Mallophaga from Birds of the Ponapé I. (Carolines) and the Palau Is. (Micronesia).

By

Seinosuke Uchida, Fuigakushi.

With 2 figures in text.

The specimens of Mallophaga, upon which this paper is based, were obtained by Mr. Naoshi Teraoka during the spring of 1914, while engaged in collecting birds for the Ornithological Society of Japan, in Micronesia and in the Caroline Islands. They hail principally from two localities, viz. the Palau or Pelew Ids. (Micronesia) and the Ponapé Id. (Carloines).

The collection includes 9 genera and 21 species, taken from 15 species of birds. Of the above number of Mallophaga species, two are apparently new to science and will be called *Psittaconirmus harrisoni* and *Myrsidea teraokai*. The former, obtained from the Red Lory, *Eos rubiginosa*, is the second species of the genus *Psittaconirmus* Harrison (1915); the latter was taken from the Eastern Reef-heron, *Demige retta jugularis grayi*.

The list of the host species and of the parasites found on them is as follows:

<table>
<thead>
<tr>
<th>Host</th>
<th>Parasite</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Phaethon candidus</em></td>
<td>{Colpocephalum epiphanes Kell. and Chap.</td>
</tr>
<tr>
<td></td>
<td><em>Menopon eulasius</em> Kell.</td>
</tr>
<tr>
<td><em>Sula sula</em></td>
<td><em>Lipeurus potens</em> Kell. and Kuw.</td>
</tr>
<tr>
<td></td>
<td><em>Menopon brevipalpe</em> P.</td>
</tr>
</tbody>
</table>
Phalacrocorax melanoleucus .......... \{ Lipeurus subsetosus P.

Demiegretta jugularis grayi .......... \{ Nirmus orarius Kell.

Nycticorax caledonicus .......... \{ Colpocephalum importunum N.

Megapodius laperousi .......... \{ Colpocephalum nyctardæ D.

Strepsilas interpres .......... \{ Myrsidea teraoakai n. sp.

Anous stolidus ................. \{ Goniocotes minor P.

Sternia bergii ................. \{ Colpocephalum pediculoides Mjöb.

Sternia melanauchen ............ \{ Nirmus separatus Kell. and Kuw.

Globicera oceanica ........... \{ Colpocephalum milleri Kell. and Kuw.

Eos rubiginosa ................. \{ Docophorus albemarleensis Kell. and Kuw.

Halcyon sordidus ............ \{ Psittaconirmus harrisoni n. sp.

Halcyon pelewensis ............ \{ Colpocephalum importunum N.

Halcyon chloris teraoakai .. \{ Eomenopon denticulatus Harr.

Several species of the parasites known before were discovered on hosts different from those from which they were originally known, as will be seen from the following table:
<table>
<thead>
<tr>
<th>Parasite.</th>
<th>Host previously reported.</th>
<th>Host in the present collection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. albemarlensis.</td>
<td><em>Camarhynchus affinis.</em></td>
<td><em>Sternbergii</em>&lt;br&gt; <em>St. melanauchen</em>.</td>
</tr>
<tr>
<td>N. orarius.</td>
<td><em>Charadrius dominicus.</em></td>
<td><em>Demigregatta jugularis grayi</em>.</td>
</tr>
<tr>
<td>L. baculus.</td>
<td>Several species of the Columbidae.</td>
<td><em>Nycticorax caledonicus</em>.</td>
</tr>
<tr>
<td>C. importunum.</td>
<td>Several species of Ardea.</td>
<td><em>Sternbergii</em>&lt;br&gt; <em>St. melanauchen</em>.</td>
</tr>
</tbody>
</table>

It may be remarked that, in the cases of one and the same species of the parasite having been taken from more than one host species, these are birds which often occur together in company on rocks of the islands.


1. *Docophorus alatocypeatus* Piaget.

Piaget, Les Pediculines, Supplement, p. 10, pl. i, fig. 11.

Four females of the species were collected from *Halcyon pelewensis* shot in the Palau Ids. (May 25), and two females and twenty one males from *Halcyon chloris teraokai* shot in the same islands (May 23). Further a male and a young specimen were obtained from *Halcyon sordidus* collected in the Palau Ids. (March).


