

## BIRD-INFESTING MALLOPHAGA COLLECTED BY THE WILLIAMS GALAPAGOS EXPEDITION.

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(Figure 12).

Our knowledge of the Mallophaga of the Galapagos Islands dates from 1902 when Professor V. L. Kellogg and S. I. Kuwana published their extensive paper (*Proc. Wash. Acad. Sci.*, Vol. vi, pp. 457-499, pls. xxviii-xxxi) on the biting lice collected by the Hopkins Stanford Galapagos Expedition, 1898-1899. The louse specimens were collected by R. E. Snodgrass, at present of the Bureau of Entomology, whose researches on the morphology of the biting lice and several other orders of insects are well known. Snodgrass obtained no less than 43 different species from the islands. Later (1906) Professor Kellogg published another paper (*Trans. Am. Ent. Soc.*, Vol. xxxii, pp. 315-324) dealing with the Mallophaga of these islands and the Revillagigedo Islands. This paper was based on a collection made by Rollo Beck in 1901, which included fifty-four species.

During the summer of 1923, Mr. William Beebe sent to the writer a small collection of bird-infesting Mallophaga obtained by the Williams Galapagos Expedition of the New York Zoological Society during the same year. Although the number of species sent in by Mr. Beebe is small yet the collection is of considerable interest as it contains a record (new species) from the flightless cormorant (*Nannopterum harrisi*).

*First form on press February 27, 1924*

LIST OF SPECIES, WITH DESCRIPTIONS OF A  
NEW SPECIES AND A NEW VARIETY.

Family MENOPONIDAE Mjöberg.

Genus *Menopon* Nitzsch.*M. auri-fasciatum* Kellogg.*New Mallophaga*, Pt. III, p. 43, pl. iv, fig. 5 (1899).From *Fregata aquila*. Three females and one nymph.*M. navigans* Kellogg.*New Mallophaga*, Pt. I, p. 156, pl. xiv, figs. 4 and 5 (1896).From *Sula neboxii*, two females and one male; and from the same host (second lot), four females and one male.Genus *Colpocephalum* Nitzsch.*C. unciferum* Kellogg.*New Mallophaga*, Pt. I, p. 140, pl. xii, figs. 1-3 (1896).From *Pelecanus* sp. Two females.

Family PHILOPTERIDAE Burmeister.

Genus *Philopterus* Nitzsch.*P. brevisformis* (Kellogg and Kuwana).*Proc. Wash. Acad. Sci.*, Vol. iv, p. 463, pl. xxviii, fig. 3 (1902).From *Progne modesta*. One female specimen.Genus *Esthiopterum* Harrison.*E. helleri* (Kellogg and Kuwana).*Proc. Wash. Acad. Sci.*, Vol. iv, p. 479, pl. xxx, fig. 3 (1902).From *Sula piscator*. Three male specimens.*E. nannopteri* sp. nov.

Fig. 12

*Female*: Head stout, subtriangular; forehead subconical, sides very slightly concave; postantennal region longer and broader than forehead; temporal lobes large, evenly rounded; posterior margin of head slightly convex. Clypeus broader than long, signature shield-shaped, slightly longer than broad and clearly outlined. Trabeculae minute. Mandibles stout, bifid at tip. Eyes small but with projecting corners and jet black pigment spots. Lateral margins of forehead each with six small setae three of which are situated on clypeal region. Temples each with a very long seta at the posterior angle and three minute prickles on lateral margin. Antennae about half as long as head; second segment longest; last segment tipped with minute setae.

Thorax about as long as head but not as wide. Prothorax fully twice as broad as long and bare above except for a pair of long and a pair of small setae at each of the posterior angles. Meso-metathorax twice as long as prothorax and broader, sides divergent posteriorly; each posterior angle with a tuft of four

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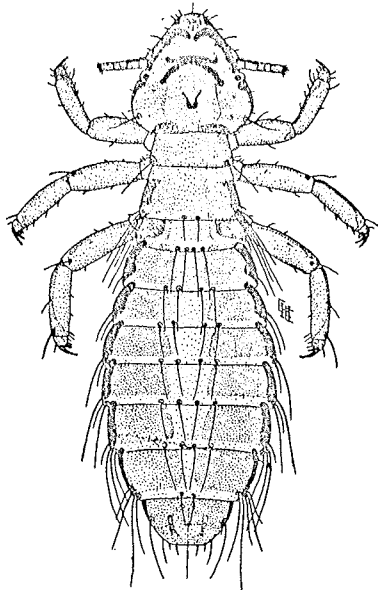


