

## Five New Species of *Myrsidea* (Phthiraptera: Menoponidae) from Asian Babblers (Passeriformes: Timaliidae)

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ABSTRACT: Five new species of *Myrsidea* are described from Babblers (Passeriformes: Timaliidae). The new species and their type hosts are: *Myrsidea cheni* ex *Alcippe morrisonia* from China; *M. macronoi* ex *Macronous gularis* from Sarawak and Thailand; *M. argentauris* ex *Leiothrix argentauris* from China and Thailand; *M. dukguni* ex *Stachyris striolata* from China; and *M. falcatae* ex *Ptilocichla falcata* from the Philippines.

KEY WORDS: Chewing lice, *Myrsidea*, new species, Phthiraptera, Menoponidae, Timaliidae, Asia

There are 21 species of *Myrsidea* Waterston currently recognized from hosts within the avian Babbler family (Passeriformes: Timaliidae) (Price *et al.*, 2003). All have been described by workers in the “modern” louse era, thus making it possible to determine the status of lice that have been collected from additional hosts within this family. Tandan and Clay (1971) described species found on the host genus *Turdoides*, including five new species and redescrptions of two species previously described by Ansari (1951). Tandan (1972) described 12 more new species, 11 from hosts in the genus *Garrulax* and one from *Pomatorhinus*, plus the redescription of one species from *Garrulax* by Ansari (1951). Rai (1978) described a single new species from *Garrulax*, this host now placed in *Liocichla* (Dickinson, 2003). We describe and illustrate herein five additional new species of *Myrsidea* from babblers (Timaliidae) in China, Thailand, Sarawak, and the Philippines.

Characters typical of *Myrsidea* and shared by the species treated in this paper are as follows and will not be repeated under the species descriptions. Head evenly rounded anteriorly, without lateral notch or slit, each side with long inner and minute outer occipital setae and 4 long marginal temple setae, without ventral sclerotized processes, and gula usually with 4, less often 3 or 5, setae on each side, the posteriormost longer and heavier than others.

Thorax lacking central pronotal setae, with 3 short lateral setae on each side and total of 6 long posterior setae. Mesonotum well defined, with 2 minute medioanterior setae and 2 minute posterior marginal setae. Metanotum without central setae, but with 6 short anterior peripheral setae. Prosternal plate well developed, with 2 short anterior setae. Metasternal plate prominent, diamond shaped, usually with 4–6 setae; venter of femur III with setal brush.

Abdomen with undivided tergites, lacking anterior setae except for minute lateroanterior seta on each side of tergite I (not included in setal count); tergal setal rows with prominent median gap. However, this median gap in tergal setal rows is not present on some previously described *Myrsidea* from Babblers. Sternite I small, without setae. Sternite II enlarged, with aster of large heavy setae at each posterior corner, these not included in setal count for that segment. Pleurites without anterior setae. Female anus oval, without inner setae; subgenital plate of fused sternites VII–IX, with lightly serrated posterior

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margin; setae for sternite VII are those located in region of segment VII. Male subgenital plate of fused sternites VIII–IX; setae for sternite VIII are those in region of segment VIII; genitalia of characteristic shape with distinctively shaped sclerite associated with spinous sac.

In the following descriptions, all measurements are in millimeters. Abbreviations are: TW, temple width; HL, head length at midline; PW, prothorax width; MW, metathorax width; AWIV, abdomen width at segment IV; TL, total length; GL, male genitalia length; and ANW, female anus width. Tergal setal counts include the postspiracular setae and all setae between them.

Host classification within the Timaliidae follows that of Dickinson (2003). Disposition of material of the new species is indicated for each: OSU (K. C. Emerson Museum, Oklahoma State University, Stillwater), NMNH (U.S. National Museum of Natural History, Washington, DC), and UU (Price Institute for Phthiraptera Research [PIPeR], Department of Biology, University of Utah, Salt Lake City).

### *Myrsidea cheni* Price, Arnold, and Bush, new species

(Figs. 1–5)

TYPE HOST: *Alcippe morrisonia* Swinhoe, the Grey-cheeked Fulvetta.

