

## TWO NEW SPECIES OF *EOMENOPON* HARRISON (Mallophaga: Menoponidae) WITH A NOTE ON THE STRUCTURE OF THE GENITAL SAC<sup>1</sup>

By Roger D. Price<sup>2</sup>

*Abstract:* Two new species of *Eomenopon* are described: *ryani* from *Psitteuteles johnstoniae* from the Philippines and *patoni* from *Glossopsitta porphyrocephala* from Australia. A discussion and illustrations are given to differentiate the genital sacs of the known species of the genus.

The 10 currently recognized species of *Eomenopon* Harrison have been discussed by Price (1966). Since that study, I have received additional series of lice that represent 2 undescribed species of this genus. Additionally, during the examination of these specimens, it became evident that the vestiture of the ♂ genital sac is of taxonomic value, a feature that had been overlooked in the earlier work on *Eomenopon*. It is my purpose here to describe the 2 new species and to discuss the importance of the ♂ genital sac as a further feature for species separation.

The 2 species to be described here are both members of the *spinimentum*-group; the characters given by Price (1966) for lice of this group as well as for lice of the entire genus will not be repeated.

***Eomenopon ryani* Price, new species**      Fig. 6, 9-12.

Type-host: *Psitteuteles johnstoniae* (Hartert).

♀. Gross features as given by Price (1966; fig. 3) for *E. spinimentum* (Neumann). Metanotum with 26-27 lateroanterior setae. Marginal tergal setae: I, 32-35; II, 34-36; III, 35-38; IV-V, 38-41; VI, 36-40; VII, 31-36; VIII, 23-27. Pleurites with moderately developed internal thickening (Price, 1966: fig. 33). Comb row on sternite III well developed, each with 13-18 spiniform setae; sternite IV with 2-5 compact or scattered short spiniform setae on each side. Marginal sternal setae, exclusive of short spiniform setae on III-IV: I, 15-18; II, 29-33; III, 24-27; IV, 33-36; V, 33-38; VI, 31-35; VII, 23-24. Anterior sternal setae: II, 19-23; III-V, 21-26; VI, 20-22; VII, 19-21. Ventral terminalia as in fig. 9; fused sternites VIII-IX with 45-49 medium to long anterior setae, medium setae lateral to very long setae on lateroposterior margin from 2+3 to 4+4, and 12-14 medium setae on each medioposterior side. Ventral anal fringe with 6-8 short setae on each side, 19-25 longer median setae; dorsal anal fringe with 47-51 setae. Internal structure of genital chamber (fig. 10) much wider than long, 0.21-0.24 mm wide, with well defined border of approximately uniform thickness anteriorly and posteriorly, and with degree of anterior indentation.

♂. Differs from ♀ as follows. Tendency for more marginal tergal setae: I, 34-38; II, 36-

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2. Dept. of Entomology, Fisheries, and Wildlife, University of Minnesota, St. Paul.

39; III, 39-40; IV, 38-40; V-VI, 40-41; VII, 39; VIII, 30-31. Sternite IV with only 0-2 short spiniform setae on each side. Marginal sternal setae, exclusive of short spiniform setae on III-IV: I, 17; II, 32; III, 27-29; IV, 37-38; V, 35-40; VI, 32-33; VII, 28-32. Sternite VIII with 20-21 marginal, 18 anterior setae. Ventral terminalia as in fig. 11; sternite IX marginally with 55-58 setae, submarginally with 6-7 very long setae, and medioanteriorly with patch of 13-16 setae. Genitalia as in fig. 12, large and complex with evenly curved left paramere; total length of genitalia 1.34-1.50 mm. Vestiture of genital sac close to that of fig. 6, with basal portion having larger irregular denticles and few fine spinules, lateroanterior 1/3 or so having smaller irregular denticles and stout spines, and without conspicuous ornamentation diagonally between these regions.

