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PARASITIC DISEASES AFFECTING RABBITS *

IN THE WAIRARAPA DISTRICT (REPORT ON),

Presented to both Houses of the General Assembly by Command of His Excellency.

REPORT ON THE PARASITIC DISEASES AFFECTING RABBITS IN THE WAIRARAPA DISTRICT.
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(Stock Branch).

University College, Auckland, 20th February, 1889.

AN interim report on the present subject was submitted to the Hon. the Minister of Lands in May, 1888 (Parliamentary Paper H.-18, 1888). Since that time my experiments have been completed, and I am now able to speak more definitely of the value of the diseases as a means of combating the rabbit-pest. The delay in concluding the report has been due to the slow development of the bladder-worm disease, and the time required to work out the results of a very extensive series of experiments on more than forty animals, including rabbits, dogs, cats, ferrets, and sheep. These experiments have been carried out single-handed, and with no assistance except in the feeding of the numerous animals under observation.

The report will be arranged under the following heads:—

- I. The decrease of rabbits in the Wairarapa, and the causes to which it has been assigned.
- II. Observations and experiments on the parasitic diseases of rabbits found in the Wairarapa.
 1. The bladder-worm (*Cœnurus serialis*): its nature. Mode of studying its development.
 2. Experiments on rabbits. Development of the bladder-worm.
 3. Experiments on carnivorous animals with the bladder-worm.
 4. Tape-worm (*Tania serialis*) reared in the dog: its characters.
 5. Is the *Cœnurus* of the rabbit distinct from that of the sheep?
 6. Smaller bladder-worm of the rabbit (*Cysticercus pisiformis*).
 7. Coccidia of the rabbit's liver.
 8. Other parasites of the rabbit.
- III. Value of the diseases as a means of dealing with the rabbit-pest:—
 1. General conditions to be satisfied by any disease used as a remedy for the rabbit-pest.
 2. Value of the bladder-worm. Conditions for the spread of the disease.
 3. Value of the liver-coccidia.
 4. How far is the reduction of rabbits by parasitic disease possible?
 5. Summary.

I. THE DECREASE OF RABBITS IN THE WAIRARAPA.

The rabbits in the Wairarapa district, and especially on the plain, have unquestionably been greatly diminishing in numbers during the last few years. The diminution has been attributed to the following causes: (1) Poisoning—chiefly with phosphorized grain in the winter time; (2) trapping, and the use of dogs; (3) the liberation of the natural enemies—viz., cats, ferrets, and, more recently, stoats and weasels; (4) parasitic disease—viz., that caused by the bladder-worm.

It is, I believe, generally admitted by stock-owners and farmers in the Wairarapa that the winter poisoning by means of phosphorized grain, followed up by rabbiting during the rest of the year, has been the most efficient cause of the decrease of the rabbits. A very large number of ferrets—probably not fewer than three thousand—and a considerable number of cats have been turned out, and more recently stoats and weasels have been liberated. It is not easy to gauge with accuracy the amount of destruction accomplished amongst the rabbits by animals which seek concealment from the eyes of man; but I was able to satisfy myself that both ferrets and cats are numerous in some places, at least, and that they appear to render good service.

With reference to the fourth cause, it is well known that it has been claimed that the bladder-worm has been largely instrumental in reducing the rabbits, and that it affords a remedy for the rabbit-pest worthy of the reward offered by the New South Wales Government.

It will be desirable, therefore, to describe the life-history and effects of this and other parasites, as shown both by my observations in the Wairarapa and by experiments in the laboratory, somewhat fully. We shall then be in a better position to form a correct estimate of the value of the disease with reference to the rabbit-pest.