

TWO NEW SPECIES OF *MYRSIDEA* (PHTHIRAPTERA: AMBLYCERA:
MENOPONIDAE) FROM HUMMINGBIRDS (APODIFORMES:
TROCHILIDAE)

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Abstract.—*Myrsidea* is a large genus of chewing lice with more than 200 species on Passeriformes and six on Piciformes. *Myrsidea imbricata* (Neumann), the only *Myrsidea* previously reported from a hummingbird, has been considered a contaminant or straggler. Recent collections of lice have included specimens of *Myrsidea* from a number of hummingbird species from different localities. They confirm that this genus occurs on the Trochilidae. Two new species, *M. kristineae* and *M. jenniferae*, are described and illustrated. They have sufficient characteristics in common with *M. imbricata* to suggest strongly that the host of that species was a hummingbird.

Key words: Phthiraptera, Menoponidae, Myrsidea, Trochilidae, hummingbirds

The chewing louse genus *Myrsidea* Waterston comprises over 200 species parasitic on hosts of many families of Passeriformes and on the Ramphastidae of the Piciformes. *Myrsidea imbricata* (Neumann), represented by a single female, is the only species of this genus reported from a hummingbird (Apodiformes: Trochilidae). In her discussion of *M. imbricata*, Clay (1968), concluded: "It is probable that the hummingbird given on the label was not the true host; no authenticated records of *Myrsidea* are known from the Trochilidae." Similarly, Carriker (1960), when erecting the family Trochiliphagidae for *Trochiloecetes* and his new genus *Trochiliphagus*, both of which are found only on hummingbirds, stated "Any other genus of Mallophaga which may have been recorded from the hummingbirds are [sic] patently stragglers and should be disregarded." The assumptions expressed by Clay and Carriker are common among phthirapterists who assume a high degree of host specificity between lice and their hosts.

The collection procedures of Carriker were such that lice had ample opportunity to move from one host to another as birds were shot and then placed in a common collecting bag (Carriker 2000). Chewing lice of the family Menoponidae are fast-moving and more likely than other chewing lice to abandon a dead host as it cools. Therefore, Carriker's procedures tended to underestimate the presence of menoponids and resulted in a high frequency of erroneous menoponid host records found by subsequent workers. All lice reported herein were collected using the following technique: Birds were captured in mist nets, placed in unused white plastic bags, dusted with silica aerogel, returned to the same bag which contained a label identifying the bird and collecting information. Following an appropriate interval (ca. 20 minutes), the bird's feathers were ruffled as it was removed from the bag and

the bird visually examined for ectoparasites. The bird was then released. All ectoparasites collected off the bird, or found in the bag, were placed in a vial with 70% ethanol. The collecting label was removed from the bag and placed in the vial. Used bags were discarded. Although care was taken to avoid contamination, it cannot be avoided totally. Menoponids, especially when the population is large, will leave the host during handling.

The identity of the host species of *M. imbricata* cannot be stated with absolute certainty. However, our discovery of at least two undescribed species of hummingbird *Myrsidea* removes any doubt that this genus occurs on the Trochilidae. The taxonomy of chewing lice has suffered from erroneous associations. Carriker, who was an authoritative ornithologist, published erroneous host associations as the result of contamination or inaccurate collection records, rather than host misidentification. The Trochilidae contains many species not distinguished easily from close relatives. However, the hosts of the lice in this study are not confused easily with other hummingbirds in the collecting areas.

Myrsidea has been well defined by Clay (1966) and we subscribe to her generic definition. The principal features of *Myrsidea* are as follows: Head without notch or slit in dorso-lateral margin, without ventral sclerotized processes arising near the base of maxillary palpi, and the hypophyrangeal sclerites well developed. Prothorax without dorsal setae on or near transverse carina, posterior margin of pronotum with six or more long setae, and prosternal plate well developed with two anterior setae. Mesothorax with notum, pleura and sternum fused to form a strongly sclerotized ring, mesonotum well defined with only two anterior setae, and mesosternum heavily sclerotized, with 2 + 2 setae. Venter of femur III without combs of spine-like setae, but with variously developed setal brushes. Abdomen of many species with an aster of spine-like setae at each lateroposterior corner of an enlarged sternite II, female often with modified shapes of some abdominal terga, and anus oval without inner setae. Male genitalia relatively simple, of the type shown in Figs. 2 and 5.

