MALLOWHAGA (BITING LICE) AND ANOPLURA (SUCKING LICE). PART II: KEYS AND LOCALITY LISTS OF MALLOWHAGA AND ANOPLURA

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Abstract. Forty-two species of Mallophaga and four of Anoplura are recorded from Antarctica. Birds occurring in the area are known to be hosts to at least 60 species of Mallophaga. Keys are presented to all of these. Also included are host and locality records, some notes on synonymy, and a list of antarctic birds and mammals with the species of lice which parasitise them.

Regional lists of Mallophaga are difficult to compile as, in general, lice have a host distribution, not a geographical one, and thus may visit more than one geographical region during a day. Further, it would give a misleading picture of the mallophagan fauna of the Antarctic if only those species taken from a bird while it was actually in the region were included. This account is therefore divided into two: the first includes the genera and species collected in Antarctica with their hosts and localities; the second is a host-parasite list giving all the species known from antarctic birds, wherever these were taken. The keys to the species in the first part include all the species in the host-parasite list and also some other genera which may be found on these birds.

Martin Hoagland has most kindly provided us with a list of birds breeding in Antarctica, and this has formed the basis of our host list; these species are marked (B). In addition, we have included those birds that breed outside Antarctica but range within the region and from which we have Mallophaga collected in Antarctica; these are marked (R).

The records are based on material in the British Museum (Natural History) (B.M.), Bernice P. Bishop Museum (Bishop), and the United States National Museum (U.S.N.M.) (through Dr. K. C. Emerson), and comprise collections from various sources including the Bernice P. Bishop Museum; U. S. Antarctic Research Program; the British, Australian, New Zealand Antarctic Research Expeditions (B.A.N.Z.A.R.E.); the Australian National Antarctic Research Expeditions (A.N.A.R.E.); the Falkland Islands Dependencies Survey (F.I.D.S.); and the British Graham Land Expedition, 1934-1937 (see Clay, 1940). The collectors of this material include the following: J. L. Gressitt, R. Leech, and J. Shoup (Bishop); A. G. Bennett, G. T. Lockley, M. W. Routh, K. H. Voous, and H. M. S. Protector and Operation Tabarin (B.M.); P. Angle, O. S. Flint, R. M. Gilmore, C. C. Olrog, and G. E. Watson (U.S.N.M.), and Dr. I. F. Spellerberg.

This material has been identified by R. L. Edwards, S. von Kéler, G. Timmernann, and T. Clay. Some of the records in the literature have been included, but doubtful identifications have been ignored. The Gressitt and Weber (1959) records have not been cited separately, as these were taken from the literature and are either included in the present paper or discarded as unreliable.

Bibliographical references are given only for those genera and species not included in “A Check List of the Genera and Species of Mallophaga” (Hopkins and Clay, 1952) or “The Sucking Lice” (Ferris, 1951).

MALLOWHAGA

Key to Antarctic Mallophaga

1. Maxillary palps present; 3rd antennal segment wine-glass shaped (Fig. 55) .......... AMBLYCYRA: MENOPONIDAE

Maxillary palps absent; 3rd antennal segment not as above (Fig. 83) ................. ISCHNOCRADA: PHILOPTERIDAE

AMBLYCYRA: Family MENOPONIDAE

Key to Antarctic Menoponidae

1. 3rd femur and sternite III with combs of stout setae .......... PIAGETIALLA CAPIUNCISA (Fig. 51)

3rd femur and sternite III without combs of stout setae ................................................. 2

2. Laterodorsal margin of head with narrow preoccular slit; antennary fossa pouchlike and closed distally (Fig. 56) (on Suloidae) .......... EIDMANIELLA

Laterodorsal margin of head and antennary fossa otherwise ............................................ 3

3. Mesosternum with 2 central setae; the 2 anterior dorsal mesothoracic setae each side of midline close to...

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Footnote: 1 For a discussion of geographical distribution of Mallophaga see Clay (1964: 14).
Pleurites without internal semicircular thickening; relative lengths of d.p.s. and m.p.s. 1 as in Fig. 63

4. Female without circle of typical anal setae, terminal margins of abdomen with few widely spaced short, stout setae (Fig. 72); last 3 terga more strongly pigmented than rest. Male parameres straight and pointed, genital sac with 3-4 toothlike projections each side (Fig. 74) ................. \textit{affine}

Female with circle of typical setae round anus. Male genitalia otherwise .................. 5

5. Sitophore of hypopharynx large (Fig. 68); internal pleural thickening large relative to size of pleurite (Fig. 70). Male parameres both with terminal thornlike projections; genital sclerite with horizontal bar (Fig. 75) ............... \textit{ossifragae}

Sitophore small (Fig. 69); internal pleural thickening small (Fig. 70). Right male paramere outwardly directed with terminal thornlike projection; left paramere inwardly directed and pointed terminally ......................... \textit{oschei, daptionis}

\textit{Procellariphaga} Eichler was erected for the species of \textit{Austromenopon} found on the Procellariiformes. In the original description there is no comparison with \textit{Austromenopon sens str.}, but only with \textit{Menopon singularis}, which is an \textit{Eidmamiella}. The most characteristic features of the petrel-infesting species are the annulated last antennal segment and the large, strongly pigmented internal pleural thickening of the abdomen, especially that of VIII; this segment in the rest of \textit{Austromenopon} rarely has the thickening well marked. However, \textit{A. cursarius} (Giebel) from \textit{Cursor cursor} has the large internal thickening of VIII but does not have the last antennal segment annulated; \textit{A. sachtlebeni} from \textit{Catoptrophorus} has the antennae annulated but the pleural thickening of VIII undeveloped. The male genitalia in species from both groups range from the comparatively simple as in \textit{A. haemato} from \textit{Haematopus} and \textit{A. paullum} from \textit{Puffinus}, to the more complicated as in \textit{A. transversum} from \textit{Larus} and \textit{A. longithoraciacum} from \textit{Puffinus}. Both symmetry (\textit{A. affine}) and asymmetry (\textit{A. brevifimbriatum}) of mesosome and parameres are found in the petrel-infesting species. Species from petrels may (\textit{A. affine}) or may not (\textit{A. paullum}) have the pre-ocular nodus strongly pigmented; the hypopharynx is probably always fully developed in the petrel-infesting species, but those from the Charadriiformes show all stages from the fully developed (\textit{A. phaeopodis}) to those in which the sitophore and epipharyngeal crest are present (\textit{A. limosae}) (see Clay, 1959: 159); in both groups the length of the third marginal prothoracic seta varies

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\textsuperscript{2} Only females of antarctic \textit{Ancistrona} are available; without both sexes it is not possible to identify them correctly.

\textsuperscript{a} Identification of this species uncertain.
(Clay, 1959: 160). Unless a number of characters are found which are different and constant for the two groups, generic separation does not seem possible or useful.

1. **Austromenopon affine** (Piaget, 1890)

   Type Host: *Diomedea exulans*

   69°52'S, 85°13'W (Thompson, 1938: 3) recorded as *Menopon affine* Piaget

2. **Austromenopon daptionis** (Eichler, 1949)

   Type Host: *Daption capense*

   68°18'S, 22°30'W (B.M.) on *Pagodroma nivea* (see Timmermann, 1963: 411)

   It is not possible to say from the original description what *daptionis* Eichler is, or whether it is separable from the population on *Thalassoaica antarctica* described as *A. oschei*.