Three females were collected from *Stern melanauchen* obtained in the Ponapé Id. (April 29); and two males and three females were obtained on *Sternbergii* shot in the same island (April 26).
Gen. **Nirmus** Nitzsch.

3. **Nirmus orarius** Kellogg.

Kellogg, New Mallophaga I, p. 104, pl. v, fig. 5.

A single female specimen was taken from *Dermigretta jugularis grayi* obtained in the Ponape Id. (April).

The type specimen of this species was taken from the Golden plover, *Charadrius dominicus* (Lawrence, Kansas, U.S.A.). This is a somewhat strange instance of distribution, but I entertain no doubt as to the correct identification of the parasite before me, since it agrees quite well with Kellogg's description of *orarius*.

4. **Nirmus separatus** Kellogg and Kuwana.


A male and a female, both immature, were obtained from *Anous stolidus* shot in the Palau Ids. (Feb. 22).

:Gen. **Psittaconirmus** Harrison.

5. **Psittaconirmus harrisoni** n. sp. (fig. 1).

A single female specimen of this new species was obtained on *Eos rubiginosa* shot in the Ponapé Id. (April 20).

This second species of the Genus Psittaconirmus is closely allied to Harrison's species* P. australis* from the Purple-crowned lorikeet, *Glossopsittacus porphyrocephalus*, but is distinguished by the following points:

1. Size larger. Length of body 2.02 mm., instead of 1.73 mm.

2. Head much broader, especially behind antennæ. Measurements of head being .44 mm. by .39 mm., instead of .42 mm. by .32 mm. as in *P. australis*.

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1) Parasitology Vol. VII, 1915, p. 403, pl. xxvi, fig. 7 and xxvii, figs. 12, 13.
3. The oval emargination in front of the frontal margin is bounded all around by a broad chitinous band, which, in *P. australis*, bounds only the posterior margin of the emargination.

4. Eye with a very fine spine instead of a hair.

5. Antennae somewhat shorter and broader.

6. The inner row of hairs on the metathoracic border contains two hairs instead of three.

7. The first abdominal segment much narrower, bringing about a distinct constriction between metathorax and abdomen.

8. Thoracic and lateral abdominal bands much darker in colour.

9. Transverse bands of abdomen darker in colour and well defined.

The specimens which Mr. Harrison[^1] obtained from the Bluebellied lorikeet, *Trichoglossus novae-hollandiae*, closely resemble the present species as regards the size of body, the shape of head, the chaetotaxy of metathorax, and the colour of body markings. They were provisionally assigned by him to *P. australis*, but are, in my opinion probably identical with the present new species.

[^1]: *Parasitology* Vol. VII, p. 405, fig. 3, pl. xxvii, fig. 14.
MEASUREMENTS.

<table>
<thead>
<tr>
<th></th>
<th>P. harrisi</th>
<th>Typical P. australis</th>
<th>P. australis: Harrison from the blue-bellied lorikeyt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of body</td>
<td>2.02 mm.</td>
<td>1.73 mm.</td>
<td>1.86 mm.</td>
</tr>
<tr>
<td>Width of body</td>
<td>.54 &quot;</td>
<td>.53 &quot;</td>
<td>.47 &quot;</td>
</tr>
<tr>
<td>Length of head</td>
<td>.44 &quot;</td>
<td>.42 &quot;</td>
<td>.44 &quot;</td>
</tr>
<tr>
<td>Width of head</td>
<td>.39 &quot;</td>
<td>.32 &quot;</td>
<td>.35 &quot;</td>
</tr>
<tr>
<td>Length of thorax</td>
<td>.37 &quot;</td>
<td>.28 &quot;</td>
<td>.31 &quot;</td>
</tr>
<tr>
<td>Width of thorax</td>
<td>.38 &quot;</td>
<td>.37 &quot;</td>
<td>.39 &quot;</td>
</tr>
</tbody>
</table>


Zeitschr. f. ges. Naturwiss. XXXV, p. 478; Giebel, Insecta Epizoa, p. 187; Taschenberg, Die Mallophagen, p. 99, Taf. ii, Fig. 10, 10 a.

A single female specimen was obtained from Globicera oceanica, shot in the Palau Ids. (June 2).


Piaget, Les Pediculines, p. 241, pl. xxi, fig. 2.

