

## THE ECONOMIC ASPECT OF WARBLE FLIES

BY SEYMOUR HADWEN.

During the summer of 1912 while conducting an investigation on Hamaturia (Red Water) in cattle at Agassiz, British Columbia, I had an exceptional opportunity for studying warbles in the experimental animals under observation. When discussing my work with Dr. F. Torrance, Veterinary Director General, under whose authorization the work was done, he suggested that it would be well to find out what damage was caused by warble flies throughout the country, and with that end in view to communicate with the tanners in the different provinces. A circular letter was sent out from the head office and as a result thirty-six letters were received in answer. These letters have been abstracted and the results are tabulated below.

The evidence collected shows that warbles damage hides to a very great extent in the Dominion; it also clearly demonstrates that the investigation which has been conducted in a small way at Agassiz should be continued and extended.

There is no doubt that the abstracted information is most accurate, the letters coming from a class of sound business men, who have no interest in the matter save to get hides free from warbles.

The man who undoubtedly loses is the farmer; the tanner does not want warbled hides at any price, and several of them testify that they only buy hides during the season when hides are not grubby (the autumn).

The uses a grubby hide can be put to are very limited, and for some purposes appear to be useless; for instance in the manufacture of belts for machinery.

Several interesting facts are brought out concerning the grades of hides most affected with warbles, some of these can be explained by a knowledge of the life history of the parasite. Another point made clear is with a little care on the part of the farmer, certain classes of cattle would be kept comparatively free from warbles.

The class of animals which are the worst affected are 'range' cattle and here lies the most difficult problem, as no method of any sort has been found to prevent the ravages of the fly among semi-wild animals.

The economic loss caused by worry, loss of milk, etc., has not been dealt with, as no new facts have been ascertained.