

CONCLUSION.

While the condition is not serious, it yet causes a definite loss through rendering the carcasses unmarketable from the export point of view. It is, besides, difficult to assume that some animals did not succumb as a result of severe tympanitis, when the nature of the feed and the seriousness of the lesion observed are considered, and probably had a careful *post-mortem* examination been made on all animals that did die—and there is always some mortality—much light might have been thrown on the whole condition. At all events, it seems certain that, were a little more care exercised at that period of the year in feeding lambs, and especially in allowing them a change of feed, this lesion would not be observed, and the general mortality would certainly be lessened.

HÆMATOPINUS (BLOOD-SUCKING LOUSE) OF SHEEP.

In my annual report of 1906 a history of the occurrence of this parasite affecting certain sheep in the Dominion was given, along with a drawing of its general appearance under the microscope, by Mr. H. C. Wilkie, F.R.C.V.S., late Government Veterinarian, but now resident in England.

Specimens of the parasite were sent to Professor Neumann, the great authority on the subject of parasites, at the Toulouse Veterinary College, who reported through Mr. Wilkie that, although specimens were not in a satisfactory state of preservation for complete examination and study, yet there was no doubt they were of a hitherto unknown and undescribed species, though closely related to the *Hæmatopinus vituli* (Linn.) of calves.

Last year I conveyed further specimens of these parasites to Europe, hoping to be able to hand them personally to Professor Neumann. Being unable to visit him, however, I posted them from London, writing fully regarding their occurrence. I pointed out that, as sheep were not indigenous to New Zealand, and had only been introduced within the past sixty years, and that as these parasites apparently affected none of the native fauna, it was certain—strange as it might seem—that these parasites, although hitherto unrecognised, were to be found in Europe. This has been found to be the case.

In the August number of the *Revue Veterinaire* Professor Neumann gives a complete description of the parasite, of which the following is a translation:—

Following is the description of the new species of pediculus of the sheep, for which I propose the name of *Hæmatopinus ovillus*:—

Head: A little longer than the thorax, and much longer than broad, cone-shaped, rounded in front, expanding behind the antennæ, beyond which the convex sides become practically parallel, a wing-like trans-

parent projection covering the upper proximal third of the first segment; on the dorsal and slightly on the ventral surfaces the posterior extremity narrows and becomes inserted into the thorax. Eye flat, small, and barely visible. Antennæ strong, the first article one-third wider than long, the second as long as the first but narrower, the third, the fourth, and the fifth nearly equal in length but scarcely narrower than the second, the third and fourth as broad as long, the fifth truncated. On each side a marginal band extends from the posterior angle to the orifice of the proboscis, being interrupted at the level of the eye and of the antennæ; on the ventral surface runs a transverse band larger and lighter-coloured, at equal distance from the anterior apex and antennæ. On each side along the border, behind the antennæ, are three separated spiniform hairs; in front of the antennæ, two others; around the proboscis, six others. On the dorsal aspect, in the posterior half of each side, a sub-marginal row of five long hairs directed backwards and inwards, besides two submedian shorter hairs. On the ventral aspect a fine hair within each orbit.

Thorax: Slightly shorter than the head, a third broader, sides parallel, anterior and posterior angles rounded, the posterior margin slightly concave. On the dorsal aspect a V-shaped longitudinal depression, broad in front, for the reception of the head; on each side two ridges, the anterior oblique, the posterior transverse, dividing the thorax into three segments; there are two long submedian hairs on the middle segment.

Latero-dorsal stigma above the second intercostal space, very large, its diameter nearly equal to that of the tibia. No sternal spots. Legs of average size, the first pair less developed. Femur subtriangular, without chitinous armature. Tibia much longer than the femur, without stripes, greatly enlarged at the extremity (without a shield). Tarsus straight, with long claws, narrow, slightly incurved, much more slender in the first pair.

Abdomen (female) oval, larger towards the median portion of its length, slightly undulated on the margins, segmentation, especially on the dorsal aspect, not pronounced; the six latero-dorsal stigmata very distinct, whitish, smaller than those of the thorax; on each segment two converging rows of long hairs, longest on the last segments; no marginal stripes; ninth segment bi-lobed by two lateral projections surrounded in front and on the sides by a light-coloured ventral stripe, the projections furnished with long ventral hairs arranged in series. In the male the abdomen presents its greatest breadth a little in front of the median portion. Genital pore large, forming a transverse band occupying two-thirds of the ventral aspect of the seventh segment and continued in a lesser degree on the eighth. Exterior appendices of the penis recurved.

