MALLOPHAGA

BY

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The small collection of Mallophaga made by the « BELGICA » during its expedition of 1897-1899 has been entrusted to me for study by Professor V. VAN STRAELEN and the following are my notes and observations. In the course of working through this collection I have experienced great difficulty in the preparation of the specimens for microscopical study. The present collection is preserved in small tubes containing 70 % alcohol. Admittedly the specimens have been preserved for many years and superficially they appear to be in an excellent state of preservation. On treating them with 5 % Potassium hydroxide solution in the ordinary way for clearing and finally mounting them in Canada balsam, however, considerable difficulty was experienced in removing the internal contents without damaging the specimens. As a result of this I have had to deal with the present collection by critically examining the specimens in alcohol under high magnifications — a method which is not altogether satisfactory in the study of Mallophaga. Having encountered similar difficulties in connection with other Mallophaga which have been preserved in alcohol for a long period of time I feel there is a very urgent need for some research in connection with the preservation of these interesting parasites. The only available alternative for the future is that specimens should be examined and reported on as soon as possible after they are collected.

It was pleasing to find, among the notes referring to this collection, references to the various parts of the birds' bodies from which the specimens were obtained. It is an established fact that the various species of Mallophaga occurring on a single host species do occupy very definite areas of their host's body.

May I take this opportunity of thanking Prof. V. VAN STRAELEN for the opportunity to study this small but interesting collection and Dr. J. W. SHACKLE for the photographs. The two drawings are my own and are the same magnification.

MENOPONIDÆ.

1. *Menopon* sp.

Host. — *Diomedea exulans* LINN.

Locality. — Long. 85° 13′ W. Greenwich, Lat. 69° 52′ S., 1. i. 1899.

A single immature example is contained in this collection. It is possible that this is Piagets' *Menopon affine* described from the same host species.

PHILOPTERIDÆ.

2. *Philopterus* sp.

Host. — *Glaucidium nanum.*

Locality. — Argentine, Terre-de-Feu, Canal du Beagle, Lapataïa, 23.XII.1897.

The Philopteridæ occurring on owls are badly in need of a revision in spite of the fact that some new genera have been erected. In view of this and the difficulty of making adequate preparations for critical study I feel it is wiser to let the determination stand only so far as the generic grouping. It is almost certainly a new species.

3. *Saemundssonia gonothorax* (GIEBEL) 1871.

Host. — *Larus dominicanus.*

Locality. — Argentine, Terre-de-Feu, Canal de Beagle, Lapataïa, 3.I.1898.

NOTES. — TIMMERMANN (1935) has recently described a new genus, with *Philopterus* (*Docophorus*) *gonothorax* (GIEBEL) as the genotype, to include Philopteridae occurring on Lari and Limicolae. KÉLER (1936) in a more recent paper has described a new genus, which he calls *Hastaephorus,* with *Philopterus alpinus* (GIEBEL) as the genotype, to include species occurring on Scolopacidae, Charadriidae and Laridae. It is evident, however, that either *Saemundssonia* and *Hastaephorus* are absolute synonyms or they may overlap one another. For the present I shall regard them as synonymous.

Saemundssonia, TIMMERMANN, 1935, Zool. Anz., Bd. 114, Hft. 3/4, p. 100.

Hastaephorus, KÉLER, 1936, Arb. morph. taxon. Ent. Berlin-Dahlem, Bd. 3, pp. 261-262.

In dealing with the Philopteridae as a whole the head and male genitalia furnish excellent characters. On the basis of the material which I have been able to examine the following species groups are referable to *Saemundssonia*. — *Philopterus gonothorax* (GIEBEL) 1871 and *P. melanocephalus* (NITZSCH IN BURMEISTER) 1838 of Laridae, *P. hexagonus* (GIEBEL) 1874(*) of Phaëthontidae, *P. acanthus* (GIEBEL) 1874 of Haematopodidae and *P. pustulosus* (NITZSCH in GIEBEL) 1866 of Stercorariidae.

