Pacific Insects 8 (1): 17-28 May 10, 1966

THE GENUS EOMENOPON HARRISON WITH DESCRIPTIONS OF SEVEN NEW SPECIES (Mallophaga: Menoponidae)[1,2]

By Roger D. Price

DEPT. OF ENTOMOLOGY, FISHERIES, AND WILDLIFE,
UNIVERSITY OF MINNESOTA, ST. PAUL

Abstract: Descriptions are given for the 3 recognized species of *Eomenopon* and for the following 7 new species (type-host in parentheses): *cardinalis* (*Chalcopsitta cardinalis*), *beeri* (*Domicella lory*), *chlorocerci* (*Domicella chlorocercus*), *wilsoni* (*Psittaculirostris salvadori edwardsii*), *sintillatae* (*Chalcopsitta sintillata*), *clissoldi* (*Charmosyna papou*), and *placentis* (*Charmosyna placentis*). A key is given to the species of the genus.

An extensive group of lice collected in the New Guinea and Solomon Islands area by the Bishop Museum from 1961 through 1964 contained numerous specimens of the genus *Eomenopon* Harrison, 1915. These lice, taken from a total of 14 host species most of which are members of the subfamily Loriinae (Order Psittaciformes), represent a genus that is known from relatively few individuals and that, at present, includes only 3 recognized species (Hopkins & Clay 1952). Since an analysis of these lice has revealed that they represent 10 morphologically recognizable species, it is my purpose here to present the results of this study.

Acknowledgments are expressed to Dr Nixon Wilson, Bishop Museum, for making the majority of these lice available to me for study, and to Dr Theresa Clay, British Museum (Natural History), and Dr K. C. Emerson, Arlington, Virginia, for additional specimens and advice pertaining to this work. Material reported here has been collected by H. Clissold, P. Shanahan, J. H. Sedlacek L. P. Richards, P. Temple, M. Thompson and N. Wilson.

Genus **Eomenopon** Harrison

Eomenopon Harrison, 1915, Parasit. 7: 385 [Type-species: *E. denticulatum* Harrison, 1915].

The diagnosis of this genus by Harrison (1915) is as follows: "Menoponidae with the chitinous framework for support of the mandibles continued forwards to the anterior

1. Paper No. 5786, Scientific Journal Series, Minnesota Agricultural Experiment Station, St. Paul, Minnesota 55101.
2. Results of fieldwork supported by grants to Bishop Museum from the National Institutes of Health (AI 01723) and the U. S. Army Medical Research and Development Command (G 65).

margin of the head, thence curving downwards and backwards to form a pair of stout freely-projecting spinous processes, which reach to the anterior border of the mandibles; with a deep narrow cleft in the side of the forehead, extending to the inner border of the antennary fossa; with winged prothorax, short, but distinct, mesothorax, and metothorax *sic* differing from the abdominal segments; and with abdomen of nine distinct segments."

In addition to this, adults of all known species of *Eomenopon* may be further characterized as follows: Head more or less evenly rounded from temples forward; each side with 3 very long marginal temple and 2 long occipital setae; dorsum with scattered minute alveoli. Lateroanterior ventral spinous process as in fig 5. Gula sculptured, but not spinose; typically with 4+4 long setae. Antennae enclosed beneath head; antennal segments without lateral elongations; terminal segment approximately spherical, undivided. Subocular comb row preceded anteriorly by single long seta within several shorter widely-spaced setae. Characteristic sitophore sclerite (fig 1) of hypopharynx.

Pronotum marginally usually with 6 long, 4 short setae on each side; dorsally with few scattered minute alveoli; prosternal plate well developed, sculptured but not spinose on posterior portion, and without setae. Mesosternal plate (fig 2) oblong, with minute pair of anterior setae, and 2-4 longer posterior setae. Metanotum with 15-20 predominantly long marginal setae; short lateral and lateroanterior setae; metasternal plate large, roughly trapezoidal, with 18-25 medium setae. Coxae I-III with scattered short setae; venter of femur III without combs of spiniform setae, but with patch of scattered short setae.

Abdominal tergites entire (fig 3); very long postspiracular setae on I-VIII; marginal row of medium to long setae on I-VIII; without anterior setae or anterior alveoli, except 1-2 short lateroanterior setae on I-II. Sternite I divided medially, with darker pigmentation than other sternites, and without anterior setae; sternite III with single well developed lateroposterior comb row (fig 8) of up to 18 uniform length short spiniform setae (rarely reduced to few spiniform setae as in fig 10); IV occasionally with few such setae; sternites II-VII with marginal and well aligned single anterior row of medium to long setae.

♀ having tergite IX with 4 (much less often 3 or 5) medium to long setae on each side; medioposteriorly with a few minute alveoli. Sternites VII-IX fused, shaped much as in fig 3. Anus oval, without inner setae; ventral anal fringe of very short lateral and longer median setae; dorsal anal fringe of medium medial setae to longer lateral setae; with internal structure associated with genital chamber at level of segment VIII (figs 3, 18-26).

♂ much as for ♀, except for often being slightly larger, and for differences in terminalia; tergite IX marginally with 9-15 medium to long setae; genital plate (fused sternites VIII-IX) as in fig 4, fringed with close-set medium setae; genitalia quite large, asymmetrical, with relation of parts difficult to discern (figs 11-17).

Late instar nymphs interestingly differ from adults in having distinctly spinose gular and prosternal plates (fig 6).

For brevity, the above characters will not be repeated within the following descriptions. A value in parentheses following a statement of range is the mean; all measurements are given in millimeters. Reference to tergites, pleura, or sternites, unless stated to the

contrary, pertain to the abdomen. Host nomenclature follows that of Peters (1937). The holotypes of all new species have been deposited in Bishop Museum.

spinimentum-group

This group of 8 species has the following characters in common in addition to those given for the generic diagnosis:

(1) Prosternal plate more or less evenly rounded across posterior margin, less often shallowly pointed (fig 7).

