fattens lambs satisfactorily with the usual top-dressing of super and lime showed improved results with the use of cobaltized super. This experiment was, unfortunately, upset by dogs worrying a number of the lambs from both the experimental and control groups. The trial will be repeated again this year.

A trial was conducted last winter and spring to see if the feeding-concentrates was of a benefit to in-lamb ewes which had been previously affected with facial eczema. Difficulty was experienced in getting the ewes to eat the concentrates, and a number of them refused their ration. Periodic weighting of the ewes and weighting the lambs at birth was carried out. The mortality in both ewes and lambs was noted, and the final results did not show any difference in favour of the concentrate feeding.

Facial Eczema.—Following the outbreak of facial eczema in the autumn of 1938, experimental areas were laid out at Ruakura and Gore's farm at Karamu. The experiments have been designed to (*a*) induce eczema, (*b*) prevent eczema. The work has been done in co-operation with the Live-stock Division and Chemistry Section. The Fields Division has been responsible for the establishment and management of the experimental areas and for the collection of pasture samples for the Chemistry Section.

The facial-eczema work has been supervised by the Facial Eczema Management Committee, and the Fields Superintendent has acted as Secretary of the Committee.

In addition to the experimental areas, twelve farms have been regularly examined and reported on for pasture and stock management.

Facial-eczema work has occupied a considerable amount of the Instructors' time. Fields Instructor Shepard has supervised Gore's farm; Assistant Instructor in Agriculture Brown has collected pasture samples at Gore's; Temporary Fields Instructor Simpson has collected data on pasture-management on the twelve farms and collected pasture samples at Ruakura.

Flock House.

Trainees.—The general standard of trainees coming forward has not, with a few exceptions, been good as one would like to see. This applies both to physique and general intellect.

Training progress, with due regard to the "raw material," has, I think, been satisfactory.

The boys have been well catered for in regard to sport and amusement generally, though there is not the enthusiasm shown that one would like to see.

Sheep.—Sheep, generally, have been maintained in satisfactory condition throughout the year, and though the months of January, February, and March were exceptionally dry, only 1·77 in. of rain being recorded for the three months, no real inconvenience has been felt in regard to shortage of feed.