

**FOUR NEW SPECIES OF *MYRSIDEA*
(PHTHIRAPTERA: MENOPONIDAE) FROM
MANAKINS (PASSERIFORMES: PIPRIDAE)**

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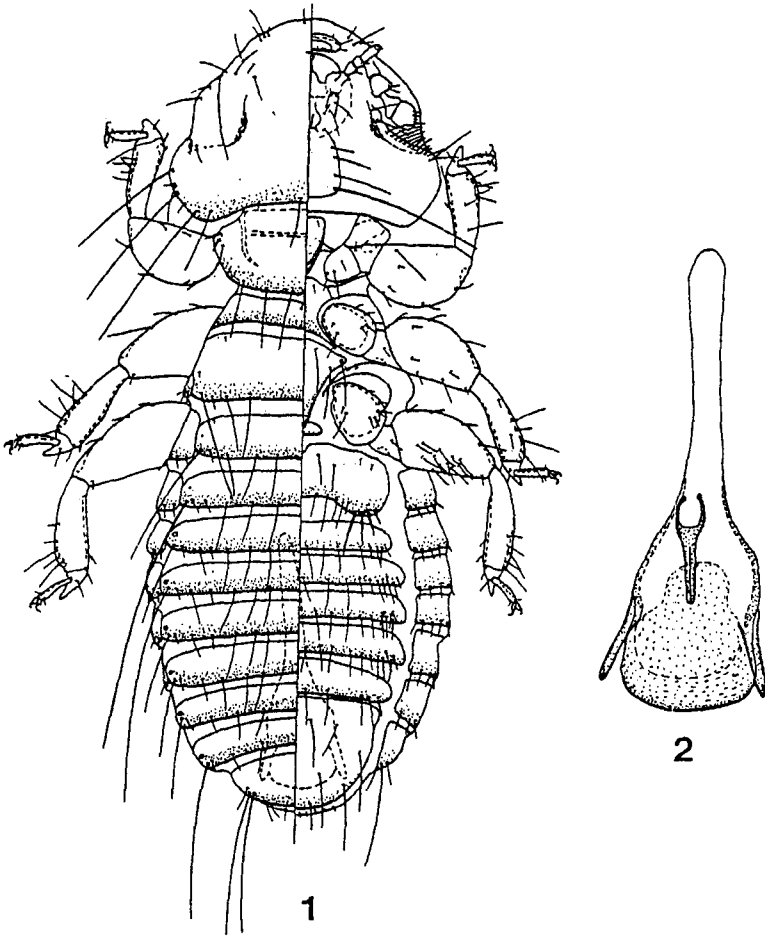
Abstract.—Descriptions and illustrations are given for four new species of *Myrsidea* Waterston from manakins. They and their type hosts are: *M. edgarsmithi* ex *Pipra erythrocephala* from Trinidad, *M. andyolsoni* ex *Heterocercus linteatus* from Brazil, *M. rekasii* ex *Pipra mentalis* from Costa Rica, and *M. baileyae* ex *Pipra erythrocephala* from Trinidad. These represent the first species of this chewing louse genus to be described from the members of the passerine family Pipridae.

Key words: Phthiraptera, Menoponidae, *Myrsidea*, new species, Pipridae, manakins.

Through the collecting efforts of the senior author and others, we have available to us an excellent series of the menoponid genus *Myrsidea* Waterston from host species within the Neotropical passerine family Pipridae, the manakins. From this material, we are describing and illustrating four new species, these representing the first of this louse genus from this host family.