3. **Austromenopon oschei** Timmermann, 1963:412

   Type Host: *Thalassoaica antarctica*

   65°10'S, 22°55'W (B.M.)

   MacRobertson Land (B.A.N.Z.A.R.E.)

   Wiencke I. Palmer Arch. (B.M.)

   Genus *Longimenopon* Thompson, 1948

1. **Longimenopon galeatum** Timmermann, 1957:9

   Fig. 54

   Type Host: *Pelagodroma marina*

   South Orkney Is. (F.I.D.S.) on *Pachypipta desolata* (see Timmermann, 1957:12)

   Genus *Piagetiella* Neumann, 1906

1. **Piagetiella caputincisa** Eichler, 1950

   Fig. 51

   Type Host: *Phalacrocorax atriceps*

   64°26'S, 62°27'W (nr. Bals L, Palmer Arch., 1960, Leech) (Bishop)

   Argentine Is., Palmer Arch. (B.M.)

   Wiencke L, Palmer Arch. (B.M.)

   South Orkney Is. (F.I.D.S.)

   Berthelot L, Palmer Arch. (B.M.)

   Five species of *Piagetiella* have been described from cormorants, and, although there are excellent taxonomic characters in the ventral sterna of both males and females, they have not been fully figured even in species described as late as 1950; in fact the most useful figure is that of the first species to be described—*P. incomposita* (Kellogg and Chapman, 1902). The types of all the species will have to be examined before the *Piagetiella* from cormorants can be correctly determined; in the meantime the species from *Phalacrocorax atriceps* will be called *caputincisa* Eichler.

**Ischnocera:** Family Philopteridae

**Key to Antarctic Genera of Philopteridae**

Preantarctic region short, ventral carinae characteristic (Fig. 94); abdominal spiracles III-VII near posterior margins of tergites, short, stout, spinelike postspiracular setae with adjacent sensilla on III-V (Fig. 93).

1. 

   2(1).

   Marginal (m.c.) and ventral (v.c.) carinae entire (as in Fig. 98); fore coxa extended posteriorly as pointed spine (Fig. 99); pteronotum without anterior setae; 3 abdominal with 8 apparent segments. **Austrogoniodes** (Fig. 79)

   Without above combination of characters.

   3(2).

   Ventral carina (v.c.) with part flattened and parallel to that of other side (Fig. 97); pteronotum without anterior setae. **Antarcticola** (Fig. 100)

   Without above combination of characters.

   4(3).

   Second and 3rd tibiae with lateral fringe of numerous hyaline setae (Fig. 101); many long temporal setae; 2+2 or more setae on margin of pronotum. **Dococephorides** (Fig. 78)

   Without above combination of characters.

   5(4).

   5. Genital opening ventral, anal opening terminal, anal setae ventral or terminal (as in Fig. 101); ♀ has, posterior to vulva, many long inwardly directed setae with elongated alveoli (Fig. 115) [2+2 pronotal marginal setae]. **Pectinopygus turbinatus** (Fig. 78)

   ♂ genital and anal opening and anal setae close together on dorsal surface (as in Fig. 102); ♀ without postvulval setae as above.

   6. Tergum II (1st apparent tergum) without anterior setae; left mandible with tooth on molar lobe (Fig. 103); dorsal anterior plate with posterior margin pointed and characteristically thickened (Fig. 97). **Saumundssonia**

   Tergum II with anterior setae; left mandible without tooth on molar lobe; anterior plate not as above. **Quadreces** (Fig. 90)

   Marginal and ventral carinae entire; distal end of 2nd and 3rd tibial with 7 hyaline setae; 3rd episternum laterally expanded (Fig. 104); exoskeleton with reticulate surface. **Epibates pedersonis** (Fig. 81)

   Without above combination of characters.

   7(3).

   Dorsum of head with stout, peglike setae; anterior region of head strongly modified (Fig. 105). **Trabecculus** (Fig. 80)

   Head without these characters.

9(8). Head with a dorsal carina passing anteriorly and medially from level of antenna (Fig. 147) ........................................... *Pelmatoberandra*

Head not as above ........................................... 10

10(9). Ventral carina merging with semicircular edge of sclerotization round oral cavity and not joined to marginal carina each side; carina mostly complete round anterior margin of head; hyaline margin present; no definite dorsal anterior plate; dorsal carinae pigmented, fused or approximate in midline (Fig. 128); ♀ genitalia mainly unpigmented, mesosome with vertical striations; vulva indented with horizontal row of 4-6 evenly spaced setae. ........................................... *Perineus*

Without above combination of characters ........................................... 11

11(10). Ventral carina as in *Perineus* above; hyaline margin present, small semicircular anterior plate; ♀ genitalia large and strongly pigmented. Vulva similar to that of *Perineus* with more setae, ♀ posterior sternites as in Fig. 83. ♂ antennae greatly enlarged (Fig. 82) ........................................... *Haffneria grandis*

Ventral carinae passing forward to fuse with marginal carina each side and enclosing ventral suture (sclerotised and sculptured surface of head sometimes covers anterior part of this suture (Clay, 1951: 183)); dorsal anterior plate present. Without combination of characters for *grandis* above ........................................... 12

12(11). Dorsal carinae not strongly pigmented; ventral carinae without anterior pigmented part; ♀ genitalia unpigmented; vulva indented with the inner setae each side separated from remainder (Fig. 122) ........................................... *Paraclisia*

Part of dorsal carinae pigmented; ventral carinae with anterior pigmented part; and without above combination of characters ........................................... 13

13(12). Large (5-10 mm), “hyaline” margin pigmented; antennae greatly enlarged (Fig. 84); ♀ vulva similar to that of *Perineus*; triangular anterior plate (Fig. 126) ........................................... *Harrisoniella* (= *Diomedicola* Kéler)

Without above combination of characters ........................................... 14

14(13). Dorsal carinae as fused bar across head (Fig. 131) ........................................... *Pseudopimirus*

Dorsal carinae otherwise ........................................... 15

15(14). Marginal carina without lateral suture, dorsal preantennal suture from anterior end of marginal carinae (Fig. 149) ........................................... *Philopeaneus*

Marginal carina divided into pre- and postmarginal carina, dorsal preantennal suture from anterior end of postmarginal carina (Fig. 88) ........................................... 16

16(15). Dorsal carinae pass posteriorly, close together, to less than midpoint of area between antennae and origin of dorsal carinae; shape of head as in Fig. 134. Lateral abdominal thickening as in Fig. 142 ........................................... *Bedfordiella simai* ♀

Dorsal carinae, shape of head, and lateral abdominal thickening of ♂ not as above ........................................... 17

17(16). Head with dorsal posterior prolongation of ventral carina (Fig. 88). ♀ abdominal tergal thickening as in Fig. 88, ♀ as in Fig. 141; stout forms ........................................... *Naubates*

Ventral carinae and abdominal thickening not as above; narrow elongate forms (Fig. 87) ........................................... *Halipeurus* 18

18(17). Dorsal carinae reaching near or to level of mandibles (Fig. 148) ........................................... *Halipeurus turutur* (see Edwards, 1961:149)

Dorsal carinae not reaching beyond midpoint of area between antennae and origin of dorsal carinae (Fig. 87) ........................................... *H. pelagicus* (see Edwards, ibid:155)

