



New species and new records of chewing lice (Phthiraptera: Amblycera and Ischnocera) from bulbuls (Passeriformes: Pycnonotidae) in Vietnam

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Abstract

Seven species of chewing lice (Insecta: Phthiraptera) were found on five species of bulbuls (Passeriformes: Pycnonotidae) in northern Vietnam. Three new species of the genera *Brueelia* and *Philopteroides* are described; they and their type hosts are: *Brueelia flavala* ex *Hemixos flavala* Blyth, 1845 *B. cucphuongensis* ex *Pycnonotus finlaysoni* Strickland, 1844 and *Philopteroides flavala* ex *Hemixos flavala* Blyth, 1845. First records of chewing lice from *Hemixos castanonotus* Swinhoe, 1870 and *Iole propinqua* (Oustalet, 1903), and a new host record for *Myrsidea ochracei* and *Sturnidoecus* sp. are also included.

Key words: Phthiraptera, lice, *Philopteroides*, *Brueelia*, *Myrsidea*, *Sturnidoecus*, new species, bulbuls, new records, Vietnam

Introduction

There are 446 species of passerine birds (Passeriformes) in Vietnam (Lepage 2011), with 151 of them known as hosts of 194 species of chewing lice (Insecta: Phthiraptera) belonging to 11 genera. However, there are only three species of chewing lice strictly recorded from Vietnam (Mey 2004; Sychra *et al.* 2009), with all the other 191 species known from neighbouring countries. Bulbuls (Passeriformes: Pycnonotidae) are 138 species of medium-sized short-necked passerines living in the Old World tropics, i.e. Africa, southern Asia, Madagascar and the islands of western Indian Ocean (Fishpool & Tobias 2005). Sixteen of 21 bulbul species occurring in Vietnam are known as hosts of 17 species in six genera of chewing lice (Price *et al.* 2003; Hellenthal & Price 2003; Mey 2004; Sychra *et al.* 2009), but only two among those 17 species of bulbul chewing lice were recorded from Vietnam, with the remaining 15 species recorded from neighboring countries where the same bird species live. Considering Vietnam bulbuls strictly, only two ischnoceran species were known up to now: *Philopteroides cucphuongensis* Mey, 2004 from the Cuc Phuong National Park, and *Brueelia alophoixi* Sychra, 2009 (in Sychra *et al.* 2009) from Bac Kan Province. The aim of this paper is to present new data on chewing lice found on bulbuls from northern Vietnam, including the description of three new species.

Material and methods

Wild passerines including bulbuls were examined in locations areas within the Cuc Phuong National Park in northern Vietnam. The first location is situated in the forest around the tourist centre and ranger station in the centre of the National Park, at 350 m above sea level (20°21' N 105°35' E); the second is in the botanical garden on the

southeastern part of the National Park, at 140 m above sea level (20°15' N 105°42' E). Between 1 and 8 February 2010, birds were captured alive, examined and their chewing lice collected as described by Sychra *et al.* (2009). Determinations of bird species were based on Robson (2007) and their taxonomy follows Clements *et al.* (2010). For the identification of lice were primarily used papers by Uchida (1948), Hellenthal & Price (2003), Mey (2004) and Sychra *et al.* (2009). Also, chewing lice belonging to the genera *Brueelia*, *Philopteroides* and *Sturnidoecus* were compared with all species of these genera known from birds which possibly occur in Vietnam according to Lepage (2011). For *Brueelia* species, we used these papers: Piaget (1880), Ansari (1947, 1955, 1956a, 1956b, 1956c, 1957), Mey (1982), and Złotorzycka (1997); for *Philopteroides* species: Giebel (1874), Uchida (1948), Tandan (1955) and Mey (2004); and for *Sturnidoecus* species: Piaget (1880), Ansari (1955, 1968) and Mey (1989), although, the latter could not be determined to species because only a single female was found in our study. In the following descriptions, all measurements are in millimeters. Abbreviations for the features measured are as follows: PAW, preantennal width from the bases of the conii; FW, frons width; PAL, preantennal length; LHCL, lateral head carina length (according to Price & Hellenthal 1998); DAPW, dorsoanterior head plate width; DAPL, dorsoanterior head plate length; TW, temple width; POL, postantennal length; HL, head length; PW, prothorax width; ML, metathorax length; MW, metathorax width; AWV, abdomen width at level of segment V; AL, abdomen length; TL, total length; GW, male genitalia width. To facilitate the identification of the morphological features measured, all measurements are indicated with arrows on Fig. 1.