In the following descriptions, all measurements are in millimeters. Abbreviations for dimensions are: TW, temple width; HL, head length; PW, prothorax width; MW, metathorax width; AWIV, abdomen width at segment IV; ANW, female anus width; GL, male genitalia length; TL, total length. The generic characteristics described above are not repeated, but are implicit in the following specific descriptions.

Myrsidea kristineae, new species

(Figs. 1–3)

Type host.—*Amazilia chionopectus* (Gould).

Male.—As in Fig. 1. Head with chaetotaxy as shown. Margin of pronotum with 3 long, 3 short setae each side. Metanotum with 10 marginal setae, including very long corner seta and short seta mediad to it. Metasternal plate large, with 6 long setae. Abdomen with all tergites undivided and of equal length, without anterior setae. Postspiracular setae extremely long on II, IV, and VIII, very long on I and VII, and long on III, V, and VI. Marginal tergal setae: I, 12; II, 11-12; III-VI, 14-16; VII, 10-13; VIII, 8-10; without median tergal setae. Last tergite with 2 extremely long setae on each side and shorter setae as shown. Pleurites II-VII with only short marginal setae; VIII with very long seta flanked by shorter setae; none with anterior setae. Sternite I without setae; II with each side having an aster of 4 prominent setae

on a posterior protuberance and total of 20-22 other setae. Sternal setae: III, 17-18; IV, 21-22; V, 23-27; VI, 19-20; VII, 12-13; VIII, 6. Subgenital plate composed of fused sterna VIII and IX. Genitalia as in Fig. 2, with only suggestion of lateral margins of sclerite associated with spinous sac. Dimensions: TW, 0.40; HL, 0.28; PW, 0.24-0.25; MW, 0.34; AWIV, 0.42-0.44; GL, 0.36-0.39; TL, 1.13-1.19.

Female.—Head and thorax much as for male. Metanotum with 10-12 marginal setae; metasternal plate with 5-6 setae. Abdomen as in Fig. 3, much as for male, but differing as follows: Tergites II-V with medioposterior margin expanded into following segment. Marginal tergal setae: I, 14-16; II-V, 14-18; VI, 13-16; VII, 12-14; VIII, 9-10. Anus with 30-37 ventral fringe setae, 27-36 dorsal fringe setae. Sternal setae: III, 20-24; IV, 24-28; V, 28-32; VI, 25-28; VII, 13-17. Subgenital plate formed from fusion of sternites VII-IX, with serrated posterior margin, and with 16-19 setae in region of fused VIII-IX. Dimensions: TW, 0.44-0.45; HL, 0.29-0.31; PW, 0.28-0.29; MW, 0.41-0.43; AWIV, 0.52-0.56; ANW, 0.19-0.21; TL, 1.41-1.48.

Type material.—Holotype female, ex *A. chionopectus*, Trinidad: Arima Valley, Simla Field Station, 16 Mar. 1976, R. C. Dalgleish. Paratypes: 6 females, 2 males, same data as holotype. The holotype and a male paratype are deposited in the National Museum of Natural History (Washington, D.C., U.S.A.). One pair of paratypes is deposited in the K. C. Emerson Entomology Museum, Oklahoma State University, Stillwater, Oklahoma, U.S.A. The remaining paratypes are in the collection of the senior author.

Etymology.—This species is named after Kristine L. Dalgleish, the senior author's daughter.

Remarks.—This species is best distinguished from other *Myrsidea* from hummingbirds by its relatively few tergal and sternal setae, and by the absence of median tergal setae.

***Myrsidea jenniferae*, new species**
(Figs. 4-6)

Type host.—*Anthracothorax nigricollis* (Vieillot).