**NOTE ON THE PHILOPTERIDAE OF THE PROCELLARIIFORMES**

The lice belonging to the groups referred to in couples 7-18 of the above key probably originated from a single ancestral stock which diverged after it became parasitic on the Procellariiformes; the resulting groups are still rather similar, owing perhaps partly to retention of ancestral characters and partly to parallel development of similar stocks in a similar environment. Uncorrelated divergence seems to have taken place in the different groups, so that abdominal characters, for instance, may be similar in two groups whereas the head characters are different. This makes the grouping of species and the delineation of genera difficult and explains the rather long diagnoses in the key. Generic separation becomes largely a matter of opinion. It is possible to have a few large genera comprising rather diverse species or, perhaps as a necessary interim stage, many small genera. In this paper we have used the genera as accepted by Dr. von Kéler and Dr. Timmermann; we have followed Timmermann (1966: 85) in considering *grandis* as generically distinct from *Perineus* and from *Harrisoniella* (= *Diomedicola* Kéler), where it was placed by Kéler (1957: 509). The internal male genitalia of *Harrisoniella* are distinguished from those of *grandis* and other Philopteridae of which these organs are known by the presence of two large, backwardly directed diverticula from the base of the vesicular apparatus (Fig. 116). However, the phylogenetic value of the internal male genitalia is doubtful (Clay, 1958: 124).

**Genus Austrogoniodes** Harrison, 1915

A key to all the species of this genus is included in the preceding paper in this volume.
1. *Austrogoniodes antarcticus* Harrison, 1937
   Type Host: *Pygoscelis adeliae*
   King George V Land (Harrison, 1938:20)
   Ross I, Cape Evans, Jan. 1960, Gressitt (Bishop)

2. *Austrogoniodes cristati* Kéler, 1952
   Type Host: *Eudyptes c. crestatus*
   Gibbs I, South Shetland Is., Jan. 1966, Flint & Watson (U.S. N.M.) on *Eudyptes chrysolorus*

3. *Austrogoniodes gressitti* Clay, n. sp.
   (see preceding paper)
   Type Host: *Pygoscelis p. papua*
   Anvers I, Antarctic Peninsula, Jan. 1966, Gressitt, on *P. papua* and *P. antarctica*
   Deception I, South Shetland Is. (Neumann, 1913: 195) on *Pygoscelis antarctica*
   Deception I, South Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.) on *P. antarctica*

4. *Austrogoniodes keleri* Clay, n. sp.
   (see preceding paper)
   Type Host: *Eudyptes c. crestatus*
   Gibbs I, South Shetland Is., Feb. 1966, Flint & Watson (U.S. N.M.) on *Eudyptes chrysolorus*

5. *Austrogoniodes macquariensis* Harrison, 1937
   Type Host: *Eudyptes c. crestatus*
   Elephant I., South Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.) on *E. chrysolorus*
   Gibbs I, South Shetland Is., Feb. 1966, Flint & Watson (U.S. N.M.) on *E. chrysolorus*

6. *Austrogoniodes mawsoni* Harrison, 1937
   Type Host: *Aptenodytes forsteri*
   King George V Land (Harrison, 1937:15)
   McMurdo Sound, Jan. 1960, Gressitt (Bishop)
   Mawson (A.N.A.R.E.)

Genus *Docophoroides* Giglioli, 1864

**KEY TO ANTARCTIC SPECIES OF Docophoroides**

**MALES**

1. Genitalia without terminal expansion. (Fig. 106) [Anterior plate longer than broad or approximately as long as broad; antennae not as above] ..........3
   Genitalia with terminal anchor shaped expansion (Fig. 107) ..............2

2. Anterior plate (Fig. 108) considerably broader than long; antennal segment III elongated and swollen distally with terminal segments set at angle (Fig. 111)
   **brevis**

   Anterior plate longer than broad or approximately as long as broad; antennae not as above ..........2
   3. Anterior margin of anterior plate emarginate, plate considerably longer than broad (Fig. 109) ...........murphyi
   Anterior margin of anterior plate straight, plate slightly longer or approximately as long as broad (Fig. 110) ..............simplex

**FE MALES**

1. Internal genital sclerite not apparent ..........harrisoni
   Internal genital sclerite present ....................2

2. Single large internal genital sclerite (Fig. 112) .......brevi
   Three internal sclerites: 2 anterior (permethalal sclerites), and one posterior (Figs. 113-114) ..........3

3. Anterior margin of anterior plate emarginate, plate considerably longer than broad (Fig. 109) ..........murphyi
   Anterior margin of anterior plate straight, plate slightly longer or approximately as long as broad (Fig. 110) ..............simplex

*Docophoroides chilensis* Carriker, 1964, can be mentioned here, although the host, *Diomedea epomophora*, is not found in Antarctica, as it is almost certainly a synonym of *Docophoroides brevis*. It was described from a nymph, but the description agrees in measurements and characters with nymphs of *brevis*, and the British Museum (Nat. Hist.) has many specimens of *brevis* from *Diomedea epomophora*. There seems little doubt, therefore, that *D. chilensis* is a synonym of *D. brevis* (new synonymy).

1. *Docophoroides brevis* (Dufour, 1835)
   Type Host: *Diomedea exulans*
   Deception I, South Shetland Is. (Neumann, 1913: 195)

2. *Docophoroides harrisoni* Waterston, 1917
   Type Host: *Diomedea melanophris* 60°24'S, 62°55'W (Clay, 1940: 298)

3. *Docophoroides murphyi* (Kellogg, 1914)
   Type Host: *Macronectes giganteus*
   King George V Land (Harrison, 1937: 42) recorded as *D. hunteri* Harrison, 1937

4. *Docophoroides simplex* (Waterston, 1914)
   Type Host: *Diomedea melanophris*
   King George V Land (Harrison, 1937: 41) on *Macronectes giganteus*, probably straggler

Genus *Haffneria* Timmermann, 1966

1. *Haffneria grandis* (Piaget, 1880)
   Figs. 82, 83
   Type Host: *Stercorarius* sp.
   King George I, South Shetland Is. (Carriker, 1958: 186); de-
scribed as Perineus antarcticus Carriker, 1958, on Catharacta maccormicki
Wienecke I., Palmer Arch. (B.M.) on Catharacta skua
McMurdo Sound, Jan. 1960, Gressitt (Bishop) on C. skua
Little America, Dec. 1959, Gressitt (Bishop) on C. skua
Greenwich I., S. Shetland Is., 1960, Leech (Bishop) on C. skua
Penguin I., S. Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.) on C. skua
Weddell Sea, 61°49'S, 48°52'W, Flint & Watson (U.S.N.M.) on C. skua

Perineus antarcticus Carriker, 1958: 186 was based on a nymph taken from Catharacta maccormicki and is most probably a synonym of grandis.

Genus Harrisoniella Bedford, 1929

Material of this genus is insufficient to make a key to the species ferox and hopkinsi (see Kéler, 1957: 502-504) and chilensis Carriker, 1964.

1. Harrisoniella hopkinsi Eichler, 1952:40
   Type Host: Diomedea exulans
   Deception I., South Shetland Is. (Neumann, 1913:192), recorded as H. ferox (Giebel, 1867)

Genus Naubates Bedford, 1930

Key to Antarctic Species of Naubates
1. Dorsal carinae sexually dimorphic; posterior vertical part of each carina does not reach level of mandibles (Fig. 89). The 2 anterior pteronotal setae in $\delta$ longer than 2nd tibia. ................. prionii
   Dorsal carinae not sexually dimorphic, posterior part reaches to level of mandibles (Fig. 88). Anterior pteronotal setae in $\delta$ short .................. fuliginosus

The other species of Naubates (N. testaceus Taschenberg, 1882) recorded from an antarctic bird (Daption capensis) was described from a nymph. It was most probably a straggler on Daption as there is no authenticated record of Naubates from this host.