One female and two males of this species were collected from a skin of Megapodius laperousi collected by Mr. Sukeyo Fujita in the Palau Ids. (March 6, 1915).

Gen. Lipeurus Nitzsch.

8. Lipeurus subsetosus Piaget.

Piaget, Les Pediculines, p. 336, pl. xxvii, fig. 5.

A male individual from Phalacrocorax melanoleucus shot in the Palau Ids. (May 25).

9. Lipeurus baculus Nitzsch.

Denny, Monogr. Anopl. Brit., p. 172, pl. xiv, fig. 3; Giebel, Insecta Epizoa, p. 216; Piaget, Les Pediculines, p. 303, pl. xxv, fig. 2; Taschenberg, Die Mallophagen.
A male specimen of this cosmopolitan parasite of the pigeon was obtained from *Nycticorax caledonicus* collected in the Palau Ids (May).

10. **Lipeurus potens** Kellogg and Kuwana.


Six male, eight female, and eleven young individuals of the species were collected from *sula sula* shot on sea, off the Mariana Ids. The size of body in the present specimens is somewhat smaller than in the type specimens. Measurements of the specimens on hand are as follows:

<table>
<thead>
<tr>
<th></th>
<th>♂</th>
<th>♀</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of body</td>
<td>3.50 mm</td>
<td>3.00 mm</td>
</tr>
<tr>
<td>Width of body</td>
<td>.66</td>
<td>.76</td>
</tr>
<tr>
<td>Length of head</td>
<td>.66</td>
<td>.66</td>
</tr>
<tr>
<td>Width of head</td>
<td>.63</td>
<td>.63</td>
</tr>
<tr>
<td>Length of thorax</td>
<td>.46</td>
<td>.40</td>
</tr>
<tr>
<td>Width of thorax</td>
<td>.60</td>
<td>.57</td>
</tr>
</tbody>
</table>

11. **Lipeurus sinuatus** Taschenberg.

Taschenberg, Die Mallophagen, p. 180, Taf. vi, fig. 6.

A male specimen was taken from *Megapodius laperousi* obtained in the Palau Ids. (March 6).

The specimen agrees with Taschenberg’s description and figure, except in the smaller size of body and in the shape of the last abdominal segment which is less conspicuously emarginated. The differences are, however, probably due to the immaturity of the specimen examined by me.

Measurements (those in parenthesis are Taschenberg’s):

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of body</td>
<td>2.14 (2.61) mm</td>
</tr>
<tr>
<td>Width of body</td>
<td>.40 (.53)</td>
</tr>
<tr>
<td>Length of head</td>
<td>.54 (.66)</td>
</tr>
</tbody>
</table>
Width of head, \text{.36 \ (\ .45) mm.}\n
Length of thorax, \text{.39 \ (\ .45) \ "}\n
Width of thorax, \text{.35 \ (\ .46) \ "}\n
Gen. \textit{Colpocephalum} Nitzsch.


Eleven female, two male and numerous young specimens were collected from \textit{Anous stolidus} shot in the Ponapé Id. (April 21); and further, a young specimen was obtained from \textit{Sterna melanuachen} shot in the same Island (April 29).


Denny, Monogr. Anopl. Brit., p. 214, pl. xviii, fig. 1; Giebel, Insecta Epiza, p. 272;

Piaget, Les Pediculines, p. 548, pl. xlv, fig. 8.

Seven male, ten female and numerous young individuals were collected from \textit{Demiegretta jugularis grayi} shot on the Ponapé Id. (April 28). Further, three females from \textit{Sterna bergii}; and one male, three females and a young from \textit{Sterna melanuachen} (both \textit{Sterna} species obtained on the Ponapé Id. (April 29).

This species has heretofore been found only on birds of the Ardeidae (\textit{Ardea cinerea}, \textit{A. minuta} and \textit{A. garzetta}). The specimens from the two species of terns may be attributed to straggling from the reef-heron which often occurs on same rocks in the island.


A male specimen from \textit{Demiegretta jugularis grayi} (date and Exact locality unknown).


A male, two female and seven young specimens were collected from *Globicera oceanica* obtained in the Palau Ids. (April 2).


One male from *Strepsilas interpres* shot on the Ponape Id. (April 14).