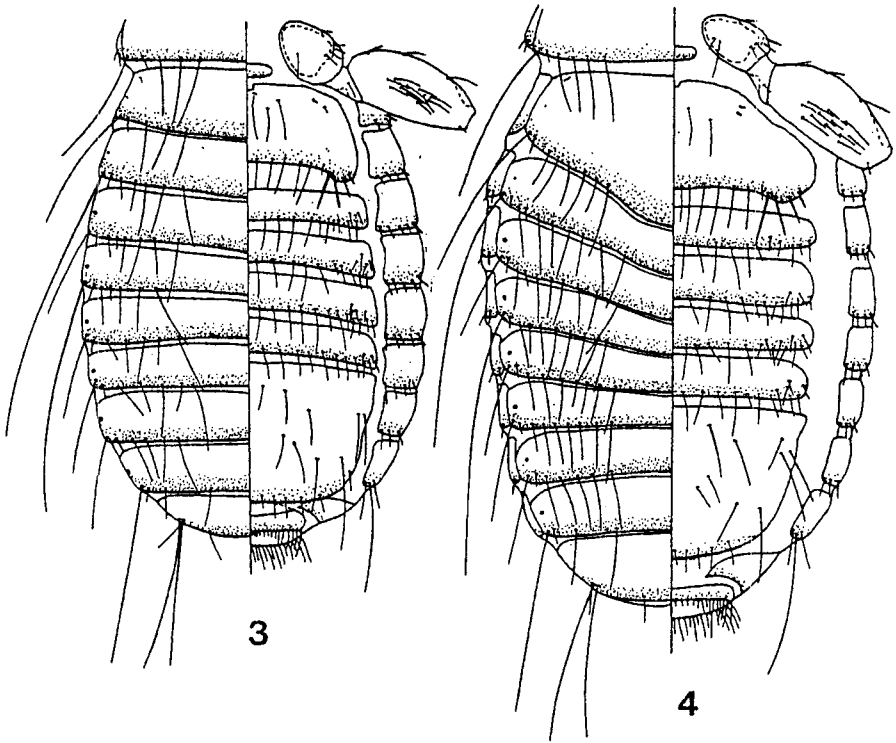
The *Myrsidea* represent a very large assemblage of lice, with 208 recognized species, most of these from hosts within the Passeriformes. As presented in Price et al. (2003), all currently recognized species of *Myrsidea* are restricted to one or, much less often, a few host species, with only a single instance of an overlap between host families. Principal contributions to our knowledge of *Myrsidea* may be found in the works of Klockenhoff (1969) and Clay (1966, 1968, 1970). Klockenhoff, in his 1969 paper and in over a dozen shorter papers appearing in the next 12 years, was responsible for redescriptions of known species and descriptions of 33 new species representing half of the 66 species recognized from the host family Corvidae. The 1966 paper of Clay dealt with the 21 chewing louse species currently recognized from the Turdidae, her 1968 paper with the 11 species from the Icteridae, and the 1970 paper with three of the four species from the Estrildidae. Thus, the lice treated by these two individuals comprise nearly half of the total now recognized in the *Myrsidea*. Although there has been no comprehensive study of the entire genus, due to the large number of species involved, all evidence to date suggests that each host species or group of closely related species is infested with one or more species of *Myrsidea*.

The only practical manner to deal with the taxonomy of such a genus, as Klockenhoff and Clay have done, and as we have employed in previous studies, is to treat lice from each host family as a unit. This approach assumes chewing louse host specificity at the family level, for which we have seen no evidence to the contrary. The host taxonomy of Dickinson (2003) is used in this study to define the family Pipridae.



Figs. 1-2. Male *Myrsidea edgarsmithi*. 1. Dorsoventral. 2. Genitalia.

Clay (1966) gives a detailed discussion of the features defining the genus *Myrsidea*. We include here only the characters we feel most pertinent to define the *Myrsidea* of the Pipridae. For brevity, these will not be repeated within the species descriptions. Both sexes are similar (Figs. 1, 3) except for larger female dimensions and setal numbers, differences associated with terminalia, and occasional expanded female abdominal tergal development. Head without lateral notch or slit; inner occipital setae long, outer very short; each side of temple margin with 3 very long setae; gula with 4-5 setae, posteriormost much heavier and longer than others; hypopharyngeal sclerites strongly developed. Pronotum with 6 long posterior marginal setae and 3 short setae at each lateral corner; without dorsal setae; well-developed elongate prosternal plate with pair of minute anterior setae. Mesonotum with pair of minute setae adjacent to postnotum; segment ringed by sclerite, with large mesosternal plate. Metanotum not enlarged,



Figs. 3–4. Female metanotal margin and dorsoventral abdomen. 3. *Myrsidea edgarsmithi*. 4. *Myrsidea rekasii*.

with very long corner setae, but lacking median setae; metasternal plate large, triangular, with 3 (rarely 2 or 4) long setae on each side; femur III with sparse ventral setal brush.