(2) Abdominal pleura with internal thickening usually poorly developed (fig 32), less often as much as in fig 33.

(3) Abdominal pleura with scattering of anterior setae, typically not aligned in a definite row (fig 3).

(4) Lateral margins of anterior abdominal sternites essentially straight or gently curved (fig 3).

(5) Anterior end of basal plate of ♂ genitalia expanded (figs 11-16).

Eomenopon spinimentum (Neumann) Figs. 1-8, 11, 24, 30, 32.

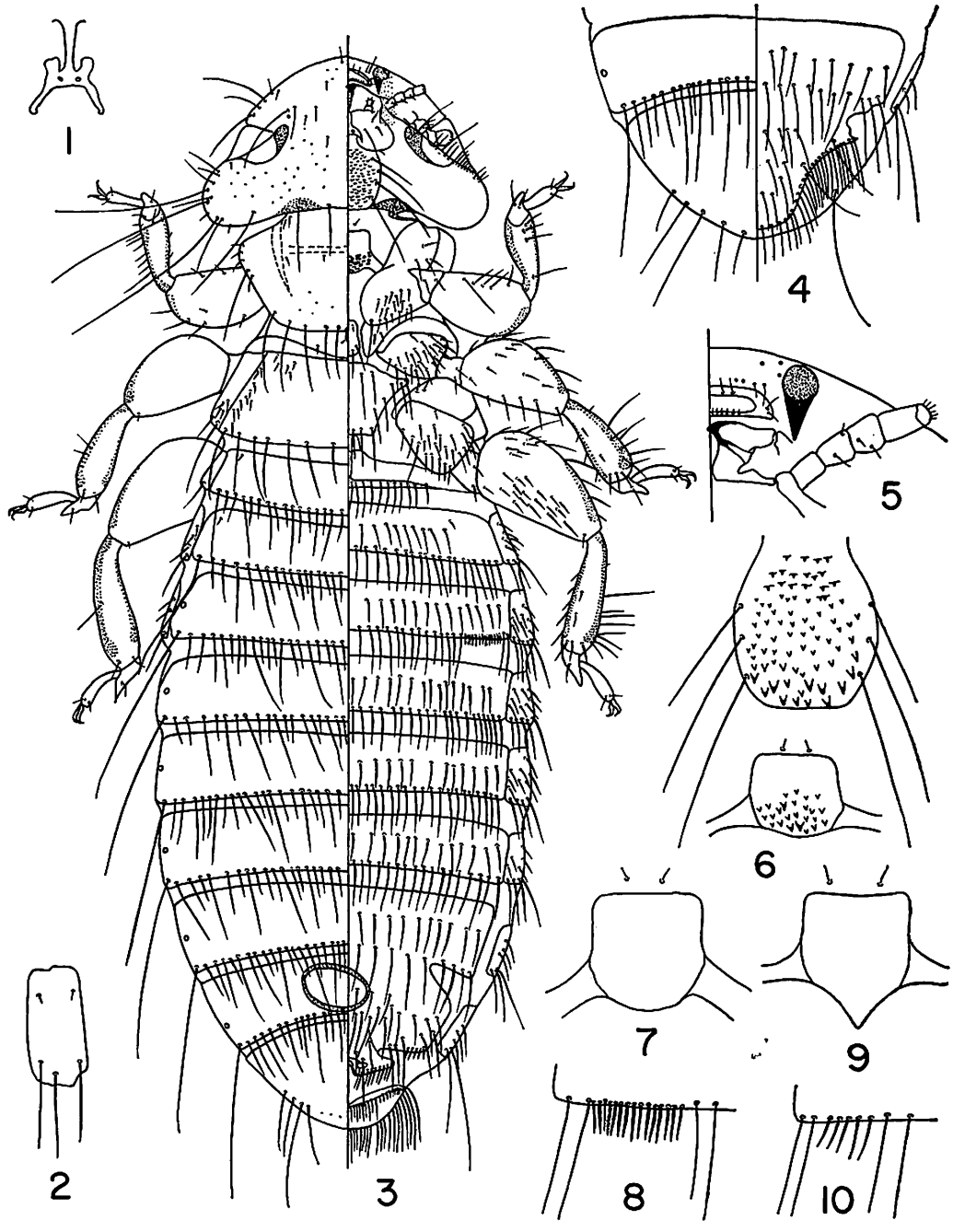
Menopon spinimentum Nmn., 1891, Bull. Soc. d'Hist. Nat. Toulouse **25**: 88 [Type-host: *Chalcopsittacus fuscatus* = *Pseudeos fuscata* (Blyth)].

♀. As in fig 3. Metanotum with 23-29 (26.5) lateroanterior setae. Marginal tergal setae: I, 32-36 (34.2); II, 34-39 (36.3); III-VI, 36-42 (39.2); VII, 34-39 (36.4); VIII, 25-31 (28.6). Pleura with weakly developed internal thickening (fig 32). Comb row on sternite III (fig 8) with 9-17 (13.4) spiniform setae; typically no such setae on either side of sternite IV, much less often 1-2 (0.3). Marginal sternal setae, exclusive of comb row setae: I, 16-23 (19.9); II, 34-40 (37.4); III, 25-34 (29.2); IV, 34-42 (40.0); V, 34-40 (36.8); VI, 30-37 (33.6); VII, 20-27 (23.1). Anterior sternal setae: II, 18-23 (20.7); III-V, 24-33 (28.4); VI, 20-28 (24.9); VII, 19-27 (22.3). Fused sternites VIII-IX with 35-45 (39.9) medium to long anterior setae, 3-6 (4.1), rarely only 2 on 1 side, short setae lateral to long setae on each lateroposterior margin (fig 30), 8-13 (10.5) somewhat longer marginal setae on each medioposterior side. Ventral anal fringe with 5-9 (6.8) very short setae on each side, 15-19 (16.8) longer median setae; dorsal anal fringe of 41-47 (44.1) setae. Oval well-defined internal structure of genital chamber (fig 24), 0.15-0.18 wide.

