

***Myrsidea* Waterston (Phthiraptera: Menoponidae) from tanagers (Passeriformes: Thraupidae), with descriptions of 18 new species**

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Abstract

The four species of previously named *Myrsidea* from tanagers are redescribed. Eighteen new species are described and illustrated. They and their type hosts are *Myrsidea cyanocephalae* ex *Thraupis cyanocephala* (d'Orbigny and Lafresnaye), *M. suttoni* ex *Euphonia jamaica* (L.), *M. tangarae* ex *Tangara mexicana* (L.), *M. icterocephalae* ex *Tangara icterocephala* (Bonaparte), *M. violaceae* ex *Euphonia violacea* (L.), *M. melanopis* ex *Schistochlamys melanopis* (Latham), *M. cayanae* ex *Tangara cayana* (L.), *M. ophthalmici* ex *Chlorospingus ophthalmicus* (Du Bus), *M. fuscicaudae* ex *Habia fuscicauda* (Cabanis), *M. zena* ex *Spindalis zena* (L.), *M. rufi* ex *Tachyphonus rufus* (Boddaert), *M. phoenicii* ex *Tachyphonus phoenicius* Swainson, *M. diglossae* ex *Diglossa lafresnayii* (Boissonneau), *M. venustae* ex *Dacnis venusta* Lawrence, *M. ramphoceli* ex *Ramphocelus carbo* (Pallas), *M. surinami* ex *Tachyphonus surinamus* (L.), *M. spizae* ex *Chlorophanes spiza* (L.), and *M. mitrospingi* ex *Mitrospingus cassinii* (Lawrence). Keys are provided for the identification of these 22 species.

Key words: chewing lice, *Myrsidea*, Phthiraptera, Menoponidae, tanagers, Thraupidae

Introduction

There are 235 species of *Myrsidea* Waterston known from the Passeriformes (Price *et al.* 2003, 2005; Hellenthal and Price 2003, 2005; Dalgleish and Price 2004, 2005), nine species known from the Piciformes: Ramphastidae (Price *et al.* 2004) and three species from the Apodiformes: Trochilidae (Dalgleish and Price 2003). There are four species of this genus recognized from the passerine family Thraupidae and the ensuing “*Genera Incertae Sedis*” as delimited by Dickinson (2003). It should be noted that Price *et al.* (2003) followed the avian classification scheme of Howard and Moore (1991) and, by doing so, included what are now recognized as members of the Thraupidae within the Emberizidae.

We have examined a large number of lice from tanagers, including hosts of the four previously described species and of 18 new species. Virtually all specimens are from the collection of the junior author and were collected by him or his associates. Herein we describe, illustrate, and provide keys for these 22 species.

In the following descriptions, all measurements are in millimeters. Abbreviations are TW, temple width; HL, head length; PW, prothorax width; MW, metathorax width; AWIV, abdomen width at segment IV; ANW, female anus width; and TL, total length. Host classification below that of order follows Dickinson (2003). The parenthetical number following each female and male heading is for the number of quantified specimens.

Holotypes of all new species are in the collection of the National Museum of Natural History, Smithsonian Institution, Washington, D.C. Paratypes, as numbers allow, are divided between there and the collection of the junior author (RCD). The etymology of new species, unless otherwise presented, is derived from either the generic or specific name of the type host.

Genus *Myrsidea* Waterston

Myrsidea Waterston 1915: 12. Type species: *Myrsidea victrix* Waterston by original designation.

A thorough characterization of this genus may be found in Clay (1966). We provide here only the diagnostic characters that are pertinent to define the genus as it pertains to the thraupid lice.

Head (Fig. 1) evenly rounded anteriorly; lacking lateral slit or notch; with long inner and minute outer occipital seta on each side; each temple margin with 4 very long setae; without ventral sclerotized processes; gula usually with 4–5 setae on each side, much less often 3 or 6, with posterior seta heavier and longer; hypopharyngeal sclerites well developed.

Thorax (Fig. 1) with pronotum lacking central setae; with 3 short setae at each lateral angle and 6 longer posterior marginal setae. Mesonotum well defined, with 2 minute medioanterior setae adjacent to postnotum and 2 minute setae at posterior margin. Metanotum without central setae, but with 6 short anterior setae around periphery and with very long seta at lateroposterior corner in addition to other marginal setae. Prosternal plate well developed, elongate, 0.09–0.12 long, with 2 short anterior setae; mesothorax with notum, pleura, and sternum fused to form strongly sclerotized ring; metasternal plate prominent, diamond shaped, 0.14–0.18 long for female, 0.11–0.15 long for male, usually with 6 setae, much less often 4–5 or 7–8; venter of femur III with setal brush.

Abdomen (Figs. 1, 4), with one exception, having undivided tergites; without anterior setae except for very small seta near lateroanterior corner of each side of tergite I (not included in setal count); sternite I small, without setae; sternite II enlarged, with aster of 4, less often 3 or 5, heavy setae at each lateroposterior corner (aster setae not included in setal

count). Postspiracular setae very long on I, extremely long on II and VIII. Pleurites without anterior setae. Female anus oval, with ventral fringe of 26–37 setae, dorsal fringe of 30–42 setae, and without inner setae. Female subgenital plate of fused sternites VII–IX, with serrated posterior margin; setae given for VII represent those anteriorly located in region of segment VII, and those for VIII–IX are the remainder of the plate setae. Male subgenital plate of fused sternites VIII–IX; setae given for VIII represent those anteriorly located in region of segment VIII; the remainder of the plate setae are not quantified, but their state may be seen on the various figures; genitalia of characteristic shape (Fig. 2), 0.35–0.46 long and with spinous sac having distinctively shaped associated sclerite.

Sexual dimorphism is limited to males having smaller dimensions, sparser abdominal chaetotaxy, and differences of the posterior abdomen. Many females have some degree of enlargement of anterior abdominal tergites. Male tergites are unmodified, with pattern of postspiracular setal lengths similar to that of the female. Characters listed above for the genus or for the group characters below will not be repeated in the species descriptions.

***bonariensis* species group**

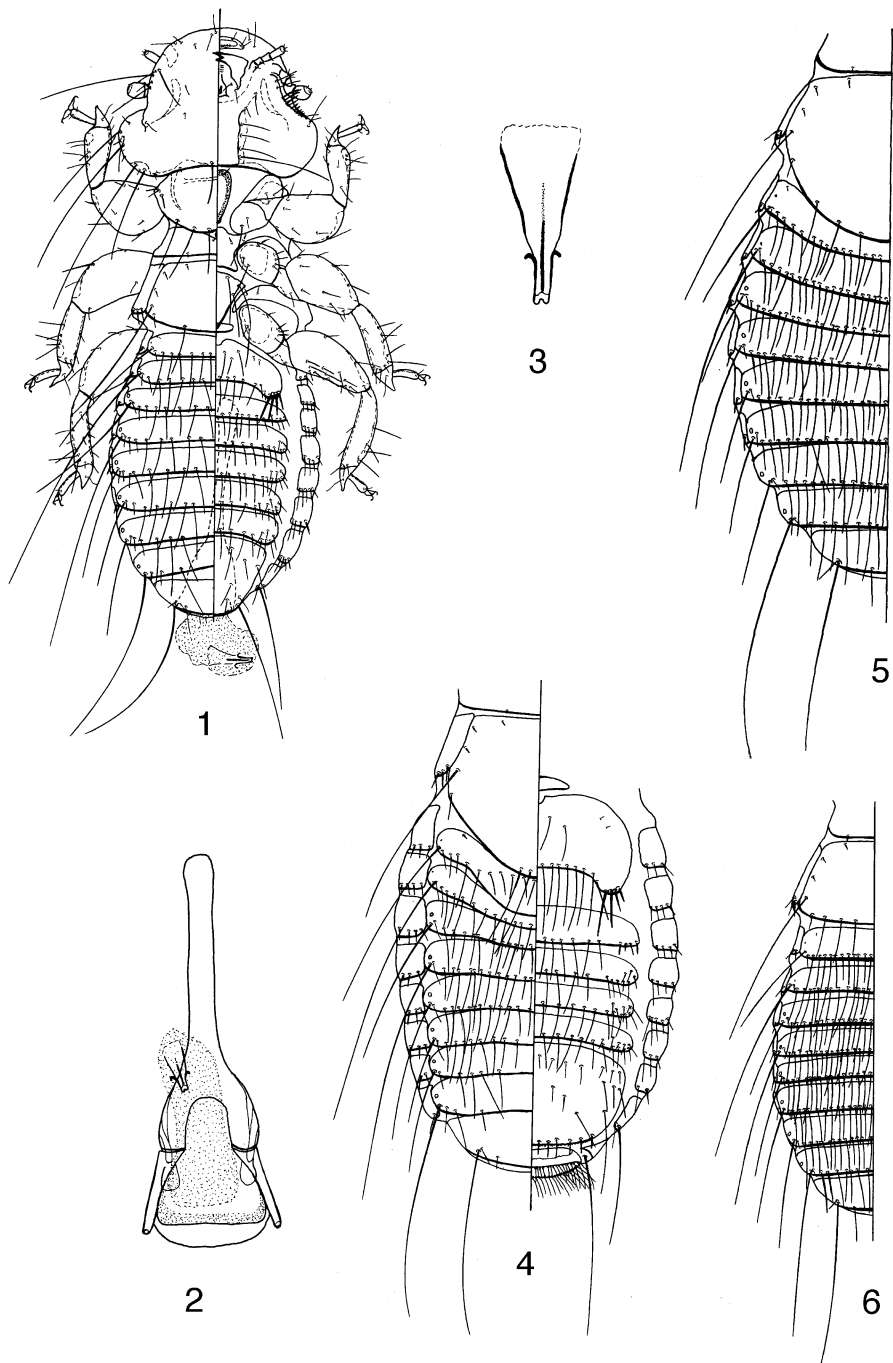
The 11 species of this group are characterized as having both sexes with a majority if not all of the abdominal segments with a continuous row of tergal setae across each segment (Figs. 1 or 4–6), without well-defined median gap in these rows.

***Myrsidea laciniaesternata* Eichler (Figs. 1–4)**

Myrsidea laciniaesternata Eichler 1956: 137. Type host: *Habia rubica* (Vieillot), Red-crowned Ant Tanager.