Abdomen with short seta mediad of each postspiracular seta; without anterior tergal or pleural setae; margin of pleurite VIII with median long seta flanked on each side by shorter seta; sternite I small, without setae; sternite II enlarged, with stellate aster of 4–5 heavy setae on each side; sternites III–VI without medioanterior setae, but with variably developed lateral brush. Male sternite VII separate from subgenital plate of fused VIII–IX. Male genitalia of characteristic shape (Fig. 2), with slender elongate sclerite associated with spinous sac. Female subgenital plate (Fig. 3) with sternites VII–IX fused and posterior margin finely serrated; anus oval, without inner setae.

In the following descriptions, all measurements are in millimeters. Abbreviations for dimensions are TW, temple width; HL, head length at midline; PW, prothorax width; PSL, prosternal plate length; MW, metathorax width; MSL, metasternal plate length; AWIV, abdomen width at level of segment IV; TL, total length; GL, male genitalia length; ANW, female anus width. Deposition of the type material of the new species is among the National Museum of Natural History, Smithsonian Institution, Washington, DC (USNM); The Natural History Museum, London (NHM); the K. C. Emerson Museum, Oklahoma State University, Stillwater (OSU); the Department of Entomology Museum, University of Minnesota, St. Paul

(UM), and personal collection of the senior author (RCD). We have restricted type material to the specimens collected from the same host species at the same locality.

***Myrsidea edgarsmithi*, new species**

Figs. 1-3

Type host. *Pipra erythrocephala* (L.).

Diagnosis. Both sexes of this species are separated from those of other piprid *Myrsidea* by the combination of their small dimensions, relative lengths of the postspiracular setae, small numbers of abdominal setae, and margin of pleurites II-VII with only short spiniform setae, and the female by lack of enlarged abdominal tergites.

Description. *Male.* As in Fig. 1. Posterior metanotal margin with 8-10 setae. Abdomen with extremely long postspiracular setae on II and IV, very long on I and VIII, and considerably shorter on III and V-VII; with marginal setae on I, 8-11; II, 10-13; III, 11-14; IV, 11-16; V, 11-15; VI, 10-14; VII, 8-12; VIII, 8-10. Margin of pleurites II-VII with only short spiniform setae. Sternal setae on II, 23-32, including cluster of usually 4 heavy setae on each side; III, 15-21; IV-VI, 15-26; VII, 6-12; VIII, 4-6. Genitalia as in Fig. 2. Dimensions: TW, 0.36-0.39; HL, 0.25-0.28; PW, 0.22-0.25; PSL, 0.07-0.09; MW, 0.29-0.33; MSL, 0.09-0.12; AWIV, 0.37-0.42; TL, 0.99-1.15; GL, 0.33-0.39. *Female.* Metanotal margin and abdomen as in Fig. 3. Posterior metanotal margin usually with 10 setae, less often 8, 9, or 11. Abdomen with postspiracular setae as for male; without conspicuously enlarged tergites; with marginal tergal setae on I, 8-14; II, 12-16; III, 13-17; IV, 13-18; V-VI, 12-17; VII, 10-14; VIII, 6-10. Pleurites as for male. Sternal setae on II, 27-36, including cluster of usually 4 heavy setae on each side; III, 17-27; IV-VI, 22-33; VII, 8-14. Subgenital plate with 8-12 marginal, 6-10 anterior setae. Anal fringe of 23-29 dorsal, 26-34 ventral setae. Dimensions: TW, 0.39-0.42; HL, 0.26-0.31; PW, 0.22-0.26; PSL, 0.08-0.10; MW, 0.32-0.38; MSL, 0.11-0.14; AWIV, 0.45-0.52; TL, 1.19-1.33; ANW, 0.16-0.19.

