and nose around, and track up to a hole in the wall. At every such point Salt stuck in a peg. Each peg, I was told, marked where a trap would be placed, because the ferret’s behaviour showed that a bitch stoat had passed that way recently. I learned later that seven stoats were taken in those traps that night, six females and one male.

Recently (in 1929) a keeper in this district lost a small very dark brown ferret while ferreting. She slipped her strap in a burrow and was seen no more. This winter a rabbit-catcher has trapped several stoats with much darker coats than usual, very little white on the belly, and bushier tails without the long-haired black tip. His captures were made within half a mile of the spot where the ferret escaped. I wonder if ferrets and stoats can and do interbreed?

ON MALLOPHAGA (BITING LICE) AFFECTING THE MAMMALS OF NORTHUMBERLAND AND DURHAM.

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In my article on the Anoplura or Sucking Lice of Northumberland and Durham (Vesiculum XVI., pp. 103-106) I referred to a small group of Biting or Bird-Lice that affects Mammals. As Mr. Stephen E. Cook has filled in further blanks of our knowledge of this latter group since his discovery of the Otter-louse, some account of the Mammal-affecting Mallophaga might now be published with advantage. We know that the Bird-Lice (or Biting Lice) are divided into two main groups—the Sub-orders, Ischnocera and Amblycera. These Sub-orders are again divided as follows:

Sub-order Ischnocera.

(a) With 3-segmented antennae and single-clawed tarsi; a small family infesting mammals.

Fam. Trichodectidae.
the jaws and bent down to pick up the supposed corpse. No sooner did he touch it than it sprang up, seized his little finger in its teeth and dug its claws into his hand and wrist. After some swearing and shaking he succeeded in strangling the animal, but he carried the marks of tooth and claw for a week or two.

If caught by the foot they sometimes escape by gnawing off the limb. Last week I saw a stoat which had evidently lost part of a hind leg in this way, and I am told that it is not unusual to meet with stoats so maimed or lacking a paw. To avoid this kind of thing, many trappers set their traps slightly below the surface of the trap-run with a hollow underneath, with the result that the captives are caught firmly by the shoulder or neck or middle, and not "limbed."

Stoats often ascend into hedges and shrubs to despoil birds’ nests of eggs and young, not clawing their way up as a cat does, but in a creeping, crawling fashion, and are able to descend head foremost with booty in both claw and jaw. On one occasion a keeper espied a stoat in a thorn-bush and tried to poke it down with his gun, when to his great surprise it sprang clean over his head and was out of sight before he could turn round.

Can, and do ferrets interbreed with stoats? That is a point on which I should like the opinion of readers of *The Væctilium*. Some of my keeper friends maintain that they do and adduce proofs thereof. Others declare that they do not, or at least that they know of no evidence of it. I give no opinion one way or the other, yet I believe that it may be possible. Many years ago I knew a keeper in Yorkshire, Salt by name, whom I often accompanied on his rounds. One day, taking an under-keeper and a male ferret with us, we proceeded to a sheepfold on the edge of the moor. This sheepfold, a circular enclosure surrounded by a dry wall of stone and turf, was alive with stoats. Salt tied a string to the ferret’s collar and let the animal wander freely about so as to traverse the whole space within the fold. Now and again the ferret would sniff and run from point to point, stop
On Mallophaga (Biting Lice) Affecting Mammals. 15

(b) With 5-segmented antennae and two-clawed tarsi; numerous genera infesting birds.
   Fam. Philopteridae.

Sub-order Amblycera.

(a) With single-clawed tarsi; a small family infesting mammals (cavies, agouti, peccary, etc.)
   Fam. Gyropidae.

(b) With 2-clawed tarsi; several genera infesting birds and 3 genera infesting marsupials.
   Fam. Liotheidae.

We are interested in the first family of each Sub-order, that is, the Trichodectidae and Gyropidae, and a large proportion of our records are from domestic animals. Our Trichodectidae are spread over two Orders of mammals—the Ungulates (which are also parasitized by blood-sucking lice) and the Carnivores, the families of which (Felidae, Canidae and Mustelidae) are peculiarly free from Anopluran parasites. The rodents are not represented, and our Palearctic and Nearctic rodents, Muridae (mice, rats, etc.) and Sciuridae (squirrels) are almost entirely, if not exclusively, parasitized by the Anoplura. On the other hand, the Gyropidae, which are with one exception peculiar to South America, are largely concentrated on rodents such as the cavies and mocos (Caviidae); the agoutis (Dasyproctidae); the chinchillas and tuco-tucos (Chinchillidae and Octodontidae), which, on the other hand, are peculiarly free from Anoplura. But these facts will be discussed more fully in another paper.

As in my Anoplura list I have included other species that may occur with us (one in square brackets being to the best of my knowledge a species not yet recognised as British), and an asterisk denotes our local species. The true Trichodectes equi from the horse and T. exilis from the otter were, for the first time, discovered as British from our Northern Counties. I take the opportunity of substituting Denny's generic name Micropus for the Gyropid genus Gliricola.
The Vascularium.