Female (10). Metanotum and abdomen as in Fig. 4. Metanotum much enlarged, with 8–12 marginal setae, with longer setae positioned at medioposterior margin. Anterior abdominal tergites compressed by enlarged metanotum. Tergal setae: I, 20–27, with median setae finer and well anterior from posterior margin; II, 24–29; III, 26–36; IV, 24–34; V, 25–31; VI, 17–24; VII, 12–16; VIII, 8. Postspiracular setae extremely long on IV, very long on III and V, and shortest on VI–VII. Sternal setae: II, 25–30; III, 17–23; IV, 20–26; V, 28–38; VI, 25–34; VII, 16–22; VIII–IX, 16–22. Dimensions: TW, 0.46–0.48; HL, 0.31–0.32; PW, 0.28–0.30; MW, 0.46–0.48; AWIV, 0.57–0.62; ANW, 0.20–0.22; TL, 1.46–1.57.

Male (8). As in Fig. 1. Metanotum with 6, rarely 7, marginal setae. Tergal setae: I, 13–17; II, 16–21; III–V, 16–23; VI, 14–18; VII, 11–14; VIII, 8. Sternal setae: II, 22–27; III, 16–20; IV, 18–23; V–VI, 23–28; VII, 15–19; VIII, 4–6. Genital sac sclerite 0.080–0.095 long, as in Fig. 3. Dimensions: TW, 0.41–0.43; HL, 0.29–0.30; PW, 0.26–0.28; MW, 0.36–0.38; AWIV, 0.44–0.46; TL, 1.15–1.22.



FIGURES 1–6. 1–4, *Myrsidea laciniaesternata*. 1, Entire dorsoventral male. 2, Male genitalia. 3, Male genital sac sclerite. 4, Female metanotum and dorsoventral abdomen. 5–6, *M. cyanocephalae*. 5, Female metanotum and dorsal abdomen. 6, Male metanotum and dorsal abdomen.

Material. Ex *H. rubica*, 15 females, 13 males, **TRINIDAD** (2 collections).

Remarks. The female of this species is recognized by its much enlarged metanotum with longer setae grouped at the medioposterior margin, the number of setae on its abdominal tergites, and the anterior distribution of setae on tergite I. The male is recognized by its metanotal margin with only 6 (rarely 7) setae and tergite VIII with only 8 setae. Although we have not been able to examine any type material, Eichler (1956), even with his lack of meaningful detail or useful illustration, did mention the “apron shape” of the metanotum. This, along with our material being from the type host, makes us reasonably confident that we have representatives of *M. laciniaesternata*.

***Myrsidea cyanocephalae* Price and Dalglish, new species (Figs. 5–6)**

Type host. *Thraupis cyanocephala* (d’Orbigny and Lafresnaye), Blue-capped Tanager.

Female (9). Metanotum and dorsal abdomen as in Fig. 5. Metanotum much enlarged, with 8–10 marginal setae spread evenly along margin. Abdominal tergite I compressed by enlarged metanotum. Tergal setae: I, 28–34, all placed at posterior margin; II, 35–44; III, 38–44; IV, 36–43; V–VI, 33–42; VII, 27–31; VIII, 15–20. Postspiracular setae very long on IV, shortest on III and V–VII. Sternal setae: II, 25–34; III, 21–29; IV–V, 28–35; VI, 26–32; VII, 11–16; VIII–IX, 19–26. Dimensions: TW, 0.45–0.47; HL, 0.31–0.33; PW, 0.29–0.31; MW, 0.45–0.48; AWIV, 0.59–0.66; ANW, 0.20–0.22; TL, 1.40–1.55.

Male (7). Metanotum and dorsal abdomen as in Fig. 6. Metanotum with 8–10 marginal setae. Tergal setae: I, 25–30; II, 30–34; III–V, 31–38; VI, 29–34; VII, 26–29; VIII, 17–21. Sternal setae: II, 22–27; III, 23–26; IV, 25–33; V, 27–38; VI, 26–32; VII, 17–21; VIII, 8–11. Genital sac sclerite 0.080–0.090 long, as in Fig. 3. Dimensions: TW, 0.41–0.43; HL, 0.29–0.31; PW, 0.27–0.29; MW, 0.37–0.38; AWIV, 0.45–0.47; TL, 1.21–1.27.

Type material. Holotype female, ex *T. cyanocephala*, **VENEZUELA**: Bocono, Trujillo, 1 Mar 1986, R. C. Dalglish. Paratypes: 6 females, 5 males, same data as holotype; 1 female, 2 males, same except 2 Feb 1986; 1 female, same except 5 Mar 1986.

Remarks. The consistently larger number of tergal and sternal setae for both sexes of *M. cyanocephalae* easily distinguishes them from *M. laciniaesternata*, the only other known species from thraupids with the female having a much enlarged metanotum.

***Myrsidea suttoni* Price and Dalglish, new species (Fig. 7)**

Type host. *Euphonia jamaica* (L.), Jamaican Euphonia.

Female (8). Metanotum not enlarged, with 11–14 marginal setae. Abdomen with tergite I enlarged, and tergites I–V shaped as for tergites II–VI in Fig. 22. Tergal setae: I, 8–10; II, 15–21; III, 20–27; IV, 23–30; V, 25–28; VI, 22–27; VII, 20–26; VIII, 15–18. Postspiracular setae extremely long on IV, shortest on III and V–VII. Sternal setae: II, 26–33; III, 24–

26; IV–V, 30–35; VI, 26–31; VII, 14–17; VIII–IX, 21–25. Dimensions: TW, 0.44–0.45; HL, 0.31–0.32; PW, 0.28–0.30; MW, 0.42–0.46; AWIV, 0.53–0.63; ANW, 0.18–0.20; TL, 1.43–1.58.

Male (8). Metanotum with 10–11 marginal setae. Tergal setae: I, 8–13; II, 18–22; III–V, 24–29; VI, 23–26; VII, 20–25; VIII, 14–16. Sternal setae: II, 26–31; III, 16–23; IV, 25–29; V, 24–31; VI, 21–23; VII, 11–17; VIII, 6–8. Genital sac sclerite 0.085–0.100 long, as in Figs. 7 or 11. Dimensions: TW, 0.38–0.41; HL, 0.27–0.29; PW, 0.26–0.30; MW, 0.33–0.35; AWIV, 0.40–0.44; TL, 1.17–1.23.

Type material. Holotype female, ex *E. jamaica*, **JAMAICA:** Marshall's Pen, Mandeville, Manchester, Feb 1982, R. C. Dalglish. Paratypes, all ex *E. jamaica*: 4 females, 6 males, same data as holotype; 2 males, same except 24–30 Dec 1982; 8 females, 2 males, same except Feb 1981, R. C. Dalglish 804; 4 females, Rocklands near Anchovy, Feb 1982, R. C. Dalglish; 2 females, 2 males, Greenhills, Blue Mountains, Feb 1982, R. C. Dalglish; 5 females, 5 males, Jim Crow Mountains, 19 Feb 1982, R. L. Sutton.

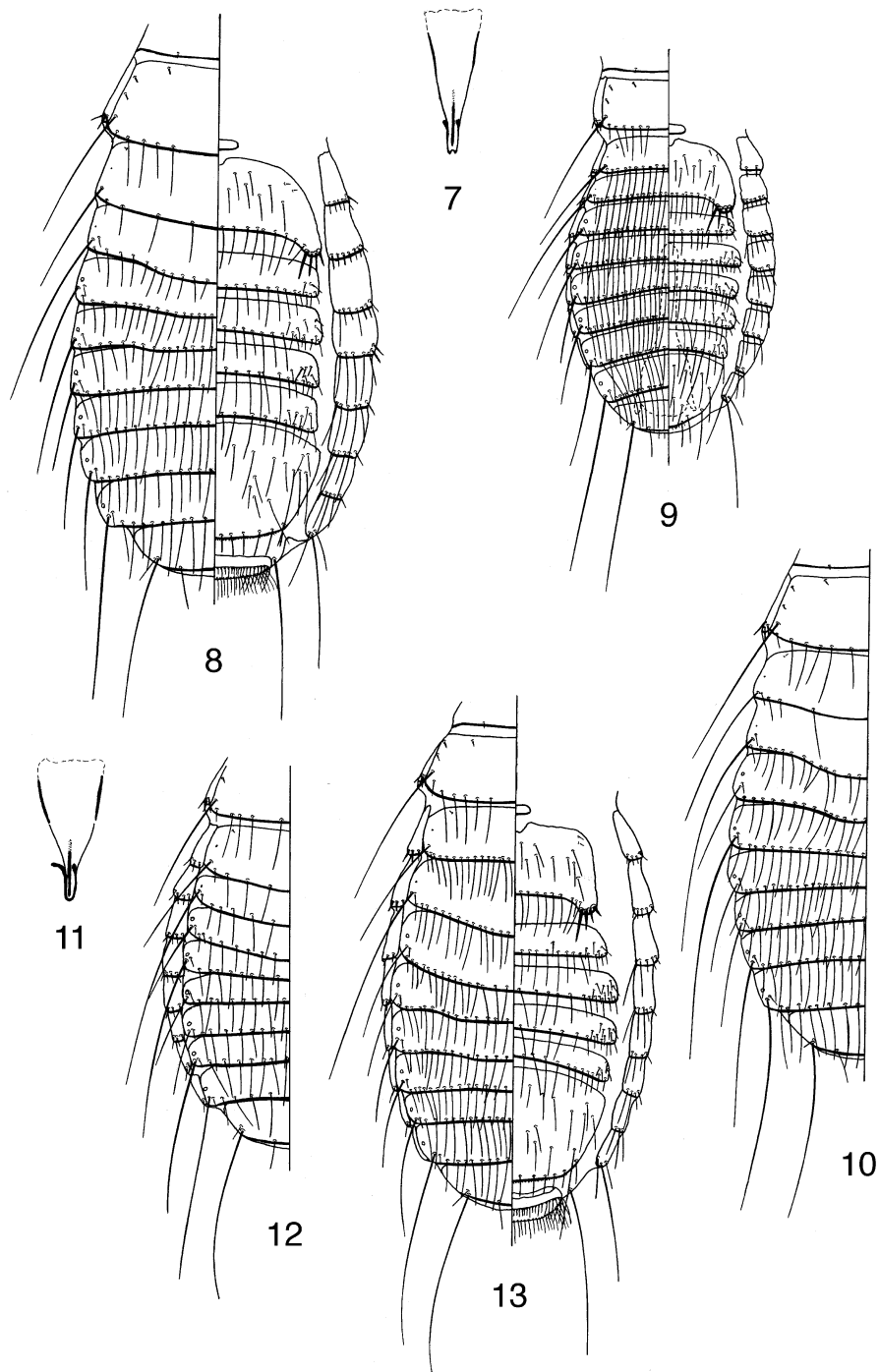
Remarks. The female, with the enlargement of tergite I as for tergite II in Fig. 22, is unique among the species having the abdominal tergal rows complete across the segments and this enables separation of females of this species from all others. The quantitative chaetotaxy of the male metanotum and abdominal segments, in conjunction with the shape of the genital sac sclerite, will separate males of this species from those with the complete tergal setal rows.

