

CATTLE DISEASES.

Johne's Disease.—There has been some increase in the numbers of Johne's specimens examined. The majority of specimens have been from positive reacting animals which have been slaughtered under the Stock Act following test with Johnin. A large number of such reactors do not appear to be voiding Johne's bacilli, and scrapings from the mucosa of the alimentary tract in many cases fail to show the presence of the organism. Many reactors to the test are not clinical cases.

We are still much indebted to Mr. Dunkin, of the Mill Hill Laboratory, England, for the supply of Johnin used in New Zealand. Using a culture also supplied by him, we have made Johnin at Wallaceville which has proved on field test equally as satisfactory as that issued by Dunkin.

With the advent of half-yearly testing of those herds from which cases of Johne's disease have been isolated from time to time, there is now some indication of the numbers of cows which one may find on initial testing of a herd. It is too soon to have had many herds retested since culling of reactors has been carried out. However, the primary test on twenty-five herds consisting of 1,458 head of cattle yielded 127 reactors or suspicious reactors—8·7 per cent.—which have been slaughtered.

Mastitis.—The numbers of milk-samples being examined under the mammitis-control scheme show no diminution. The percentage of cows placed in C group has risen somewhat in the Wallaceville examinations over last year. This may be due to the entry of new herds. Hamilton figures are much the same. In his report from Hamilton, Mr. Kidd, the officer in charge of milk examinations, stresses the fact that in dealing with 41,000 samples, 33,312 of which belong to the mammitis-control scheme operating in seventy herds, he and his limited staff are working under pressure for the greater part of the year.

An attempt was made to get a useful statistical perspective of the results of the scheme, but for several reasons the figures obtained gave no indication of general improvement. This is due to entry of new herds from time to time, to the fact that a number of very large herds where milking of cows in strict order is not carefully controlled, are amongst the number examined, and also to the fact that farmers in the scheme cull fewer cows and milk more as a result of their knowledge of the state of the udder health of individual cows, thus making it appear that their herds are showing no improvement, whereas the farmers themselves are very well satisfied with the position.

Very little original work on the mastitis problem was accomplished during the year at Wallaceville, but a routine bacteriological test of the Laboratory herd was kept going. Mr. T. A. Blake, Veterinarian at Hamilton, has, however, given attention to treatment. He reports that 128 clinically affected quarters were treated—11 with chlorine, 24 with Entozon, and 93 with ammonia. All of these quarters were examined microscopically, but no cultural tests were made. Improvements, which in some cases appeared to be complete, occurred, and about sixty quarters were giving secretion normal in appearance following the treatment. The quarters are to be re-examined after calving to decide whether the cure has been permanent or merely temporary. Mr. Blake is inclined to approve of the ammonia treatment as being cheaper and possibly more efficacious than other methods. He stresses, however, the necessity for persistent attention over a period of a week or more with any treatment adopted.

An abortion-free herd of forty-six cows shows eight dry quarters upon microscopical examination.

Sterility.—The bulk of sterility work on bulls has been carried out in the Waikato by Mr. T. A. Blake. He has classified bulls by seminal examination this year into—Good, 24; fair, 29; poor, 37; bad, 19; sterile, 0. Two bulls entirely unable to serve were noted this year, similar to those recorded by Professor Lagerlof, in Sweden.

An important finding late in the season was the presence in a herd of cows in the Waikato of the Protozoan parasite (*Trichomonas bovis*). This parasite has been associated in other countries with temporary sterility in dairy cows, the infection being carried by the bull from cow to cow. In view of this a careful watch is being kept for it by field officers. Treatment of the infected herd is being carried out by Mr. Blake with lactic acid.

Male rat sterility work is reported upon fully by Dr. I. J. Cunningham in his attached report.

Grass Staggers (Lactation Tetany, Hypo-magnesaemia).—The use of dolomite in prevention of hypomagnesaemia was reported upon by Mr. D. Marshall in December. Thirteen farms were included, and where dolomite-treated ensilage or dolomite-licks were fed out, very little grass staggers was encountered, whereas cows on neighbouring farms not having access to dolomite or magnesium sulphate were frequently affected. After several seasons' use on farms where tetany had previously been observed it would appear that dolomite in ensilage acts as a preventative of the condition. Recently the theory has been advanced in England that tetany results from a high intake of manganese which temporarily depresses the intake of magnesium. Tables were given of farms where grass staggers occurred and farms which were free. Analysis of pasture in New Zealand has shown no such relationship between magnesium and manganese, but a method for estimation of manganese in the blood of cows is being perfected for use in the coming season so that the theory may be checked up.

SHEEP DISEASES.

Photosensitivity.—The Southdown lambs previously mentioned as having been obtained by crossing a photosensitive male with apparently non-sensitive females have this season been mated brother to sister. Lambing will occur in August, 1937.

A photosensitive Southdown ram lamb has been kept perfectly healthy on hay, chaff, and crushed oats, but readily becomes sensitive to light if placed on cut green rye-grass or clover. The rye-grass acts rather more quickly than does clover in producing irritation.

Circling Disease.—Numerous cures have again been reported, and specimens of heads and of live sheep have been received. While in all true cases of circling disease *Listerella* can be found present, yet the suspected carrier—the small *O. ovis* larva—has not been found present on every occasion in the nasal cavity. Where live sheep have been received at the Laboratory suffering from the disease the spinal fluid has been found turbid with cells, and on occasion organisms have been obtained on culture. There appears also to be an increase in round-cell content of the livers of sheep, particularly in relation to the small afferent blood-vessels.

Further brain inoculation experiments in mice and spine inoculations of sheep have failed to create a typical case of the disease and have failed to suggest the presence of a virus as a primary infection. The mode of entry of the organism is therefore still obscure.

Pneumonia.—A lobar type of pneumonia with considerable effusion of fluid into the pleural cavity has been noted in the Southland district. Many farms were affected and the disease had every appearance of being epizootic. The percentage of sheep affected on any one farm at one time was, however, small.