

ART. III. MALLOPHAGA CARRIED BY HIPPOBOSCIDES.

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A specimen of a bird fly (Diptera: Hippoboscidae) was received recently from Dr. Hugo Kahl of the Carnegie Museum which had been collected from an American Egret, *Casmerodius albus egretta* (Gmelin), shot at Hartstown, Pennsylvania, by W. E. Clyde Todd on August 5, 1933. In the same vial there were 31 specimens of a biting louse (Mallophaga: Philopteridae) which Dr. Kahl reported to have all been attached by their mandibles to the thorax and abdomen of the fly when it was collected from the egret. Unfortunately all of the Mallophaga were detached from the fly when the specimens reached me. Mr. Todd collected the fly from the egret and remarked to Dr. Kahl that it appeared to be covered with a white powder as if it had been placed in a medicine bottle. On examination Dr. Kahl found a large number of immature Mallophaga (white in color) attached to the thorax and around the junction of the thorax and abdomen of the fly, causing the peculiar resemblance to a covering of white powder on the fly. No other hippoboscids were found on the egret but a few other Mallophaga were picked from the body of the bird after it was received at the Carnegie Museum.

The hippoboscid was determined as *Lynchia americana* Leach by Dr. J. Bequaert of Harvard University Medical School. This is a very unusual host for this species of fly, as it is generally found on hawks and owls. The Mallophaga were determined by myself as *Esthiop-terum botauri* (Osborn) and were all immature but almost full grown. It is interesting to note that none of the lice on the fly or picked from the bird was adult. The specimens have been given Bishopp No. 22540 and also bear Carnegie Museum numbers 9778 and 9796. The hippoboscid and some of the Mallophaga are deposited in the Carnegie Museum and the remaining Mallophaga are in the collection of the Bureau of Entomology and Plant Quarantine.

¹Contribution from the Division of Insects Affecting Man and Animals, Bureau of Entomology and Plant Quarantine, U. S. Dept. of Agriculture.

This is a very interesting record for several reasons. It is the first time any flies in the genus *Lynchia* have been recorded as transporting lice and the first time any lice in the genus *Esthiopterum* have been recorded as being carried by hippoboscids (although *Columbicola columbae* has been reported attached to *Pseudolynchia maura* by Martin, 1934). This is the largest number of lice that have ever been recorded on a single fly, the largest number previously reported being eleven (Thompson, 1933). The unusual host record for *L. americana* has been mentioned above.

There are now recorded twenty-one cases of Mallophaga being transported by hippoboscids. McAtee, Ewing, and Thompson have listed and summarized the previous records and have called attention to the peculiar fact that in nearly all cases the lice were carried by the hippoboscid, *Ornithomyia avicularia* Linnaeus, and most of the lice have been in the genus *Degeeriella*.

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