Etymology. This species is named in memory of Robert Sutton of Marshall's Pen, Mandeville, Jamaica, who assisted in the collection of this and many additional species. Robert was a Jamaican of English descent and one of the country's preeminent ornithologists. His death in 2002, at the hands of burglars, was a great loss to ornithology, his many friends, and colleagues.

Myrsidea bonariensis Malcomson (Figs. 8–9)

Myrsidea bonariensis Malcomson 1929: 728. Type host: "*Molothrus bonariensis* (Cabanis)"—error.

Female (10). Metanotum not enlarged, with 12–16 marginal setae. Abdomen (Fig. 8) with tergite I largest, with gently curved posterior margin, II–IV with slight medioposterior convexity. Tergal setae: I, 8–15; II, 24–34; III–V, 32–47; VI, 30–42; VII, 27–37; VIII, 18–23. Postspiracular setae very long on IV and VII, shorter on III and V–VI. Sternal setae: II, 34–41; III, 26–32; IV–V, 34–44; VI, 29–41; VII, 18–25; VIII–IX, 20–23. Dimensions: TW, 0.43–0.45; HL and PW, 0.28–0.31; MW, 0.40–0.45; AWIV, 0.55–0.59; ANW, 0.20–0.21; TL, 1.38–1.51.



FIGURES 7–13. 7, *Myrsidea suttoni* male genital sac sclerite. 8–9, *M. bonariensis*. 8, Female metanotum and dorsoventral abdomen. 9, Male metanotum and dorsoventral abdomen. 10, *M. tangarae* female metanotum and dorsal abdomen. 11, *M. icterocephalae* male genital sac sclerite. 12, *M. melanopis* female metanotum and dorsal abdomen. 13, *M. seminuda* female metanotum and dorsoventral abdomen.

Male (10). Metanotum with 12–16 marginal setae. Tergal setae: I, 20–26; II, 28–33; III–VI, 30–39; VII, 26–32; VIII, 20–25. Sternal setae: II, 28–34; III, 22–32; IV–V, 31–39; VI, 30–35; VII, 18–24; VIII, 7–13. Genital sac sclerite 0.080–0.100 long, as in Figs. 3 or 11. Dimensions: TW, 0.39–0.41; HL, 0.27–0.29; PW, 0.26–0.28; MW, 0.34–0.36; AWIV, 0.40–0.44; TL, 1.13–1.21.

Material. Ex *Tangara gyrola* (L.), Bay-headed Tanager, 6 females, 8 males, **TRINIDAD** (3 collections); 7 females, 10 males, **COSTA RICA** (2 collections).

Remarks. This species was described by Malcomson (1929) from a female/male type pair presumed to have come from “*Molothrus bonariensis* (Cabanis), the Argentina cowbird. The skin bears no data.” This bird is now recognized as *M. bonariensis* (J. F. Gmelin). Clay (1968) studied and illustrated these type specimens and concluded the erroneous nature of the type host. Unfortunately, many setae are missing, but, from what Clay shows, setal number and distributions, dimensions, and female tergal shape all agree in excellent fashion with what we have described here from *T. gyrola*. *Myrsidea bonariensis* is distinguished from others of this group by the shape of the female tergites, the setal counts, and the shorter postspiracular setae on tergite IV.

Myrsidea tangarae Price and Dalglish, new species (Fig. 10)

Type host. *Tangara mexicana* (L.), Turquoise Tanager.

Female (5). Metanotum not enlarged, with 11–14 marginal setae. Abdomen with tergites and chaetotaxy as in Fig. 10, tergite I largest with gently curved posterior margin, II–IV with slight medioposterior convexity. Tergal setae: I, 9–10; II, 23–32; III–V, 29–35; VI, 27–33; VII, 28–32; VIII, 19–22. Postspiracular setae extremely long on IV, very long to extremely long on VII, considerably shorter on III and V–VI. Sternal setae: II, 29–36; III, 23–28; IV, 31–41; V, 36–44; VI, 30–38; VII, 17–24; VIII–IX, 20–23. Dimensions: TW, 0.45–0.46; HL, 0.30–0.31; PW, 0.30–0.31; MW, 0.43–0.46; AWIV, 0.55–0.61; ANW, 0.20–0.22; TL, 1.46–1.53.

Male (5). Metanotum with 11–14 marginal setae. Tergal setae: I, 20–22; II, 28–33; III, 33–35; IV, 30–36; V, 33–34; VI, 30–33; VII, 27–30; VIII, 22–25. Sternal setae: II, 28–33; III, 24–25; IV, 29–31; V, 31–34; VI, 26–29; VII, 17–21; VIII, 6–13. Genital sac sclerite 0.085–0.095 long, as in Fig. 23. Dimensions: TW, 0.41–0.42; HL, 0.27–0.29; PW, 0.27–0.28; MW, 0.36–0.37; AWIV, 0.43–0.44; TL, 1.20–1.21.

Type material. Holotype female, ex *T. mexicana*, **TRINIDAD**: Simla near Arima, 22 Mar 1980, R. C. Dalglish 683. Paratypes: 4 females, 5 males, same data as holotype.

Remarks. This species is very close anatomically to *M. bonariensis*. The gula shows 7/9 specimens with 4 + 4 setae and 2/9 with 4 + 5 while *M. bonariensis* has 12/20 with 5 + 5 such setae, 7/20 with 4 + 5, and only 1/20 with 4 + 4. In addition, there are differences in the length of the postspiracular setae on tergites IV and VII and in some tergal setal counts. The male genital sac sclerite of *M. tangarae* is marginally different from that of *M. bonariensis* (Fig. 23 vs Fig. 3).

***Myrsidea icterocephalae* Price and Dalglish, new species (Figs. 11)**

Type host. *Tangara icterocephala* (Bonaparte), Silver-throated Tanager.

Female (10). Metanotum not enlarged, with 11–16 marginal setae. Abdominal tergites shaped much as for *M. tangarae* (Fig. 10). Tergal setae: I, 8–11; II, 21–31; III–V, 30–37; VI, 28–35; VII, 24–31; VIII, 19–24. Postspiracular setae extremely long on IV, shorter on III and V–VII. Sternal setae: II, 25–35; III, 22–31; IV–V, 28–46; VI, 25–37; VII, 15–24; VIII–IX, 21–24. Dimensions: TW, 0.42–0.44; HL and PW, 0.27–0.30; MW, 0.39–0.42; AWIV, 0.53–0.58; ANW, 0.20–0.22; TL, 1.40–1.49.

Male (10). Metanotum with 11–14 marginal setae. Tergal setae: I, 13–19; II, 23–31; III, 28–34; IV–V, 30–36; VI, 28–33; VII, 26–32; VIII, 20–27. Sternal setae: II, 26–31; III, 20–26; IV, 27–32; V, 29–35; VI, 25–30; VII, 18–21; VIII, 7–11. Genital sac sclerite 0.085–0.090 long, as in Fig. 11. Dimensions: TW, 0.39–0.41; HL and PW, 0.25–0.29; MW, 0.32–0.36; AWIV, 0.41–0.46; TL, 1.14–1.22.

Type material. Holotype female, ex *T. icterocephala*, **COSTA RICA:** Las Cruces Biological Station, Cota Brus, 18–21 Apr 1992, R. L. Fisher. Paratypes, all ex *T. icterocephala*: 6 females, 5 males, same data as holotype; 4 females, same except 26 Jun 1993, R. L. Fisher 644 and 646; 6 females, 13 males, same except Wilson Botanical Garden, Las Cruces, 20 Apr 1992, Fisher 84, 118, and 148; 13 females, 14 males, same except 19 Apr 1992, Fisher 53, 93, 99, and 103.

Remarks. This species is anatomically very similar to *M. tangarae*, but differs in having both sexes with more gular setae (41/59 with 5 + 5 setae, 1/59 with 5 + 6, 16/59 with 5 + 4, and only 1/59 with 4 + 4) and smaller dimensions. The male has fewer setae on tergite I and a slightly different genital sac sclerite (Fig. 11 vs Fig. 23).

***Myrsidea violaceae* Price and Dalglish, new species**

Type host. *Euphonia violacea* (L.), Violaceous Euphonia.

Female (10). Metanotum not enlarged, with 9–11 marginal setae. Abdomen with tergites shaped much as in Fig. 10, with tergite I slightly enlarged with gently curved posterior margin, and at least II–III with small medioposterior convexity. Tergal setae: I, 11–13; II, 17–26; III–VI, 22–30; VII, 19–26; VIII, 14–18. Postspiracular setae extremely long on IV, very long on VII, and shorter on III and V–VI. Sternal setae: II, 26–32; III, 19–23; IV, 25–32; V, 29–37; VI, 23–34; VII, 14–21; VIII–IX, 18–23. Dimensions: TW, 0.40–0.42; HL, 0.28–0.31; PW, 0.27–0.29; MW, 0.39–0.43; AWIV, 0.52–0.61; ANW, 0.18–0.21; TL, 1.39–1.48.

Male (10). Metanotum with 9–11 marginal setae. Tergal setae: I, 16–20; II, 22–29; III–IV, 25–30; V, 26–31; VI, 24–29; VII, 22–27; VIII, 18–22. Sternal setae: II, 26–32; III, 19–25; IV, 21–29; V, 26–30; VI, 23–28; VII, 14–22; VIII, 7–11. Genital sac sclerite 0.080–0.105 long, as in Fig. 7. Dimensions: TW, 0.36–0.39; HL, 0.26–0.29; PW, 0.24–0.27; MW, 0.32–0.35; AWIV, 0.39–0.43; TL, 1.11–1.21.