Male.—As in Fig. 4. Much as for *M. kristineae*, except as follows. Margin of metanotum with 12 setae; metasternal plate with 5 setae. Larger number of tergal setae: I, 21-22; II, 29-32; III-VI, 31-35; VII, 28-31; VIII, 20-23; these setae distributed evenly across posterior tergal margin. Pleurites with longer marginal setae. Larger number of sternal setae: II, 23-28, in addition to 4+4 or 4+5 stout lateroposterior cluster; III, 22-25; IV, 32-33; V, 36-37; VI, 28-31; VII, 20; VIII, 9-12. Genitalia as in Fig. 5.

Female.—Head, thorax, and dimensions much as for *M. kristineae*. Margin of metanotum with 15 setae. Abdomen as in Fig. 6. Postspiracular setae extremely long on VIII, very long on I-II, and long on III-VII. Marginal tergal setae: I, 8; II-VI, 31-36; VII, 29; VIII, 23. Anus with 35-37 setae in each fringe. Pleurites with long, fine setae on III-VII. Sternal setae: II, 26 in addition to 4+4 lateroposterior setae; III, 28; IV, 36; V, 43; VI, 33; VII, 18; portion of subgenital plate on VIII-IX fused with 22 setae.

Type material.—Holotype female, ex *A. nigricollis*, Trinidad: Arima Valley, Simla Field Station, 12 Mar. 1976, R. C. Dalgleish. Paratypes: 1 female, 1 male,

same data as holotype. The holotype and a male paratype are deposited in the National Museum of Natural History (Washington, D.C., U.S.A.). The remaining female paratype is deposited in the K. C. Emerson Entomology Museum, Oklahoma State University, Stillwater, Oklahoma, U.S.A.

Etymology.—This species is named after Jennifer E. Paler, the junior author's daughter.

Remarks.—This species is distinguished from *M. kristineae* by its much larger number of tergal and sternal setae, with tergal setae distributed evenly and completely across the segment. The female is further separated by the shorter postspiracular setae on II, IV, and VII.

Myrsidea imbricata (Neumann)

Menopon imbricatum Neumann, 1891. Type host: *Chlorolampis elegans* = *Chlorostilbon swainsonii* (Lesson)

Clay (1968) examined a slide with one female from the Laboratoire de Parasitologie, École Nationale Vétérinaire de Toulouse, labeled “*Menopon imbricatum* Nn. Sur l'Oiseau-mouche. *Chlorolampis* sp. *elegans* (?). Antilles.” Based on the labels and figure given by Neumann, she had no doubt that this is the type specimen. No information was provided by Neumann (1891) as to whether the host was a museum specimen or one collected for the millinery industry. If it was the latter, then the host identification and locality are suspect. Peters (1945) places *Chlorolampis* within the genus *Chlorostilbon* Gould, but listed no species or subspecies named *elegans* in the Trochilidae. Hopkins and Clay (1952) cite the host as “(*Chlorolampis elegans*) = *Chlorostilbon swainsonii* (Lesson),” their assumption being apparently that “Antilles” refers to Hispaniola, since *C. swainsonii* is not found elsewhere. Sibley and Monroe (1990) consider *C. swainsonii* a subspecies of *C. maugaeus* (Audebert and Vieillot) which they indicate may be conspecific with *C. mellisugus* (Linnaeus). Hummingbirds of the genus *Chlorostilbon* are called emeralds and are found on many of the larger islands of the Caribbean and surrounding mainland south of the United States.

Clay (1968), in her review of *Myrsidea*, provided illustrations of both the dorsal and ventral thorax and abdomen of *M. imbricata*. These illustrations, with many missing setae, suggest that it is most similar to *M. jenniferae*, but differs in having no median tergal setae and in the enlargement of the anterior tergal plates. The general details are, however, sufficiently close to our material that the type host of *M. imbricata* may indeed be *C. swainsonii*.

In addition to the material included in the descriptions above, we have examined the following *Myrsidea* specimens from hummingbird hosts: 1 male ex *Amazilia tobaci* (Gmelin) from Trinidad, 1 male ex *Chlorestes notatus* (Reichenbach) from Trinidad, 1 male ex *Glaucis hirsuta* (Gmelin) from Trinidad, 1 female ex *Trochilus polytmus* Linnaeus from Jamaica, and 2 females, 1 male ex “Hummingbird” from Panama. These specimens exhibit differences from the species discussed above and from one another. However, in the absence of more material, we chose not to consider them in this study. They are mentioned here only as further evidence that *Myrsidea* occurs on hummingbirds, although not often collected. The senior author and Robert L. Fisher, using the same collecting technique, examined over 1,000 hummingbirds in Costa Rica and did not find any *Myrsidea*. We hope that this paper

will encourage others to look for these small lice to expand the knowledge of the distribution of this genus on the Trochilidae.