1. Naubates fuliginosus (Taschenberg, 1882)
   Fig. 88
   Type Host: Diomedea exulans
   62°04'S, 87°24'E (B.M.) on Procellaria aequinoctialis

Genus Paracaris Timmermann, 1965

Key to Antarctic Species of Paracaris
1. Last 2 abdominal segments in $\delta$ narrowly prolonged (Fig. 119); parameres narrow (Fig. 143); $\varphi$ edge of vulva with 3+3 setae (Fig. 122) ............... diomedae

   Without above combination of characters ............... 2

2. Thickening of head scarcely pigmented; anterior plate triangular; $\delta$ posterior segment of abdomen as in Fig. 120; parameres continuous with basal apodeme (Figs. 125, 144); $\varphi$ vulva with rounded shallow indentation (Fig. 124) ...................... hyalina

   (Fig. 85)

   Thickening of head strongly pigmented; anterior plate small and oval; $\delta$ posterior segments of abdomen as in Fig. 121; parameres not continuous with basal apodeme (Fig. 153); $\varphi$ vulva with deep indentation (Fig. 123) ..................... obscura

1. Paracaris diomedae (J. C. Fabricius, 1775)
   Type Host: Diomedea melanophrys
   62°24'S, 62°55'W (Clay, 1940: 300)
   63°15'S, 98°46'E (B.M.) on Phoebetria palpebrata
   Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.) on P. palpebrata

2. Paracaris obscura (Rudow, 1869)
   Type Host: Macronectes giganteus
   Pettermann I., Palmer Arch. (Neumann, 1913: 195) recorded as Lipurus gaini Neumann
   King George V Land (Harrison, 1937: 29)
   69°52'S, 85°13'W (Thompson, 1938: 6)
   62°50'S, 10°55'W (B.M.)
   Wiencke I., Palmer Arch. (B.M.)
   South Shetland Is. (F.I.D.S.)
   Anvers I., Palmer Arch., Jan. 1966, Flint & Watson (U.S.N.M.)
   Penguin I., South Shetland Is., Jan. 1966, Flint & Watson (U.S.N.M.)

Genus Pectinopygus Mjöberg, 1910

1. Pectinopygus turbinatus (Piaget, 1890)
   Fig. 78
   Type Host: Unknown, but probably Phalacrocorax atriceps or Phalacrocorax albiventer
   South Orkney Is. (F.I.D.S.) on Phalacrocorax atriceps
   Wiencke I., Palmer Arch. (B.M.) on P. atriceps
   Gonzales Videla, Danco Coast, Jan. 1961, R. & T. Leech (Bishop) on P. atriceps
   Gaston I., Feb. 1966, Flint & Watson (U.S.N.M.) on P. atriceps

Genus Perineus Harrison in Thompson, 1936

Key to Antarctic Species of Perineus
1. Dorsal carinae join to form narrow, elongate V-shaped mark (Fig. 130) .............. circumcinnaeides
   Dorsal carinae do not form narrow, elongate V-shaped mark
   2. Head as in Fig. 128 ............... nigrolimbatus
   Head as in Fig. 129 ............... circumfuscatus

The type host of circumfuscatus is melanophrys; specimens from Macronectes differ somewhat in pro-

\(^{3}\) See also Kéler (1957).
portions but can be included as P. circumfasciatus sens. lat.

1. Perineus circumfasciatus Kéler, 1957
   Type Host: Diomedea melanophris
   Weddell Sea (U.S.N.M.) on Phoebetria palpebrata

2. Perineus nigrolimbatus (Giebel, 1874)
   Type Host: Fulmarus glacialis
   King George V Land (Harrison, 1937: 30) on Procella antarctica
   Stillwell I., King George V Land (Harrison, 1937: 30) on P. antarctica
   Clarence I., South Shetland Is. (Clay, 1940: 299) on P. antarctica

   Wienieke I., Palmer Arch. (B.M.) on P. antarctica
   63°13’S, 99°27’E (B.M.) on P. antarctica
   59°35’S, 66°33’E (B.M.) on P. antarctica
   Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.) on P. antarctica

   Larsen I., South Orkney Is., Feb. 1966, Flint & Watson (U.S.N.M.) on P. antarctica
   62°45’S, 28°W, Feb. 1947, Gilmour (U.S.N.M.) on P. antarctica
   62°55’S, 112°0’W, Jan. 1947, Gilmour (U.S.N.M.) on P. antarctica
   62°51’S, 112°05’W, Jan. 1947, Gilmour (U.S.N.M.) on P. antarctica

Genus Philoceanus Kellogg, 1903

1. Philoceanus fasciatus (Carriker, 1958: 184)
   Type Host: Oceanites oceanicus (probably error)
   South Orkney Is. (F.I.D.S.) on Fregata tropica melanogaster
   Deception I., S. Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.) on Fregata tropica
   Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.) on Fregata tropica
   Elephant I., S. Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.) on Fregata tropica
   This species was described from specimens said to have come from Oceanites oceanicus. However, as the figures appeared to represent specimens in the British Museum (Nat. Hist.) from Fregata tropica, the collector, Dr. Olrog, was approached through the kindness of Dr. K. Hayward of the Fundacion Miguel Lillo; it was ascertained that in the collecting bag together with Oceanites were specimens of Fregata tropica and Sternal vitatta. There seems little doubt that the true host of fasciatus is Fregata tropica, and that P. wolfherrei Timmermann, 1961, is a synonym.

2. Philoceanus robertsi (Clay, 1940)
   Type Host: Oceanites oceanicus
   Argentine Is., Palmer Arch. (Clay, 1940: 313)


Genus Pseudonirmus Mjöberg, 1910

Key to Antarctic Species of Pseudonirmus

1. Marginal carina of head divided into pre- and postmarginal carinæ (Fig. 132) .................. 2
2. No definite premarginal carina (Fig. 131) ........ charcoti
2. Lateral internal abdominal thickening as in Figs. 137, 140; head as in Fig. 133; gurlti
   Lateral internal abdominal thickening as in Figs. 136, 139; head as in Fig. 132; lugubris

Lipeurus caudatus from Fulmarus glacialoides (“Procella antarctica”) was placed by Taschenberg (1882: 153), who saw a drawing by Rudow, near his species P. gurlti, so that it can be presumed that Rudow’s species was a Pseudonirmus; Taschenberg considered that the species was not identifiable. The name caudatus should be treated as a nomen dubium and not used again (see also Timmermann, 1961: 31).

1. Pseudonirmus charcoti (Neumann, 1907)
   Type Host: Pagodroma nivea
   Booth-Wandel I., Palmer Arch. (Neumann, 1907: 16)
   King George V Land (Harrison 1937: 26)
   66°50’S, 12°22’W (B.M.)
   Wienieke I., Palmer Arch. (B.M.)
   South Orkney Is. (F.I.D.S.)
   66°51’S, 112°05’W (U.S.N.M.)
   Nelson I., South Shetland Is., Mar. 1964, Watson (U.S.N.M.)
   Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.)

