

A NEW GENUS AND FOUR NEW SPECIES OF CHEWING LICE
(PHTHIRAPTERA: AMBLYCERA: MENOPONIDAE) FROM
HUMMINGBIRDS (APODIFORMES: TROCHILIDAE)

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Abstract.—*Leremenopon* new genus, and four new species, *L. fisheri*, *L. sanchezi*, *L. donnaldorum*, and *L. obermani*, are described and illustrated. With these descriptions, four genera of chewing lice are now known from hummingbirds.

Key words: *Phthiraptera*, *Menoponidae*, *Leremenopon*, *Trochilidae*, *hummingbirds*

Hummingbirds (Aves: Apodiformes: Trochilidae) are known for their small size, bright coloration, and hovering flight. There is disagreement among ornithologists concerning the taxonomic status of this group. The avian taxonomy of Howard and Moore (1994), followed in this paper, places the 335 species and 114 genera of hummingbirds with the swifts (Apodidae and Hemiprocnidae) in the order Apodiformes. Monroe and Sibley (1993) recognize 322 species and 108 genera in the subfamilies Phaethornithinae and Trochilinae, with Phaethornithinae, the hermits, containing 29 species in four genera. Sibley and Ahlquist (1990) elevate the hummingbirds and swifts each to ordinal status, but consider them closely related placing them in the superorder Apodimorphae. They conclude, "The divergence was ancient, possibly in the late Cretaceous, but the morphological evidence and DNA comparisons support this conclusion better than any of the alternatives." The evidence from the distribution of the lice, which Sibley and Ahlquist consider in discussing relationships of other avian families, also supports their conclusion that the divergence of swifts and hummingbirds is ancient. However, the taxonomy of the lice from the Trochilidae does not support the division of this family into two subfamilies.

The genera of lice found on hummingbirds are not known from swifts and, with the exception of the genus *Myrsidea* Waterston, none of the hummingbird louse genera is known from other avian families. The first chewing louse described from a hummingbird was *Myrsidea imbricata* (Neumann). Chewing lice of the genera *Myrsidea*, *Trochiloecetes* Paine and Mann, and *Trochiliphagus* Carriker, are now known from the Trochilidae. The latter two genera were placed in the family Trochiliphagidae by Carriker (1960) when he described the new genus *Trochiliphagus*. Few phthirapterists accepted this family and the two genera are placed within the Ricinidae. Female *Trochiliphagus* may reach a total length of 3.8 mm., making their size larger relative to that of their hosts than the relative size of the very large *Laemobothrion* Nitzsch specimens found on raptors.

Over the past 35 years lice were collected in Peru, Venezuela, Costa Rica, Jamaica, and Trinidad and Tobago from more than 1,400 hummingbirds under circumstances designed to minimize the chance of contamination (Dalglish and

Price, In press). Thus, it is with a high degree of confidence that we describe another genus of chewing louse from the Trochilidae. This small menoponid is found on the head and abdomen of the host, but not on the wings or tail. Because it is fast moving, difficult to see and capture, this louse rarely is collected, and probably has a relatively low frequency of infestation. It appears to be restricted to the Trochilidae, but may have been overlooked on other potential hosts.

Leremenopon, new genus

Type species.—***Leremenopon fisheri***, new species

The four species in this genus share the following characteristics: Head wider than long, with a shallow preocular slit; numbering (see Clay, 1969) from the midline of the head, bases of occipital setae 21, 22, and 23 in line; seta 26 fine and short, 27 very long, with alveoli contiguous; ventral spinous processes absent; weak nodi and carinae; hypopharyngeal sclerites inconspicuous or weak. Pronotum with 14–18 marginal setae, typically with 12 long, 4 short; inner central pronotal setae minute, outer longer, stouter; prosternal plate small, with only 2 minute associated setae anterior to it; postnotum elongate, slender, with 4 minute mesonotal setae posterior to it; metanotum with 12 marginal setae, less often 11; ventral femur III with only very sparse setae. Tergites of equal length, undivided, without anterior setae; postspiracular setae very long on II–VIII, slightly shorter on I; tergites I–II usually with short seta outermost and short seta mediad of postspiracular seta on I–VIII; pleurites without anterior setae; sternites without brushes, ctenidia or *Myrsidea*-like aster; subgenital plate with sternite VII separated from VIII; female anus oval, without inner setae; male genitalia symmetrical, with prominent outwardly-curved parameres and spinous sac with only poorly developed associated sclerite.