Dimensions (in mm): Preocular width, ♀ 0.48-0.50, ♂ 0.49-0.50; temple width, ♀ 0.62-0.65, ♂ 0.64-0.65; head length, ♀ 0.35-0.37, ♂ 0.35-0.37; prothorax width, ♀ 0.48-0.52, ♂ 0.48-0.51; metathorax width, ♀ 0.62-0.64, ♂ 0.61-0.64; total length, ♀ 2.54-2.63, ♂ 2.83-2.96.

Holotype ♂ (BISHOP 8238), *Trichoglossus johnstoniae*, Philippine Is., Mindanao, Cotabato, Tupi, Kablon, Mt. Matutum, 3700-5500 m, 16.VI.1966, N. Wilson (2582); in the collection of Bishop Museum, Honolulu, Paratypes: 5 ♀♀, same data as holotype; 2 ♀♀, 1 ♂, same as holotype, except 2500-3700 m, 27.VI.1966 (3314); 5 ♀♀, same as holotype, except 2500-3700 m, 28.VI.1966 (3342, 3345).

*Eomenopon ryani* is closest morphologically to *E. denticulatum* Harrison, *E. cardinalis* Price, and *E. semilunare* (Piaget). The ♂♂ are separable on the basis of the vestiture of the genital sac; additionally, the ♂♂ of *E. denticulatum* and *E. semilunare* have only 5-10 medioanterior setae on the genital plate and those of *E. cardinalis* have a significantly larger temple width of 0.70-0.74 mm. The ♀♀ of *E. cardinalis* have a pronounced gap between the shorter and longer setae on the lateroposterior margin of fused sternites VIII-IX and have a larger temple width of 0.68-0.71 mm; the ♀♀ of *E. semilunare* have an internal genital chamber structure of different shape; the ♀♀ of *E. denticulatum* have only 0-2 setae lateral to longer setae on the lateroposterior margin of fused sternites VIII-IX and usually have the anterior border of the internal genital chamber structure thicker than the posterior border.

***Eomenopon patoni* Price, new species** Fig. 2, 13, 14.

Type-host: *Glossopsitta porphyrocephala* (Dietrichsen).

♀. Differs from ♀ of *E. ryani* as follows. Marginal tergal setae: I, 33-40; II, 36-40; III, 37-38; IV-VI, 37-42; VII, 35-36; VIII, 22-26. Sternite IV with 4-6 short spiniform setae usually in compact row. Marginal sternal setae, exclusive of short spiniform setae on III-IV: I, 14-22; II, 33-36; III, 27-32; IV, 33-37; V, 33-39; VI, 31-37; VII, 23-27. Anterior sternal setae: II, 17-21; III-V, 21-28; VI, 19-24; VII, 20-21. Ventral terminalia as in fig. 13; fused sternites VIII-IX with only 39-42 anterior setae, medium setae lateral to very long setae on lateroposterior margin from 2+2 to 3+4, and 9-10 medium setae on each medioposterior side. Ventral anal fringe with 6-9 short setae on each side, 16-18 longer median setae; dorsal anal fringe of 44-52 setae.

♂. Differs from ♂ of *E. ryani* as follows. Marginal tergal setae: I, 35-38; II, 35-40; III, 38-43; IV, 39-43; V-VI, 41-46; VII, 37-41; VIII, 29-31. Sternite IV with 1-5 short spiniform setae on each side. Marginal sternal setae, exclusive of short spiniform setae on III-IV: I, 17-18; II, 32-37; III, 27-30; IV, 30-37; V, 34-36; VI, 31-32; VII, 27-30. Sternite VIII with 18-20 marginal, 13-19 anterior setae. Ventral terminalia essentially as in fig. 11; sternite IX with 59-66 marginal setae, 15-19 setae in medioanterior patch. Genitalia as in fig. 14, much as for those of *E. ryani*, but smaller, especially at distal end, being 1.18-1.29 mm long. Vestiture of genital sac

