

## STREPTOCOCCIC MASTITIS.

Work in mastitis has been largely bound up with that of *B. abortus* in the Laboratory. Field-work mainly undertaken by Mr. Blake in the Waikato, and aided by the Hamilton Branch Laboratory, has been undertaken to show that basing mastitis on the diagnosis by means of leucocytes it is possible considerably to prevent the spread of mastitis in herds by milking those cows diagnosed microscopically as normal first, and all others afterwards—i.e., by grading the cows for milking purposes. Mr. Blake's work has already tended to show that normal cows do not contract mastitis nearly as readily where such precautions are taken, and that there is less of wastage of cows through culling at the end of the season. An endeavour is also being made in such herds for the general introduction of disinfection of teats after milking of each cow in order to curb the numbers of deleterious organisms lodging in the teat sphincter between milkings.

## MILK-FEVER IN COWS.

An extensive trial of calcium chloride intravenously and per month and calcium gluconate subcutaneously was carried out by Mr. Blake in the Waikato district. The incidence of this disturbance was particularly high, and on some farms a very large percentage of cows became affected. The paralytic type, without loss of consciousness, was very much in evidence, and was treated in the same way as the typical milk-fever.

Results were particularly good, and undoubtedly many cows, upon which inflation of the udder appeared to be having little or no effect, were saved. Cases occurred, too, where the preventive method of dosing drinking-water with CaO appears to have been a factor in stopping a run of milk-fever on certain farms.

## SO-CALLED PARTURIENT ECLAMPSIA OF COWS.

A very much lessened amount of this condition was noted, and it was not possible to carry out the investigational work, mainly of a biochemical nature, which had been decided upon. In the few cases seen the blood calcium level was lower than normal. The introduction of calcium chloride (CaCl<sub>2</sub>) and of formalin, intravenously, did not prove beneficial. As in the previous year, treatment by chloral hydrate per rectum in the early stages was the only method which gave success at all, and that not regularly.

## JÖHNE'S DISEASE.

Jöhne's disease appeared on three farms during the year, and several suspicious specimens were received for diagnosis. "Johnin" was used successfully to a very limited extent as an intradermal test. The fact that this disease has recently been scheduled has given more power for dealing with it, and it is hoped to test all herds from which cases are diagnosed in order to prevent further spread.

## BLACKLEG.

A large number of specimens were received this year from calves to determine whether the cases cropping up throughout affected areas and occasionally in clean areas were or were not blackleg. As a result, it was found that the majority of cases in affected districts were due to *B. chauvoei*, although some were definitely due to the *Vibrio septique*. In clean areas, however, the cases were all due to *Vibrio septique* without exception. Owing possibly to good feed conditions there was a higher mortality than usual.

For some time it has been the aim of the Laboratory to put a more scientific vaccine into the hands of the officers for controlling this disease, and this year instead of the powder vaccine the new formalinized liquid vaccine was used. Very few deaths have been noticed—fewer than with the powder vaccine. Those officers using the vaccine have expressed their appreciation of the change.

## SHEEP-DISEASES.

## CASEOUS LYMPHADENITIS.

Serious attention has been paid to caseous lymphadenitis during the year, both to the incidence of the disease throughout the country as found during palpation and incision in the meat-works and also to the method of infection.

Laboratory experimental work was carried out as follows:—

(a) Six hoggets lightly affected with parasitic gastro-enteritis were fed cultures of a Cambridge strain and a New Zealand strain, three hoggets to each. Cultures were washed off Loeffler's blood serum and fed in 10 c.c. amounts on eight occasions at intervals of a fortnight. The first hogget was killed in June—weeks after commencement of feeding, and showed a lesion in the retropharyngeal gland. A second was killed in July and also showed a retropharyngeal gland affected only. A third hogget killed three months after commencement of feeding showed a similar lesion. The fourth hogget killed eight months after feeding commenced showed not only the retropharyngeal gland but also two other lymph glands, one in the region of the pancreas and the other over the rumen. Two remain and are in excellent condition without palpable lesions.

(b) Ten affected old ewes were obtained from a farm in the Wairarapa for observation over a long period at Wallaceville. They have been examined at least every fortnight and a record of their lesions, lambing dates, shearing experiences, &c., kept over the year. Three of the ten have abscesses, chronic in character, which have not ruptured, the remainder have ruptured at least once. Two ruptured a second time, two have died or been killed, and four now feel normal in the original glands, but may or may not have developed infection in other glands following shearing, when blades infected with pus were in some cases used.

(c) Eight of these ewes lambed, but none of the lambs developed infection with the Preisz Nocard organism as far as could be noted in those slaughtered.

(d) At shearing, ewes were shorn alternately with lambs and clean hoggets. Several of the hoggets were shorn with shears smeared with pus from caseous lymphadenitis abscesses obtained from natural cases, and four of these were sprayed with a dip fluid directly after shearing. Where cuts with an overlapping portion of skin were left, sores developed showing a characteristic green pus, later in two such hoggets definite typical lesions developed and were found on slaughter. In another not yet slaughtered there is a growing abscess. Although infection did not occur in more than three out of the seven, two of these were in the sprayed animals, tending to show the fallacy of expecting a dip following shearing to protect the sheep from caseous lymphadenitis where the cuts are of an overlapping nature.