While sharing a number of features in common with members of the *Menacanthus*-complex as defined by Clay (1969), *Leremenopon* is separated from *Menacanthus* Neumann by the absence of ventral head spines and from *Amyrsidea* Ewing by the absence of any femoral or sternal brushes. Other features, such as head shape and subgenital plate structure, further support this separation. Members of *Menacanthus* and *Amyrsidea* are parasites primarily of the Passeriformes and Galliformes, whereas *Leremenopon* is restricted to the Apodiformes. All *Myrsidea* known thus far from the Trochilidae have a well developed "aster" of stout, spine-like setae at the lateroposterior corners of an enlarged sternite II.

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.

Holotypes of the new species will be deposited in the National Museum of Natural History (Washington, D.C., U.S.A.) and paratypes, as numbers allow, will be deposited there and in the K. C. Emerson Entomological Museum, Oklahoma State University (Stillwater, Oklahoma).

Etymology.—The generic name is formed by "*Lere*," which translates roughly from the language of the indigenous Ienian Arawaks as "land of the hummingbird", which was their name for the island now known as Trinidad, and "menopon", a suffix in many generic names in the Menoponidae.

Leremenopon fisheri, new species
(Figs. 1-3)

Type host.—*Florisuga mellivora* (Linnaeus).

Male.—As in Fig. 1. Anterior margin of head evenly rounded, with strong internal marginal thickening. Without evident hypopharyngeal sclerites. Mesosternal plate with 8-9 setae; metasternal plate with 6-7 setae. Tergal setae: I, 13-14; II, 16; III, 16-17; IV, 16-18; V, 15-17; VI, 14-15; VII, 14; VIII, 10. Sternal setae: I, 2; II, 11; III, 16-17; IV, 23-25; V, 26-27; VI, 21-22; VII, 11-13; VIII, 6-8. Genitalia as in Fig. 2. Dimensions: TW, 0.35-0.37; HL, 0.18-0.19; PW, 0.25-0.26; MW, 0.29-0.30; AWIV, 0.38-0.39; GL, 0.30; TL, 1.00-1.02.

Female.—Head and thorax much as for male. Abdomen as in Fig. 3. Mesosternal plate with 10-11 setae; metasternal plate with 8 setae. Tergal setae: I, 14; II, 17-19; III, 17-20; IV, 20-21; V, 21-22; VI, 18-19; VII, 16-18; VIII, 12-13. Sternal setae: I, 2; II, 13-14; III, 23-24; IV, 24-27; V, 30; VI, 26-28; VII, 20-23. Subgenital plate with 17-18 setae. Anus with 30-34 setae in each fringe. Dimensions: TW, 0.40; HL, 0.18-0.21; PW, 0.29; MW, 0.36-0.38; AWIV, 0.51-0.53; ANW, 0.15-0.16; TL, 1.19-1.23.

Type material.—Holotype female, ex *F. mellivora*, Costa Rica: La Selva Biological Station, Puerto Viejo, 11-14 June 1993, R. L. Fisher. Paratypes: 1 female, 2 males, same data as holotype.

Etymology.—Named after Robert L. Fisher, Juniata College, Huntingdon, Pennsylvania, U.S.A., the collector of this species and many others from Costa Rica.

Remarks.—The combination of head shape, reduced number of mesosternal and metasternal plate setae, and small size enables recognition of this species.

Leremenopon sanchezi, new species

Type host.—*Eugenes fulgens* (Swainson).

Male.—Unknown.

Female.—Much as for *L. fisheri*, differing as follows. Mesosternal plate with 15-17 setae; metasternal plate with 16-19 setae. Fewer tergal setae: I, 12-14; II, 13-15; III, 17-18; IV, 16-20; V, 16-19; VI, 15-16; VII, 14-15; VIII, 12. More sternal setae: I, 3-4; II, 25; III, 31-33; IV, 40-42; V, 41; VI, 35-39; VII, 27-31. Subgenital plate with 22-24 setae. Anus with 32-36 setae in each fringe. Dimensions: TW, 0.46-0.48; HL, 0.23-0.25; PW, 0.33; MW, 0.41; AWIV, 0.57-0.61; ANW, 0.18; TL, 1.40-1.44.