This species was first described in 1904 by Kellogg and Chapman,\(^1\) from three female specimens obtained from *Anous stolidus* collected at Kahului, Maui Island. The present specimens were found on *Phaethon candidus* shot in the Palau Ids. (April 2) and consist of three females and three males.

The male is paler in colour than the female and much smaller in size of body but especially in that of abdomen. Head comparatively larger, with a constriction on the lateral margin in front of ocular emargination; front more rounded, expanded, with two strong spines near each lateral margin. Genitalia indistinctly distinguishable through the body-wall, extending forward into segment 6.

**Measurements:**

\[
\begin{array}{cccccc}
\text{Size} & \delta & \delta & \varphi & \varphi \\
\text{Length of body} & 1.58 & 1.50 & 1.64 & 1.98 & 1.97 \text{ mm.} \\
\text{Width of body} & .48 & .47 & .48 & .60 & .60 \\
\text{Length of head} & .33 & .31 & .34 & .35 & .34 \\
\text{Width of head} & .52 & .51 & .52 & .54 & .54 \\
\text{Length of thorax} & .40 & .40 & .41 & .43 & .43 \\
\text{Width of thorax} & .42 & .42 & .42 & .47 & .47 \\
\end{array}
\]

\(^1\) Fauna Hawaiensis III, p. 313, pl. x, fig. 7; Journ. N. Y. Entm. Soc., X, p. 160, pl. xiv, fig. 2.
18. *Myrsidea teraokai* n. sp. (Fig. 2)

A single female specimen was taken from *Demiegretta jugularis grayi* shot in the Ponape Id. (April 26).

This new species somewhat resembles *Myrsidea insolita* Kellogg and Paine,\(^1\) and also *M. extranea* Carriker,\(^2\) but differs from both in the more developed metathorax as well as in the shape of abdominal segments. The members of *Myrsidea* have hitherto been found chiefly on Passerine birds, especially on the higher groups such as the *Corvidae*. *Myrsidea diffusa* Kellogg and Chapman, which was taken from the Ardeidæ as well as from several passerine hosts, was the only species of the genus which was recorded to have been ever taken from the Ardeidæ.

*Description of the female:*—Body short, broad, 1.41 mm. long and 0.55 mm. wide; with enormously developed metathorax. Ground colour of body pale brownish; with distinct markings of pitchy brown on head and with smoky brownish lateral bands on abdomen.

Head 0.31 mm. long, 0.46 mm. wide; front broadly rounded, with two short hairs at middle and two long and a few short marginal

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2) Carriker, Univ. Stud. Nebr., III, 1903, p. 173, pl. vi, fig. 3.
hairs on each side of forehead; a long hair at the angle in front of each shallow ocular emargination; ocular fringe distinct, composed of long stiff hairs; palp projecting to an extent of half the length of the apical segment; the eye is large, emarginate and with a brownish fleck; temples broad, rounded, each bearing four long pustulated hairs and a few prickles; occipital margin concavo-convex, with four short hairs. Colour of head clear brownish; temples with narrow brownish margin; the curved line bounding the antennal region pitchy brown; occipital margin edged with pitchy brown, paler in the middle; a brownish spot on the margin, just in front of each palpus.

Prothorax 0.15 mm. long, 0.29 mm. wide, hexagonal in outline, with produced and sharp lateral angles, each bearing two spines and a hair; anterior lateral margin straight; posterior margin flatly convex, bearing six long and pustulated hairs; transverse and longitudinal chitin bars distinct, of a clear brownish colour. Mesothorax 0.366 mm. long, 0.32 mm. wide; distinctly divided from metathorax by lateral emargination and a sutural line, with convex lateral and truncate posterior margins; two short prickles on the posterior margin; a reddish brown band around sides and anterior angles, broken medially. Metathorax pentagonal, 0.49 mm. long, 0.46 mm. wide, and about three-fourths as long as abdomen; anterior lateral margin bare, straight, diverging posteriorly; posterior lateral angles obtuse, each bearing four spines and a short submarginal hair; posterior margin parabolical, with four short submarginal hairs on the summit; the region posterior to posterior lateral angles very large. Ground colour of metathorax pale brownish; each lateral margin with a brownish submarginal band, curving at the lateral angle; smoky brown indistinct bands running inward from the median part of the bands, nearly meeting together medially. Legs long and stout, somewhat paler than thorax, with darker marginal markings on femora and tibiae.