2. Pseudonirmus gurlti (Taschenberg, 1882)
   Type Host: Daption capense
   Petermann I, Palmer Arch. (Neumann, 1913: 192)
   70°56’S, 100°17’W (Thompson, 1938: 6)
   Deception I., South Shetland Is. (Clay, 1940: 298)
   65°20’S, 10°30’W (B.M.)
   61°25’S, 22°40’W (B.M.)
   Wienieke I., Palmer Arch. (B.M.)
   63°20’S, 87°39’E (B.M.)
   66°51’S, 112°05’W (U.S.N.M.)
   Nelson I., South Shetland Is., Mar. 1964, Watson (U.S.N.M.)
   Elephant I., South Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.)

3. Pseudonirmus lugubris (Taschenberg, 1882)
   Type Host: Thalassoco antarctica
   Stillwell I. King George V Land (Harrison, 1937: 26) as P. antarcticus Harrison
   King George V Land (Harrison, 1937: 26) as P. antarcticus Harrison
   61°30’S, 23°W (B.M.)
   62°00’S, 22°40’W (B.M.)
   63°28’S, 93°45’E (B.M.)
   South Shetland Is. (B.M.)
Bellingshausen Sea (B.M.) 62°4'S, 62°24'W (B.M.)
Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.)
66°51'S, 112°05'W, Jan. 1947, Gilmore (U.S.N.M.)

Genus Quadraceps Clay and Meinertz-Hagen, 1939

Key to Antarctic Species of Quadraceps

1. Lateral pigmentation of abdominal segments horizontal; parameres, except tips, unpigmented (Fig. 90) **punctatus** sublinguatus

Lateral pigmentation of abdominal segments either vertical or bilobed (Fig. 91); parameres pigmented...

2. Gular plate strongly pigmented; δ basal apodeme with distal cross bar........................................................................... 3

Gular plate not strongly pigmented; δ basal apodeme without distal cross bar........................................................................... 4

3. Breadth of head over 0.50 mm ......................................................................................................................... 3

Breadth of head under 0.50 mm ......................................................................................................................... 4

4. Head relatively broader, breadth:length = 0.90–94; ♀ with pigmented meso-metasternal plate (Fig. 146) **ornatus** (Fig. 91)

Head relatively narrower, breadth:length = 0.82–85; ♀ without pigmented meso-metasternal plate (Fig. 145) **sellatus**

5. Tergocentral setae of IV (= 4th apparent segment) less than 6 in number; δ genitalia with toothed vestige of genital sac (Fig. 160) ......................................................................................................................... 3

Tergocentral setae of IV, 6 or over; δ genitalia without toothed vestige of genital sac ......................................................................................................................... 4

6. Preanellum region short (Fig. 177); δ genitalia as in Fig. 160 ......................................................................................................................... 3

Preanellum region longer (Fig. 178); δ genitalia as in Fig. 161 ......................................................................................................................... 4

7. Females....................................................................................................................................................... 7

Males....................................................................................................................................................... 8

8. Head width over 0.70 mm; normally marginal setae of penultimate tergite 3 + 3 or over ......................................................................................................................................................................................... 7

Head width under 0.70 mm; normally marginal setae of penultimate tergite 2 + 2 ......................................................................................................................................................................................... 8

9. Basal apodeme with distal cross bar (Fig. 162, b); mesosome with dorsal membrane (m) ......................................................................................................................... 9

Basal apodeme without cross bar and mesosome without dorsal membrane ......................................................................................................................... 10

10. Endomeres joined anteriorly by narrow strip (Fig. 165) ......................................................................................................................... 10

Endomeres not joined ....................................................................................................................................................... 11

11. Parameres and endomeres as in Figs. 169, 171, 172 ......................................................................................................................... 11

Parameres and endomeres as in Figs. 170, 173, 174 ......................................................................................................................... 12

**Quadraceps alpha** (Kellogg, 1914)

Type Host: **Catharacta skua antarctica**

Ross Ice Shelf, Little America, Dec. 1959, Grossett (Bishop) on **Catharacta maccormicki**

**Quadraceps antarcticus** Timmermann, 1952

Type Host: **Cabianus scoresbyi**

Wiencke I., Palmer Arch. (B.M.) on Chionis alba

South Orkney Is. (F.I.D.S.) on Chionis alba (see Timmermann, 1952: 218)

**Quadraceps houri** Hopkins, 1949

Type Host: **Sterna paradisaea**

Nelson L. (U.S.N.M.) on Sterna vittata

Genus Saemundssonia Timmermann, 1935

Key to Antarctic Species of Saemundssonia

1. Postspiracular seta and sensillus on tergite III (2nd apparent segment); hyaline margin of head with deep median indentation (Fig. 156)......................................................................................................................... 2

No postspiracular seta on tergite III (Fig. 168); hyaline margin without deep median indentation ......................................................................................................................... 3

2(1). Parameres and penis long (Fig. 157); breadth of ♀ head over 0.65 mm......................................................................................................................... 3

Parameres and penis short (Fig. 158); breadth of ♀ head under 0.65 mm. **desolata** Group

3(1). Setae of sternite II & III long [Meso- and metasternal setae present] ......................................................................................................................... 4

Setae of sternite II & III short and spine-like (one on III occasionally long) (Fig. 168) ......................................................................................................................... 5

4(3). Endomeres as in Fig. 154; ♀ head as in Fig. 175 ......................................................................................................................... 5

Endomeres as in Fig. 155; ♀ head as in Fig. 176 ......................................................................................................................... 6

5(3). Tergocentral setae of IV (= 3rd apparent segment) less than 6 in number; δ genitalia with toothed vestige of genital sac (Fig. 160) ......................................................................................................................... 6

Tergocentral setae of IV, 6 or over; δ genitalia without toothed vestige of genital sac ......................................................................................................................... 7

6(5). Preanellum region short (Fig. 177); δ genitalia as in Fig. 160 ......................................................................................................................... 7

Preanellum region longer (Fig. 178); δ genitalia as in Fig. 161 ......................................................................................................................... 8

7(5). Females....................................................................................................................................................... 8

Males....................................................................................................................................................... 9

8(7). Head width over 0.70 mm; normally marginal setae of penultimate tergite 3 + 3 or over ......................................................................................................................... 8

Head width under 0.70 mm; normally marginal setae of penultimate tergite 2 + 2 ......................................................................................................................... 9

9(7). Basal apodeme with distal cross bar (Fig. 162, b); mesosome with dorsal membrane (m) ......................................................................................................................... 9

Basal apodeme without cross bar and mesosome without dorsal membrane ......................................................................................................................... 10

10(9). Endomeres joined anteriorly by narrow strip (Fig. 165) ......................................................................................................................... 10

Endomeres not joined ....................................................................................................................................................... 11

11(10). Parameres and endomeres as in Figs. 169, 171, 172 ......................................................................................................................... 11

Parameres and endomeres as in Figs. 170, 173, 174 ......................................................................................................................... 12

**Saemundssonia antarctica** (Wood) (Harrison, 1937), said to have been taken from Pagodroma nivea, has the male genitalia (shown in Harrison, 1937, Pl. II, Fig. 3) similar to those of S. lari. It seems probable that the specimens were stragglers from one of the Laridae and that antarctica is a synonym of S. lari (Fabricius).