Type material.—Holotype female, ex *E. fulgens*, Costa Rica: Cabinas Chacón, San Gerardo de Dota, Cerro de la Muerte, 29 May 1992, R. L. Fisher. Paratype: 1 female, same data as holotype.

Etymology.—Named after Julio E. Sánchez, Department of Ornithology, Museo Nacional de Costa Rica, San José, Costa Rica, who greatly assisted the senior author and R. L. Fisher during their field work.

Remarks.—This species is separated from *L. fisheri* by the former having fewer abdominal tergal setae and more sternal setae, more setae on the mesosternal and metasternal plates, and consistently larger dimensions.

Leremenopon donnaldorum, new species

(Figs. 4-6)

Type host.—*Glaucis hirsuta* (Gmelin)

Male.—As in Fig. 4. Anterior head margin with slight median convexity. Hypopharyngeal sclerites weak. Mesosternal plate with 7-9 setae; metasternal plate with 6-8 setae. Tergal setae: I, 13-16; II-III, 14-16; IV, 14-17; V, 13-16; VI, 12-13; VII, 11-12; VIII, 8-10. Sternal setae: I, 0-2; II, 14-17; III, 19-23; IV, 19-20; V, 17-21; VI, 13-18; VII, 9-12; VIII, 6-9. Genitalia as in Fig. 5. Dimensions: TW, 0.38-0.40; HL, 0.22-0.24; PW, 0.28-0.30; MW, 0.34-0.36; AWIV, 0.44-0.46; GL, 0.32-0.35; TL, 1.09-1.12.

Female.—Head and thorax much as for male. Abdomen as in Fig. 6. Mesosternal plate with 8-10 setae; metasternal plate with 5-8 setae. Tergal setae: I, 13-16; II, 16-20; III, 15-19; IV, 17-21; V, 18-20; VI-VII, 16-18; VIII, 11-14. Sternal setae: I, 0-2; II, 14-19; III, 25-30; IV, 28-37; V, 31-38; VI, 30-34; VII, 22-28. Subgenital plate with 19-24 setae. Anus with 35-40 ventral fringe setae, 30-38 dorsal fringe setae. Dimensions: TW, 0.40-0.43; HL, 0.22-0.26; PW, 0.30-0.32; MW, 0.36-0.40; AWIV, 0.47-0.57; ANW, 0.17-0.19; TL, 1.25-1.37.

Type material.—Holotype female, ex *G. hirsuta*, Trinidad: Arima Valley, Simla Biological Station, 5 Mar. 1980, R. C. Dalglish, No. RCD 674. Paratypes: 1 female, same data as holotype; 1 female, same locality, 4 Mar. 1980, No. RCD 671; 4 females, 4 males, same locality, 15 Mar. 1978, No. RCD 540; 3 females, 1 male, same locality, 28 Mar. 1976; 1 female, same locality, 16 Mar. 1976.

Other material.—6 females, 2 males, ex *Phaethornis guy* (Lesson), Trinidad: Arima Valley, Simla Biological Station, 12 Mar. 1976, R. C. Dalglish.

Etymology.—Named after Donald Donald and his late wife Margaret, Potomac, Maryland, U.S.A., who assisted and supported much of the field work in Trinidad, Venezuela, and Peru.

Remarks.—This species is separated from *L. fisheri* and *L. sanchezi* by the difference in head shape and the presence of the weakly developed hypopharynx. It is further distinguished from *L. fisheri* by the fewer mesosternal and metasternal plate setae and smaller temple width, and from *L. sanchezi* by the greater head length.

Leremenopon obermani, new species*Type host.*—*Amazilia chionopectus* (Gould)

Male.—Much as for *L. donnaldorum*, differing as follows. Mesosternal plate with 12-16 setae; metasternal plate with 12 setae. Tergal setae: I-V, 13-16; VI, 12-14; VII, 11-12; VIII, 9-10. Sternal setae: I, 2; II, 19-20; III, 26-29; IV, 32-33; V, 30; VI, 26-28; VII, 13-15; VIII, 7-8. Dimensions: TW, 0.43-0.44; HL, 0.27-0.28; PW, 0.31-0.32; MW, 0.35; AWIV, 0.45; GL, 0.33-0.34; TL, 1.19-1.22.