♂. Differs from ♀ as follows. More marginal tergal setae on IV, 40-44 (41.8); V, 41-47 (43.9); VI, 39-47 (42.9); VII, 38-43 (41.0); VIII, 29-37 (33.8). More marginal sternal setae on IV, 39-45 (41.9); V, 37-42 (39.0); VI, 33-39 (36.6); VII, 31-35 (32.4). Terminalia as in fig 4. Sternite VIII with 18-22 (20.0) marginal and 15-19 (17.2) anterior setae; IX marginally with 36-49 (43.9) setae, anteriorly with 16-21 (18.0) setae. Genitalia (fig 11) very large and complex, 1.31-1.82 (1.65) long.

Dimensions: Preocular width (measured at level of preocular slit), ♀ 0.48-0.51, ♂ 0.49-0.53; temple width, ♀ 0.66-0.71, ♂ 0.71-0.75; head length, ♀ 0.32-0.36, ♂ 0.32-0.37; prothorax width, ♀ 0.52-0.56, ♂ 0.54-0.58; metathorax width, ♀ 0.67-0.72, ♂ 0.66-0.74; total length, ♀ 2.44-2.74, ♂ 3.04-3.22.

SPECIMENS EXAMINED: 12♀♀, 9♂♂, *Pseudeos fuscata* (8 collections), New Guinea (Nakata



Figs. 1-10. 1-8. *Eomenopon spinimentum* (Neumann): 1, ♀ sitophore sclerite of hypopharynx (×165); 2, ♀ mesosternal plate (×165); 3, ♀ (×55); 4, ♂ terminalia (×55); 5, ♀ ventroanterior head (×165); 6, late instar nymph gula and prosternal plate (×165); 7, ♀ prosternal plate outline (×165); 8, ♀ lateroposterior sternite III (×165). 9, *E. clissoldi* n. sp., ♀ prosternal plate outline (×165). 10, *E. wilsoni* n. sp., ♀ lateroposterior sternite III (×165).

Ridge, Finschhafen, Bulolo, Kileton).

Neumann (1891) presumably described *E. spinimentum* from 3♀♀; however, the mention of "En dessous, en arrière des mandibules, une bande longitudinale, formée de rangées transversales de petites épines..." in addition to similar prosternal spines, clearly indicates his specimens were nymphs. This is further borne out by his illustrations and by the dimensions given.

Eomenopon denticulatum Harrison Figs. 13, 18, 28, 33.

Eomenopon denticulatum Harr., 1915, Parasit. **7**: 385 [Type-hosts: *Ptilosclera versicolor* = *Psitteuteles versicolor* (Lear) and *Trichoglossus novae-hollandiae* = *Trichoglossus haematod moluccanus* (Gmelin)].

♀. Similar to *E. spinimentum*, except as follows. Fewer marginal tergal setae: I, 29-34 (31.3); II, 29-36 (32.3); III-VI, 30-38 (34.7); VII, 28-35 (31.4); VIII, 21-26 (23.1). Occasionally 1 short seta on tergite I immediately anterior to postspiracular seta, less often 1 on each side. Pleura, in well sclerotized specimens, with heavier internal thickening (fig 33). Sternite IV with 1-9 (4.8) short marginal spiniform setae on each side. Fewer marginal sternal setae on I, 13-19 (15.8); II, 24-32 (27.3); III, 21-26 (23.5); IV, 27-38 (30.8); V, 30-36 (33.4); VI, 28-33 (31.0). Fewer anterior sternal setae on II, 16-22 (18.4); III-V, 18-26 (21.1); VI, 15-22 (19.3); VII, 16-20 (18.0). Lateroposterior margin of fused sternites VIII-IX with only 0-2 (1.1) setae lateral to longer setae (fig 28), these outer setae longer than with *E. spinimentum* (fig 30). Ventral anal fringe with more median longer setae, 20-26 (23.6); dorsal anal fringe with more setae, 45-56 (51.0). Internal structure of genital chamber considerably wider than long, with well-defined border often, but not always, somewhat thicker anteriorly and varying to a degree in indentation (fig 18), 0.22-0.28 wide. Specimens smaller in size.

♂. Consistent with ♀ and distinctive from *E. spinimentum* in the following features. Fewer marginal tergal setae: I, 28-34 (31.1); II, 30-36 (32.5); III, 32-37 (35.0); IV-VI, 34-40 (37.8); VII, 33-39 (36.1); VIII, 22-31 (27.5). Pleura and sternal setae on I-VII much as in ♀. Spiniform setae on each side of sternite IV, 0-7 (1.9). Genitalia (fig 13) smaller, of different structure than *E. spinimentum*, 1.31-1.39 (1.36) long. Specimens of smaller size than *E. spinimentum*.

Dimensions: Preocular width, ♀ 0.47-0.48, ♂ 0.46-0.49; temple width, ♀ 0.61-0.66, ♂ 0.62-0.67; head length, ♀ 0.32-0.34, ♂ 0.33-0.36; prothorax width, ♀ 0.46-0.50, ♂ 0.45-0.51; metathorax width, ♀ 0.58-0.62, ♂ 0.59-0.66; total length, ♀ 2.28-2.45, ♂ 2.54-2.75.