Type material. Holotype female, ex *E. violacea*, **TRINIDAD:** Simla Biological Station, 21 Mar 1978, R. C. Dalglish 523. Paratypes, all ex *E. violacea*: 5 females, 8 males, same data as holotype; 1 female, 2 males, Arima, Simla, 14 Mar 1976, R. C. Dalglish; 3 females, 3 males, Simla near Arima, 6 Mar 1980, R. C. Dalglish 667; 1 female, 2 males, same except 14 Mar 1980, 686; 3 females, 4 males, same except 18 Mar 1980, 691; 1 female, 2 males, same except 4 Mar 1980, 651 and 659; 3 females, same except 10 Mar 1980, 684; 3 females, 2 males, same except 12 Mar 1980, 708; 2 females, 3 males, same except 13 Mar 1980, 683 and 685; 3 females, 1 male, same except 16 Mar 1980, 703; 5 females, 3 males, same except 20 Mar 1980, 693 and 700; 2 females, 1 male, same except 21 Mar 1980, 699.

Remarks. Anatomically close to the preceding three species from *Tangara* species, *M. violaceae* has longer postspiracular setae on tergites IV and VII than *M. bonariensis* and smaller dimensions and fewer marginal metanotal and tergal setae than the other two species. Also, the male genital sac sclerite (Fig. 7) is contrasted to Figs. 3, 11, and 23 of the other three species.

Price *et al.* (2003:128) erroneously cite Clay (1968:236) for the association of *M. bonariensis* with *E. violacea*. This host/lice association is not cited in that reference and must be corrected to read *M. violaceae* based on the above description.

Myrsidea melanopis Price and Dalglish, new species (Fig. 12)

Type host. *Schistochlamys melanopis* (Latham), Black-faced Tanager.

Female (10). Metanotum not enlarged, with 10–13 marginal setae. Abdomen (Fig. 12) with tergite I largest, I–III with evenly curved margins. Tergal setae: I, 10–12; II, 13–16; III–IV, 17–22; V–VI, 18–22; VII, 17–19; VIII, 11–14. Postspiracular setae extremely long on IV and VII, shortest on III and V–VI. Sternal setae: II, 27–33; III, 19–23; IV–V, 26–33; VI, 26–29; VII, 13–18; VIII–IX, 18–27. Dimensions: TW, 0.48–0.50; HL, 0.32–0.34; PW, 0.30–0.33; MW, 0.46–0.48; AWIV, 0.59–0.65; ANW, 0.21–0.24; TL, 1.46–1.59.

Male (10). Metanotum with 10–12 marginal setae. Tergal setae: I, 11–15; II, 18–22; III–V, 19–26; VI, 20–24; VII, 18–23; VIII, 13–17. Sternal setae: II, 22–28; III, 19–21; IV–V, 24–32; VI, 20–30; VII, 13–19; VIII, 6–8. Genital sac sclerite 0.075–0.095 long, as in Fig. 7. Dimensions: TW, 0.44–0.46; HL, 0.30–0.32; PW, 0.28–0.30; MW, 0.39–0.41; AWIV, 0.49–0.51; TL, 1.27–1.36.

Type material. Holotype female, ex *S. melanopis*, **VENEZUELA:** 60 km E Sta Elena, Edo Bolivar, Jan 1987, R. C. Dalglish. Paratypes: 13 females, 11 males, same data as holotype.

Remarks. The large dimensions, coupled with the setal counts, will separate this species from all others of the group. The female is further distinguished by its large development of tergite I and the evenly curved posterior margins of tergites I–III.

***Myrsidea seminuda* Eichler (Figs. 13–14)**

Myrsidea seminuda Eichler 1951: 53. Type host: *Thraupis palmarum* (Wied), Palm Tanager.

Female (8). Metanotum not enlarged, with 12–14 marginal setae. Abdomen (Fig. 13) with tergites I–III enlarged, I with straight posterior margin, II–III with convex margin, IV–VI smaller but with slight medioposterior convexity. Tergal setae: I, 27–38; II, 30–41; III, 31–36; IV, 28–37; V, 33–39; VI, 29–36; VII, 27–33; VIII, 16–22. Postspiracular setae of fairly uniform lengths on III–VII, much shorter than on II and VIII. Sternal setae: II, 38–44; III–V, 29–41; VI, 25–31; VII, 15–18; VIII–IX, 18–26. Dimensions: TW, 0.45–0.47; HL, 0.31–0.32; PW, 0.29–0.31; MW, 0.43–0.46; AWIV, 0.56–0.61; ANW, 0.18–0.20; TL, 1.48–1.59.

Male (5). Metanotum with 12–13 marginal setae. Metanotum and abdomen as in Fig. 14. Tergal setae: I, 25–29; II, 30–35; III–V, 34–42; VI, 36–39; VII, 31–33; VIII, 21–22. Postspiracular setae different from female by being longer on IV and VII. Sternal setae: II, 32–37; III, 30–42; IV, 32–41; V, 32–38; VI, 24–31; VII, 17–20; VIII, 12–17. Genital sac sclerite 0.075–0.100 long, as in Fig. 7. Dimensions: TW, 0.41–0.43; HL, 0.28–0.30; PW, 0.27–0.29; MW, 0.34–0.40; AWIV, 0.44–0.46; TL, 1.24–1.28.

Material. Ex *T. palmarum*, 4 females, 2 males, **COSTA RICA** (2 collections). Ex *T. episcopus* (L.), 8 females, 7 males, **COSTA RICA** (3 collections), **TRINIDAD** (1 collection).

Remarks. Eichler (1951) described *M. seminuda* from one male off *T. palmarum*. There is nothing of significance in the accompanying verbiage and only a poor generalized illustration of the male genitalia. Thus, we consider our specimens from the type host as being of this species. The female is identifiable by its large number of setae on tergite I and the abdominal tergal configuration of the male by its large number of tergal and marginal metanotal setae.

***Myrsidea cayanae* Price and Dalglish, new species**

Type host. *Tangara cayana* (L.), Burnished-buff Tanager.

Female (10). Metanotum not enlarged, with 10–12 marginal setae. Abdomen with tergites shaped much as for *M. seminuda* (Fig. 13). Tergal setae: I, 19–23; II, 19–28; III, 19–23; IV, 21–26; V, 22–32; VI, 25–33; VII, 21–26; VIII, 12–15. Postspiracular setae extremely long on IV and VII, long to very long on III and V–VI. Sternal setae: II, 23–31; III, 21–28; IV–V, 27–36; VI, 26–31; VII, 12–16; VIII–IX, 17–23. Dimensions: TW, 0.42–0.44; HL, 0.29–0.31; PW, 0.27–0.30; MW, 0.40–0.43; AWIV, 0.53–0.58; ANW, 0.17–0.20; TL, 1.35–1.51.

Male (10). Metanotum with 8–10 marginal setae. Tergal setae: I, 16–19; II–III, 21–24; IV, 24–29; V–VI, 25–30; VII, 21–25; VIII, 15–19. Sternal setae: II, 21–27; III, 19–25; IV–VI, 22–28; VII, 13–18; VIII, 5–8. Genital sac sclerite 0.075–0.090 long, as in Fig. 11.

Dimensions: TW, 0.37–0.39; HL, 0.26–0.28; PW, 0.24–0.27; MW, 0.33–0.35; AWIV, 0.41–0.43; TL, 1.11–1.15.

Type material. Holotype female, ex *T. cayana*, VENEZUELA: 60 km E Sta Elena, Edo Bolivar, Jan 1987, R. C. Dalglish. Paratypes: 36 females, 38 males, same data as holotype.

Remarks. The female of this species is recognized by the combination of its pattern of abdominal tergal development, its number of setae on tergite I, and its temple width. The male is identified by the number of marginal metanotal setae, its temple width, and the number of setae on its abdominal tergites.

Myrsidea ophthalmici Price and Dalglish, new species (Fig. 15)

Type host. *Chlorospingus ophthalmicus* (Du Bus), Common Bush Tanager.

Female (5). Metanotum not enlarged, with 9–10 marginal setae. Abdomen (Fig. 15) without any enlarged tergites, but II–IV with slight medioposterior convexity. Tergal setae: I, 13–14; II–IV, 16–19; V, 16–21; VI, 19–23; VII, 18–21; VIII, 12–13. Postspiracular setae extremely long on IV, very long on VII, and shortest on III and V–VI. Sternal setae: II, 26–27; III, 18–22; IV, 21–28; V, 27–31; VI, 26; VII, 16–19; VIII–IX, 17–20. Dimensions: TW, 0.41–0.43; HL, 0.30–0.31; PW, 0.27–0.29; MW, 0.39–0.42; AWIV, 0.49–0.58; ANW, 0.18–0.19; TL, 1.30–1.40.

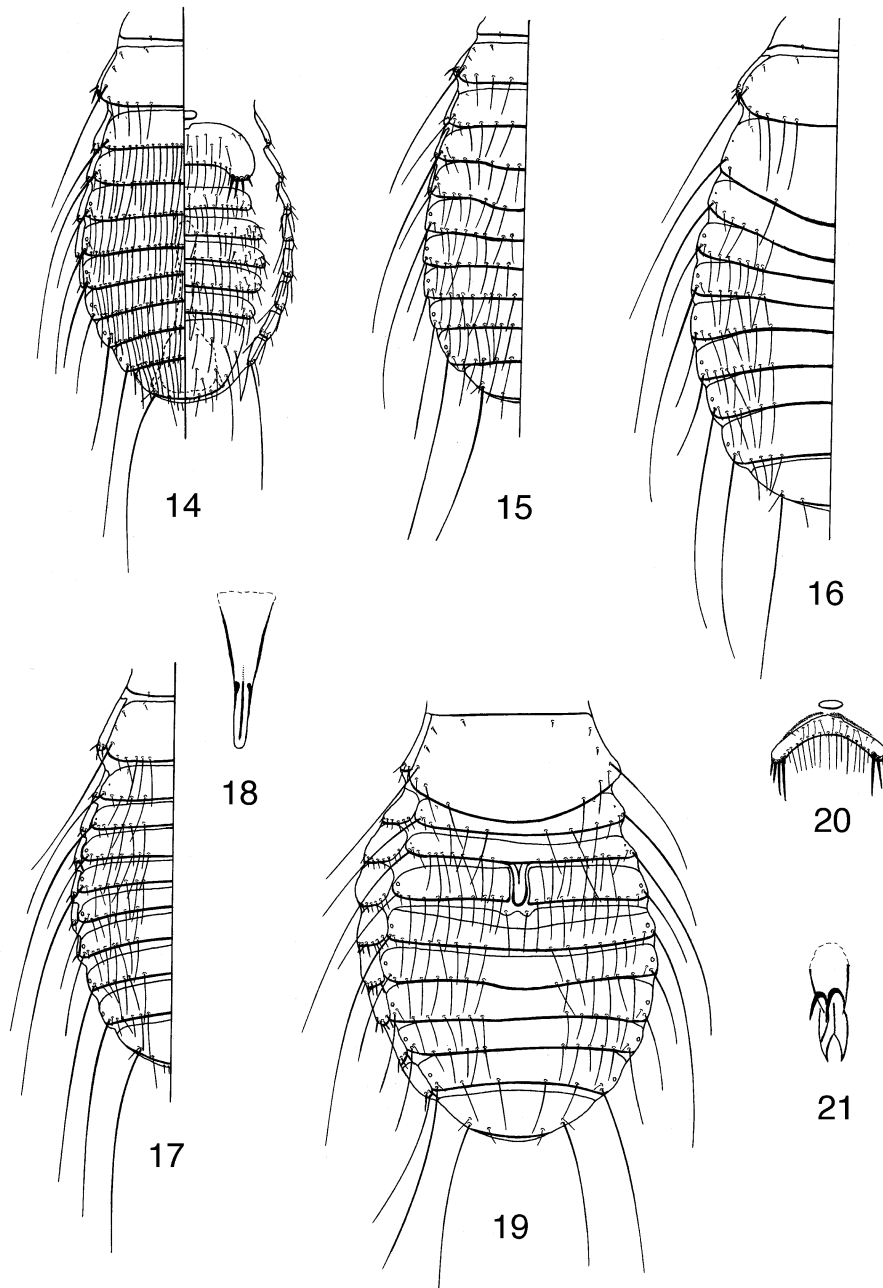
Male (2). Metanotum with 8 marginal setae. Tergal setae: I, 10–12; II–VII, 14–18; VIII, 13–15. Sternal setae: II, obscured; III, 19–20; IV, 22–23; V, 26–28; VI, 23; VII, 17; VIII, 8–9. Genital sac sclerite 0.080–0.090 long, as in Fig. 11. Dimensions: TW, 0.38–0.39; HL, 0.28; PW, 0.24–0.25; MW, 0.33–0.34; AWIV, 0.43; TL, 1.12–1.13.

