

To what extent, it will be asked, can the prevalence or severity be increased? The only means which can be adopted to secure the maximum destruction by the disease is to increase the chances of rabbits swallowing the tape-worm eggs. We must keep as many tape-worms as possible in the neighbourhood—that is, we must make sure that each dog carries his due complement of tape-worms, and we must see, further, that the dog passes frequently over ground where the rabbits feed. It would be useless, of course, to keep the dogs chained up at home. The rabbit's pack of dogs will obviously be the most suitable for the purpose, though any dogs will do which are kept under supervision. It will not do to liberate dogs to run wild and keep down the rabbits, as has been done in the case of cats, ferrets, &c., for dogs would quickly learn to attack the sheep.

The disease, of course, can be encouraged largely, though not indefinitely, by increasing the number of dogs in the neighbourhood; but here the question of cost and other practical matters demand consideration. The rabbit's dogs and any other dogs already kept could, of course, be employed to disseminate the disease without incurring any special expense (always supposing the dogs do not suffer—a point to be considered later on). But these dogs have already been unconsciously used in the way indicated, and, though some of them have had their power of distribution restrained by medicine to cure the tape-worm, it will, I believe, be necessary to increase the number of dogs to secure any much greater prevalence of the disease. With the increase of the dogs expenses will arise, though it will clearly be desirable to use the dogs for rabbiting also. If the dogs are not made useful in other ways, I doubt if the results they produce in disseminating the bladder-worm disease would, as a rule, be commensurate with the cost of maintaining and supervising them.

We have seen above that the bladder-worm that we are now considering has been found in various parts of Europe, and we are therefore naturally led to ask, What are its effects there? Has it been found to cause any destructive epidemic among rabbits? I have not been able in the literature of the subject to find any statement of any serious epidemic of the kind, and, though the disease has been long and firmly established in various parts of Europe, I do not find any record of its occurring anywhere so commonly as it appears to have done in the Wairarapa.

The greater prevalence which the bladder-worm has shown in the Wairarapa is probably due in part to the moisture of the climate during a considerable portion of the year, in part to the abundance of both rabbits and dogs, many of which are used chiefly or entirely for rabbiting, and are allowed to feed upon uncooked rabbits, and so are generally infested with the tape-worm. In England the rabbit is valuable for the market; in the rabbit districts in New Zealand it is at best looked upon as food for dogs. There can be no doubt that the disease has been introduced into the Wairarapa from Europe, and probably England, where it has been found in Norfolk, near Oxford, and in Ayrshire. It is most probable that the disease has been brought by a dog infested with *Tænia serialis*.

In the "Transactions of the New Zealand Institute," Vol. xx., p. 457, will be found a statement by Sir J. Hector "that in America he had seen large tracts of country cleared of rabbits in a few months by the propagation of this disease"—namely, bladder-worm. In the absence of detailed evidence, I think it highly doubtful whether the disease which is said almost to exterminate the Canadian rabbit (not the same species as the English rabbit) is due to a bladder-worm. The statements made by Mr. C. N. Bell, of Winnipeg, do not bear out any such idea. The two known bladder-worms of the rabbit (the *Cœnurus serialis* and *Cysticercus pisiformis*) are most certainly not likely to effect such sweeping destruction. Although known so long in Europe, nothing of the kind has ever been observed there.

It may be asked why the *Cœnurus* is more injurious to rabbits than a good many other bladder-worms are to their hosts. The injury is partly due to the size which this bladder-worm attains and partly to the positions it sometimes occupies. The *Cysticercus pisiformis*, the other bladder-worm of the rabbit, is of very much smaller size, and I have found over four hundred examples in a single rabbit, which was not obviously suffering from its load of parasites. But a single *Cœnurus* may have a bulk greater than two hundred of the *Cysticercus pisiformis*, and the latter, though they may create a good deal of disturbance in their early development in the liver, subsequently settle in a position in which their presence does little harm. We are, however, acquainted with bladder-worms which do create injurious epidemics in other animals—for instance, the other species of *Cœnurus* (*C. cerebralis*), which formerly caused serious losses amongst flocks of sheep. This bladder-worm was probably more hurtful than the *Cœnurus* of the rabbit, for it occurred in the brain, an organ specially susceptible to injury. The *Echinococcus*, or hydatid of man and some of the domestic animals, is also an example of a large form of bladder-worm, causing severe injury to its host. As is well known, it is very prevalent in the Colony of Victoria, and is often fatal to human life.

*Second Condition.*—The disease must not be injurious to man or any of the animals useful to man. The best evidence showing that the bladder-worm satisfies this condition is that, although from time to time it has been so common in the Wairarapa, yet the stock feeding on the same ground have never suffered. The *Cœnurus* of the rabbit, however, bears a certain resemblance to the *Cœnurus* producing a disease in the sheep, and I have therefore taken considerable trouble to find out whether the two species are distinct or not. The results are detailed above (II., 5), and the evidence there given shows that the *Cœnurus* of the rabbit is distinct from that of the sheep, and that sheep fed with the eggs of the *Tænia serialis* remain free from bladder-worm.

There remains, however, one point to consider, and that is, What is the effect of the tape-worm on the dog? Do the dogs suffer when harbouring the tape-worm? I do not think they suffer to any serious extent: the dogs which I have seen as hosts of the tape-worm have been in apparent good health. Of course, the parasites require to be fed, and the dogs may be a little thinner and consume rather more food than they would otherwise do; but if at any time a dog seems to suffer from its parasite it will be easy to secure a little rest for it by administering a dose of medicine to