Female.—Head and thorax much as for *L. donnaldorum*. Mesosternal plate with 14-20 setae; metasternal plate with 13-17 setae. Tergal setae: I, 14; II, 13-15; III, 13-16; IV, 14-17; V, 15-16; VI, 14-17; VII, 13-14; VIII, 8-10. Sternal setae: I, 1-2; II, 19-27; III, 30-35; IV, 34-41; V, 38-41; VI, 33-40; VII, 24-31. Subgenital plate with 25-31 setae. Dimensions: TW, 0.47-0.51; HL, 0.27-0.28; PW, 0.35-0.36; MW, 0.41-0.43; AWIV, 0.54-0.60; ANW, 0.18-0.19; TL, 1.36-1.50.

Type material.—Holotype female, ex *A. chionopectus*, Trinidad: Arima, Simla Biological Station, 18 Mar. 1978, R. C. Dalgleish, No. RCD 538. Paratypes: 1 female, 1 male, same data as holotype.

Other material.—1 female, 1 male, ex *Chlorestes notatus* (Reichenbach) Trinidad: Arima Valley, Simla Biological Station, 23 Mar. 1978, R. C. Dalgleish, No. RCD 537; 1 female, ex *Campylopterus hemileucurus* (Deppe), Costa Rica: Las Cruces Biological Station, Cota Brus, 26 June 1993, R. L. Fisher, No. RLF 685.

Etymology.—Named after William Oberman, Washington, D.C., U.S.A., who assisted and supported the field work in Trinidad, Venezuela, and Peru.

Remarks.—Similar to *L. donnaldorum* by its head shape and hypopharyngeal development, but separated by its greater number of meso- and metasternal plate setae and its larger dimensions.

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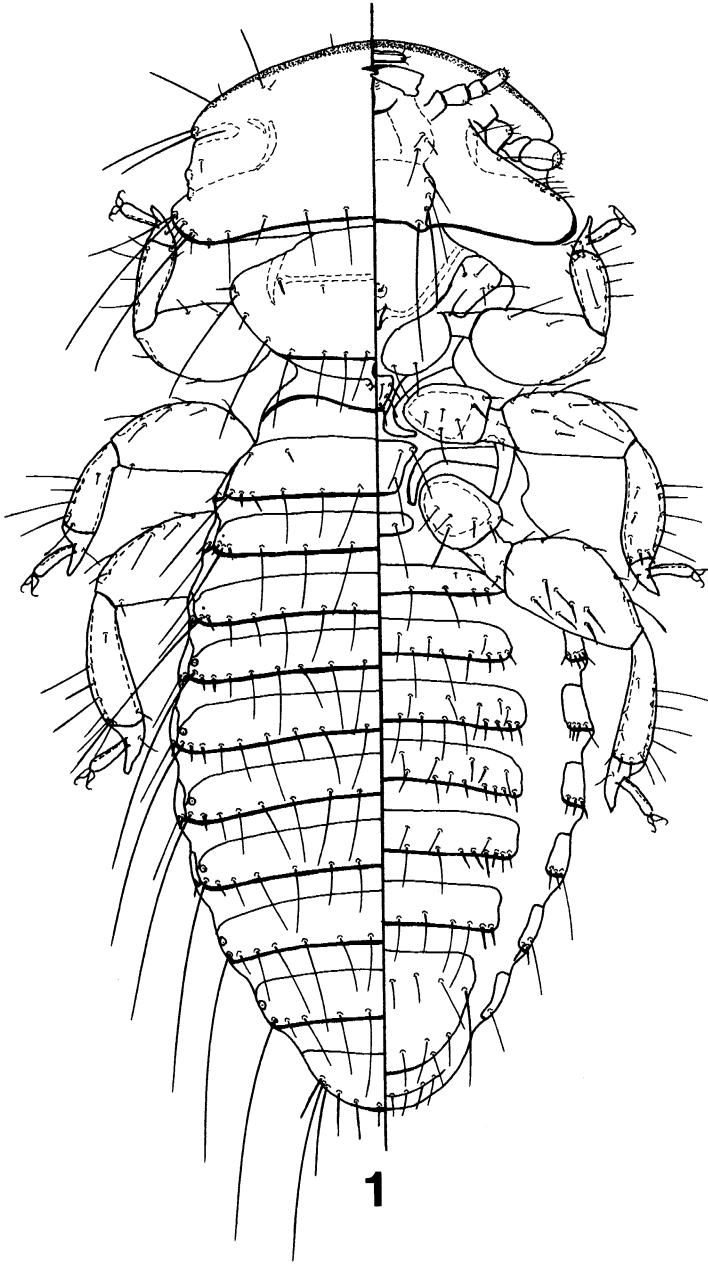