SPECIMENS EXAMINED: 62♀♀, 34♂♂, *Trichoglossus haematod* (L.) (39 collections), New Guinea (Slate Ck., Bulolo River, Nakata Ridge, Wau Creek, Pindiu, Finschhafen, Coviak, McAdam Res., Oriomo), Solomon Islands, New Hebrides (Santo Island).

This species apparently was described from material from 2 host species without preference expressed by Harrison (1915) for either as the type-host; unfortunately, personnel at the Australian Museum, Sydney, are unable to locate any of Harrison's type-series, thereby preventing a lectotype designation here. Although all material I studied is from *Trichoglossus haematod*, it agrees in excellent fashion with all aspects of the description of *E. denticulatum* and most probably is representative of this louse species.

Eomenopon semilunare (Piaget) Figs. 15, 20.

Menopon semilunare Pgt., 1880, Pédiculines; 424 [Type-host: *Cuculus orientalis*—error. Probably either *Neopsittacus pullicauda* Hartert or *N. musschenbroekii* (Schlegel)].

♀. Marginal tergal and sternal setae and spiniform setae on sternite IV as for *E. denticulatum.* Metanotum with 20-24 (22.8) lateroanterior setae. Internal thickening of pleura weakly developed (fig 32). Fewer anterior sternal setae than for *E. spinimentum* or *E. denticulatum*: II, 15-19 (16.8); III-V, 15-21 (17.7); VI, 15-17 (16.3); VII, 14-17 (15.0). Lateroposterior margin of fused sternites VIII-IX much as for *E. denticulatum* (fig 28), but with 2-4 (2.8) setae on each side lateral to long setae. Anal fringes as for *E. spinimentum.* Internal structure of genital chamber (fig 20), 0.15-0.19 long, with weakly developed margin, somewhat flattened anteriorly. Smaller specimen than either of foregoing species.

♂. As for ♀, except for differences in terminalia. Sternite VIII with 16-18 (17.0) evenly distributed marginal setae, 8-14 (12.2) anterior setae. Sternite IX with 42-48 (44.0) marginal, 11-16 (12.8) anterior setae. Genitalia (fig 15) 1.11-1.23 (1.18) long, with gently curving left paramere.

Dimensions: Preocular width, ♀ 0.42-0.44, ♂ 0.44-0.45; temple width, ♀ 0.54-0.58, ♂ 0.56-0.60; head length, ♀ 0.29-0.32, ♂ 0.32-0.34; prothorax width, ♀ 0.41-0.46, ♂ 0.41-0.45; metathorax width, ♀ 0.53-0.60, ♂ 0.54-0.59; total length, ♀ 2.03-2.35, ♂ 2.17-2.45.

SPECIMENS EXAMINED: Syntype ♂ of *Menopon semilunare* Piaget, *Cuculus orientalis*—host error; 9♀♀, 5♂♂, *Neopsittacus pullicauda* (7 collections), New Guinea (Kepilam, Tambul, Bulldog Road, Enarotadi); 3♀♀, 1♂, *N. musschenbroekii* (3 collections), New Guinea (Bulldog Road, Wau, Kepilam); 2♂♂, *Micropsitta* sp. (2 collections), Solomon Islands.

Piaget (1880) based the description of *E. semilunare* on specimens from a cuckoo in the Zoological Garden of Rotterdam. These lice most certainly were stragglers from some member of the Psittaciformes. The ♂ syntype of *E. semilunare* reasonably fits all details of the lice described from *Neopsittacus*, including dimensions and details of chaetotaxy and genitalia, and it seems best now to restrict the application of this name to these lice; therefore, I here designate the ♂ specimen on slide 843, British Museum (Nat. Hist.), as the lectotype of *E. semilunare.*

Eomenopon cardinalis Price, n. sp. Figs. 19, 27.

Type-host: *Chalcopsitta cardinalis* (G. R. Gray).

♀. Size, structure, and chaetotaxy close to *E. spinimentum.* Differs by having only 18-24 (22.2) marginal setae on tergite VIII; 0-6 (2.7) short marginal spiniform setae on each side of sternite IV; lateroposterior margin of fused sternites VIII-IX with only 1-2 (1.7) setae lateral to longer setae (fig 27), with a pronounced gap between shorter and longer setae; and internal structure of genital chamber (fig 19) much wider than long, with well-defined margin of uniform thickness throughout, 0.23-0.28 wide.

♂. Also closest to *E. spinimentum* in size, structure, and chaetotaxy. Slightly smaller prothorax width, 0.50-0.54; metathorax width, 0.65-0.70; and total length, 2.74-3.00. Fewer marginal setae on tergite VIII, 25-31 (27.8). Fewer marginal setae on sternites VII, 20-32 (27.1), and VIII, 12-19 (16.1). Fewer anterior sternal setae on IV, 19-30 (24.0);

V, 20-27 (23.6); VI, 19-25 (21.7); and VII, 16-21 (18.9). Marginal spiniform setae on each side of sternite IV, 0-8 (3.1). More marginal setae on sternite IX, 45-61 (50.9). Genitalia close to that of *E. denticulatum* (fig 13), but of somewhat larger size, 1.31-1.54 (1.44) long.

Holotype ♀ (BISHOP 6652), *Eos cardinalis* (BBM-SI 24462), Haleta, Florida Island, Solomon Islands, 14.X.1962, P. Shanahan. Paratypes: 28♀♀, 19♂♂, *Eos cardinalis* (BBM-SI 23232, 23243, 23523, 23524, 23525, 23572, 23590, 23598, 24100, 24270, and 24462; Brit. Mus. 1932-305, 1933-126), Solomon Islands (Haleta, Florida Is.; Boala, Santa Ysabel Is.; Malaita, Guadalcanal).