Type material. Holotype female, ex *C. ophthalmicus*, VENEZUELA: Bocono, Trujillo, 2 Feb 1986, R. C. Dalglish. Paratypes: 4 females, 2 males, same data as holotype.

Remarks. The female of this species is unique for this group by having no obviously enlarged metanotum or abdominal tergites, but tergites II–IV do exhibit a slight medioposterior convexity. Dimensions and setal counts assist in recognition of both sexes from the closely related forms.

fusca species group

The 11 species of this group are characterized by the presence, in both sexes, of a well defined median gap in the rows of tergal setae. (Figs. 16–17).



FIGURES 14–21. 14, *Myrsidea seminuda* male metanotum and dorsoventral abdomen. 15, *M. ophthalmici* female metanotum and dorsal abdomen. 16–17, *M. fusca*. 16, Female metanotum and dorsal abdomen. 17, Male metanotum and dorsal abdomen. 18, *M. fuscicaudae* male genital sac sclerite. 19–21, *M. zena*. 19, Female metanotum and dorsal abdomen. 20, Male sternite II. 21, Male genital sac sclerite.

***Myrsidea fusca* (Carriker) (Figs. 16–17)**

Menopon thoracicum fuscum Carriker 1903: 187. Type host: *Ramphocelus passerinii* Bonaparte, Scarlet-rumped Tanager.

Female (8). Metanotum not enlarged, with 12–16 marginal setae. Abdomen (Fig. 16) with tergite I largest with strongly convex posterior margin, II–V with slight medioposterior convexity. Tergal setae: I, 6; II, 12–17; III–V, 17–20; VI, 15–21; VII, 13–19; VIII, 11–15. Postspiracular setae extremely long on IV and VII, shorter on III and V–VI. Sternal setae: II, 27–32; III, 23–29; IV, 30–39; V, 36–48; VI, 31–42; VII, 19–26; VIII–IX, 16–21. Dimensions: TW, 0.46–0.49; HL and PW, 0.28–0.31; MW, 0.45–0.50; AWIV, 0.60–0.67; ANW, 0.22–0.24; TL, 1.47–1.62.

Male (4). Metanotum with 12–16 marginal setae. Dorsal abdomen as in Fig. 17. Tergal setae: I, 10–12; II, 15–16; III, 18–19; IV, 16–18; V, 16–19; VI–VII, 14–17; VIII, 13–14. Sternal setae: II, 27–29; III, 23–24; IV, 28–33; V–VI, 29–35; VII, 22–25; VIII, 6–8. Genital sac sclerite 0.090–0.100 long, as in Fig. 3. Dimensions: TW, 0.40–0.43; HL, 0.28–0.29; PW, 0.27–0.30; MW, 0.36–0.38; AWIV, 0.45–0.49; TL, 1.14–1.24.

Material. Ex *R. passerinii*, 10 females, 5 males, including holotype female, allotype male, 2 female paratypes of *M. t. fuscum*, **COSTA RICA** (5 collections).

Remarks. The description of this louse taxon by Carriker (1903) as a subspecies of *Menopon thoracicum* Giebel was based on “Numerous specimens collected on *Ramphocelus passerinii*, Juan Vinae, Costa Rica, March, 1902.” This description is essentially useless, as it contains only brief verbiage of a general nature and no illustrations. However, if indeed it is close to *M. thoracicum*, then Carriker’s illustration for *M. thoracicum* is counter to what we considered to be diagnostic for our specimens of *M. fusca*, because it clearly shows tergal setae in a continuous row across all tergites. A study of the type specimens from the National Museum of Natural History resolved this matter. They possess the central gap in the tergal rows confirming the improper placement of these specimens from *R. passerinii* as a subspecies of *M. thoracicum*. The female of this species is recognized by its much enlarged tergite I, and there is a tendency in both sexes for a larger number of marginal metanotal setae.

***Myrsidea fuscicaudae* Price and Dalglish, new species (Fig. 18)**

Type host. *Habia fuscicauda* (Cabanis), Red-throated Ant Tanager.

Female (3). Metanotum not enlarged, with 19 marginal setae. Abdomen much as for *M. fusca* (Fig. 16). Tergal setae: I, 6; II, 16–18; III–VI, 22–25; VII, 17–19; VIII, 9–10. Postspiracular setae as for *M. fusca*. Sternal setae: II, 24–26; III, 28–29; IV, 37–38; V, 41–42; VI, 32–34; VII, 14–15; VIII–IX, 21–24. Dimensions: TW, 0.46–0.48; HL, 0.31–0.32; PW, 0.29–0.30; MW, 0.46; AWIV, 0.58–0.61; ANW, 0.22–0.23; TL, 1.53–1.56.

Male (5). Metanotum with 14–15 marginal setae. Tergal setae: I, 11–13; II, 16–20; III, 19–23; IV, 20–24; V, 19–21; VI, 17–19; VII, 15–18; VIII, 11–12. Sternal setae: II, 22–26; III, 20–24; IV–V, 29–38; VI, 27–31; VII, 17–20; VIII, 7–8. Genital sac sclerite 0.085–0.095 long, as in Fig. 18. Dimensions: TW, 0.41–0.42; HL, 0.25–0.29; PW, 0.25–0.27; MW, 0.34–0.36; AWIV, 0.43–0.44; TL, 1.19–1.22.

Type material. Holotype female, ex *H. fuscicauda*, **COSTA RICA:** La Selva Biological Station, Puerto Viejo, 11–14 Jan 1992, R. L. Fisher 395. Paratypes: 2 females, 5 males, same data as holotype.

Remarks. This species is closest to *M. fusca*, but may be separated from it by the female having a larger number of marginal metanotal setae, more setae on tergites III–VI, and fewer on sternite VII. The male of *M. fuscicauda* tends to have more setae on tergites II–VI, fewer on sternite VII, and a slight difference of the genital sac sclerite (Fig. 3 vs Fig. 18).

Myrsidea zena Price and Dalglish, new species (Figs. 19–21)

Type host. *Spindalis zena* (L.), Western Spindalis.

Female (10). Metanotum and dorsal abdomen as in Fig. 19. Metanotum with 8–9 marginal setae, with broadly rounded posterior margin. Abdominal tergites (Fig. 19) with I–II reduced, III medially divided with tongue-like insertion in center, IV with transverse division, V with slight medioposterior convexity, and VI–VIII normal. Tergal setae: I, 11–16; II–III, 22–29; IV, 17–23; V, 17–22; VI, 16–21; VII, 14–18; VIII, 8–9. Postspiracular setae extremely long on IV, shortest on III and V–VII. Sternal setae: II, 29–34; III, 27–35; IV, 30–36; V, 32–40; VI, 28–36; VII, 10–14; VIII–IX, 25–35. Dimensions: TW, 0.49–0.53; HL, 0.32–0.34; PW, 0.31–0.33; MW, 0.48–0.53; AWIV, 0.62–0.69; ANW, 0.22–0.25; TL, 1.48–1.58.

Male (10). Metanotum with 8–10 marginal setae. Tergal setae: I, 12–16; II–III, 19–23; IV–VI, 17–21; VII, 14–18; VIII, 8–10. Sternal setae: II, 28–32, with deeply arched sclerite (Fig. 20); III, 24–30; IV, 32–36; V, 34–42; VI, 37–45; VII, 28–37; VIII, 17–25. Genital sac sclerite 0.060–0.080 long, as in Fig. 21. Dimensions: TW, 0.46–0.48; HL, 0.30–0.32; PW, 0.29–0.33; MW, 0.40–0.43; AWIV, 0.48–0.50; TL, 1.30–1.37.

Type material. Holotype female, ex *S. zena*, **JAMAICA:** Marshall's Pen, Mandeville, Feb 1982, R. C. Dalglish. Paratypes: 14 females, 13 males, same data as holotype; 16 females, 20 males, same except Feb 1981, R. C. Dalglish 802.

Remarks. This is the most distinctive of the thraupid *Myrsidea*. The female has a unique metanotal and tergal configuration on I–IV (Fig. 19); the male has a distinctive shape of sternite II (Fig. 20) and an unusual genital sac sclerite structure (Fig. 21).

***Myrsidea rufi* Price and Dalglish, new species (Figs. 22–23)**

Type host. *Tachyphonus rufus* (Boddaert), White-lined Tanager.