Fig. 1. *L. fisheri*, male, dorsoventral

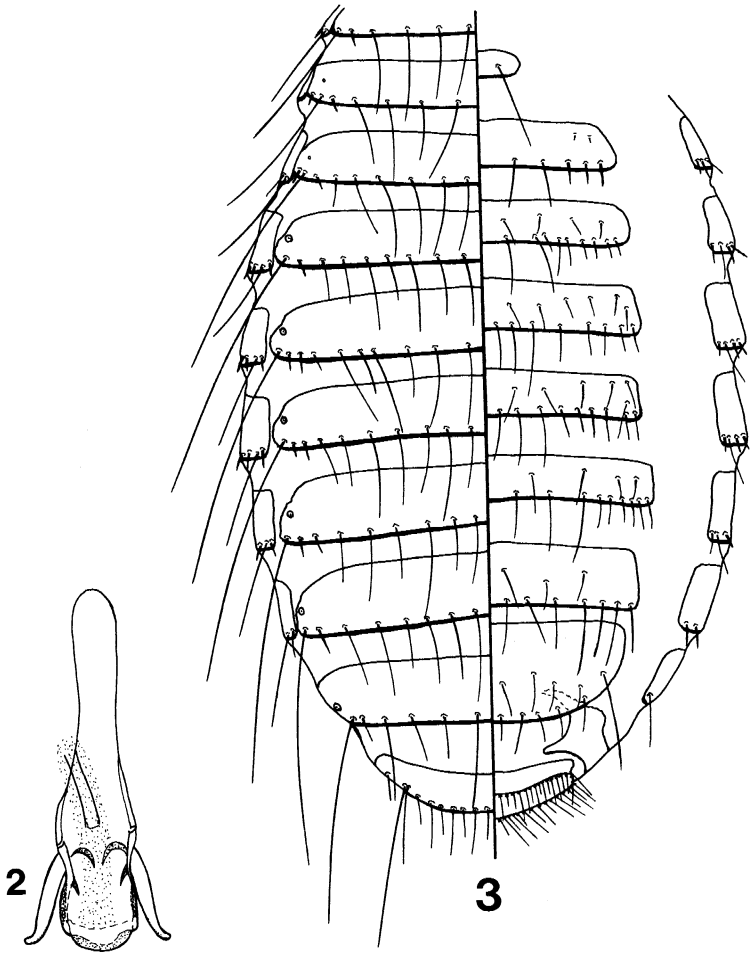


Fig. 2. *L. fisheri*, male genitalia

Fig. 3. *L. fisheri*, female, abdomen, dorsoventral

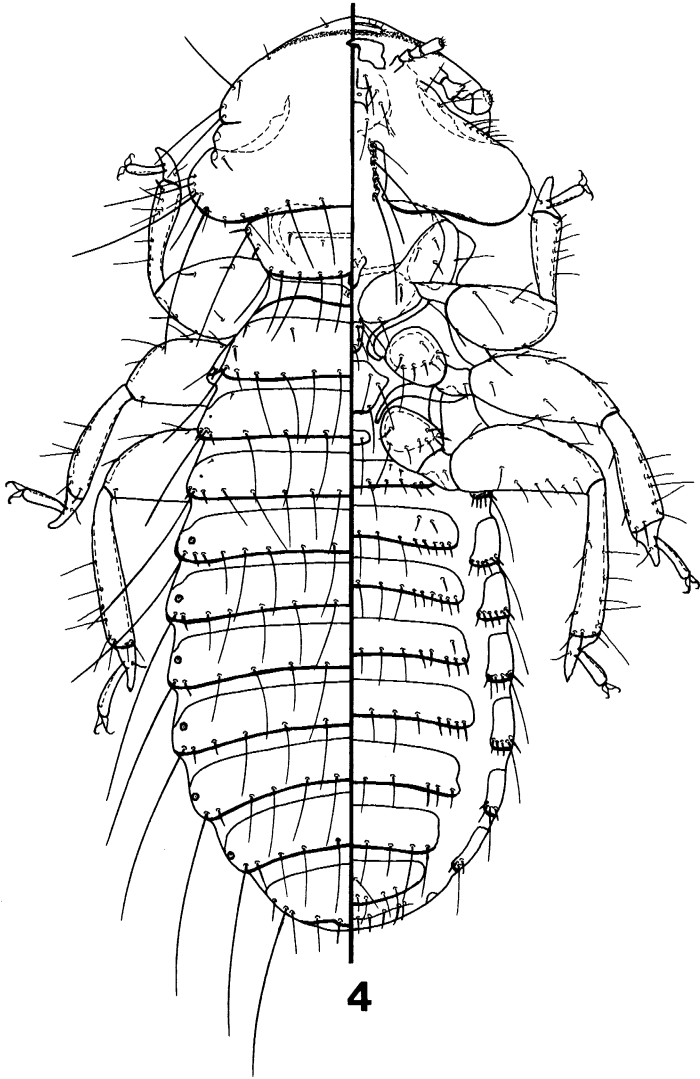