To simplify the text descriptions of the new species of *Brueelia*, the following fixed abdominal setae are named and characterized according to Cicchino & Castro (1996): a) *Postspiracular seta*: present on both sexes on tergites IV–VII (rarely absent on one side of IV). b) *Postspiracular accessory seta*: absent in females; present on tergites IV – VII of males. c) *Sutural seta*: present on both sexes on tergites II–VIII.

The descriptions of the new species are attributed to the first two authors of this paper. The types of the new species described in this paper are deposited in the Department of Zoological Museum of the Institute for Ecology and Biological Resources, Vietnamese Academy of Science and Technology, Hanoi, Vietnam (IEBR VAST); in the Moravian Museum, Brno, Czech Republic (MMBC) and in the Natural History Museum, London, United Kingdom (BMNH).

TABLE 1. List of bulbuls (Aves: Passeriformes: Pycnonotidae) as hosts of chewing lice found in Cuc Phuong National Park, Vietnam in 2010.

Host ¹	Family/Species of chewing lice	♂	♀	Nymphs
<i>Hemixos castanonotus</i> Swinhoe, 1870 Chestnut Bulbul	Philopteridae <i>Brueelia flavala</i> sp. nov.	1	–	2
	Philopteridae <i>Philopteroides flavala</i> sp. nov.	1	5	17
<i>Hemixos flavala</i> Blyth, 1845 Ashy Bulbul	Philopteridae <i>Brueelia flavala</i> sp. nov.	1	6	20
	Philopteridae <i>Philopteroides flavala</i> sp. nov.	3	6	5
	Philopteridae <i>Brueelia cucphuongensis</i> sp. nov.	1	1	–
<i>Iole propinqua</i> (Oustalet, 1903) Grey-eyed Bulbul	Menoponidae <i>*Myrsidea ochracei</i> Hellenthal and Price, 2003	1	6	4
	Philopteridae <i>*Sturnidoecus</i> sp.	–	1	–
	Philopteridae <i>Brueelia cucphuongensis</i> sp. nov.	3	2	1
<i>Pycnonotus finlaysoni</i> Strickland, 1844 Stripe-throated Bulbul	Philopteridae <i>Philopteroides cucphuongensis</i> Mey, 2004	–	1	1
	Philopteridae <i>Brueelia cucphuongensis</i> sp. nov.	2	1	1
<i>Pycnonotus flaviventris</i> (Tickell, 1833) Black-crested Bulbul	Menoponidae <i>*Myrsidea plumosi</i> Hellenthal and Price, 2003	1	–	2

¹only one individual of each bird species was examined. *new louse-host association.

Results

Five birds of five species from the family Pycnonotidae were examined. All of them were parasitised by chewing lice. Seven species within four genera of chewing lice were determined (Table 1). Three chewing lice species were identified as previously described species – *Philopteroides cucphuongensis* Mey, 2004, *Myrsidea ochracei* Hellenenthal & Price, 2003 and *M. plumosi* Hellenenthal & Price, 2003. Three other represent new species which are described below. One record of the genus *Sturnidoecus* was determined at the generic level only, because it was represented by one female only.

Philopteroides flavala Najer & Sychra, sp. nov.

(Figs. 1, 2 A–G, 5 A–B)

Type host: *Hemixos flavala* Blyth, 1845, the Ashy Bulbul.