Abdomen broad, elliptical; widest at the fourth segment; lateral margin of segments rounded; the first segment the longest; posterior
angles projecting, furnished on segments I-VII each with a long hair and three or four spines and on segment VIII with a short and two long hairs; the last segment broad, with a fringe of hairs on the flatly rounded posterior margin; two long hairs on each side of that fringe. Posterior margin of first and second segments strongly curved posteriorly, almost parallel to metathorax; posterior margin of third segment convex; that of the fourth straight; that of the fifth to eighth concave. Dorsal surface of first to third segments with several short hairs on each side of the posterior margin; dorsal surface of the fourth to seventh with a row of hairs of different length, interrupted in the middle. Ground colour of abdomen pale brownish, with broad smoky brown lateral bands which become darker on posterior segments and end on the eighth segment; no transverse bands on dorsal surface, but those of ventral surface show themselves through the body; the transverse bands of first and second ventral segments indistinct; those of seventh to ninth segments form one continuous blotch covering the whole space between the lateral bands. Sternite of first abdominal segment reduced; that of second segment the longest, with a group of four very strong spines on each side of the concave posterior margin; posterior margin of third to eighth segments concave and thickly covered with hairs of different lengths.

Gen. Menopon Nitzsch.

19. Menopon eulaidus Kellogg.

Kellogg, Sjöstedts Kilimandjaro-Meru Expedition, 1908. 15. 4. p. 54. Taf. 7, Fig. 11.

Six female and four male specimens were collected from Phaethon candidus obtained in the Palau Ids. (April 2). The males agree very closely with Kellogg's description and figure of a specimen taken from Phalacrocorax africanus. The female, which remained unknown to Kellogg, is larger and slightly darker than the male; abdomen more elongate-elliptical, the posterior margin of eighth abdominal segment
slightly convex and not concave as in the male; the last segment more rounded, with a fringe of hairs. Measurements of the present specimens are as follows:

<table>
<thead>
<tr>
<th></th>
<th>♂</th>
<th>♂</th>
<th>♀</th>
<th>♂</th>
<th>♀</th>
<th>♂</th>
<th>♀</th>
<th>♂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of body</td>
<td>1.80</td>
<td>1.80</td>
<td>1.78</td>
<td>1.70</td>
<td>2.17</td>
<td>2.17</td>
<td>2.08</td>
<td>2.08</td>
</tr>
<tr>
<td>Width of body</td>
<td>.79</td>
<td>.78</td>
<td>.75</td>
<td>.75</td>
<td>.93</td>
<td>.93</td>
<td>.94</td>
<td>.94</td>
</tr>
<tr>
<td>Length of head</td>
<td>.40</td>
<td>.37</td>
<td>.40</td>
<td>.40</td>
<td>.43</td>
<td>.44</td>
<td>.43</td>
<td>.43</td>
</tr>
<tr>
<td>Width of head</td>
<td>.74</td>
<td>.72</td>
<td>.71</td>
<td>.71</td>
<td>.78</td>
<td>.78</td>
<td>.78</td>
<td>.78</td>
</tr>
<tr>
<td>Length of thorax</td>
<td>.47</td>
<td>.47</td>
<td>.46</td>
<td>.46</td>
<td>.47</td>
<td>.47</td>
<td>.47</td>
<td>.47</td>
</tr>
<tr>
<td>Width of thorax</td>
<td>.56</td>
<td>.54</td>
<td>.56</td>
<td>.56</td>
<td>.62</td>
<td>.62</td>
<td>.62</td>
<td>.64</td>
</tr>
</tbody>
</table>


Piaget, Les Pediculins, p. 498, pl. xi, fig. 5.

Five females and one young were obtained from *sula sula* shot on sea off the Marina Ids., July 7th 1916.


Parasitology Vol. VII, 1915, p. 385, fig. 5; pl. xxvi, fig. 5, pl. xxvii, figs. 6, 16.

One male, three female, and three young individuals were taken from *Eos rubiginosa* shot on the Ponapé Id. (April 20).

Tokyo, Oct. 30, 1917.
Mallophaga from Birds of the Ponapé I. (Carolines) and the Palau Is. (Micronesia).

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