Female (10). Metanotum not enlarged, with 10–12 marginal setae. Abdominal tergites (Fig. 22) with I enlarged but with straight posterior margin, II medially greatly enlarged, causing compression of tergites III–VI. Tergal setae: I, 16–18; II, 13–17; III–VII, 12–16; VIII, 10–12. Postspiracular setae extremely long on IV and VII, shortest on III and V–VI. Sternal setae: II, 21–30; III, 21–26; IV, 31–34; V, 33–37; VI, 24–31; VII, 10–13; VIII–IX, 18–23. Dimensions: TW, 0.46–0.49; HL, 0.30–0.34; PW, 0.28–0.32; MW, 0.43–0.48; AWIV, 0.59–0.64; ANW, 0.21–0.24; TL, 1.45–1.58.

Male (10). Metanotum with 8–11 marginal setae. Tergal setae: I–V, 11–16; VI, 11–14; VII, 10–14; VIII, 10–11. Sternal setae: II, 22–26; III, 20–26; IV, 26–33; V, 30–35; VI, 26–33; VII, 13–19; VIII, 5–9. Genital sac sclerite 0.080–0.100 long, as in Fig. 23. Dimensions: TW, 0.43–0.45; HL, 0.29–0.33; PW, 0.27–0.29; MW, 0.38–0.40; AWIV, 0.48–0.53; TL, 1.28–1.34.

Type material. Holotype female, ex *T. rufus*, **TRINIDAD:** Arima, Simla, 22 Mar 1976, R. C. Dalglish. Paratypes, all ex *T. rufus*: 12 females, 8 males, same data as holotype; 15 females, 12 males, same except 14 Mar 1976; 6 females, 2 males, same except 28 Mar 1976; 5 females, 2 males, Simla near Arima, 11 Mar 1980, R. C. Dalglish 709 and 743; 1 female, Arima, Simla Biological Station, 18 Mar 1978, R. C. Dalglish 528; 3 females, 2 males, **TOBAGO:** Mt St George, 16 Mar 1980, R. C. Dalglish 691; 1 male, same except 17 Mar 1980, 680.

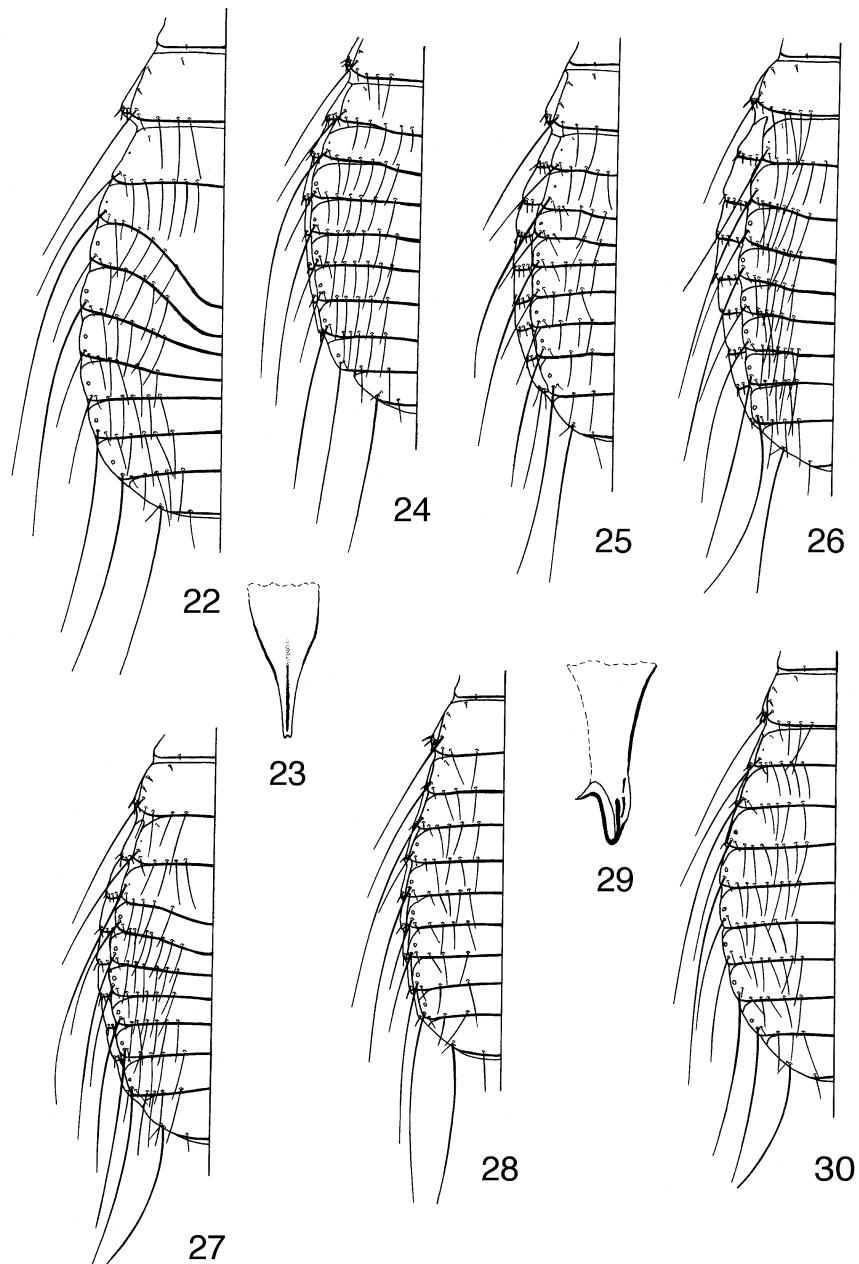
Remarks. Among the species of this group, such an extensive enlargement of female tergite II is unique to *M. rufi* and to the following new species *M. phoeniciei*. For these two species, the female of *M. rufi* is recognized by its tergite I with at least 16 setae and the male by sternite VIII with at least 5 setae.

***Myrsidea phoeniciei* Price and Dalglish, new species**

Type host. *Tachyphonus phoenicius* Swainson, Red-shouldered Tanager.

Female (6). Metanotum not enlarged, with 11–12 marginal setae. Dorsal abdomen shaped much as in Fig. 22 for *M. rufi*. Tergal setae: I, 12–14; II–III, 14–16; IV, 13–15; V–VI, 13–17; VII, 12–16; VIII, 10–12. Postspiracular setae as for *M. rufi*. Sternal setae: II, 24–29; III, 20–27; IV–V, 26–34; VI, 22–29; VII, 10–11; VIII–IX, 19–22. Dimensions: TW, 0.47–0.48; HL, 0.33–0.34; PW, 0.29–0.30; MW, 0.44–0.45; AWIV, 0.56–0.59; ANW, 0.20–0.22; TL, 1.45–1.53.

Male (1). Metanotum with 10 marginal setae. Tergal setae: I, obscured; II–VII, 13–15; VIII, 10. Sternal setae: II, 24; III, 21; IV, 27; V, 31; VI, 27; VII, 15; VIII, 3. Genital sac sclerite 0.100 long, as in Fig. 23. Dimensions: TW, 0.44; HL, 0.31; PW, 0.28; MW, 0.38; AWIV, 0.49; TL, 1.29.



FIGURES 22–30. 22–23, *Myrsidea rufi*. 22, Female metanotum and dorsal abdomen. 23, Male genital sac sclerite. 24, *M. diglossae* female metanotum and dorsal abdomen. 25, *M. venustae* female metanotum and dorsal abdomen. 26, *M. ramphoceli* female metanotum and dorsal abdomen. 27, *M. surinami* female metathorax and dorsal abdomen. 28–29, *M. spizae*. 28, Female metathorax and dorsal abdomen. 29, Male genital sac sclerite. 30, *M. mitrospingi* female metanotum and dorsal abdomen.

Type material. Holotype female, ex *T. phoenicius*, **VENEZUELA:** 60 km E Sta Elena, Edo Bolivar, Jan 1987, R. C. Dalgleish. Paratypes: 5 females, 1 male, same data as holotype.

Remarks. *Myrsidea phoenicii* and *M. rufi* both differ from others of this group by their females with a much enlarged tergite II. The separation of these two species is based on *M. phoenicii* females having only 12–14 setae on tergite I and males having 3 setae on sternite VIII.

***Myrsidea diglossae* Price and Dalgleish, new species (Fig. 24)**

Type host. *Diglossa lafresnayii* (Boissonneau), Glossy Flowerpiercer.

Female (8). Metanotum not enlarged, with 10–12 marginal setae. Dorsal abdomen (Fig. 24) with tergite I slightly larger than others, and I–IV having slight medioposterior convexity. Tergal setae: I, 14–16; II, 17–19; III–V, 18–21; VI, 16–22; VII, 15–18; VIII, 11–12. Postspiracular setae extremely long on IV and VII, much shorter on III and V–VI. Sternal setae: II, 24–27; III, 20–26; IV–V, 29–35; VI, 26–33; VII, 12–17; VIII–IX, 20–26. Dimensions: TW, 0.41–0.42; HL and PW, 0.25–0.29; MW, 0.37–0.41; AWIV, 0.52–0.56; ANW, 0.16–0.18; TL, 1.34–1.42.

Male (6). Metanotum with 9–10 marginal setae. Tergal setae: I, 14–18; II, 16–20; III–V, 17–22; VI–VII, 15–18; VIII, 10–14. Sternal setae: II, 25–30; III, 20–25; IV–V, 26–34; VI, 26–28; VII, 12–16; VIII, 6–9. Genital sac sclerite 0.070–0.090 long, as in Fig. 7. Dimensions: TW, 0.38–0.39; HL and PW, 0.24–0.27; MW, 0.34–0.37; AWIV, 0.45–0.48; TL, 1.12–1.24.

Type material. Holotype female, ex *D. lafresnayii*, **VENEZUELA:** Bocono, Trujillo, 5 Mar 1986, R. C. Dalgleish. Paratypes: 7 females, 6 males, same data as holotype.

Remarks. This is the first of four species of this group for which the female has no exaggerated development of the abdominal tergites, but there is some associated medioposterior convexity. *Myrsidea diglossae* has a slight medioposterior convexity associated with tergites I–IV, with tergite I only slightly larger than the following ones. Dimensions and number of tergal and sternal setae afford the best features for its separation from the other species.

***Myrsidea venustae* Price and Dalgleish, new species (Fig. 25)**

Type host. *Dacnis venusta* Lawrence, Scarlet-thighed Dacnis.