In general colour the species vary from almost black to golden brown. The abdomen of the males is much more strongly sclerotic than that of the females. The heads are very similar in general facies and vary from squarish to elongate forms. The inner bands run to the clypeus on the ventral side and appear to become fused with the clypeal bands, they are weak and would appear to play little part in mandibular articulation in contrast with some of the Philopteridae (e. g. *P. platysomus* (NITZSCH IN BURMEISTER), 1838 group), most of this is apparently borne by apodemes from a pair of dorsal bands curving in to form dorsal plates. The mandibles appear to present excellent characters for the separation of the genus. The signature is a median dorsal plate, squarish in front then expanding slightly and tapering to an apex on a level with the trabeculae. The trabeculae are large and articulated ventrally. The cuticular lens of the eye is pointed and bears a single short seta. The mandibles

(*) The inclusion of the Philopteridae of Phaëthontidae in this genus along with those of the Laridae etc. is interesting since it lends further support to the parasite evidence that the Tropic birds are related to these birds rather than the Pelecaniformes.

appear to have four curved striae. There seems to be little in the way of thoracic sternites except for very slender 'clavicles' which are the main skeletal structures.

The male genitalia (pl. I) form a very compact group. The basal plate is narrow in proportion to the stoutness of the parameres together with the endomeres, telomeres etc. The parameres are large, curving towards one another apically, articulated at the posterior lateral angles of the basal plate. The endomeres and telomeres furnish excellent characters for the separation of species. The penis appears as a delicate rod emerging from between the telomeres.

I am presenting drawings of the head and male genitalia of *S. gonothorax* (GIEBEL) together with photographs of a complete male and female in order to typify the genus. (pl. I).

4. *Degeeriella* sp.

Host. — *Hirundo mayeni.*

Locality. — Argentine, Terre-de-Feu, Canal de Beagle, Lafataïa, 26.xii.1897.

The four specimens from this host are too immature for specific determination but it may be said that they closely resemble, in general facies, *Degeeriella gracilis* (NITZSCH IN BURMEISTER) 1838, which occurs on the European House-martin (*Delichon u. urbica* (LINN.).

5. *Degeeriella* sp.

Host. — *Turdus magellanicus.*

Locality. — Argentine, Terre-de-Feu, Canal de Beagle, Lapataïa, 23.xii.1897.

Numerous specimens of a species which undoubtedly belongs to a group of species of the *Degeeriella marginalis* (NITZSCH IN BURMEISTER) 1838 type. Until such time as the types of Nitzsch and Giebel together with those of Denny have been revised it would be unsafe to say anything further regarding the specimens contained in the present collection.

6. *Harrisoniella diomedeae* (FABRICIUS) 1775.

Host. — *Diomedea exulans* LINN.

Locality. — Long. 63° 35′ W. Greenwich, Lat, 56° 10′ S., 15.i.1898.

Three males and five females of this very large and characteristic parasite of Albatrosses are present in the collection. The species shows a very marked sexual dimorphism of the antennae. I am presenting photographs of a male and a female of this species (pl. I). In view of the fact that at present only a single species is recognised of this large parasite the photographed examples were taken from a specimen of *Diomedea epomophora* LESSON from New Zealand. This species is recorded by the expedition as occurring on the wings.

7. *Episbates pederiformis* (DUFOUR) 1834.

Host. — *Diomedea exulans* LINN.

Locality. — Long. 63° 35′ W. Greenwich, Lat. 56° 10′ S., 15.i.1898.

A single female of this apparently rare parasite is contained in the collection. Again this species seems to be a characteristic parasite of Albatrosses.

8. *Perineus hyalinus* (NEUMANN) 1911.

Host. — *Diomedea exulans* LINN.

Locality. — Long. 63° 35′ W. Greenwich, Lat. 56° 10′ S., 15.i.1898.

This species is represented by a single female. It may be distinguished from the remainder of the species contained in the genus *Perineus* by the almost entire absence of dark markings, which are confined to the apex of the mandibles and a few spots laterally placed on the abdomen.

9. *Perineus obscurus* (RUDOW) 1870.

Host. — *Macronectes giganteus* (GMELIN). ('variété brune').

Locality. — Long. 85° 13′ W. Greenwich, Lat. 69° 52′ S., 1.i.1899.

A number of specimens representing what I take to be this species of RUDOW. It differs from other species in the genus by its short, rounded, anterior part of the head and by the structure of the clypeal region.

10. *Pseudonirmus gurlti* (TASCHENBERG), 1882.

Host. — *Daption capensis* (LINN).

Locality. — Long. 100° 17′ W. Greenwich, Lat. 70° 56′ S., 9.iii.1899.