Types. Holotype, female, TRINIDAD, Simla Biological Station, near Arima, ex *P. erythrocephala*, 13-III-1980, R. C. Dalglish 5760 (USNM). Paratypes (USNM, OSU, RCD): TRINIDAD: same data as holotype, except 2 females, 1 male, 11-III-1980, RCD 5687; 3 females, 5 males, 12-III-1980, RCD 5715; 2 females, 3 males, 12-III-1980, RCD 5722; 2 females, 1 male, 13-III-1980, RCD 5778; 5 females, 6 males, 18-III-1980, RCD 5852; 5 females, 4 males, 19-III-1980, RCD 5871; 2 females, 2 males, 23-III-1980, RCD 5916.

Other material examined. 25 females, 15 males, ex *P. erythrocephala*, TRINIDAD (7 collections), PERU (3 collections), BRAZIL (1 collection), VENEZUELA (1 collection). 4 females, ex *P. filicauda* Spix, PERU (1 collection). 7 females, 2 males, ex *Lepidothrix coronata* (Spix), PERU (1 collection), VENEZUELA (1 collection). 5 females, 5 males, ex *Corapipo leucorrhoea* (P. L. Sclater), COSTA RICA (4 collections). 13 females, 7 males, ex *Manacus manacus* (L.), PERU (2 collections), TRINIDAD (1 collection).

Etymology. This species is named in honor of Edgar H. Smith, Arlington, Virginia, an assistant and sponsor of many of the trips during which some of the specimens for this study were collected.

***Myrsidea andyolsoni*, new species**

Type host. *Heterocercus lineatus* (Strickland).

Diagnosis. Both sexes of this species are similar to those of *M. edgarsmithi*, but they have a much longer postspiracular seta on VII and their dimensions are larger than *M. edgarsmithi*.

Description. *Male.* Similar to *M. edgarsmithi*, except as follows. Posterior metanotal margin with 10 setae. Abdomen with extremely long postspiracular setae on II and IV, very long on I, VII, and VIII, and considerably shorter on III, V, and VI; with marginal tergal setae on I, 10; II–IV, 14; V–VI, 16; VII, 12; VIII, 10. Sternal setae on II, 36, including cluster of 4 heavy setae on each side; III, 16; IV–VI, 20–24; VII, 15; VIII, 6. Dimensions: TW, 0.41; HL, 0.29; PW, 0.25; PSL, 0.09; MW, 0.34; MSL, obscured; AWIV, 0.44; TL, 1.18; GL, 0.44.

Female. Also similar to *M. edgarsmithi*, differing as follows. Lengths of postspiracular setae as for male. Posterior margin of metanotum with 10–12 setae. Marginal tergal setae on I, 12; II, 13; III, 14–17; IV, 16; V–VI, 13–16; VII, 10–11; VIII, 8. Sternal setae on II, 28, including cluster of 4 heavy setae on each side; III, 20–21; IV–VI, 24–30; VII, 11–14. Subgenital plate with 11 marginal, 8–10 anterior setae. Anal fringe of 29–32 dorsal, 32–33 ventral setae. Dimensions: TW, 0.45; HL, 0.30–0.31; PW, 0.28; PSL, 0.10; MW, 0.39–0.40; MSL, obscured; AWIV, 0.55–0.56; TL, 1.40–1.48; ANW, 0.21–0.22.

Types. Holotype, female, BRAZIL, Meinertzhagen 17730, ex *H. linteatus* (NHM). Paratypes (NHM): BRAZIL: 1 female, 1 male, same data as holotype.

Etymology. This species is named in honor of Andrew C. Olson, Jr., San Diego State University, in recognition of his long distinguished career as a teacher of parasitology and parasitologists, including the senior author.

***Myrsidea rekasii*, new species**

Fig. 4

Type host. *Pipra mentalis* P. L. Sclater.

Diagnosis. While the male of this species is inseparable from that of *M. edgarsmithi*, the female is readily distinguished by its enlarged abdominal tergite I and the larger number of marginal metanotal setae.

Description. *Male.* Inseparable from *M. edgarsmithi*.

Female. Metanotal margin and abdomen as in Fig. 4. Differing from that of *M. edgarsmithi* as follows. Margin of metanotum usually with 12 setae, less often 11. Abdominal tergite I enlarged, compressing II–IV at midline. Marginal tergal setae on I, 14–18; II, 15–22; III–V, 17–20.