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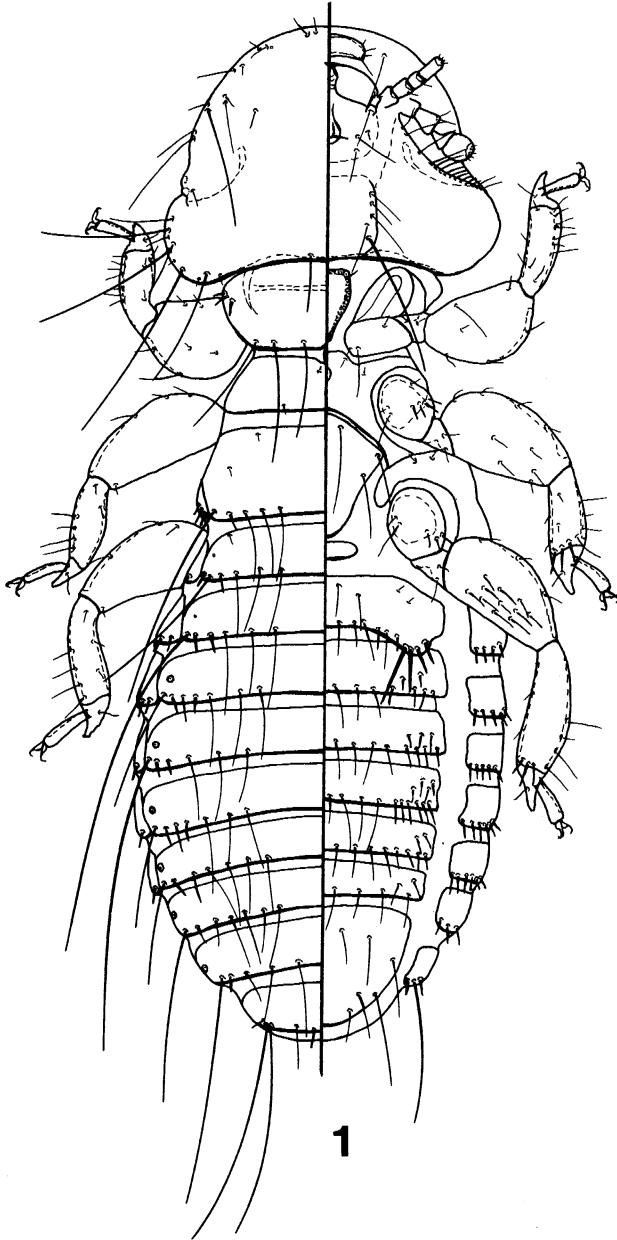


