



Some Additional Records of an Association between Hippoboscidae and Mallophaga, together with a Bibliography of the previous Records. By GORDON B. THOMPSON, Department of Entomology, British Museum (Natural History).

THROUGH the kindness of Dr. Jos. Bequaert and Mr. N. J. B. Plomley I am able to add some records of the association of Hippoboscidae and Mallophaga to the ever-growing number of instances of this interesting phenomenon. The new records are from the U.S.A., Australia, New Hebrides, and Scotland. In most of the earlier records of Mallophaga found attached to Hippoboscidae, the latter were all *Ornithomyia*; the later records suggest that many other species of Hippoboscidae which infest birds may be involved.

All the specimens of Hippoboscidae mentioned in this note have been examined by Dr. Bequaert.

(1) A single specimen of ? *Degeeriella* sp. attached to the abdomen of *Ornithessa metallica* (Schiner), taken off *Halcyon juliae* (Heine), a kingfisher—New Hebrides, Espiritu Santo.

Unfortunately, in the course of labelling the dry specimen of the Hippoboscid, the Mallophagan was lost; I am, therefore, unable to say with any certainty to which genus the species belonged, although I did examine it once in its dry condition.

(2) Five specimens of *Ardeicola botauri* (Osborn) attached to the abdomen of a dry specimen of *Lynchia botaurinorum* (Swenk), presumably taken on the wing,

as there is no indication of a host—U.S.A., Mexico, Orizaba. Dr. Bequaert informs me that this species of Hippoboscid is a fairly common parasite of various wading birds in America. The type-host of the species of Mallophaga is *Botaurus lentiginosus* (Montagu) (American Bittern).

(3) Two females of *Degeeriella* sp. attached to the abdomen of *Ornithiza metallica* (Schiner), taken off a flycatcher—Australia, Queensland, Dinner Creek (16 miles from Ravenshoe) (*F. H. Taylor*).

(4) A female of *Degeeriella hectica* (Nitzsch in Giebel) attached to the abdomen of *Ornithomyia* sp., taken off *Sericulus chrysocephalus* (Lewin) (Regent bird), New South Wales, Nambucca R., 16. x. 1912. The type-host of *Degeeriella hectica* (Nitzsch in Giebel) is *Sericulus chrysocephalus* (Lewin) = *S. regens*.

(5) Three males and thirteen females of *Degeeriella* sp. (probably sp. n.) attached to the dorsal and ventral surfaces of the abdomen of *Ornithomyia* sp., taken off *Strepera versicolor* (Latham) (Grey Bell-Magpie)—New South Wales, Georges Basin.

(6) Two males and two females of *Degeeriella marginalis* (Nitzsch in Burmeister) attached to the dorsal surface of the abdomen of *Ornithomyia fringillina* Curtis, taken off *Turdus merula merula* Linn. (Blackbird)—Scotland, Dumbarton. The type-host of *D. marginalis* (Nitzsch in Burmeister) is *Turdus pilaris* Linn., but it has been recorded from *T. m. merula* Linn. on numerous occasions.

(7) Two females of *Degeeriella* sp. attached to the terminal segment of the abdomen of *Ornithomyia fringillina* Curtis, ♂, taken off *Melospiza melodia melodia* (Wilson) (Eastern Song Sparrow)—U.S.A., Mass., Martha's Vineyard, 28. vii. 1930 (*G. D. Eustis*).

(8) Two females of *Degeeriella simplex* (Kellogg) attached to the dorsal surface of the abdomen of *Ornithomyia fringillina* Curtis, ♀, taken off *Turdus migratorius* Linn.—U.S.A., New York, Elmhurst (*Mrs. M. V. Beals*). *Turdus migratorius* Linn. is the type-host of *D. simplex* (Kellogg).

Records 4 and 5 have previously been referred to by the late Launcelot Harrison in "Notes and Exhibits," Proc. Linn. Soc. N.S.W., 1913, but as additional data are available I have thought it best to include them.

It is of interest to note that all the genera and species recorded up to the present as having been found attached to Hippoboscidae are members of the superfamily Ischnocera. The Ischnocera, as compared with the other superfamily of Mallophaga, Amblycera, do not appear to be so active; in fact they do not tend to leave the body of the host after death, but attach themselves by their mandibles to the fur or feathers and die *in situ*. In my experience straggling is rarer in the Ischnocera than in the Amblycera, and in consequence they are the more valuable group in the study of host affinities. All the records I can trace of Mallophaga found apart from their hosts are of Amblycera (see Thompson, 1936, Ent. Mon. Mag. pp. 94-96). In view of these facts it is interesting to find that only the Ischnocera have developed the habit of attaching themselves to Hippoboscidae.

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* This paper contains the same record given by McAtee and Banks, with the addition of the name of the host from which the Hippoboscid was taken.

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