FAMILY Trichodectidae.

(1) LICE OF THE GENUS Trichodectes FROM Ungulates. T. climax Nitzsch (limbatus Gerv.).
1880 Piaget, l.c., pl. XXXII, fig. 1.
Louse of the goat.

T. ovis L. (apharoecephalus N.).
1842 Denny, l.c., p. 193, XVII—14.
Louse of the sheep. The goat and sheep should be searched for their parasites.

1880 Piaget, l.c., p. 396, pl. XXXII, fig. 4.
The complicated synonymy of this species and T. pilosus (parampilosus) is set out by Johnston and Harrison, Proc. Roy. Soc., Q’land, 1912, XXIV, p. 21. Examples submitted me towards the end of 1913 from horses in Newcastle and Gateshead were, I believe, the first British examples to be detected.

*T. bosis L. (scalaris Nitzsch).
1842 Denny, l.c., p. 191, pl. XVII, fig. 9.
1840 Piaget, l.c., p. 396, pl. XXXIII, fig. 2.
Louse of the ox (Bos taurus) and probably not uncommon. I have seen examples from Stamfordham, Northumberland, and Fatfield, Co. Durham.

*T. pilosus Greb. nec Piaget (parampilosus Piaget) =equi Denny nec Linne.
1842 Denny, l.c., p. 191, pl. XVII, fig. 7.
1880 Piaget, l.c., p. 397, pl. XXXII, fig. 5.
Common on horses.

*T. tibialis Piaget for longicornis Denny nec N.
1842 Denny, l.c., p. 192, pl. XVII, fig. 8.
1880 Piaget, l.c., p. 399, pl. XXXII, fig. 6.
Louse of our Fallow Deer (Cervus dama), Mr. Cook has sent me examples of this species from Hepple, Northumberland, July 14th, 1930.
T. longicornis N. nec Denny (similis Denny).
1842 Denny, l.c., p. 194, pl. XVII, fig. 6.
Louse of our Red Deer (Cervus elaphus).

(2) LICE OF THE GENUS TRICHOODECTES FROM CARNIVORES.

*T. subrostratus Nitzsch.
1842 Denny, l.c., p. 189 and postscript.
1880 Piaget, l.c., p. 389, pl. XXXI, p. 9.
Louse of the domestic cat. Once in numbers from cats living in outhouses at Gibside. It is also known from the lynx.

*T. canis de Geer (latus Nitzsch).
1842 Denny, Mon. Anopl. Brit., p. 188, pl. XVII, fig. 1.
1880 Piaget, l.c., p. 384, pl. XXI, fig. 6.
Common on the dog (Canis familiaris).

*T. vulpis Denny.
1842 Denny, l.c., p. 189, pl. XVII, fig. 5.
1880 Piaget, l.c., p. 386.
On the fox (Canis vulpes). Once on a fox shot at Fattfield.

*T. exilis Nitzsch.
1930 Bugnall, The Vascularum, XVI, pp. 6-9.
This is the louse of the otter (Lutra). The first known British examples were those collected by Mr. Stephen E. Cook in 1929 from the head of an otter caught at Bywell Bridge near Stocksfield on Tyne, who later took further examples at Riding Mill, September 17th, 1930.

*T. melis Fabr. (crossus Nitzsch).
1842 Denny, l.c., p. 187, pl. XVII, fig. 3.
1880 Piaget, l.c., p. 386, pl. XXXI, fig. 7.
This is the louse of the badger (Meles taxus) and has been found in both our counties.
*T. mustela* Schr. (dubius et retusus N.).
1842 Denny, l.c., p. 190, pl. XVII, fig. 2.
1880 Piaget, l.c., p. 387, pl. XXXI, fig. 8.
Denny obtained examples from the stoat (*Mustela ermina*) from the late Pridenux J. Selby of Twizell House, Northumberland, from which host we have found it in both counties.

**Family Gyropidae.**

H. E. Ewings' Memoir "On the Taxonomy, Biology and distribution of the Biting Lice of the Family Gyropidae" (Proc. U.S. Nat. Mus., 63, Art. 60, pp. 1-42, pl. 1), 1924, should be consulted. The following species are common enough on the domestic guinea-pig, and I first observed them many years ago on some guinea-pigs kept by some cousins at Haydon Bridge, Northumberland.

Genus *Gyropus* Nitzsch.

*G. ovalis* N.

Genus *Micropus* Denny.

*M. porcelli* (Linn).

Denny (p. 247) says: "Were it not for the fear of being accused of a fondness for innovation, I should have proposed the establishment of a new sub-genus, *Micropus*, for this species, which differs so very materially from the preceding, not only in the structure of the antennae which is greater than in any other instance with which I am acquainted between two species of the same genus, but also in the character of the tibia and tarsi, the former of which in the *Gyropus ovalis* has a peculiar twisted appearance, which in this case is flat and broad. The ungues in the former species is very large and striking, while in the one under consideration it is so minute as scarcely to be visible without a close investigation."