FIG. 12.—*ESTHIOPTERUM MANNOPTERI* sp. nov., female,  $\times 30$ .

long, unequal setae, some of which are longer than the segment itself. Legs large and conspicuous; the posterior pair, which is slightly the largest, reaches to the middle of abdomen. Claws unequal, those of the second legs are nearly equal. Femora slightly swollen and subequal in length to the tibiae.

Abdomen swollen and broadest at the fourth or fifth segment; pleural bands dark brown, almost black; tergal bands broadly interrupted at the middle and not quite as broad as the segments, brown in color. Above, the abdomen bears four submedian rows of long setae and on the posterior corners of each segment is one or more long setae, the number being greatest on the next to the last segment which bears a tuft of five such setae at each posterior corner. The first segment of the abdomen is the shortest, the second is longer than either I, III or IV, the last is almost as long as broad.

Length, 2.3 mm.; greatest width, 0.8 mm.

*Nymphs:* Similar in shape to adult, but smaller and paler. Smaller nymphs without abdominal bands. Last nymph with dark brown pleural markings.

Length of last nymph, 2.0 mm.; greatest width, 0.6 mm.

Type host and type locality: From *Nannopterum harrisi*, Galapagos Islands.

Type: Cat. No. 23764, U. S. N. M.

Described from one female and four nymphs. Holotype a female.

This is the first record of an *Esthiopterum* species from the flightless cormorant, and as far as the writer has been able to determine is the only Mallophagan record from this remarkable and rather recently discovered bird. Snodgrass obtained some of these cormorants in the Galapagos but no lice from them.

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Beck in his trip to the Galapagos in 1901 took some of these flightless cormorants, two of which are now mounted specimens in the United States National Museum. The Mallophaga which he collected this year were worked up by Professor Kellogg, yet in Kellogg's paper I find no mention of any lice from the flightless cormorant. Also this host is not mentioned in the list of hosts of the Mallophaga known from the birds of the Galapagos Islands published earlier by Kellogg and Kuwana.

The species is distinctive and does not resemble any of those previously listed from the Galapagos. However, it is closely related to *E. farallonii* (Kellogg), described from the Farallone Cormorant, *Phalacrocorax dilophus albociliatus*, taken at Monterey Bay, California. It differs from Kellogg's species in being smaller, having a decidedly wider head, longer setae on the abdomen and much larger legs, and, probably most important of all, in not having the median abdominal blotches. Although of about the same dimensions as *E. acutifrons* (Rudow), taken from *Phalacrocorax sulcirostris*, the specimens from *Nannopterum* differ from Rudow's species decidedly in the shape of the head and in various body dimensions.

*E. pelagicum* (Denny).

*British Anopleura*, p. 173, pl. xiv, fig. 2 (1842).

From a petrel. One male specimen.

*E. potens* var. *minor*, var. nov.

Similar to the type form taken from *Sula piscator* in the Galapagos and described by Kellogg and Kuwana. It differs from the species described by these authors chiefly in size. Males of var. *minor* are but little over 3 mm. in length, while the length given by Kellogg and Kuwana for *potens* proper is 4 mm. The females also of *minor* are somewhat smaller than those of the type form. Specimens of *minor* are more strongly banded than represented in the drawing of *potens* given in Kellogg's and Kuwana's paper.

Type host and type locality: From *Sula neboxii* taken in the Galapagos Islands.

Type slide: Cat. No. 23765, U. S. N. M.

Described from a male, two females and a nymph in one lot and from two males, two females and two nymphs of another lot. All specimens from *Sula neboxii* taken in the Galapagos.

This is one of the series of scientific papers of the Harrison Williams Galapagos Expedition, under the directorship of William Beebe, sent out by the Department of Tropical Research of the New York Zoological Society. The general account and narrative of the expedition, together with the natural history and photographs of the fauna, are embodied in a volume by William Beebe, published by G. P. Putnam's Sons, under the auspices of the Zoological Society. Its title is "Galapagos; World's End."

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