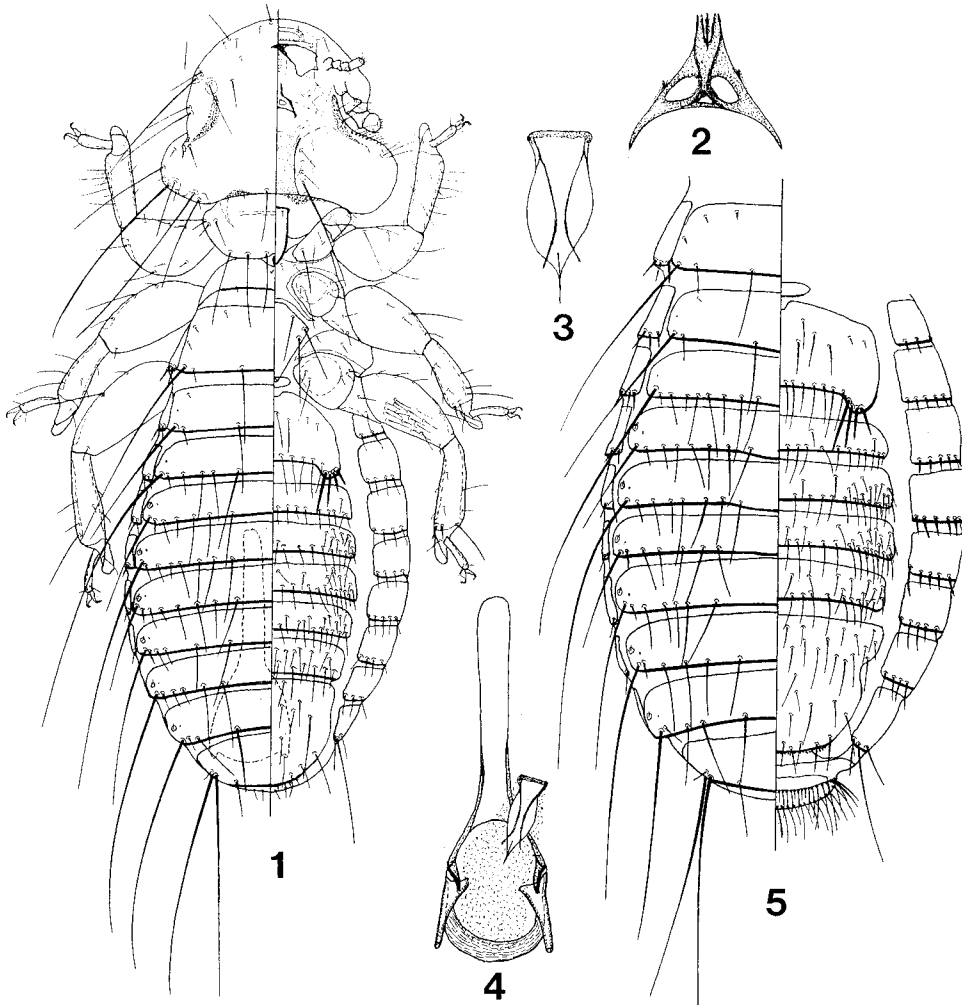
DESCRIPTION: **Male.** As in Fig. 1. Hypopharyngeal sclerites greatly reduced (Fig. 2). Metanotal margin and metasternal plate each with 6 setae. Tergal setae: I, 6; II, 11–15; III, 13–18; IV–V, 13–15; VI–VII, 12–14; VIII, 8–10. Postspiracular setae extremely long on II, IV, and VII–VIII, shorter on I and VI, shortest on III and V. Sternal setae: II, 18–25, each aster with 4; III, 16–20; IV, 26–38; V, 30–47; VI, 27–38; VII, 16–28; VIII, 6–11. Genitalia (Fig. 4) with straight slender parameres, lightly spiculate sac with sclerite as in Fig. 3. Dimensions: TW, 0.40–0.42; HL, 0.28–0.29; PW, 0.26–0.28; MW, 0.37–0.41; AWIV, 0.48–0.53; TL, 1.16–1.31; GL, 0.39–0.41.