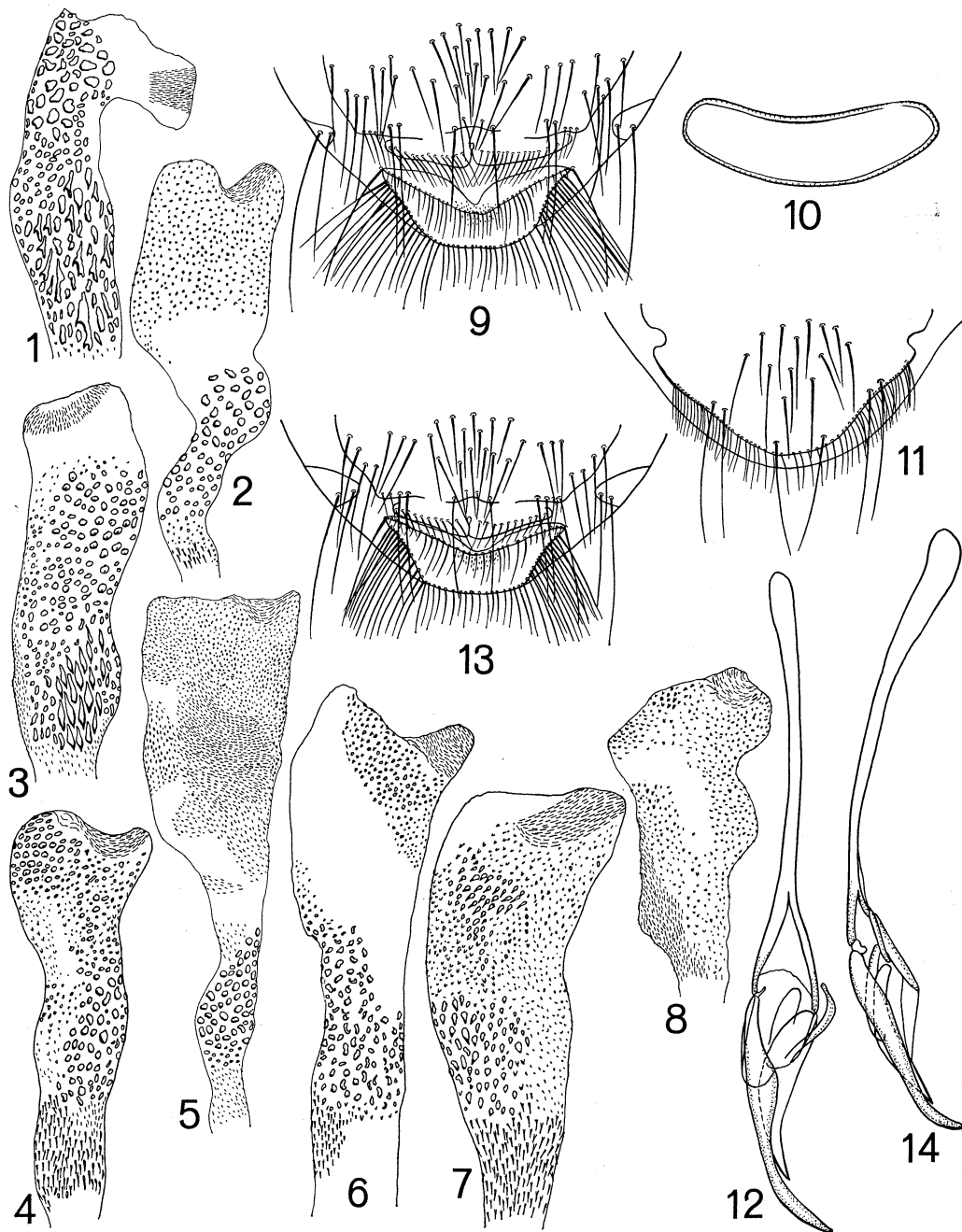


Fig. 1-14. 1-8. ♂ genital sac (X110): 1, *Eomenopon placentis* Price; 2, *E. patoni* n. sp.; 3, *E. clissoldi* Price; 4, *E. beeri* Price; 5, *E. cardinalis* Price; 6, *E. ryani* n. sp.; 7, *E. spinimentum* (Neumann); 8, *E. wilsoni* Price. 9-12. *E. ryani* n. sp.: 9, ♀ ventral terminalia (X90); 10, ♀ internal genital chamber structure (X160); 11, ♂ ventral terminalia (X90); 12, ♂ genitalia (X70). 13-14. *E. patoni* n. sp.: 13, ♀ ventral terminalia (X90); 14, ♂ genitalia (X70).

as in fig. 2, with basal portion grossly similar to that of *E. ryani*, but distal 1/3 or so with small irregular denticles and stout spines entirely across sac, and without conspicuous ornamentation across median portion.