Eomenopon beeri Price, n. sp. Figs. 16, 22, 31.

Type-host: *Domicella lory* (L.).

♀. Close to *E. denticulatum*, differing only in the following. Tendency for fewer marginal tergal setae, especially on V, 31-36 (32.7); VI, 28-32 (30.2); VII, 25-29 (26.7); and VIII, 16-20 (17.9); and for fewer setae in dorsal anal fringe, 40-51 (46.5). Internal thickening of pleura intermediate between figs 32 and 33. Distinctively different structure within genital chamber (fig 22), with rather indefinite outer edge of margin, 0.18-0.22 wide. Dimensions at or slightly less than lower range for *E. denticulatum*.

♂. Likewise close to *E. denticulatum*, but differing in same ways as ♀. Fewer marginal tergal setae on V, 31-36 (33.7); VI, 28-35 (31.5); VII, 26-32 (29.3); and VIII, 18-22 (19.9). Marginal setae of sternite VIII with 3-4 detached laterally on each side (fig 31). Genitalia (fig 16) distinctive, 1.13-1.26 (1.18) long, with left paramere always having short apical portion sharply deflected. Specimens smaller than *E. denticulatum* in metathorax width, 0.56-0.59, and total length, 2.25-2.45.

Holotype ♀ (BISHOP 6653), *Lorius lory* (BBM-NG 28701), Popondetta, SE New Guinea, 7.IX.1963, P. Shanahan. Paratypes: 30♀♀, 23♂♂, *L. lory* (BBM-NG 20862, 22303, 22634 22659, 27768, 28504, 28701, 28859, 29242, 29314, 29337, 29715, 29717, 29877, 29895, 29905, and 29979), New Guinea (Popondetta, Bulolo River, Ahola, Embi, Nakata Ridge, Jumbora, Saputa, Aitola, Kileton, Sangaro, Gaulim).

OTHER SPECIMENS: 12♀♀, 8♂♂, *Trichoglossus haematod* (BBM-NG 21012, 21013, 21080, 29254, and 29313), New Guinea (Kileton, Mt Missim, Moolyck, Embi).

Eomenopon chlorocerci Price, n. sp. Fig. 26.

Type-host: *Domicella chlorocercus* (Gould).

♀. Chaetotaxy and structure much as for *E. denticulatum*. Separable from all other species by shape and small size of internal structure of genital chamber (fig 26), being oblong, with slightly indented and thicker anterior margin, and only 0.13 wide. Dimensions as for *E. beeri*.

♂. Unknown.

Holotype ♀ (BISHOP 6654), *Lorius chlorocercus* (BBM-SI 24197), Ataa, Malaita, Solomon Islands, 19.VIII.1964, P. Shanahan. Paratype: 1♀, *L. chlorocercus* (BBM-SI 24163), Solomon Islands.

Eomenopon wilsoni Price, n. sp. Figs. 10, 12.

Type-host: *Psittaculirostris salvadori edwardsii* (Oustalet).

♀. Close to *E. semilunare*, agreeing in dimensions, marginal sternal chaetotaxy (other than comb rows), and chaetotaxy of head, thorax, and terminalia. More marginal tergal setae: I, 36-39 (37.1); II, 34-38 (36.5); III-IV, 35-41 (38.7); V, 35-43 (40.0); VI, 35-39 (37.2); VII, 32-36 (33.6); VIII, 26-29 (27.2). Tergite I having 1 or both sides with short spiniform seta immediately anterior to postspiracular seta. More anterior sternal setae on III-V, 15-23 (20.1), and VI, 17-21 (18.4). Separable from all other known species by composition of comb rows on sternites III-IV; III (fig 10) with only 2-6 (4.0) slightly longer more widely-spaced spiniform setae in each row; IV with 2-5 (3.5) similar setae in each row. Internal structure of genital chamber shaped as for *E. semilunare* (fig 20) but larger, 0.19-0.22 wide, with indistinct margin.

♂. Also close to *E. semilunare* in most dimensions, marginal sternal chaetotaxy (other than comb rows) and chaetotaxy of head and thorax. Differs in having more marginal tergal and sternal setae, as for ♀. Sternite VIII with 13-17 (14.7) anterior setae. Sternal comb rows distinctive, as for ♀. Sternite IX with only 33-38 (35.9) marginal and more anterior setae, 17-23 (19.6). Genitalia (fig 12) small, 0.85-0.92 long, with slender straight left paramere. Metathorax width, 0.53-0.56, and total length, 2.01-2.12.

Holotype ♀ (BISHOP 6655), *Psittaculirostris edwardsii* (BBM-NG 27688), Finschhafen, NE New Guinea, 15.IV.1963, H. Clissold. Paratypes: 10♀♀, 7♂♂, *P. edwardsii* (BBM-NG 27657, 27669, 27685, 27688, 27692), New Guinea (Finschhafen).