**Female.** Hypopharynx as for male. Metanotum and abdomen as in Fig. 5. Metanotal margin and metasternal plate each with 6 setae. Tergal setae: I, 6–8; II, 14–18; III–V, 15–18; VI, 14–16; VII, 12–14; VIII, 10–12. Tergites I–II and VI–VIII with relatively straight posterior margin, III–V with slight medioposterior convexity. Postspiracular setae as for male. Sternal setae: II, 21–27, each aster with 4; III, 17–26; IV–V, 34–56; VI, 35–51; VII, 20–30; subgenital plate with 9–12 marginal, 8–13 anterior setae. Anus with 25–30 dorsal fringe setae, 25–32 ventral. Dimensions: TW, 0.42–0.46; HL, 0.29–0.31; PW, 0.29–0.31; MW, 0.43–0.47; AWIV, 0.63–0.70; TL, 1.42–1.69; ANW, 0.19–0.22.

TYPE MATERIAL: Holotype male, ex *A. morrisonia*, CHINA: Guangxi Province, Jin Xin County Provincial Nature Reserve, 23.12°N, 105.96°E, 25 Sept. 2004, P#250 (NMNH). Paratypes, all ex *A. morrisonia*: two females, same data as holotype; two males, same except 20 Sept. 2004, P#63; one female, same except Schwandashan National Nature Preserve, 21.84°N, 107.88°E, 20 Apr. 2005, P#879 (NMNH, UU).

OTHER MATERIAL: Three males, three females, ex *A. poioicephala* (Jerdon), the Brown-cheeked Fulvetta, Thailand: Khao Luang (four collections).

DIAGNOSIS: This species is best recognized by the male with its unique genital sac sclerite, the female with its slightly modified central abdominal tergites, and both sexes by their weakly developed hypopharyngeal sclerites and the lengths of the postspiracular setae. Among the *Myrsidea* from *Garrulax*, both sexes of *M. cheni* identify as *M. sehri* Ansari or *M. erythrocephali* Tandan in the keys provided by Tandan (1972), but details of metanotal and abdominal chaetotaxy, dimensions, and the male genital sac sclerite clearly separate *M. cheni* from these species. Gross differences, including only six setae on



Figs. 1–5. *Myrsidea cheni* n. sp. 1. Dorsal entire male. 2. Male hypopharyngeal sclerites. 3. Male genital sac sclerite. 4. Male genitalia. 5. Female metanotum and dorsoventral abdomen.

tergite I, the lack of female metanotal enlargement, and the unique male genital sac sclerite, distinguish *M. cheni* from any *Myrsidea* species known from *Turdoides* hosts.