Two examples of this interesting parasite, which is a specific parasite of the host from which it was collected, are contained in the collection.

11. *Docophoroides brevis* (DUFOUR), 1834.

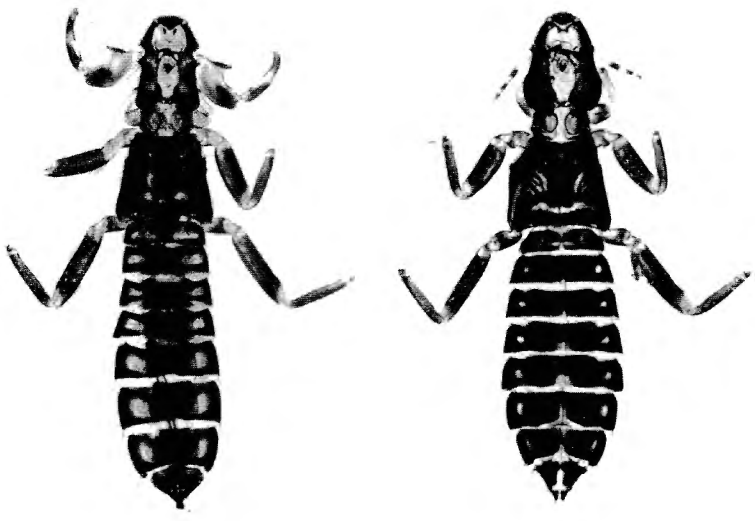
Host. — *Diomedea exulans* LINN.

Locality. — Long. 63° 35′ W. Greenwich, Lat. 56° 10′ S., 15.i.1898.

Numerous examples of both sexes together with a few immatures of this well marked species, which appears to be a characteristic parasite of *Diomedea exulans* LINN. and its subspecies. It is the largest species known belonging to the genus *Docophoroides*. The specimens here recorded are said to have been taken from their host's body and were copulating at the time of collection.

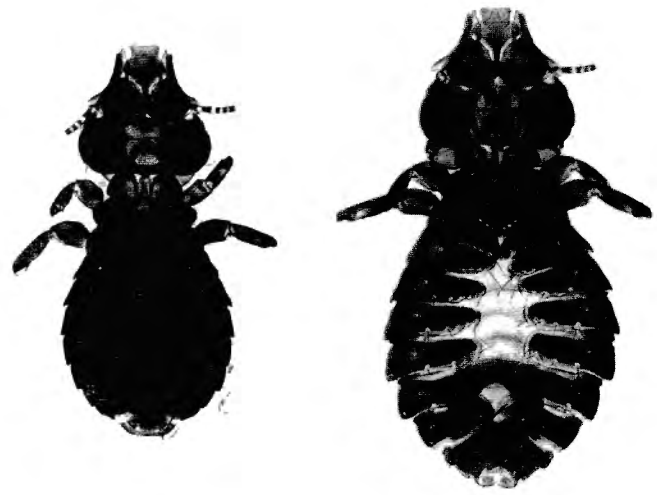
HOST-PARASITE SUMMARY.

Glaucidium nanum.	*Philopterus* sp.
Hirundo mayeni	*Degeeriella* sp.
Turdus magellanicus	*Degeeriella* sp.
Larus dominicanus	*Saemundssonia gonothorax* (GIEBEL)
Diomedea exulans (LINN.)	*Menopon* sp.
	Harrisoniella diomedeae (FABRICIUS)
	Episbates pederiformis (DUFOUR)
	Perineus hyalinus (NEUMANN)
	Docophoroides brevis (DUFOUR)
Daption capensis (LINN.)	*Pseudonirmus gurlti* (TASCHENBERG)
Macronectes giganteus (GMELIN)	*Perineus obscurus* (RUDOW)