Dimensions (in mm) consistently smaller than for *E. ryani*: Preocular width, ♀ 0.44-0.45, ♂ 0.44-0.46; temple width, ♀ 0.59-0.60, ♂ 0.59-0.63; head length, ♀ 0.31-0.33, ♂ 0.32-0.33; prothorax width, ♀ 0.44-0.45, ♂ 0.44-0.47; metathorax width, ♀ 0.57-0.61, ♂ 0.55-0.60; total length, ♀ 2.14-2.26, ♂ 2.37-2.51.

Holotype ♀, *Glossopsitta porphyrocephala*, Bluett Springs, South Australia, 28.VII.1965, J. B. Paton; in the collection of the Division of Entomology Museum, C. S. I. R. O., Canberra, Australia. Paratypes: 3 ♀♀, 4 ♂♂, same data as holotype.

### ♂ Genital Sacs of *Eomenopon* species Fig. 1-8.

A study of the vestiture of the ♂ genital sacs has convinced me that the size and shape of the denticles as well as their distribution often furnish evidence supporting species separation within *Eomenopon*. Aside from *E. chlorocerci* Price, for which the ♂ is still not known, I was able to examine a minimum of 2 ♂♂ for each of the remaining 11 species of *Eomenopon* and I found the vestiture surprisingly consistent within a species and capable of being classed into 8 distinguishable types (fig. 1-8). No particular reliance should be placed on the gross shape of the large membranous sac itself since this is understandably variable.

The sacs of *E. clissoldi* Price and *E. placentis* Price, the only 2 known species of the *clissoldi*-group, are distinctive from those of the species of the *spinimentum*-group in having elongate very large denticles on the basal 1/2 and in lacking ornamentation across the apical end, except for the usual striated area characteristic of all of the sacs. The large basal denticles of *E. clissoldi* (fig. 3) are grouped fairly compactly and are distinctly pointed at the end directed toward the base of the sac; those of *E. placentis* (fig. 1) are more irregular, scattered, and, when pointed, the point arises laterally.

The sac as shown in fig. 4 is representative of that for *E. beeri* Price, *E. denticulatum*, *E. semilunare*, and *E. sintillatae* Price. This type is characterized as having fairly large irregularly rounded denticles, intermixed with smaller denticles and occasional spinules, continuous along the apical 2/3 to 3/4; the basal portion has abundant long slender spinules.

Probably the sac coming closest to the above type is that of *E. spinimentum* (fig. 7), but with this the denticles are often obviously pointed, somewhat larger across the middle 1/3 than apically.

The previously described sacs of *E. ryani* (fig. 6) and *E. patoni* (fig. 2) are unique in having the comparatively unornamented area separating the smaller apical denticles from the much coarser basal ones.

The compactly arranged fairly regularly shaped small denticles across the apical 1/2 of the sac of *E. cardinalis* (fig. 5) make this highly characteristic and easily separated from the other types; the arrangement of these denticles, especially in the center of the area, is almost whorled fingerprint-like. A small unornamented zone separates these from the larger basal denticles.

With only sparse small fine denticles and blunt spines, an irregular unornamented

central area, and a laterobasal area of fine slender spinules, the sac of *E. wilsoni* Price (fig. 8) is the only one lacking larger denticles of some type somewhere on the sac.

#### REFERENCE

- Price, R. D. 1966. The genus *Eomenopon* Harrison with descriptions of seven new species (Mallophaga: Menoponidae). *Pacif. Ins.* **8**: 17-28.