Female (1). Metanotum not enlarged, with 9 marginal setae. Dorsal abdomen (Fig. 25) with tergites I–II slightly enlarged, I–III with small medioposterior convexity. Tergal setae: I, 11; II–III, 15; IV–V, 11–12; VI–VIII, 8–9. Postspiracular setae extremely long on IV, very long on VII, shorter on III and V–VI. Sternal setae: II, 19; III, 15; IV, 27; V, 25; VI,

20; VII, 10; VIII–IX, 14. Dimensions: TW, 0.39; HL, 0.29; PW, 0.27; MW, 0.38; AWIV, 0.53; ANW, 0.18; TL, 1.37.

Male. Unknown.

Type material. Holotype female, ex *D. venusta*, **COSTA RICA:** Las Cruces Biological Station, Cota Brus, 18–21 Apr 1992, R. L. Fisher 201.

Remarks. Although *M. venustae* is represented by only one female and is very similar to *M. diglossae*, it is separated by its smaller temple width, fewer setae on all tergites and sternites, and the somewhat shorter postspiracular setae on VII.

***Myrsidea ramphoceli* Price and Dalglish, new species (Fig. 26)**

Type host. *Ramphocelus carbo* (Pallas), Silver-beaked Tanager.

Female (14). Metanotum not enlarged, with 8–15 marginal setae. Dorsal abdomen as in Fig. 26, with tergites I–II somewhat enlarged, and posterior margin of I straight, at least II–V with slight medioposterior convexity. Tergal setae: I, 15–19; II–VI, 16–21; VII, 12–16; VIII, 10–14. Postspiracular setae very long to extremely long on all segments. Sternal setae: II, 22–32; III, 20–26; IV–V, 30–44; VI, 28–40; VII, 14–23; VIII–IX, 19–26. Dimensions: TW, 0.46–0.50; HL, 0.31–0.33; PW, 0.28–0.31; MW, 0.43–0.47; AWIV, 0.58–0.63; ANW, 0.20–0.23; TL, 1.45–1.61.

Male (12). Metanotum with 7–12 marginal setae. Tergal setae: I, 11–14; II, 13–15; III–VII, 13–18; VIII, 10–14. Sternal setae: II, 20–28; III, 17–21; IV, 23–31; V, 24–33; VI, 21–30; VII, 15–20; VIII, 4–8. Genital sac sclerite 0.080–0.095 long, as in Fig. 7. Dimensions: TW, 0.42–0.44; HL, 0.28–0.31; PW, 0.26–0.28; MW, 0.36–0.39; AWIV, 0.46–0.50; TL, 1.19–1.28.

Type material. Holotype female, ex *R. carbo*, **PERU:** Explor Napa Camp, Rio Yamamoto, 50 km SE Iquitos, 20 Jun 1989, R. C. Dalglish *et al.* 9416. Paratypes, all ex *R. carbo*: 1 female, 2 males, same data as holotype; 2 females, 1 male, same except Rio Napa, 15 Jun 1989, 9415; 1 female, 3 males, same except 9417; 3 females, 6 males, same except 17 Jun 1989, 9419 and 9420.

Other material. Ex *R. carbo*, **VENEZUELA:** 4 females, 2 males, 60 km E Sta Elena, Edo Bolivar (1 collection). **TRINIDAD:** 2 females, 2 males, Arima, Simla (3 collections); 1 female, 1 male, Foster Road, Sangre Grande (1 collection); 1 female, Vega de Oropouche.

Remarks. The very long to extremely long postspiracular setae on all tergites, the large dimensions, and the number of marginal metanotal and abdominal setae enable identification of this species.

***Myrsidea surinami* Price and Dalglish, new species (Fig. 27)**

Type host. *Tachyphonus surinamus* (L.), Common Bush Tanager.

Female (8). Metanotum not enlarged, with 10–12 marginal setae. Abdomen (Fig. 27) with tergites I–II largest, at least II–IV with medioposterior convexity. Tergal setae: I, 10–13; II, 12–16; III–VI, 14–17; VII, 11–14; VIII, 10–13. Postspiracular setae very long to extremely long on all segments. Sternal setae: II, 23–31; III, 19–22; IV, 29–36; V, 36–41; VI, 28–38; VII, 16–25; VIII–IX, 19–23. Dimensions: TW, 0.48–0.50; HL, 0.32–0.33; PW, 0.30–0.31; MW, 0.45–0.47; AWIV, 0.59–0.65; ANW, 0.21–0.24; TL, 1.53–1.61.

Male (3). Metanotum with 8–10 marginal setae. Tergal setae: I, 9–11; II, 12–14; III–VI, 14–17; VII, 12–15; VIII, 10–11. Sternal setae: II, 25–28; III, 21–23; IV, 27–34; V, 33–38; VI, 26–30; VII, 17–22; VIII, 6–8. Genital sac sclerite 0.100 long, as in Fig. 3. Dimensions: TW, 0.45; HL, 0.30–0.31; PW, 0.29–0.31; MW, 0.40–0.41; AWIV, 0.50–0.51; TL, 1.24–1.35.

Type material. Holotype female, ex *T. surinamus*, **VENEZUELA:** 60 km E Sta Elena, Edo Bolivar, Jan 1987, R. C. Dalglish. Paratypes: 7 females, 3 males, same data as holotype.

Remarks. The combination of all postspiracular setae being very long to extremely long, the female with tergites I–II largest and II broadly convex, the large dimensions, and the smaller number of setae on tergites I–II can be used to separate *M. surinami* from the preceding three species.

***Myrsidea spizae* Price and Dalglish, new species (Figs. 28–29)**

Type host. *Chlorophanes spiza* (L.), Green Honeycreeper.

Female (3). Metanotum not enlarged, with 8–9 marginal setae. Metasternal plate with only 4 setae. Abdomen (Fig. 28) with all tergites approximately similar size, with straight posterior margins. Tergal setae: I, 8–11; II, 13–14; III, 15–16; IV, 13–15; V, 11–14; VI, 10–11; VII, 8–10; VIII, 8. Postspiracular setae very long to extremely long on IV and VII, shortest on III and V–VI. Sternal setae: II, 20–25; III, 20–24; IV, 29–33; V, 32–38; VI, 22–24; VII, 10–12; VIII–IX, 19. Dimensions: TW, 0.43–0.45; HL, 0.31–0.32; PW, 0.28–0.31; MW, 0.41–0.44; AWIV, 0.55–0.56; ANW, 0.19–0.20; TL, 1.47–1.56.

Male (2). Metanotum with 6–8 marginal setae. Metasternal plate with only 4 setae. Tergal setae: I, 6–9; II, 12–13; III, 14; IV–V, 10–12; VI, 10; VII, 9; VIII, 8. Sternal setae: II, 20–22; III, 16–18; IV, 27–29; V, 25–27; VI, 19–20; VII, 10; VIII, 4. Genital sac sclerite 0.080–0.090 long, as in Fig. 29. Dimensions: TW, 0.39–0.40; HL, 0.29–0.30; PW, 0.27–0.28; MW, 0.34–0.38; AWIV, 0.44–0.45; TL, 1.22–1.25.

Type material. Holotype female, ex *C. spiza*, **COSTA RICA:** Las Cruces Biological Station, Cota Brus, 18–21 Apr 1992, R. L. Fisher 112. Paratype, ex *C. spiza*: 1 male, same data as holotype except 188.

Other material. Ex *C. spiza*, **TRINIDAD**: 1 female, 1 male, Arima, Simla (1 collection), 1 female, Melajo Forest, Sangre Grande.

Remarks. This and the following species are the only ones in this group for which females have no modification of the tergites. The female of *M. spizae* is recognizable by its smaller dimensions, only 4 metasternal plate setae, and fewer setae on the metanotal margin, most abdominal tergites, and some sternites. The male genital sac sclerite (Fig. 29) is unique among the thraupid lice.

***Myrsidea mitrospingi* Price and Dalglish, new species (Fig. 30)**

Type host. *Mitrospingus cassinii* (Lawrence), Dusky-faced Tanager.

Female (1). Metanotum not enlarged, with 10 marginal setae. Metasternal plate with 6 setae. Abdomen (Fig. 30) with all tergites of approximately same size, with straight posterior margins. Tergal setae: I–II, 14–15; III–VI, 17–18; VII, 13; VIII, 10. Postspiracular setae very long to extremely long on all segments. Sternal setae: II, 19; III, 24; IV–VI, 35–38; VII, 22; VIII–IX, 21. Dimensions: TW, 0.49; HL, 0.33; PW, 0.31; MW, 0.48; AWIV, 0.65; ANW, 0.24; TL, 1.65.

Male. Unknown.

Type material. Holotype female, ex *M. cassinii*, **COSTA RICA**: Punta Cocles Hotel, 10 km E Pto Viejo, Limon, 24–25 Apr 1992, R. L. Fisher 222.

Remarks. The comparison of *M. mitrospingi* to the anatomically similar *M. spizae* has been given above.

Discussion

The results of this study are consistent with those on passerine *Myrsidea* of the Pycnonotidae by Hellenthal and Price (2003), of the Pipridae by Dalglish and Price (2004), and of the Tyrannidae by Price *et al.* (2005), in that they have shown a high degree of host specificity. The analysis of thraupid *Myrsidea* has revealed a close anatomical similarity with those from the Tyrannidae and Pipridae, though the species separation remains distinct. This relationship is especially evident in the structure of the male genital sac sclerite, with the typical pattern being for an elongate triangular shape with a dark median distal line. However, the unique chaetotaxy and female tergal development also provide excellent features for species recognition.