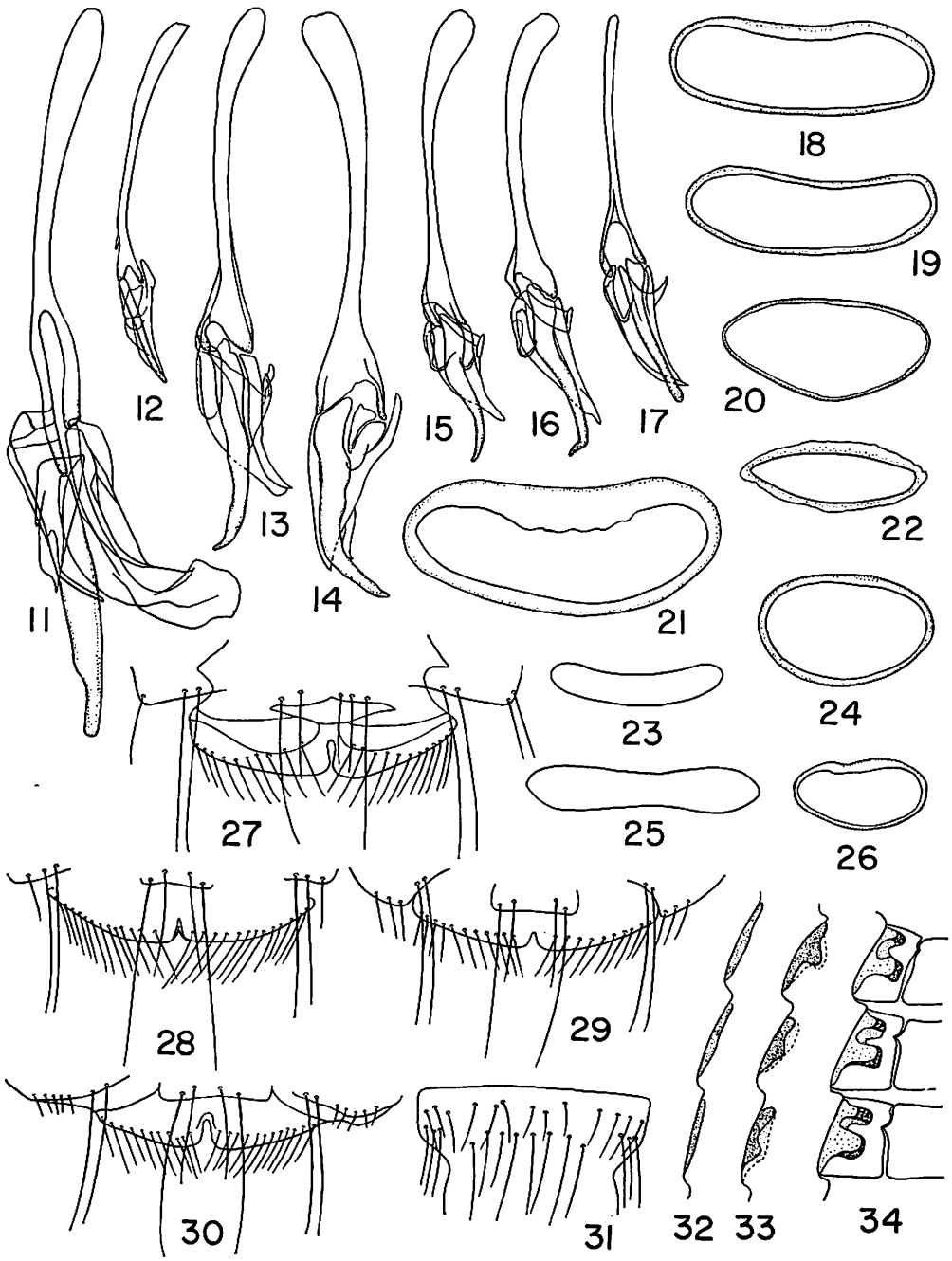
Eomenopon sintillatae Price, n. sp. Figs. 14, 21.

Type-host: *Chalcopsitta sintillata* (Temminck).

♀. Close to *E. spinimentum*, agreeing in its large dimensions and general chaetotaxy. Fewer marginal tergal setae on VI, 35-38 (37.4); VII, 30-35 (32.0); and VIII, 22-26 (24.0). Slightly more marginal sternal setae on IV, 38-49 (42.8); V, 39-46 (41.6); VI, 34-42 (38.4); VII, 27-30 (28.6); and anterior sternal setae on II, 22-27 (24.2). Greater tendency for marginal short spiniform setae on each side of sternite IV, 0-4 (2.3). More anterior setae on fused sternites VIII-IX than any other known species, 52-65 (57.4). Lateroposterior margin of fused sternites VIII-IX as for *E. denticulatum* (fig 28). Anal fringe ventrally with 26-31 (28.0) median longer setae, dorsally with 50-59 (54.6) setae. Highly distinctive internal structure of genital chamber (fig 21), being largest known, 0.27-0.32 wide, with distinct margin pronouncedly thicker anteriorly.

♂. Likewise close to *E. spinimentum*, agreeing in dimensions and general chaetotaxy.

Figs. 11-34. 11-17. ♂ genitalia, less genital sac (×53): 11, *Eomenopon spinimentum* (Neumann); 12, *E. wilsoni*, n. sp.; 13, *E. denticulatum* Harrison; 14, *E. sintillatae*, n. sp.; 15, *E. semilunare* (Piaget); 16, *E. beeri*, n. sp.; 17, *E. clissoldi*, n. sp. 18-26. Internal structure of ♀ genital chamber (×150): 18, *E. denticulatum* Harrison; 19, *E. cardinalis*, n. sp.; 20, *E. semilunare* (Piaget); 21, *E. sintillatae*, n. sp.; 22, *E. beeri*, n. sp.; 23, *E. placentis*, n. sp.; 24, *E. spinimentum* (Neumann); 25, *E. clissoldi*, n. sp.; 26, *E. chlorocerci*, n. sp. 27-30. Posterior margin of fused ♀ sternites VIII-IX (×150): 27, *E. cardinalis*, n. sp.; 28, *E. denticulatum* Harrison; 29, *E. clissoldi*, n. sp.; 30, *E. spinimentum* (Neumann). 31, Abdominal sternite VIII (×75), ♂ *E. beeri*, n. sp. 32-34. Internal thickening of ♀ abdominal pleura II-IV (×75): 32, *E. spinimentum* (Neumann); 33, *E. denticulatum* Harrison; 34, *E. clissoldi*, n. sp.


