

## ASSOCIATION OF HIPPOBOSCID WITH LICE

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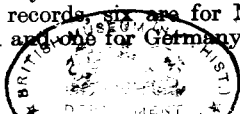
ON July 2 a Song Thrush was captured in the Vicarage Garden, North Mimms, Herts, by Messrs. D. Buxton and J. F. Shillito. The bird was a young one and in a very weak condition, being unable to stand up for more than a few seconds at a time when it was caught. It was noticed that there were at least twenty specimens of a Hippoboscid on the bird. Four of these were caught, the rest escaped. The Hippoboscids together with the bird were brought to the British Museum and Dr. F. W. Edwards determined the Hippoboscids as *Ornithomyia avicularia* Linn., a widely distributed parasite of many passerine and raptorial birds.

At the suggestion of Dr. Edwards the bird was brought to me by Mr. Shillito to examine for Mallophaga. I succeeded in obtaining thirteen specimens of lice and one flea. On examining the lice I found representatives of the following three species: *Degeeriella marginalis* Nitzsch (7♂♂4♀♀), *Degeeriella merulensis* Denny (1♀) and *Philopterus merulae* Denny (1♀).

I also examined the Hippoboscids, and on the posterior margin of the abdomen of one of them, a female, I found three lice firmly attached by their mandibles. These lice proved to belong to the species *Degeeriella marginalis* Nitzsch which is a common parasite of birds of the genus *Turdus*.

As a result of this record coming to my notice I decided to examine all the specimens of *Ornithomyia avicularia* Linn. in the National Collection in order to see if there were any with lice attached to them. I found one specimen, a female, with eleven examples of the species *Degeeriella marginalis* Nitzsch fixed to the posterior portion of the abdomen. The data relating to the capture of this Hippoboscid is as follows: "Caught on window, Surrey, Woking, 9-vii-1910, G. C. Champion."

So far as I am aware, these records bring the number of recorded instances of lice being carried by *Ornithomyia avicularia* Linn. to a total of thirteen. The previous records for England number only two, the earliest record of all by Dr. Sharp<sup>1</sup> in 1890 and the recent one by Warburton<sup>2</sup> in 1928. Of the remaining nine records, six are for North America, two for Finland and one for Germany.



Ewing<sup>3</sup> (1927) summarised the data relating to previous records of lice being carried by Hippoboscids and pointed out that nearly all the instances relate to the one species *Ornithomyia avicularia* Linn. and that the species of lice found on the Hippoboscids have, in every case except two (in the case of Dr. Sharp's record the lice were not determined and efforts to trace Dr. Sharp's specimens have been unsuccessful), been found to belong to the genus *Degeeriella*.

The total number of recorded instances of lice found on Hippoboscids is now sixteen. The question whether this association has a definite object naturally arises. Ewing has put forward the following suggestions in the form of questions as possible explanations of this Hippoboscid-lice relationship:—"1. Could the lice be attached to the bird-flies for reasons other than transportation? 2. Are the lice attempting to obtain some of the blood the flies have imbibed from their bird hosts? 3. Do the lice attach to the flies because the latter have become temporarily warmed by contact with the skin of the bird host? 4. Could the bird-fly give off any odour or secretion that is attractive to the lice?"

Since the total number of records is only sixteen and there is no evidence to substantiate any of these suggestions, they are of little value. It is possible that the phenomenon has a wider significance than a mere Hippoboscid-lice relationship, especially in view of the following records: Calandrucio<sup>4</sup> (1890) has noted instances of *Pediculus* being conveyed by flies; Mitzmain<sup>5</sup> in connexion with research on the insect transmission of surra in Carabaos has found a species of Dipteron, *Lyperosia* sp. carrying the louse *Hæmatopinus tuberculatus* Burmeister (1,800 flies yielded 620 specimens of lice); and Peus<sup>6</sup> (1933) has published two instances of the louse *Trichodectes tibialis* Piaget being found attached to *Culicidæ*. Ewing's suggestion that the lice attach themselves to the Hippoboscids as a result of the latter becoming temporarily warmed by contact with the skin of the bird is certainly wrong, because the lice which are already on the bird have presumably the temperature of the host, and therefore the acquired host temperature of the Hippoboscids is no inducement for the migration of the lice to the flies. Many more records and experimental research are necessary before conclusions of any value can be arrived at concerning these relationships.

<sup>1</sup> Sharp, *Proc. Ent. Soc. Lond.*, p. 30.

<sup>2</sup> Warburton, *Parasit.*, 20, 175-178.

<sup>3</sup> Ewing, *Ann. Ent. Soc. Amer.*, 20, 245-250.

<sup>4</sup> Calandrucio, *Atti Accad. Gioenia di Sci. Nat. in Catania*, 2, p. 135.

<sup>5</sup> *Philip. Agric. Rev.*, 5, 673-674.

<sup>6</sup> Peus, *Z. Parasit.*, 5, 740-741.