Keys to the Species of *Myrsidea* from the Thraupidae

Female

- 1 Without well-developed median gap in majority of rows of tergal setae (Figs. 4–5) .. 2
 – With well-developed median gap in most rows of tergal setae (Figs. 16, 19) 12
- 2 Metanotum much enlarged (Figs. 4–5) 3
 – Metanotum not so enlarged 4
- 3 Tergite II with <31 setae, VII with <19, VIII with only 8 *laciniaesternata* Eichler
 – Tergite II with >34 setae, VII with >25, VIII with >13..... *cianocephalae* **n. sp.**
- 4 Tergite I with extensive median enlargement shaped as tergite II in Fig. 22
 *suttoni* **n. sp.**
 – Tergite I without such enlargement 5
- 5 Tergite I with >26 setae (Fig. 13) *seminuda* Eichler
 – Tergite I with <24 setae 6
- 6 Temple >0.47 wide; tergite II with not >16 setae *melanopis* **n. sp.**
 – Temple smaller and/or tergite II with more setae 7
- 7 Tergite I with at least 18 setae *cayanae* **n. sp.**
 – Tergite I with not >15 setae 8
- 8 Tergites III–IV with <20 setae, VIII with <14 (Fig. 15) *ophthalmici* **n. sp.**
 – Tergites III–IV with at least 22 setae, VIII with at least 14 9
- 9 Postspiracular setae on IV very long, but distinctly shorter than those on II and VIII (Fig. 8) *bonariensis* Malcomson
 – Postspiracular setae on IV extremely long, similar to those on II or VIII (Fig. 10) ... 10
- 10 Tergite VIII with not >18 setae; III–V not >29; temple not >0.42 wide
 *violaceae* **n. sp.**
 – Tergites with more setae and/or larger temple width 11
- 11 Temple at least 0.45 wide; gula with 4 setae on each side, rarely 5 on one side
 *tangarae* **n. sp.**
 – Temple not >0.44 wide; gula with 5–6 setae on each side, less often 4 on one side
 *icterocephalae* **n. sp.**
- 12 Tergites I–IV modified as in Fig. 19, with medially divided III and transversely divided IV *zenae* **n. sp.**
 – Tergites I–IV not modified as above 13
- 13 Tergite I much enlarged, especially in relation to other tergites (Fig. 16) 14
 – Tergite I without such disproportionate enlargement 15
- 14 Metanotal margin with <17 setae; tergites III–V with not >20 setae (Fig. 17)
 *fusca* (Carriker)
 – Metanotal margin with >18 setae; tergites III–V with >21 setae *fuscicaudae* **n. sp.**

15	Abdominal tergites all of essentially similar size, each with straight posterior margin (Figs. 28, 30)	16
–	Some abdominal tergites larger than others, with variably convex posterior margins ..	17
16	Temple <0.46 wide; tergites IV–VI with <15 setae (Fig. 28)	<i>spizae</i> n. sp.
–	Temple >0.47 wide; tergites IV–VI with >16 setae (Fig. 30)	<i>mitrospingi</i> n. sp.
17	Tergite II much enlarged (Fig. 22)	18
–	Tergite II not much enlarged	19
18	Tergite I with at least 15 setae (Fig. 22)	<i>rufi</i> n. sp.
–	Tergite I with not >14 setae	<i>phoeniciei</i> n. sp.
19	Temple <0.41 wide; tergites IV–V with <14 setae (Fig. 25).....	<i>venustae</i> n. sp.
–	Temple >0.40 wide or tergites IV–V with >15 setae	20
20	Temple <0.45 wide	<i>diglossae</i> n. sp.
–	Temple at least 0.46 wide	21
21	Tergite I with <14 setae, II with not >15 setae (Fig. 27)	<i>surinami</i> n. sp.
–	Tergite I with >14 setae, II with >15 setae	<i>ramphoceli</i> n. sp.

Male (excluding *Myrsidea venustae* and *M. mitrospingi*)

1	Without well-developed median gap in majority of rows of tergal setae (Fig. 1)	2
–	With well-developed median gap in most rows of tergal setae (Fig. 17)	12
2	Metanotum with 6, rarely 7, marginal setae, tergite VIII with 8 (Fig. 1)	<i>laciniaesternata</i> Eichler
–	Metanotum with at least 8 marginal setae, tergite VIII with >10	3
3	Tergite I with at least 25 setae and from <i>Thraupis</i>	4
–	Tergite I with not >24 setae, or, if more, not from <i>Thraupis</i>	5
4	Tergite VI with <35 setae, tergite VII <30, sternite III with <28	<i>cianocephalae</i> n. sp.
–	Tergite VI with at least 35 setae, tergite VII with >30, sternite III with >28	<i>seminuda</i> Eichler
5	Tergites IV–VI with not >18 setae	<i>ophthalmici</i> n. sp.
–	Tergites IV–VI with at least 19 setae	6
6	Temple >0.43 wide	<i>melanopis</i> n. sp.
–	Temple <0.43 wide	7
7	Tergite IV with not >29 setae	8
–	Tergite IV with at least 30 setae	10
8	Tergite I with <14 setae, VIII with 14–16	<i>suttoni</i> n. sp.
–	Tergite I with at least 16 setae, VIII with 15–22	9

- 9 Tergite III with >24 setae; genital sac sclerite as in Fig. 7; from *Euphonia* *violaceae* **n. sp.**
 – Tergite III with not over 24 setae; genital sac sclerite as in Fig. 11; from *Tangara* *cayanae* **n. sp.**
- 10 Tergite I with <20 setae *icterocephalae* **n. sp.**
 – Tergite I with at least 20 setae 11
- 11 Sternite VI at least 30 setae; genital sac sclerite as in Fig. 3 or 11 *bonariensis* Malcomson
 – Sternite VI with not >29 setae; genital sac sclerite as in Fig. 23 *tangarae* **n. sp.**
- 12 Sternite VIII with >15 setae; genital sac sclerite as in Fig. 21 *zenae* **n. sp.**
 – Sternite VIII with <11 setae; genital sac sclerite otherwise 13
- 13 Metanotum with at least 12 marginal setae; postspiracular setae on V–VI shorter than on VII 14
 – Metanotum with not >12 marginal setae, or, if more, then postspiracular setae on V–VI much longer 15
- 14 Tergite IV with <19 setae, sternite VII >21 *fusca* (Carriker)
 – Tergite IV with >19 setae, sternite VII <21 *fuscicaudae* **n. sp.**
- 15 Tergites IV–VI with not >12 setae; genital sac sclerite as in Fig. 29 *spizae* **n. sp.**
 – Tergites IV–VI with some to all having >12 setae; genital sac sclerite otherwise 16
- 16 Temple <0.41 wide *diglossae* **n. sp.**
 – Temple at least 0.42 wide 17
- 17 Postspiracular setae very long to extremely long on all segments 18
 – Postspiracular setae much shorter on V–VI than on VII 19
- 18 Temple at least 0.45 wide; prothorax at least 0.29 wide; on *Tachyphonus* *surinami* **n. sp.**
 – Temple not >0.44 wide; prothorax not >0.28 wide; on *Ramphocelus* *ramphoceli* **n. sp.**
- 19 Sternite VIII with only 3 setae *phoenicii* **n. sp.**
 – Sternite VIII with 5–9 setae *rufi* **n. sp.**

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References

- Carriker, M.A., Jr. (1903) Mallophaga from birds of Costa Rica, Central America. *Nebraska University Studies*, 3, 123–192.
- Clay, T. (1966) Contributions towards a revision of *Myrsidea* Waterston. I. (Menoponidae: Mallophaga). *Bulletin of the British Museum (Natural History), Entomology*, 17, 327–395.
- Clay, T. (1968) Contributions towards a revision of *Myrsidea* Waterston. III (Menoponidae: Mallophaga). *Bulletin of the British Museum (Natural History), Entomology*, 21, 203–243.
- Dalgleish, R.C. & Price, R.D. (2003) Two new species of *Myrsidea* (Phthiraptera: Amblycera: Menoponidae) from hummingbirds (Apodiformes: Trochilidae). *Occasional Papers of the Western Foundation of Vertebrate Zoology*, No. 6, 1–9.
- Dalgleish, R.C. & Price, R.D. (2004) Four new species of *Myrsidea* (Phthiraptera: Menoponidae) from manakins (Passeriformes: Pipridae). *Journal of the New York Entomological Society*, 111(2003), 167–173.
- Dalgleish, R.C. & Price, R.D. (2005) Two new species of the genus *Myrsidea* Waterston (Phthiraptera: Menoponidae) from cotingas (Passeriformes: Cotingidae). *Zootaxa*, 983, 1–6. Available from www.mapress.com/zootaxa/2005f/zt00983.pdf
- Dickinson, E.C. (2003) *The Howard and Moore Complete Checklist of the Birds of the World*. 3rd edition. Princeton University Press, Princeton, New Jersey, 1,039 pp.
- Eichler, W. (1951) Notulae Mallophagologicae. XVII. Die Myrsideen. *Zoologischer Anzeiger*, 146, 45–53.
- Eichler, W. (1956) Mallophaga. In: Neithammer, G. Zur Vogelwelt Boliviens (Teil II: Passeres). *Bonner Zoologischer Beiträge*, 7, 84–150.
- Hellenthal, R.A. & Price, R.D. (2003) The genus *Myrsidea* Waterston (Phthiraptera: Menoponidae) from bulbuls (Passeriformes: Pycnonotidae), with descriptions of 16 new species. *Zootaxa*, 354, 1–20. Available from www.mapress.com/zootaxa/2003f/zt00354.pdf
- Hellenthal, R.A. & Price, R.D. (2005) Two new species of *Myrsidea* (Phthiraptera: Amblycera: Menoponidae) from the jewel-babblers (Passeriformes: Eupetidae) from New Guinea. *Proceedings of the Entomological Society of Washington*, 107, 485–488.
- Howard, L. & Moore, A. (1991) *A Complete Checklist of the Birds of the World*. 2nd edition. Academic Press, San Diego, California, xiii + 622 pp.
- Malcomson, R.O. (1929) Two new species of Mallophaga. *Annals of the Entomological Society of America*, 22, 728–730.
- Price, R.D., Hellenthal, R.A. & Dalgleish, R.C. (2005) The genus *Myrsidea* Waterston (Phthiraptera: Menoponidae) from tyrant-flycatchers (Passeriformes: Tyrannidae), with descriptions of 13 new species. *Zootaxa*, 1048, 1–20. Abstract available from www.mapress.com/zootaxa/2005f/z01048p020f.pdf
- Price, R.D., Hellenthal, R.A. & Palma, R.L. (2003) World checklist of chewing lice with host associations and keys to families and genera. In: Price, R.D., Hellenthal, R.A., Palma, R.L., Johnson, K.P. & Clayton, D.H. *The Chewing Lice: World Checklist and Biological Overview*. Illinois Natural History Survey Special Publication 24, x + 501 pp.
- Price, R.D., Hellenthal, R.A. & Weckstein, J.D. (2004) The genus *Myrsidea* Waterston (Phthiraptera: Menoponidae) from the toucans (Piciformes: Ramphastidae), with descriptions of three new species. *Zootaxa*, 613, 1–18. Available from www.mapress.com/zootaxa/2004f/zt00613.pdf
- Waterston, J. (1915) On two new species of Mallophaga (Menoponidae): *Menacanthus balfouri* n. sp. and *Myrsidea victrix* n. sp. from Colombia. *Entomologist's Monthly Magazine*, 51, 12–16

ZOOTAXA

1174