General colour varying from fawn to yellowish-brown.

Dimensions: Male, 2.1 mm.; female, 2.8 mm.

	Length.		Breadth.	
	Male. Mm.	Female. Mm.	Male. Mm.	Female. Mm.
Head ...	0.45	0.46	0.26	0.26
Thorax ...	0.40	0.40	0.35	0.35
Abdomen ...	1.25	1.95	0.70	0.85
Antennæ ...	0.28	0.32		
3rd femur ...	0.11	0.14		
3rd tibia and tarsus	0.25	0.28		

This species is related to the *Hæmatopinus vituli* (of cattle) and the *Hæmatopinus stenopsis* (of the goat).

In dealing with the subject generally, the professor, after drawing attention to the two very different species of lice (the *Hæmatopinus* and the *Trichodectes*) affecting domesticated animals (excepting guinea-pigs, in which pityriasis or lousiness is caused exclusively by the Gyropes), both being comparatively large and readily seen, states,—

It would appear, then, that our knowledge of this group of parasites, in so far as it concerns the domesticated animals, should have long since been complete, and that they would have had less chance of escaping the observation of owners and parasitologists than other species.

Such, however, appears to have been the case with pityriasis of sheep, which has been ascribed exclusively to the *Trichodectes ovis* (L) or *Tr. sphaerocephalus* (Nitzsch).

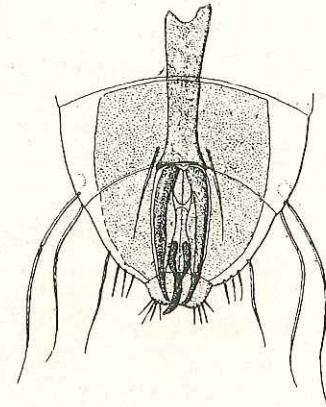
As to the presence of this parasite in European flocks as surmised by me, Mons. Neumann in his article states,—

By an interesting coincidence, two months after Mr. Wilkie had sent me a preparation of the *Hæmatopinus* I received some others, still less satisfactory, which were forwarded to me by Mr. William Evans, of Edinburgh. These specimens from Scotland had also been collected from the face of a sheep, but of a different breed (Black-faced breed). I easily recognised that these lice from Scotch sheep were of the same species as those from the New Zealand sheep. This recognition was of additional interest owing to the identical site of the parasites, which in each case had been found on the face. They evidently have the same origin; and, since the New Zealand sheep belong to a British variety, it is the north of Great Britain which is the home of this new species of *Hæmatopinus*. In fact, I recollect that the Black-faced breed belong to Scotland, and the Border Leicester variety to the north of England and south of Scotland.

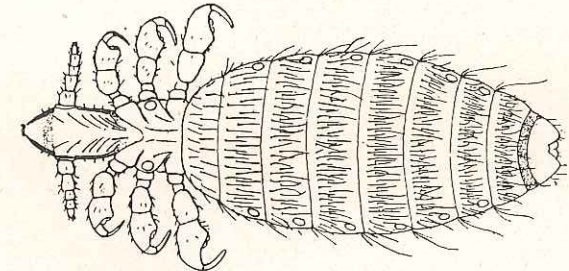
The fact that this parasite (which is apparently confined entirely to sheep, and from our knowledge of such parasites generally must have been closely associated with sheep for thousands of years, in some part of Europe) should first be observed as something heretofore unrecognised in practically the last country of the world to which sheep have been introduced, and where mammals have never been indigenous in the true sense, is, to say the least, remarkable, and alone affords sufficient reason for a full description in this report.

THE SHEEP-MAGGOT.

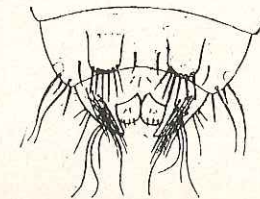
During the year, and prior to the season when the trouble is likely to be prevalent, a Bulletin (No. 12, Veterinary Division) on the sheep-maggot was published, a copy being sent to every sheep-farmer in the Dominion. As a result, specimens of maggots have been received from different parts, and, although as yet not common in New Zealand, the fly has proved not to be confined to one particular district.



MALE : POSTERIOR EXTREMITY, VENTRAL ASPECT.



FEMALE : DORSAL ASPECT.



FEMALE : POSTERIOR EXTREMITY, VENTRAL ASPECT.

BLOOD-SUCKING LOUSE OF SHEEP (*Hæmatopinus ovis*). (After Neumann
From *Revue Veterinaire*, 1st August, 1907, tome xxxii.)
Ag. Rept.]