Since the preparation of this paper, the reference to **Docophorus bicolor** Rudow in Timmermann (1965: 75) has been seen. Timmermann considers that Rudow's species is unrecognizable and that it should be rejected as a nomen dubium. However, there is little

*Does not include the lateral post-spiracular seta each side.*
doubt that the description, which is rather better than most of Rudow’s, can apply only to the Saemundssonia among the species parasitic on Prionella antarctica. The majority of the species described by the early workers on Mallophaga are not recognizable by modern standards, and as most of the types are lost (unlike the recent unrecognizable species), it has been the practice, a most reasonable one, that the name should be applied to the species from the type host, unless there are in the description some characters quite inapplicable to the species. For these reasons, and as bicolor has always been used for the Saemundssonia species from Prionella antarctica, Rudow’s name is here retained. S. occidentalis (Kellogg, 1896), parasitic on Fulmarus glacialis, differs from bicolor, at least in the proportions of the head.

The Saemundssonia platycephalus group comprises the population from Oceanites gracilis (S. platycephalus Kellogg & Kuwana, 1902), Oceanites oceanicus, and Pelagodroma marina (S. marina Timmermann, 1956). The Saemundssonia males from Oceanites oceanicus listed below appear to be the same as the male type of S. marina, and both may be S. platycephalus. Only a single male, the lectotype, has been seen from the type host of this latter species, and it is not possible to see the details of the genitalia in this specimen. Further material is needed from Pelagodroma marina and Oceanites gracilis to decide the status of these populations.

In this paper the specimens from Oceanites oceanicus are called Saemundssonia marina Timmermann.

1. **Saemundssonia bicolor** (Rudow, 1870)
   Type Host: Prionella antarctica
   Clarence L., South Shetland Is. (Clay, 1940: 297)
   62°8′S, 26°W (B.M.)
   63°13′S, 99°27′E (B.M.)
   Wienecke I., Palmer Arch. (B.M.)
   Larsen I., South Orkney Is., Feb. 1966, Flint & Watson (U.S.N.M.)
   Weddell Sea (U.S.N.M.)

2. **Saemundssonia desolata** Timmermann, 1959:151
   Type Host: Pachyptila desolata
   61°59′S, 85°54′E (Timmermann, 1959: 153)

3. **Saemundssonia gaini** (Neumann, 1913)
   Type Host: Macronectes giganteus
   Petermann I., Palmer Arch. (Neumann, 1913: 169)

4. **Saemundssonia lari** (O. Fabricius, 1780)
   Type Host: Larus hyperboreus
   Petermann I., Palmer Arch. (Neumann, 1913: 188) on Larus dominicanus

South Orkney Is. (F.I.D.S.) on L. dominicanus
Wienecke I., Palmer Arch. (B.M.) on L. dominicanus
Deception Is, South Shetland Is. (B.M.; Bishop)
Avian L., nr. Adelaide L., off Palmer Peninsula, Jan. 1966, Flint & Watson (U.S.N.M.) on L. dominicanus
Litchfield L., off Anvers I., Ant. Peninsula, Jan. 1966, Flint & Watson (U.S.N.M.) on L. dominicanus

5. **Saemundssonia lockleyi** Clay, 1949
   Type Host: Sterna vittata
   Petermann I., Palmer Arch. (Neumann, 1913: 188) recorded as Philopterus melanocephalus Nitzsch
   Wienecke I., Palmer Arch. (Clay, 1949: 11)
   Greenwich L., S. Shetland Is., Feb. 1960, R. Leech (Bishop)
   Penguin I., South Shetland Is., Feb. 1966, Flint & Watson (U.S.N.M.)
   Nelson L., South Shetland Is., Mar. 1964, Watson (U.S.N.M.)

6. **Saemundssonia ?marina** Timmermann, 1956:191
   Type Host: Pelagodroma marina
   65°18′S, 10°30′W (B.M.) on Oceanites oceanicus

7. **Saemundssonia nivea** Timmermann, 1956:190
   Type Host: Pagodroma nivea
   63°18′S, 22°30′W (B.M.)
   63°13′S, 99°27′E (B.M.)
   South Orkney Is. (F.I.D.S.)
   Wienecke I., Palmer Arch. (B.M.)
   Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.)
   66°51′S, 112°05′W, Jan. 1947, Gilmore (U.S.N.M.)
   61°30′S, 23°W (B.M.) on Thalassoica antarctica

8. **Saemundssonia stammeri** Timmermann, 1959:149
   Type Host: Daption capense
   63°21′S, 87°39′E (Timmermann, 1959: 151)
   62°25′S, 9°20′W (B.M.)
   65°20′S, 10°30′W (B.M.)
   61°25′S, 22°40′W (B.M.)
   Clarence L., South Shetlands (B.M.)
   Nelson L., South Shetland Is., Mar. 1964, Watson (U.S.N.M.)

9. **Saemundssonia streeamannii** Timmermann, 1949
   Type Host: Catharacta skua
   Cape Royals, 77°32′S, 166°12′E (Neumann, 1911: 20) on C. maccormicki recorded as Docophorus lari (O. Fabricius)
   King George V Land (Harrison, 1937: 22) recorded as Philopterus pustulosus (Nitzsch)
   Wienecke I., Palmer Arch. (B.M.)
   Greenwich I., S. Shetland Is., Feb. 1960, Leech (Bishop)
   Little America, Ross Ice Shelf, Dec. 1959, Gressitt (Bishop) on C. maccormicki
   Cape Royals, 19–23 Dec. 1963, I. F. Spellerberg on C. maccormicki
   Weddell Sea, Feb. 1966, Flint & Watson (U.S.N.M.)
Genus *Trabeculus* Rudow, 1866

Key to Antarctic Species of *Trabeculus*

1. 2 stout peglike spines on dorsum of head in ♀ and ♂; 3 long setae on each temple; ♂ 1st antennal segment enlarged (Fig. 150); genitalia as in Fig. 151 .................................................. *heteracanthus* (♀=schillingi)
2. 4 (♀), 4 (♂) stout peglike spines on dorsum of head; 2 long setae on each temple; ♂ 1st antennal segment not enlarged; genitalia as in Fig. 152 .......................................................... *hexacon* (Fig. 80)

*Trabeculus heteracanthus* (Waterston) was described from specimens taken from *Macrocheles giganteus* and *Oceanites oceanicus*. As there are no other records of *Trabeculus* from these two hosts, it seems possible that the original specimens were stragglers. The type material of *T. heteracanthus* appears to be the same as *schillingi* Rudow, 1866, although specimens are somewhat larger and can be included as *schillingi sens lat.*

1. *Trabeculus hexacon* (Waterston, 1914)
   Type Host: *Procellaria aequinoctialis* 66°04'S, 87°24'W (B.M.)

ANOPLURA

Family ECHINOPHTHIRIDAE Enderlein

This family is found only on the Pinnipedia (seals) of the order Carnivora.