Types. Holotype, female, COSTA RICA, Limón, Tortuguero, Caña Palma Biological Station, ex *P. mentalis*, 23-V-1992, R. L. Fisher 237 (USNM). Paratypes (USNM, OSU, UM, RCD): COSTA RICA: 1 male, same data as holotype; 1 female, same data except RLF 267; 1 female, 1 male, same data except RLF 269; 1 female, 1 male, same data except RLF 293; 1 female, 1 male, same data except 6-7-VI-1992, RLF 314.

Other material examined. BELIZE, 9 females, 6 males, ex *P. mentalis* (5 collections).

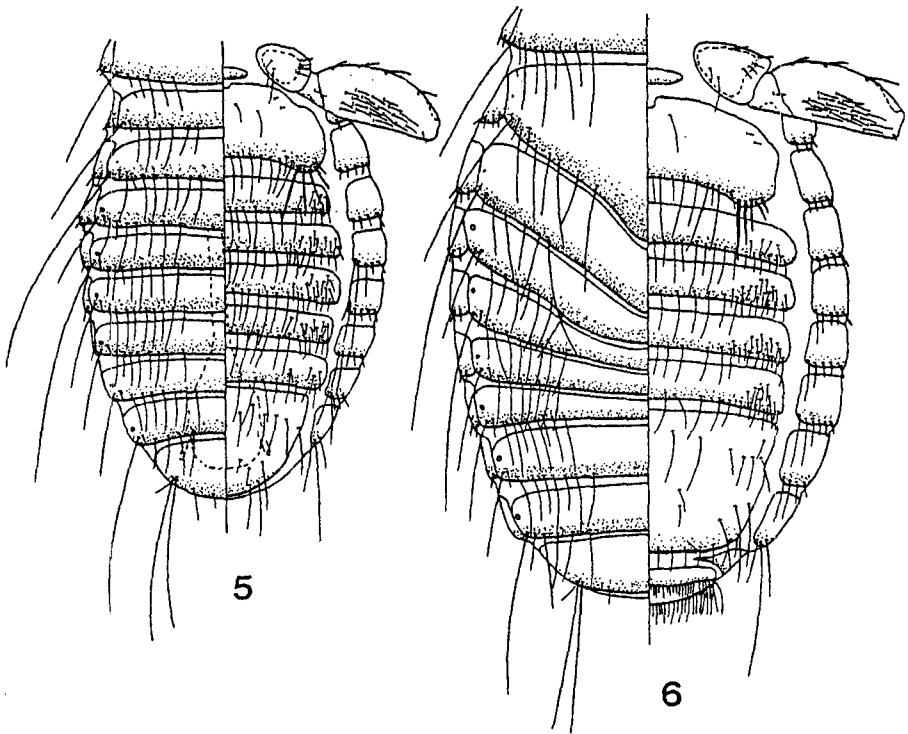
Etymology. This species is named in honor of József Rékási, Pannonhalma, Hungary, a colleague who has helped expand our knowledge of the lice of birds in central Europe.

***Myrsidea baileyae*, new species**

Figs. 5–6

Type host. *Pipra erythrocephala* (L.).

Diagnosis. Both sexes are readily separable from all of the other known piprid *Myrsidea* by their consistently large dimensions, large number of marginal metanotal setae, more setae on abdominal sternites, and 5 heavy setae in each cluster on sternite II. This separation is further



Figs. 5-6. *Myrsidea baileyae* metanotal margin and dorsoventral abdomen. 5. Male. 6. Female.

supported by the enlargement of female tergite I and both sexes with pleurites IV-VII with longer finer setae.

Description. *Male.* Metanotal margin and abdomen as in Fig. 5. Metanotal margin with 14 setae. Abdominal tergal setae on I, 16; II, 20; III, 18-21; IV, 20; V, 20-22; VI, 20-21; VII, 16-19; VIII, 13-14. Margin of pleurites IV-VII with some long fine setae. Sternal setae on II, 36, including 5 heavy setae in each lateral cluster; III, 33-39; IV, 46-51; V, 45-54; VI, 38-47; VII, 24-26; VIII, 6-11. Dimensions: TW, 0.48; HL, 0.33; PW, 0.31; PSL, 0.12; MW, 0.45; MSL, 0.13; AWIV, 0.53-0.55; TL, 1.50; GL, 0.46-0.51.