11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

Tendency for fewer marginal tergal setae, especially on VI, 40-42 (40.7); VII, 36-39 (37.3); VIII, 26-31 (27.8); marginal sternal setae on VIII, 15-18 (16.1); and anterior sternal setae on VI, 20-25 (22.7). Spiniform setae on sternite IV much as for ♀. Genital plate with largest number of marginal setae among known species, 62-70 (66.0). Genitalia (fig 14) large, of magnitude approaching *E. spinimentum*, but differing in structure, especially in absence of such prominent forking of basal plate and presence of bend near middle of left paramere.

Holotype ♀ (BISHOP 6656), *Chalcopsitta sintillata* (BBM-NG 29475), Oriomo, SE New Guinea, 12.II.1964, H. Clissold. Paratypes: 4♀♀, 7♂♂, *C. sintillata* (BBM-NG 29415, 29475, and 50040), New Guinea (Oriomo).

clissoldi-group

This group of 2 species may be distinguished from the members of the *spinimentum*-group by the following characters:

(1) Prosternal plate with posterior portion attenuated (fig 9).

(2) Abdominal pleura with internal thickening well developed (fig 34).

(3) Abdominal pleura with anterior setae aligned in single row.

(4) Lateral margins of anterior abdominal sternites inserted into indentation in lateral pleural margin (fig 34).

(5) Anterior portion of basal plate of ♂ genitalia of essentially same width as mid-portion of plate (fig 17).

Eomenopon clissoldi Price, n. sp. Figs. 9, 17, 25, 29, 34.

Type-host: *Charmosyna papou* (Scopoli).

♀. Metanotum with 33-40 (35.9) lateroanterior setae. Marginal tergal setae: I, 27-31 (28.4); II, 28-32 (30.1); III, 32-35 (33.0); IV, 33-37 (34.7); V, 33-37 (35.3); VI, 31-37 (33.8); VII, 28-33 (30.5); VIII, 20-27 (23.5). Tergites I-II often with a short spiniform seta anterior to postspiracular seta on 1 or both sides. Comb row on sternite III each with 6-12 (10.0) spiniform setae; sternite IV with only 0-2 (1.1) such setae on each side. Marginal sternal setae, exclusive of comb row setae: I, 13-17 (14.9); II, 22-27 (24.3); III, 19-20 (19.6); IV, 26-31 (28.1); V, 24-29 (25.9); VI, 21-26 (23.3); VII, 13-18 (15.9). Anterior sternal setae: II, 14-20 (18.3); III, 18-21 (20.0); IV, 17-20 (18.7); V, 16-21 (17.6); VI, 13-17 (15.5); VII, 9-15 (12.4). Sternites VIII-IX with 18-25 (23.1) medium to long anterior setae, 2-3 (2.7) short setae lateral to long setae on each lateroposterior margin (fig 29), these short setae aligned in such a way as to appear to be almost continuation of medioposterior marginal setae, which number 10-15 (12.3) on each side. Ventral anal fringe with 4-8 (6.1) very short setae on each side, 19-26 (21.6) longer median setae; dorsal anal fringe of 41-51 (46.3) setae. Elongate structure in genital chamber (fig 25), slightly constricted in middle, 0.19-0.22 wide, with poorly defined margin.

♂. Much as for ♀, but differs as follows. Metanotum with 26-39 (31.4) lateroanterior setae. Sternite III with 16-18 (17.4) anterior setae. Sternite VIII with 12-13 (12.2) marginal and 11-12 (11.4) anterior setae. Sternite IX marginally with 33-42 (38.8) setae, anteriorly with 15-18 (16.6). Genitalia as in fig 17, 1.04-1.10 (1.06) long.

Dimensions: Preocular width, ♀ 0.42-0.45, ♂ 0.43-0.44; temple width, ♀ 0.57-0.61, ♂

0.58-0.59; head length, ♀ 0.30-0.32, ♂ 0.30-0.31; prothorax width, ♀ 0.43-0.48, ♂ 0.41-0.43; metathorax width, ♀ 0.54-0.61, ♂ 0.49-0.53; total length, ♀ 2.13-2.30, ♂ 2.01-2.12.

Holotype ♀ (BISHOP 6657), *Charmosyna papou* (BBM-NG 20322), Coviak, SE New Guinea, 24. II. 1963, H. Clissold. Paratypes: 14♀♀, 10♂♂, *C. papou* (BBM-NG 20322, 21416, 21417, 28087, 28148, and 28558), New Guinea (Coviak, Kawongu, Murmur, Nakata Ridge, Enarotadi).

OTHER SPECIMENS: 1♀, 1♂, *Trichoglossus haematod* (BBM-NG 20386 and 27953), New Guinea (Tambul, Slate Ck.); 2♀♀, *Charmosyna placentis* (Temminck) (BBM-NG 29542), New Guinea (Nakata Ridge); 1♀, *Alisterus chloropterus* (Ramsay) (BBM-NG 20323), New Guinea (Coviak); and 1 ♀, 3♂♂, *Syma megarhyncha* (BBM-NG 27792), New Guinea (Coviak).

Eomenopon placentis Price, n. sp. Fig. 23.

Type-host: *Charmosyna placentis* (Temminck).

♀. Close to *E. clissoldi*, differing in having 4-5 (4.3) marginal spiniform setae on each side of sternite IV; only 0-1 short setae lateral to long setae on lateroposterior margin of fused sternites VIII-IX; only 35-37 setae in dorsal anal fringe; and with structure in genital chamber shaped as in fig 23, 0.17-0.19 wide, but with poorly defined margin.