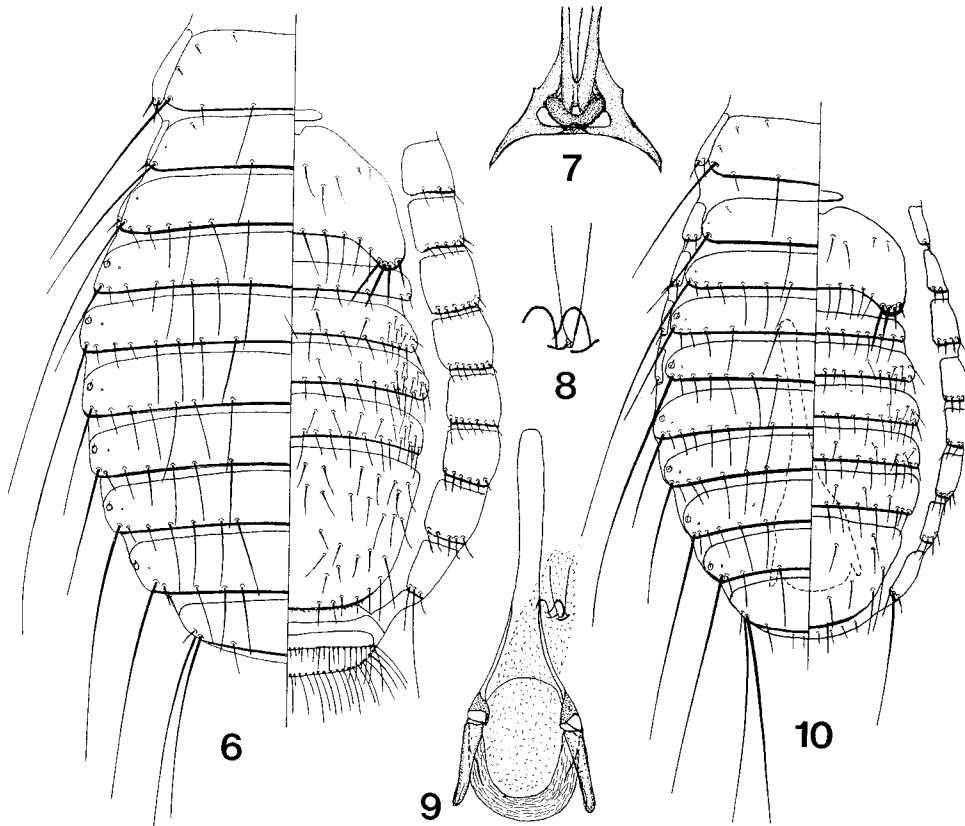
ETYMOLOGY: This species is named for Guojun Chen, The Natural History Museum, University of Kansas, Lawrence, in recognition of his work on Chinese avifauna.

***Myrsidea macronoi* Price, Arnold, and Bush, new species**

(Figs. 6–10)

TYPE HOST: *Macronous gularis* (Horsfield), the Striped Tit-babbler.

DESCRIPTION: **Male.** Hypopharyngeal sclerites moderately reduced (Fig. 7). Metanotum and abdomen as in Fig. 10. Metanotal margin with 6 setae; metasternal plate with 4 setae. Tergal setae: I, 4; II, 11–15; III, 13–16; IV–V, 14–16; VI–VII, 12–15; VIII, 8. Postspiracular setae extremely long on II, IV, and VII–VIII, shortest on I, III, and V–VI. Sternal setae: II, 19–24, each aster with 4; III, 11–13; IV, 26–30; V, 29–32; VI, 30–34;



Figs. 6–10. *Myrsidea macronoi* n. sp. 6. Female metanotum and dorsoventral abdomen. 7. Male hypopharyngeal sclerites. 8. Male genital sac sclerite. 9. Male genitalia. 10. Male metanotum and dorsoventral abdomen.

VII, 18–27; VIII, 9–18. Genitalia (Fig. 9) with straight slender parameres, lightly spiculate sac with sclerite as shown in Fig. 8. Dimensions: TW, 0.33–0.38; HL, 0.27–0.30; PW, 0.24–0.29; MW, 0.32–0.40; AWIV, 0.43–0.49; TL, 1.15–1.32; GL, 0.37–0.42.

**Female.** Hypopharynx as for male. Metanotum and abdomen as in Fig. 6. Metanotal margin with 6 setae; metasternal plate with 4 setae. Tergal setae: I, 4; II, 10–15; III–V, 13–16; VI, 13–15; VII, 10–16; VIII, 8–13. All tergites unmodified. Postspiracular setae as for male. Sternal setae: II, 21–24, each aster with 4–5; III, 8–13; IV, 30–34; V, 37–45; VI, 36–46; VII, 24–34; subgenital plate with 12–14 marginal, 16–28 anterior setae. Anus with 33–38 dorsal fringe setae, 35–45 ventral. Dimensions: TW, 0.39–0.43; HL, 0.28–0.30; PW, 0.27–0.31; MW, 0.43–0.47; AWIV, 0.62–0.64; TL, 1.47–1.58; ANW, 0.22–0.24.