Fig. 4. *L. donnaldorum*, male, dorsoventral

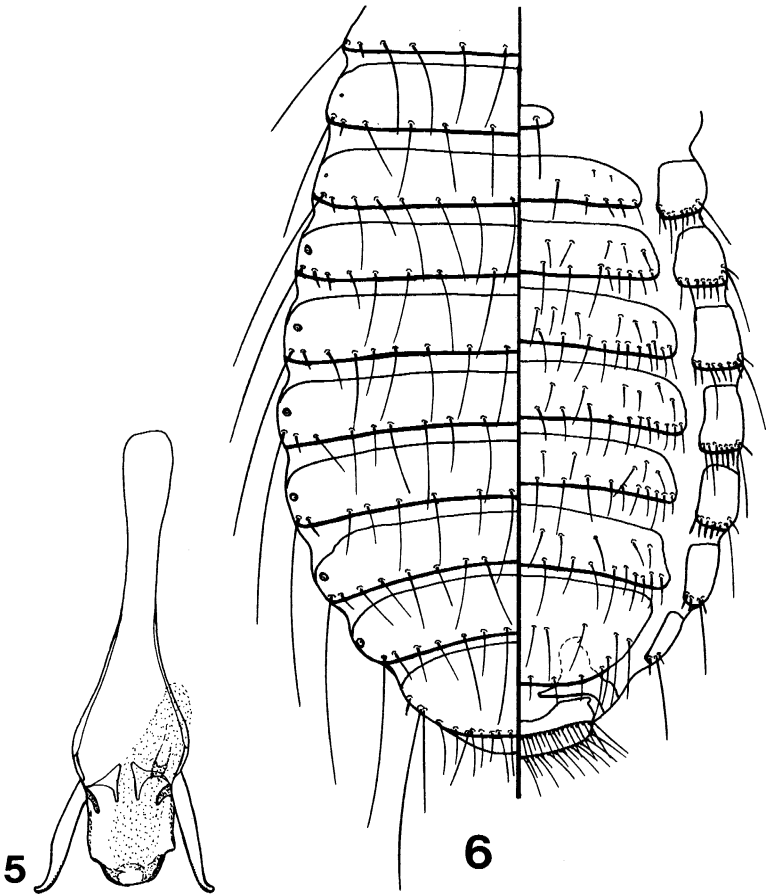


Fig. 5. *L. donnaldorum*, male genitalia

Fig. 6. *L. donnaldorum*, female, abdomen, dorsoventral