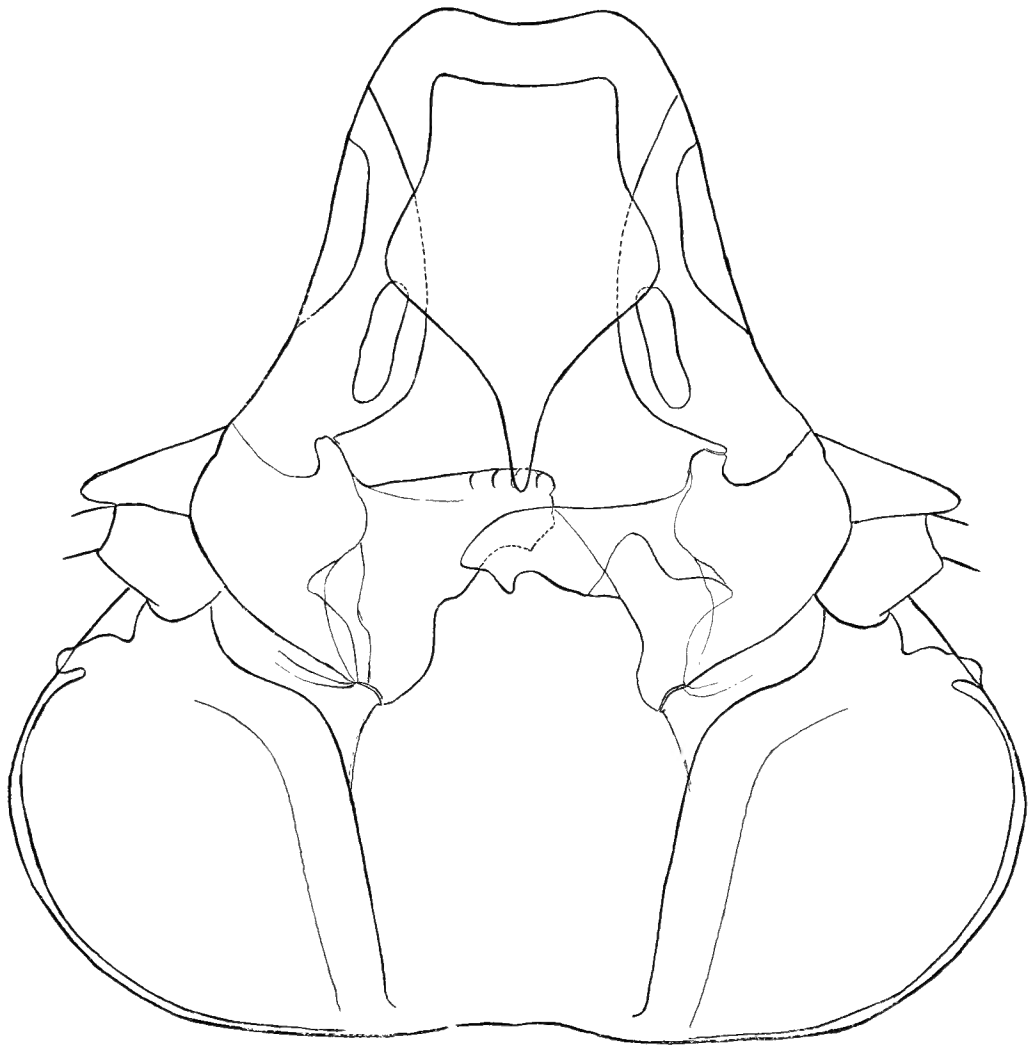
♂ ♀

Harrisoniella diomedeae (FABRICIUS)

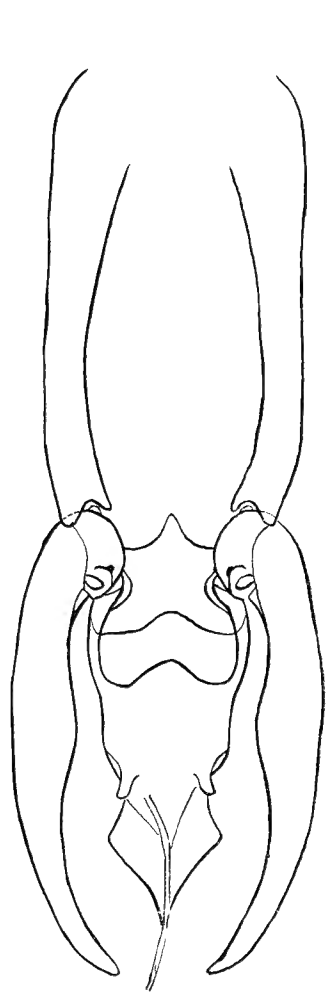


♂ ♀

Saemundssonia gonothorax (GIEBEL)



head of female



male genitalia

Saemundssonia gonothorax (GIEBEL)