**TYPE MATERIAL:** Holotype male, ex *M. gularis*, **THAILAND:** Satun Wang Bla Chan, 6 Aug. 1967, 7E-1518 (OSU). Paratypes, all ex *M. gularis*: one female, same as holotype except 8 Aug. 1967, 7E-1519; one female, Sarawak: Semengo, 14 Aug. 1966, 7E-0706 (OSU).

**OTHER MATERIAL:** One male, one female, ex *Stachyris maculata* (Temminck), the Chestnut-rumped Babbler, Sarawak (two collections); one male, one female, ex *S. nigricollis*

(Temminck), the Black-throated Babbler, Sarawak (one collection); two females, ex *S. erythroptera* (Blyth), the Chestnut-winged Babbler, Sarawak (one collection).

DIAGNOSIS: *Myrsidea macronoi* is readily separated from *M. cheni* by the former having both sexes with only four setae on tergite I, greater development of the hypopharyngeal sclerites, and considerably fewer setae on sternite III; the male with a markedly different genital sac sclerite; and the female without any modified abdominal tergites and with more anal setae on both fringes. The presence of only four setae on tergite I, the degree of development of the hypopharyngeal sclerites, and details of the male genital sac sclerite clearly ally *M. macronoi* with *M. breviterga* Tandan and Clay, *M. meinertzhageni* Tandan and Clay, and *M. clamosae* Tandan and Clay, all from *Turdoides*. However, the females of these last three species have a markedly enlarged tergite I and both sexes lack a median gap in the tergal rows. Of these, *M. breviterga* appears closest to *M. macronoi*, but differences cited above clearly separate these species.

ETYMOLOGY: The name of this new species is derived from the generic name of the type host.

### *Myrsidea argentauris* Price, Arnold, and Bush, new species

(Figs. 11–14)

TYPE HOST: *Leiothrix argentauris* (Hodgson), the Silver-eared Mesia.

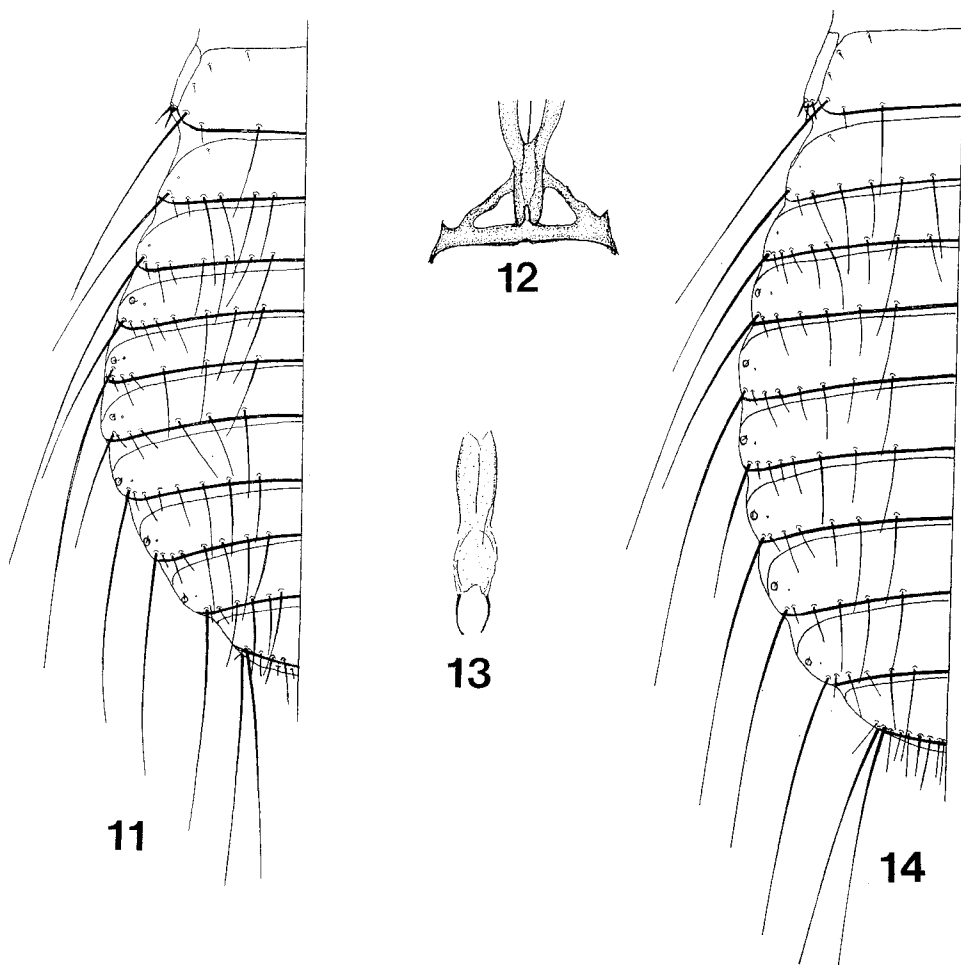
DESCRIPTION: **Male.** Hypopharyngeal sclerites reduced (Fig. 12). Metanotum and dorsal abdomen as in Fig. 11. Metanotal margin and metasternal plate each with 6 setae. Tergal setae: I, 12; II, 16; III–VIII, 14–15. Postspiracular setae extremely long on II, IV, and VI–VIII, shorter on I and III, shortest on V. Sternal setae: II, 22, each aster with 4; III, 22; IV–V, 42–43; VI, 38; VII, 28; VIII, 13. Genitalia much as in Fig. 4, but with sac sclerite as in Fig. 13. Dimensions: TW, 0.42; HL, 0.31; PW, 0.29; MW, 0.39; AWIV, 0.54; TL, 1.34; GL, 0.43.