Key to Antarctic Genera of *Echinophthiridae*

1. Antennae 5-segmented ................. *Antarctophorus* 2
   Antennae 4-segmented .................. *Lepidophthirus*

Genus *Antarctophorus* Enderlein, 1906

Key to Antarctic Species of *Antarctophorus*

1. Pro and mesosternite with a pair of setae 3 [Metasternite without setae (according to Harrison (1937))] *maevsoni* 2
   Pro- and mesosternite without setae .............. 2
2. Metasternum with setae .................. *lobodontis* (Fig. 180)
   Metasternum without setae ................... *ogmorhini* (Fig. 179)

1. *Antarctophorus lobodontis* Enderlein, 1909
   Type Host: *Lobodon carcinophagus*
   Booth-Wandel I., Palmer Arch. (Neumann, 1907: 13), recorded as *A. ogmorhini*
   Argentine Is., Palmer Arch. (Clay, 1940: 296)
   Coulman I., Victoria Land, 18 Jan. 1965, J. Shoup (Bishop)

2. *Antarctophorus maevsoni* Harrison, 1937
   Type Host: *Ommatophoca rossi*
   King George V Land (Harrison, 1937: 11)

3. *Antarctophorus ogmorhini* Enderlein, 1906
   Type Host: *Hydrurga leptonyx*
   Victoria Land (Enderlein, 1909: 476)
   Argentine Is., Palmer Arch. (Clay, 1940: 296) on *Leptonychotes weddeli*
   Wilkes Station (B.M.) on *L. weddeli*
   McMurdo Sound, Jan. 1960, Gressitt, Leech (Bishop) on *L. weddeli*
   Franklin I., Ross Sea, Jan. 1965, Shoup (Bishop) on *L. weddeli*

Genus *Lepidophthirus* Enderlein, 1904

*Lepidophthirus macrorhini* Enderlein, 1904
   Fig. 181
   Type Host: *Mirounga leonina*
   Wiencke I., Palmer Arch. (B.M.)

This is the only species in the genus.

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REFERENCES


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* See Harrison (1937:12) for definition of scales and setae.

HOST-PARASITE LIST

(Asterisk indicates species from type-host. (B) = breeds in Antarctica. (R) = ranges in Antarctica)

HOST (BIRDS)

MALLOPHAGA

*Bastrogoniodes mawsoni Harrison, 1937
*Bastrogoniodes gressitti Clay, n. sp.
*Bastrogoniodes antarcticus Harrison, 1937

Australoichiodes gressitti Clay, n. sp. [Bishop, B.M.]
*Bastrogoniodes bicornutus (Kéler, 1954:56)
Australoichiodes hamiltoni (Harrison, 1937) [B.M.]
Australoichiodes macquariensis (Harrison, 1937) [B.M.]
Australoichiodes keleri Clay, n. sp. [U.S.N.M.]

SIPHONICIFORMS

(B) Aptenodytes forsteri Gray, 1844
(B) Pygocelis papua (Forster, 1781)
(B) Pygocelis adelae (Hombron & Jacquinot, 1841)
(B) Pygocelis antarctica (Forster, 1781)
(B) Eudyptes chrysolophus (Brandt, 1837)
Procellariiformes

(R) *Diomedea exulans* Linnaeus, 1758

- *Austromenopon affine* (Piaget, 1890)
- *Perineus concinnoides* Keler, 1957:521
- *Paracallis hyalina* (Neumann, 1911)
- *Naubates fucipinnis* (Taschenberg, 1882)
- *Harrisoniella hopkinsi* Eichler, 1952:40
- *Docophoroides brevis* (DuFour, 1835)
- *Episcates pederiformis* (DuFour, 1835)
- *Perineus circumfasciatus* Keler, 1957:525
- *Paracallis diomedae* (J. C. Fabricius, 1775)
- *Harrisoniella ferox* (Giebel, 1867)
- *Docophoroides harrisoni* Waterston, 1917
- *Docophoroides simplex* (Waterston, 1914)

(R) *Diomedea melanophrys* Temminck, 1828

Perineus circumfasciatus Keler, 1957 [Keler, 1957:525]
Paracallis diomedae (J. C. Fabricius, 1899) [Clay, 1940:300]

(B) *Macronectes giganteus* (Gmelin, 1789)

- *Austromenopon ossifragae* (Eichler, 1949:12)
- *Paracallis obscura* (Rudow, 1869)
- Perineus circumfasciatus Keler, 1957 sens. lat. [B.M.]
- *Docophoroides murphyi* (Kellogg, 1914)
- *Trabeculus heterocanus* (Waterston, 1912)
  = *T. schillingi* Rudow, 1866 sens. lat.
- *Saemundssonia gaini* (Neumann, 1913)

(B) *Daption capense* (Linnaeus, 1758)

- *Austromenopon daptionis* (Eichler, 1949:344)
- *Anistrona procellariarum* Westwood, 1874
- *Naubates testaceus* (Taschenberg, 1882)
- *Psiefonimus griffii* (Taschenberg, 1882)
- *Saemundssonia stammeri* Timmermann, 1959:149

(B) *Pachyptila desolata* (Gmelin, 1789)

- *Naubates prion* (Enderlein, 1909)
- Halirerus turtur Edwards, 1961:149 [B.M.]
- *Saemundssonia desolata* Timmermann, 1959:151
  Longimenopon galeatum Timmermann, 1957:9
  [Timmermann, 1957:12]

(B) *Fulmarus glacialoides* (“Procella antarctica”) (Stephens, 1826)

Ancistrona sp.
Perineus nigrolimbatus (Giebel, 1873) [Keler, 1957:513]
*Harrisoniella chilensis* Carriker, 1964:16
*Saemundssonia bicolor* (Rudow, 1870)
Ancistrona sp.

(B) *Thalassoica antarctica* (Gmelin, 1789)

- *Austromenopon oschei* Timmermann, 1963:412
- *Psiedonirius lugubris* (Taschenberg, 1882)
- *Saemundssonia nivea* Timmermann, 1956
- Naubates fucipinnis (Taschenberg, 1882)
  [Timmermann, 1961:177]
- *Trabeculus hexacon* (Waterston, 1914)

(R) *Procellaria aequinoctialis* Linnaeus, 1758

Ancistrona sp.
*Austromenopon ?daptionis* (Eichler, 1949)
  [Timmermann, 1963: 411]
- *Psiedonirius charcoti* (Neumann, 1907)
- *Saemundssonia nivea* Timmermann, 1956:190

(B) *Pagodroma nivea* (Forster, 1777)

Ancistrona sp.
*Austromenopon ?daptionis* (Eichler, 1949)
  [Timmermann, 1963: 411]
- *Psiedonirius charcoti* (Neumann, 1907)
- *Saemundssonia nivea* Timmermann, 1956:190
(B) Oceanites oceanicus (Kuhl, 1820) Halipeurus pelagicus (Denny, 1842) [Edwards, 1961:155]
   Philocoenus robertsi (Clay, 1940)
   Saemundssonia marina Timmermann, 1956:191 [B.M.]
   Halipeurus pelagicus (Denny, 1842) [Edwards, 1961:156]
   Philocoenus fasciatus (Carriker, 1958:184) [B.M.]

