

PIG DISEASES.

Zinc Poisoning.—Experiments on the production of zinc poisoning by feeding zinc in the form of zinc lactate were continued. Two pigs were fed milk containing 2.02 grams zinc lactate per gallon, and two milk containing 1.01 grams per gallon. They received approximately half a gallon of milk each per day at first, but this was increased until after the first month they were getting 1½ gallons each per day. Within three months they all developed symptoms of zinc poisoning, and three of the four succumbed. Further experiments with smaller doses of zinc are in progress. Pigs receiving 0.5 grams zinc lactate per day for two months still show no ill effect.

Sterility.—Dr. I. J. Cunningham has commenced an experiment to determine the effect of various diets on the fertility of male pigs.

Mr. T. A. Blake has examined semen from two boars, one of which he considered fair and the other poor.

Stephanuris dentatus.—One or two pigs killed at the Auckland abattoir showed kidney-worm infestation, this being the first time this worm has been seen in New Zealand.

PARASITOLOGY.

Blowfly Investigation.—Owing to the departure of Mr. V. G. Cole, work on this subject has been somewhat curtailed. Mr. W. V. Macfarlane has taken over the blowfly work in Marlborough which was commenced by Mr. Cole. He is conducting a survey of blowfly strike and studying the types of strike and the fly species concerned. An experiment designed to determine the value of trapping was largely unsuccessful owing to the low incidence of strike in the untrapped controls. Fleecerot occurring during hot, humid weather was considered to be an important contributing factor to back strike.

Rotational Grazing Experiment.—Two groups of fourteen similar lambs are being run in an experiment designed to test the benefit of rotation. Regular weighings of sheep and egg counts are being carried out. After some seven months the sheep in both groups are fairly comparable. However, three sheep of the unrotated group have died as against one of the rotated group.

Intestinal Parasites of Sheep.—A limited amount of work only was done on this subject. Mr. Jones carried out a number of routine parasite counts in connection with the Canterbury sheep-disease survey. It is felt that intestinal parasites play an important part in sheep mortalities in this district.

Liver-fluke of Sheep.—Mr. Macfarlane has investigated the snail intermediate host for *Fasciola hepatica* in the Hawke's Bay district. Whereas it was formerly believed that the intermediate host was the small black mollusc (*Potamopyrgus*), the only snail actually shown in the recent survey to act as host was *Myxas ampulla*. Usually flukey country showed about 5 per cent. of this species to be carrying parasites, which were identified by feeding to rabbits at Wallaceville. The mature fluke was recovered from the rabbits after some fifty days (see publication).

A few cases of liver-fluke infestation have been reported from Otago. This is the first time that liver-fluke has been recorded in this district. There are also odd cases in the Nelson district, and Mr. Macfarlane is to survey the position as soon as opportunity offers.

Davainea proglottina.—Mr. Macfarlane is investigating the intermediate host of this parasite in New Zealand.

DEFICIENCY DISEASES.

The value of pure cobalt in bush sickness was demonstrated by a cobalt-drenching experiment on sheep at Arohena (see publication). It is being found that country previously thought to be normal may be somewhat low in cobalt, and cobaltized lick is being popularized. Cobaltized lick is to be preferred in some cases to limonite which is sometimes low in cobalt. A mixture of the two is frequently advocated.

Mr. Filmer, who, in association with Underwood, was responsible for the early cobalt work in Western Australia, took up his duties at Wallaceville during February. He will be responsible for the activities with regard to nutritional diseases and will work in collaboration with Dr. I. J. Cunningham. Mr. Filmer is planning a cobalt top-dressing experiment with a view to determining the concentration necessary for maintenance of health, and at the same time will study the pathology of bush sickness.

Dr. Cunningham has commenced experiments to determine the physiological action of cobalt.

DIAGNOSTIC SECTION.

Report of L. W. N. FITZGERALD, B.V.Sc., Assistant Officer in Charge.

This is the first year in which the activities of the Diagnostic Section have been in any measure distinguished from those of the Laboratory as a whole. It has hitherto been the practice for all Veterinarians at Wallaceville to share in the diagnostic duties while carrying out research into various problems as opportunity offered.

Owing to the resignation of our senior Laboratory Assistant at a time when seasonal activities were very heavy, and to his not being replaced for some months, we were for a while somewhat handicapped. However, with the arrival in September, 1937, of Mr. J. J. G. Peddie as Senior Bacteriologist, and in January, 1938, of a second veterinary officer in Mr. M. B. Buddle, we were in a position to organize the activities of the section along lines ensuring its most efficient operation.

Briefly, the work of the Diagnostic Section may be defined as:—

- (1) The examination of pathological material.
- (2) The preparation and distribution of biological products and the distribution of certain imported biological products.
- (3) The investigation of a variety of disease problems which do not fall within the province of a whole-time research officer.