**Female.** Hypopharynx as for male. Metanotum and dorsal abdomen as in Fig. 14. Metanotal margin and metasternal plate each with 6 setae. Tergal setae: I, 13–14; II, 15–18; III–VII, 13–16; VIII, 10–14; margin of last segment with 14–19 setae between very long setae. All tergites unmodified. Postspiracular setae as for male. Sternal setae: II, 22–26, each aster with 4, less often 3 or 5; III, 23–27; IV, 49–54; V, 49–60; VI, 47–49; VII, 24–32; subgenital plate with 10 marginal, 10 anterior setae. Anus with 37 dorsal fringe setae, 32 ventral. Dimensions: TW, 0.43–0.44; HL and PW, 0.29–0.32; MW, 0.43–0.46; AWIV, 0.59–0.65; TL, 1.53–1.69; ANW, 0.19–0.21.

TYPE MATERIAL: Holotype male, ex *L. argentauris*, **THAILAND:** Chiangmai, Doi Pha Hom Pok, 16 Dec. 1965, MAPS 3444 (OSU). Paratypes, all ex *L. argentauris*: one female, same as holotype; two females, same except 7 Dec. 1965, MAPS 2998 and 3001 (OSU).

DIAGNOSIS: Both sexes of *M. argentauris* are distinguished from the previous two species by having many more setae on tergite I, the extremely long postspiracular seta on VI similar to those on VII–VIII, and a row of medioposterior setae on the last segment. Additionally, the male has a uniquely different genital sac sclerite and more setae on tergite VIII. These features closely associate *M. argentauris* with *M. ananthakrishnani* Rai from *Liocichla phoenicea* (Gould). The most obvious differences involve both sexes of the latter with much more reduced hypopharyngeal sclerites and with eight marginal metanotal setae, and the male without a median gap in the tergal setal rows.

ETYMOLOGY: The name given to this new species is based on the specific name of the type host.



Figs. 11–14. *Myrsidea argentauris* n. sp. 11. Male metanotum and dorsal abdomen. 12. Male hypopharyngeal sclerites. 13. Male genital sac sclerite. 14. Female metanotum and dorsal abdomen.