Fig. 1. *M. kristineae*, male, dorsoventral

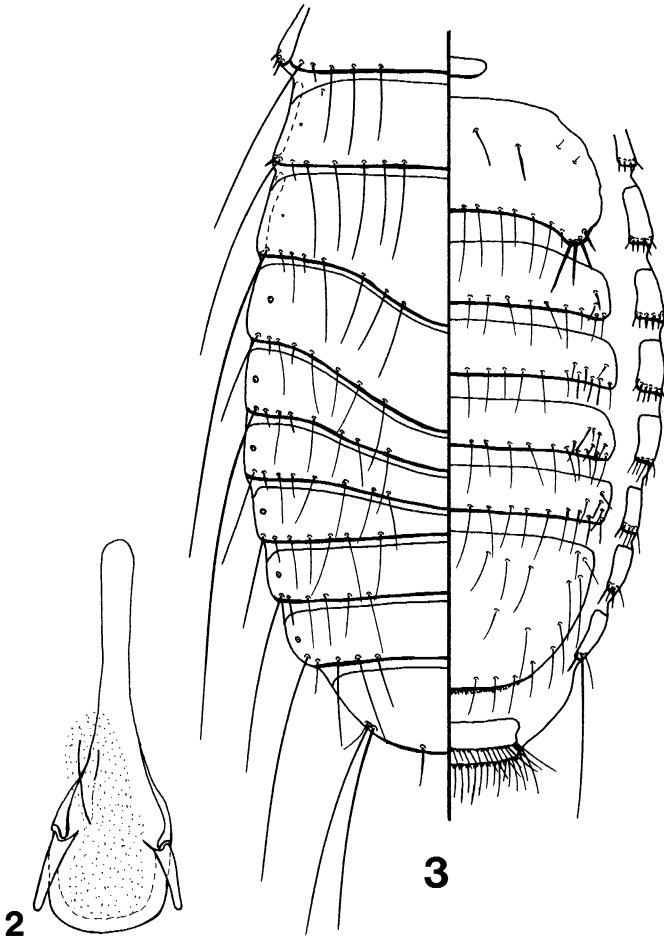


Fig. 2. *M. kristineae*, male genitalia

Fig. 3. *M. kristineae*, female, abdomen, dorsoventral



Fig. 4. *M. jenniferae*, male, dorsoventral

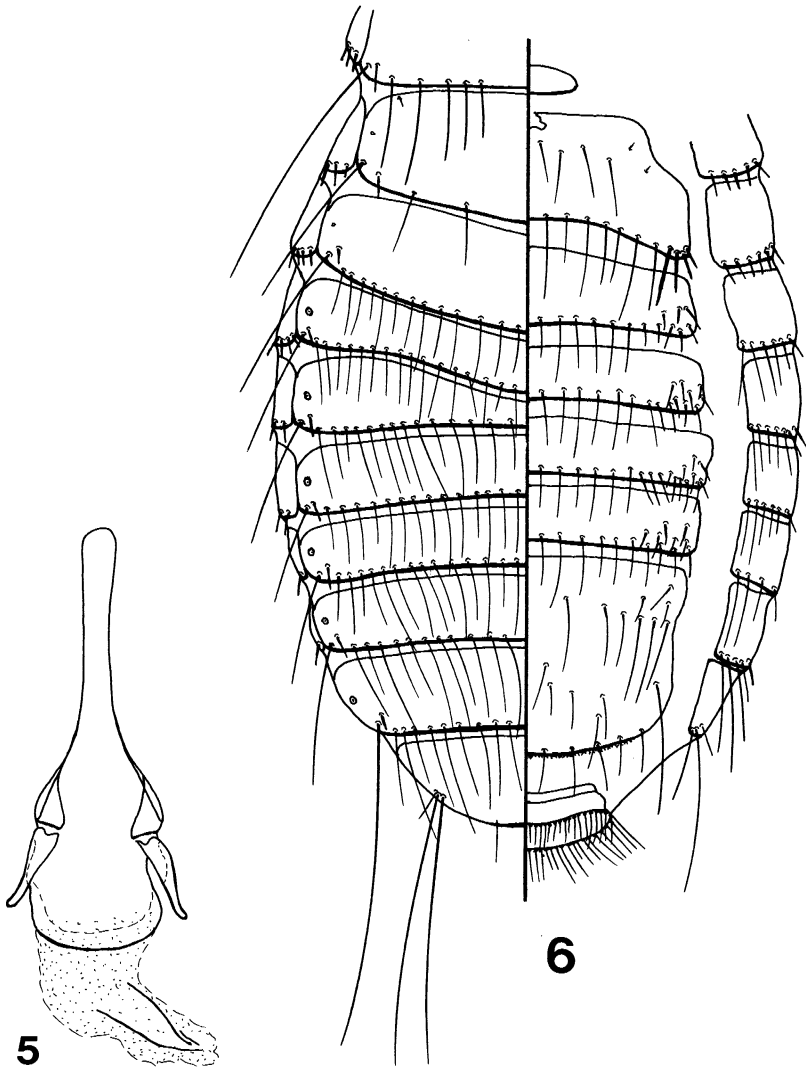


Fig. 5. *M. jenniferae*, male genitalia

Fig. 6. *M. jenniferae*, female, abdomen, dorsoventral