Pelecaniformes
   (B) Phalacrocorax atriceps (King, 1828)

Charadriiformes
   (B) Chionis alba (Gmelin, 1789) Quadraceps antarcticus Timmermann, 1952:218
   [Timmermann, 1952:218]
   Harrisoniella grandis (Piaget, 1880) [Kéler, 1957:509]
   *Saemundssonia stresemanni Timmermann, 1949
   *Quadraceps alpha (Kellogg, 1914)
   Harrisoniella grandis (Piaget, 1880) [B.M.]
   Saemundssonia stresemanni Timmermann, 1949
   [I. F. Spellerberg coll. 1964]
   (B) Catharacta skua (Brünnich, 1764) Actornithophilus piceus (Denny, 1842) sens. lat. [B.M.]
   Austromenopon transversum (Denny, 1842) [B.M.]
   Saemundssonia lari (O. Fabricius, 1780) [B.M.]
   *Quadraceps ornatus fuscolaminulatus (Enderlein, 1908)
   *Saemundssonia lockleyi Clay, 1949
   Quadraceps sellatus (Burmeister, 1838) [Clay, 1957:4]
   (B) Catharacta maccormicki (Saunders, 1893)
   *Pinguetiella caputincisa (Eichler, 1950)
   Pectinopygus turbinatus (Piaget, 1890) [Timmermann, 1964:280]
   (B) Larus dominicanus (Lichtenstein, 1823)
   (B) Sterna vittata Gmelin, 1789

Carnivora (Pinnipedia)
   Otariidae
   Arctocephalus tropicalis (Gray, 1872)
   Phocidae (Monachinae)
   Leptonychotes weddelli (Lesson, 1826)
   Lobodon carcinophagus (Hombron & Jacquinot, 1842)
   Hydrurga leptonyx (Blainville, 1820)
   Ommatophoca rossi (Gray, 1844)
   Phocidae (Cystophoridae)
   Mirounga leonina (Linne, 1758)

HOST (MAMMALS)

Anoplura

No records

Antarctophthirus ogmorhini Enderlein, 1906 [Clay, 1940:296]
*Antarctophthirus lobodontis Enderlein, 1909
*Antarctophthirus ogmorhini Enderlein, 1906
*Antarctophthirus mawsoni Harrison, 1937

*Lepidophthirus macrorhini Enderlein, 1904
Figs. 1-6, Austrogoniodes spp. 1, A. antarcticus, thorax (a. ventral ptero thoracic seta); 2, A. antarcticus, median penial sclerite; 3, same, A. gressitti; 4, A. keleri, attenuated conus (appendix coni sens. Keeler, 1952); 5, terminal terga of ♂ abdomen, A. gressitti (a. pleural setae of VII); 6, same, A. antarcticus.
Figs. 7–12, ♂ genitalia of *Austrogoniodes* spp. 7, *A. gressitti*; 8, *A. antarcticus*; 9, *A. antarcticus*, paramere; 10, *A. gressitti*, same; 11–12, *A. keleri*; position of median penial sclerite; p, paramere. Dotted end of paramere in Fig. 11 taken from specimen from *E. chrysolophus*. 
5, temple seta 51.
Figs. 29-32. *Austrogoniodes* spp., 29. spermathecal sclerites. 29. *A. conrae*; 30. *A. hamiltoni*; 31. *A. macquariensis* in lateral pouch, see Fig. 17; 32. *A. bicornatus*. 
Fig. 51. *Propriella caputareas*, x 28 (B.M. 100300): Fig. 52. *Zeuxostraca paccellata*, x 25 (B.M. 100117): Fig. 53. *Lemnotaphlus picus*, x 45 (B.M. 100260): Fig. 54. *Longonectes galeatum*, x 61 from *Pachyptila desalata* (B.M. 10027).
Fig. 55. Amblyceran antenna; Fig. 56. Feldmania sp., laterodorsal margin of head; Fig. 57, the 3 anterior mesothoracic setae in Menoponidae; c, anterior margin of mesothorax lying ventral to prothorax; p, posterior margin of prothorax with 2 of the prothoracic setae; Fig. 58, anterior mesothoracic setae in Acternithophila; Fig. 59, Lactistoma sp., laterodorsal margin of head; Fig. 60, labial palp and seta, Acternithophila tibainsa; Fig. 61, same, 4, mesosternite; Fig. 62, Acternithophila piecea, mesosternite; Fig. 63, Austremenopon transversum, prothorax; Fig. 64, Austremenopon sp., prothorax (m.p.s., marginal prothoracic setae 1-3; d.p.s., dorsal prothoracic setae 1-2); Fig. 65, Austremenopon sp., hypopharynx; Fig. 66, Austremenopon insutosinatum, prothorax; Fig. 67, Austremenopon utriculum, outline of head.
Figs. 68-75. Austromonopus spp. 68. Head. I. ossitragae (s. citophore selerite of hypopharynx); 69. same. A. oschiri; 70. lateral margins of segments VII-VIII. I. ossitragae; 71. same. A. oschiri; 72. A. albire 1. terminal segments of abdomen; 73. Genitalia. I. transversum; 74. same. A. albire; 75. same. I. ossitragae (g. genital selerite).
Fig. 76. Vespiinae demersus Kellogg $\times 24.6$ (BM.100027); Fig. 77. V. demersus $\delta$, genitalia; Fig. 78. Pectinopygus turbanatus $\times 34.5$ (BM.10012); Fig. 79. Astragoniodes hamilton $\times 50$ (BM.10022); Fig. 80. Trachuranus hexagon $\times 85$ (BM.10021); Fig. 81. Epishites cordiformis $\delta$ $\times 36$ (BM.10009).
Fig. 82. *Haliotrema grandis* \( \times 31 \) (B.M. 10019); Fig. 83. same. \( \times 30.5 \) (B.M. 10018); Fig. 81. *Harrisoniella hopkinsi* \( \times 45 \) (B.M. 10033); Fig. 85. *Parachys hesperina* \( \times 27 \) (B.M. 10032); Fig. 86. *Philocorus lascentias* \( \times 74 \) (B.M. 100020); Fig. 87. *Haloecus pelagius* \( \times 39 \) (B.M. 10028).
Figs. 94-95, *Vesonius demersus*. 94, preantennal region of head, ventral; 95, part of tergite IV (p.sp.s., post-spiracular seta; s., post-spiracular sensillum; sp., spiracle). Fig. 96, *Saemundssonius* sp., post-spiracular seta and sensillus. Figs. 97-98, types of internal carinae in the Philopteridae (con. Conus; d.ap., dorsal anterior plate; d.prs., dorsal preantennal suture; h.m., hyaline margin; m.c., marginal carina; m.d., mandible; m.t.c., marginal temporal carina; o.c.c., occipital carina; p.c.n., postocular nodus; p.m.c., postmarginal carina; p.o.s., postantennal suture; p.ra.n., preantennal nodus; p.m.c., premarginal carina; p.o.n., preocular nodus; pul., pulvinius; t.c., temporal carina; t.t.c., transverse carina; v.a.p., ventral anterior plate; v.c., ventral carina.)
Fig. 99. *Austrogoniodes* sp., fore coxa; Fig. 100. *Dromoponocrates* sp., distal end of tibia and tarsus; Figs. 101-102, types of *A* ano-genital openings; Fig. 103, *Squamosus armatus* sp., left mandible; Fig. 104, *Epishates* sp., 3rd episternum; Fig. 105, *Trabecula* sp., preantral region.
Figs. 157-162. Sanguinidsonia spp.: 157. genitalia; s, vestige of genital sac; b, cross bar of basal apodeum; m, dorsal membrane of mesosome; 157. S. desobata; 158. S. ? matter from Oenocetes oceanicus; 159. S. nivea; 160. S. ganti; 161. S. bicolor; 162. S. stresemanni.
Figs. 179-180. *Antarctophthirus* spp. 179. *A. ogmorkini* : 180. *L. fullo* (A. dorsal aspect of head; B. ventral aspect of head; C. thoracic sternum; D. types of scales from abdomen. Fig. 181. *Lepidophthirus macrothini* ♀. (From Ferris. 1931: 186, 187, 500.)