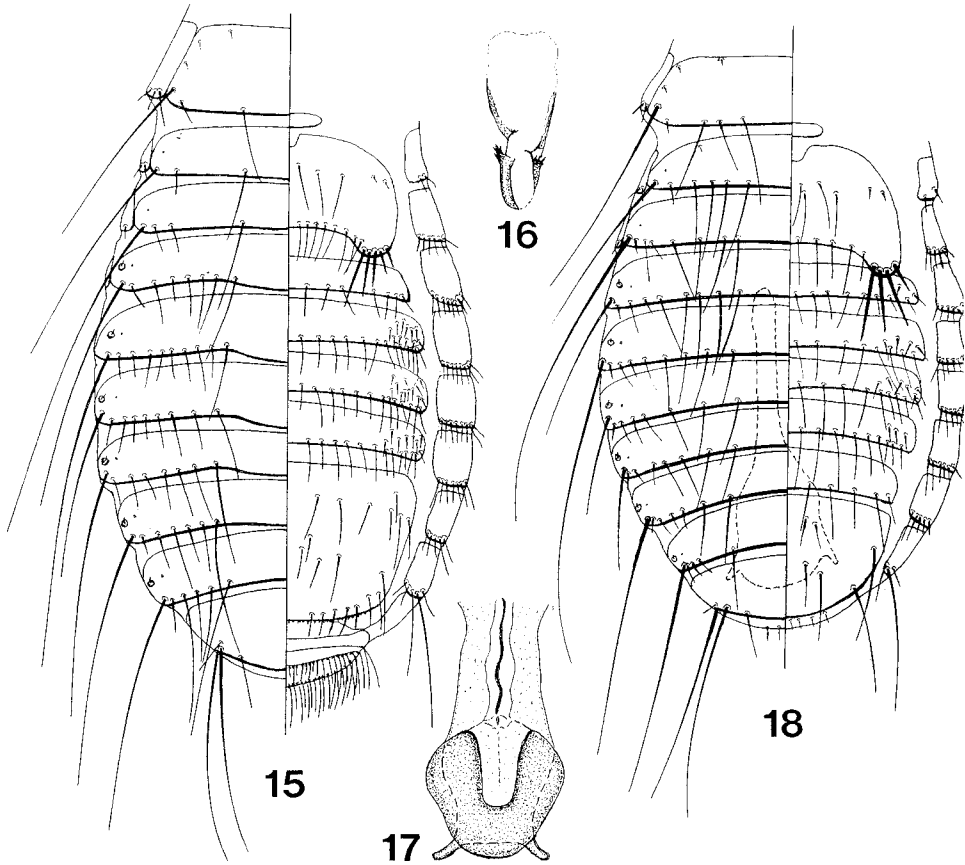
***Myrsidea dukguni* Price, Arnold, and Bush, new species**

(Fig. 15)

TYPE HOST: *Stachyris striolata* (S. Müller), the Spot-necked Babbler.

DESCRIPTION: **Male.** Unknown.

**Female.** Hypopharynx strongly developed, much as in Fig. 17. Metanotum and abdomen as in Fig. 15. Metanotal margin with 6 setae; metasternal plate with 4 setae. Tergal setae: I, 6; II, 9–11; III, 16–17; IV, 19; V, 17–18; VI, 15–16; VII, 14; VIII, 10–12. Tergites III–VII with slight medioposterior convexity. Postspiracular setae extremely long on II, IV, and VI–VIII, somewhat shorter on I, III, and V. Sternal setae: II, 26–28, each aster with 5; III, 14–16; IV–V, 46–52; VI, 40–42; VII, 14–16; subgenital plate with 13 marginal, 9–10 anterior setae. Anus with 32–33 dorsal fringe setae, 36–37 ventral. Dimensions: TW, 0.48–0.49; HL, 0.32–0.33; PW, 0.31; MW, 0.46–0.47; AWIV, 0.61–0.63; TL, 1.53–1.57; ANW, 0.22–0.23.



Figs. 15–18. 15. *Myrsidea dukguni* n. sp. Female metanotum and dorsoventral abdomen. 16–18. *Myrsidea falcatae* n. sp. 16. Male genital sac sclerite. 17. Male hypopharyngeal sclerites. 18. Male metanotum and dorsoventral abdomen.