♂. Similarly close to *E. clissoldi*, differing by sternite IV having fewer marginal setae, 21-23, and 4-5 (4.3) marginal spiniform setae on each side; and sternite IX marginally with 29-34 setae.

Holotype ♀ (BISHOP 6658), *Charmosyna placentis* (BBM-NG 29538), Oriomo, SE New Guinea, 16. II. 1964, H. Clissold. Paratypes: 1♀, 2♂♂, *C. placentis* (BBM-NG 29537), New Guinea (Oriomo).

KEY TO THE SPECIES OF EOMENOPON

1. Prosternal plate with definite posterior attenuation (fig 9); internal pleural thickenings on II-IV well developed (fig 34) 2
   Prosternal plate flatly rounded to much less often shallowly pointed posteriorly (fig 7); less developed internal pleural thickenings on II-IV (figs 32-33)..... 3
2. Sternite IV with 4-5 marginal short spiniform setae on each side. ♀: genital chamber structure as in fig 23. ♂: genital plate marginally with up to 34 setae..... **placentis***
   Sternite IV with 0-2 (rarely up to 5 on 1 side) marginal short spiniform setae on each side. ♀: genital chamber structure as in fig 25. ♂: genital plate marginally with 33 or more setae..... **clissoldi***
3. ♀: genital chamber structure small, only 0.13 wide, shaped as in fig 26. ♂: unknown ..... **chlorocerci***
   ♀: genital chamber structure larger, shaped as in figs 18-25. ♂♂..... 4
4. Each comb row on sternite III composed of only up to 6 spiniform setae (fig 10) ..... **wilsoni***
   Each comb row on sternite III with more than 6 spiniform setae (fig 8)..... 5
5. ♀: large genital chamber structure (fig 21), 0.27-0.32 wide, and with much thicker anterior border. ♂: genital plate with 62 or more marginal setae; genitalia as in fig 14..... **sintillatae***

♀ : smaller genital chamber structure, shaped otherwise (figs 18-20, 22, 24). ♂ : genital plate with fewer than 62 marginal setae; genitalia as in figs 11, 13, 15-16 6

6. Usually 0, less often 1-2, short spiniform setae on each side of sternite IV. ♀ : 3-6 short setae lateral to long setae on each side of lateroposterior margin of fused sternites VIII-IX (fig 30); genital chamber structure as in fig 24. ♂ : genitalia as in fig 11; 29 or more marginal tergal setae on VIII ..... **spinimentum** (Neumann)

Spiniform setae on sternite IV variable. ♀ : 0-2 slightly longer setae lateral to long setae on each side of lateroposterior margin of fused sternites VIII-IX (figs 27-28), or, if up to 3-4, then always 2 or more short spiniform setae on each side of sternite IV; genital chamber structure as in figs 18-20, 22. ♂ : genitalia as in figs 13, 15-16; not more than 31 marginal tergal setae on VIII 7

7. ♀ : tergite VIII with 20 or fewer marginal setae; genital chamber structure as in fig 22, with poorly defined outer edge of margin. ♂ : genitalia (fig 16) with sharp apical bend of left paramere; up to 22 marginal tergal setae on VIII..... **beeri***

♀ : tergite VIII usually with 21 or more marginal setae, or, if fewer, genital chamber structure different (figs 18-20). ♂ : genitalia (figs 13, 15) without sharp apical bend of left paramere; 23 or more (rarely 22) marginal tergal setae on VIII 8

8. ♀ : genital chamber structure as in fig 20, 0.15-0.19 wide. ♂ : genitalia as in fig 15, 1.11-1.23 long. Smaller specimens, e. g., temple width, 0.54-0.60... **semilunare** (Piaget)

♀ : genital chamber structure as in figs 18-19, 0.22-0.28 wide. ♂ : genitalia close to fig 13, 1.31-1.54 long. Larger specimens, e. g., temple width, 0.61-0.74 9

9. Sternite III with 26-33 (30.3) marginal setae (exclusive of comb setae). ♀ : pronounced gap between short and long setae on lateroposterior margin of fused sternites VIII-IX (fig 27); tergite VI with 38-42 (40.2) marginal setae. ♂ : more marginal tergal setae, e. g., III, 37-42 (39.8), V, 40-46 (43.3). Larger individuals, e. g., temple width, ♀ 0.68-0.71, ♂ 0.70-0.74..... **cardinalis***

Sternite III with 21-27 (24.0) marginal setae (exclusive of comb setae). ♀ : lacking such a gap between short and long setae on lateroposterior margin of fused sternites VIII-IX (fig 28); tergite VI with 32-37 (34.5) marginal setae. ♂ : fewer marginal tergal setae, e. g., III, 32-37 (35.0), V, 37-40 (38.2). Smaller individulals, e. g., temple width, ♀ 0.61-0.66, ♂ 0.62-0.67..... **denticulatum** Harrison

REFERENCES

Hopkins, G. H. E. & T. Clay. 1952 A check list of the genera & species of Mallophaga. Brit. Mus. (Nat. Hist.), London, 362 pp.

Harrison, L. 1915 On a new family and five new genera of Mallophaga. *Parasit.* **7**: 383-407.

Neumann, M. G. 1891 Notes sur quelques Ricinidae d'origine exotique. *Bull. Soc. d'Hist. Nat. Toulouse* **25**: 83-93.

Peters, J. L. 1937 Check-list of birds of the world. **III**: xiii+311 pp. Harvard Univ. Press, Cambridge.

Piaget, E. 1880 Les Pédiculines, Essai monographique. E. J. Brill, Leide, xxxix+714 pp.