Female. Much as for male, except metanotal margin and abdomen as in Fig. 6. Metanotal margin with 16-18 setae. Abdominal tergal setae on enlarged I, 16-20; II, 14-15; III, 16-19; IV, 17-21; V, 16-18; VI, 19-20; VII, 16-18; VIII 12-13. Pleurites as for male. Sternal setae on II, 34, including 5 heavy setae in each lateral cluster; III, 34-40; IV, 45-51; V, 46; VI, 41-42; VII, 16. Subgenital plate with 15 marginal, 8-11 anterior setae. Anus with 39-42 dorsal, 39-40 ventral fringe setae. Dimensions: TW, 0.54-0.55; HL, 0.35-0.36; PW, 0.34; PSL, 0.13-0.14; MW, 0.55-0.56; MSL, 0.18; AWIV, 0.70-0.72; TL, 1.76; ANW, 0.24-0.27.

Types. Holotype, female, TRINIDAD, Simla Biological Station, near Arima, ex *P. erythrocephala*, 29-III-1976, R. C. Dagleish 5248 (USNM). Paratypes (USNM, RCD): TRINIDAD: 1 female, 3 males, same data as holotype.

Etymology. This species is named in honor of Pic Bailey, Englewood, Florida, an assistant and sponsor of many of the trips during which some of the specimens for this study were collected.

DISCUSSION

According to Dickinson (2003), there are 48 species recognized within the Pipridae. The four new species described here represent the first *Myrsidea* described from this family, these lice having been taken from only eight of the 48 host species. This only serves to emphasize the potential for many additional louse species when collecting from piprid hosts is expanded.

Sibley and Alquist (1990) and others place manakins in the subfamily Piprinae within the Tyrannidae and consider them to be a sister subfamily of the Cotinginae. The *Myrsidea* from the passerines are so poorly known that we cannot speculate as to the validity of the host family or its position within the Passeriformes based on the distribution of *Myrsidea*. The present authors are reviewing the *Myrsidea* from tyrannids and cotingids and this may shed some additional light on the relationship of these hosts.

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LITERATURE CITED

- Clay, T. 1966. Contributions towards a revision of *Myrsidea* Waterson. I. (Menoponidae: Mallophaga). *Bulletin of the British Museum (Natural History), Entomology* 17: 327–395.
- Clay, T. 1968. Contributions towards a revision of *Myrsidea* Waterson. III. (Menoponidae: Mallophaga). *Bulletin of the British Museum (Natural History), Entomology* 21: 203–243.
- Clay, T. 1970. Species of *Myrsidea* (Insecta: Mallophaga) parasitic on the Estrildidae (Aves). H. D. Srivastava *Commen.* Volume: 561–570.
- Dickinson, E. C. (Editor). 2003. *The Howard and Moore complete checklist of the birds of the World*, 3rd edition. Princeton University Press, Princeton, New Jersey, U.S.A. 1039 pp.
- Klockenhoff, H. 1969. Zur systematischen Aufgliederung der Myrsideen (Gattung: *Myrsidea* Waterson, 1915; Menoponidae: Mallophaga) als Parasiten von Unterarten der Dschungelkrähe *Corvus macrorhynchos* Wagler, 1827. *Zoologischer Anzeiger* 183: 379–442.
- Price, R. D., R. A. Hellenthal and R. L. Palma. 2003. World checklist of chewing lice with host associations and keys to families and genera, pp. 1–448 *in* Price, R. D., R. A. Hellenthal, R. L. Palma, K. P. Johnson and D. H. Clayton, *The Chewing Lice: World Checklist and Biological Overview*. Illinois Natural History Survey Special Publication 24. x + 501 pp.
- Sibley, C. G. and J. E. Ahlquist. 1990. *Phylogeny and classification of birds: a study in molecular evolution*. Yale University Press, New Haven, Connecticut, U.S.A. xxiii + 870 pp.

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