**TYPE MATERIAL:** Holotype female, ex *S. striolata*, **CHINA:** Guangxi Province, Jin Xin County Provincial Nature Reserve, 23.12°N, 105.96°E, 20 Sept. 2004, P#80 (NMNH). Paratype: one female, same as holotype (UU).

**DIAGNOSIS:** The strongly developed hypopharyngeal sclerites easily set this species apart from the three above-described new species. Additionally it is separable on the basis of its five setae in each aster on sternite II, its larger dimensions, its modest modification of tergites III–VII, and its abdominal chaetotaxy. The chaetotaxy of tergite I for *M. dukguni* is unlike that of any *Myrsidea* from *Turdoides*; this separation is further supported by its strongly developed hypopharynx (Fig. 17 vs. Figs. 2, 7, or 12) and degree of metanotal and abdominal tergal modification. Only four *Myrsidea* species from *Garrulax* and *Pomatorhinus* have strongly developed hypopharyngeal sclerites. However, the lengths of the setae on tergite VIII, the lack of an enlargement of tergite I, and the presence of only six marginal metanotal setae will distinguish *M. dukguni* from them.

**ETYMOLOGY:** This species is named for Dukgun Kim, Department of Biology, University of Utah, Salt Lake City, in recognition of his work on cryptic coloration of lice.

*Myrsidea falcatae* Price, Arnold, and Bush, new species  
(Figs. 16–18)

TYPE HOST: *Ptilocichla falcata* Sharpe, the Falcated Wren-babbler.

DESCRIPTION: **Male.** Hypopharyngeal sclerites strongly developed (Fig. 17). Metanotum and abdomen as in Fig. 18. Metanotal margin with 10–11 setae; metasternal plate with 6 setae. Tergal setae: I, 12–13; II–VI, 15–20; VII, 14; VIII, 8–9. Postspiracular setae extremely long on II, IV, and VII–VIII, shorter on I and III, and shortest on V–VI. Sternal setae: II, 22, each aster with 4; III, 19–20; IV, 24–26; V, 31; VI, 25–26; VII, 9–10; VIII, 4–6. Genitalia with sac sclerite as in Fig. 16. Dimensions: TW, 0.42–0.43; HL, 0.30–0.31; PW, 0.29; MW, 0.39; AWIV, 0.49–0.50; TL, 1.29–1.33; GL, 0.39–0.41.

**Female.** Unknown.

TYPE MATERIAL: Holotype male, ex *P. falcata*, **PHILIPPINES:** Palawan, Kabigaan Aborlan, 7 Aug. 1964, H. E. McClure, H-0048 (OSU). Paratype: one male, same as holotype (OSU).

DIAGNOSIS: The strongly developed hypopharynx allies this species with *M. dukguni* and separates it from the first three described in this paper. However, even with *M. dukguni* based only on females and *M. falcatae* only on males, these species are clearly separable by *M. falcatae* having at least 10 setae on the metanotal margin, six metasternal plate setae instead of four, more setae on tergites I and II, only four setae in each aster, and shorter postspiracular setae on tergites V and VI. The number of setae on tergite I and the structure of the male genital sac sclerite will differentiate *M. falcatae* from any *Myrsidea* from *Turdoides*. The combination of the large number of setae on tergite I, the length of the central setae on tergite VIII, and details of the genital sac sclerite will separate *M. falcatae* from the four species of *Myrsidea* from *Garrulax* with the strongly developed hypopharyngeal sclerites. While we do not encourage descriptions of new species limited to a single sex, in this instance the differences between them are soundly based and also enable separation of them from previously described species.

ETYMOLOGY: The name of this new species is derived from the specific name of the type host.

#### Discussion

The avian family Timaliidae is large and includes 50 genera and 273 described species (Dickinson, 2003). Chewing lice, including those described herein, have been recorded from only 34, or 12%, of the species of Timaliidae. With such a small sampling of host taxa, it would be premature to attempt any speculation on how these parasites might reflect on host relationships.

#### Acknowledgments

The collection of lice in China was supported by the National Science Foundation 02-186 Biotic Survey and Inventories grant of A. Peterson, R. Brown, D. Clayton, and B. Lim.

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