Male (n = 4). Habitus as in Figs. 2A and 5A. Head longer than wide, the preantennal region longer than the postantennal, with concave lateral margin. Central sclerotization placed in the concave hyaline margin of head with somewhat enlarged and convex (Figs. 2B and 2F). Dorsal anterior head plate with concave anterior margin, ventral one with a little concave to almost straight anterior margin as in Figs. 1, 2B and 2F. Metanotum with 6–8 setae on each side including one minute seta associated with long seta in each lateral end of the metanotum. Metapleurite with one short seta. Tergal setae: II, 9–10 (plus anterior pair); III, 10–12; IV, 10; V, 9–11; VI, 10–11; VII, 10–11; VIII, 6–9; IX, 2; sternal setae: II, 5–8; III–IV, 7–8; V, 7–10; VI, 9–12 including 2 short spine-like setae on each sternite (Fig. 2C). Sternite II very reduced. Sternite II–III and the posterior part of male subgenital plate with small rounded lateral sclerites, all other sternites entire without lateral sclerites (Fig. 2C); subgenital plate as in Fig. 2C, with 4 long setae. Pleural setae: II–III, 0; IV with 2 medium long setae on each pleurite; V, 2 and VI–VIII, 3, longer than setae on pleurites IV–V. Male genitalia as in Figs. 1 and 2D with stout parameres with short latero-anterior processes and rounded mesomere with small posterior lobe on each side. Dimensions: PAW, 0.31–0.32; FW, 0.13–0.15; PAL, 0.25–0.26; LHCL, 0.13–0.14; DAPW, 0.11–0.12; DAPL, 0.23–0.25; TW, 0.40–0.42; POL, 0.15–0.17; HL, 0.46–0.49; PW, 0.25–0.31; ML, 0.14–0.16; MW, 0.36–0.42; AWV, 0.51–0.62; AL, 0.50–0.61; GW, 0.09; TL, 1.24–1.36.

Female (n = 11). General habitus as in Figs. 1 and 5B. Most features as in male (Fig. 2E). Metanotum with 7–9 setae on each side including one minute seta associated with long seta in each lateral end of the metanotum. Tergal setae: II, 9–11 (plus anterior pair); III, 10–13; IV, 12–13; V, 10–14; VI, 11–14; VII, 10–12; VIII, 5–8; IX, 2; sternal setae: II, 6–9; III–V, 8–11; VI, 10–11, including 2 short spine-like setae on each sternite (Fig. 2G). Numbers of pleural setae as in male, setae on each pleurite IV and V longer, approximately the same length as setae on tergite IV and pleural setae on VI. Abdominal sternites with small rounded lateral sclerites, with relatively large gap between them and sternal plates. Subgenital plate as in Fig. 2G, with 4 long setae placed behind the posterior margin of the plate. Vulval margin with groups of 6–7 setae on each side and 6–9 minute setae in the central part. Dimensions: PAW, 0.34–0.38; FW, 0.13–0.16; PAL, 0.28–0.29; LHCL, 0.14–0.20; DAPW, 0.12–0.13; DAPL, 0.24–0.28; TW, 0.45–0.48; POL, 0.17–0.20; HL, 0.50–0.55; PW, 0.29–0.34; ML, 0.16–0.20; MW, 0.41–0.48; AWV, 0.65–0.71; AL, 0.67–0.85; TL, 1.51–1.72.

Type material. Holotype male ex *Hemixos flavala* Blyth, 1845, VIETNAM: Botanical Garden, Cuc Phuong, Province of Ninh Binh (20°15' N 105°42' E), 7 February 2010, coll. I. Literak, in IEBR VAST (O.Sychra V24). Paratypes: 1 female with the same data as holotype in IEBR VAST (O. Sychra V24); 1 male, 1 female with the same data as holotype in MMBC (O. Sychra V25); 1 male, 1 female with the same data as holotype in BMNH (O. Sychra V26); 1 male, 1 female ex *Hemixos castanonotus* Swinhoe, 1870, other data as in holotype, in IEBR VAST (O.Sychra V27); 2 females with the same data but in MMBC (O.Sychra V28) and 2 females with the same data but in BMNH (O.Sychra V29).

Remarks. Although Clay (1972) mentioned *Philopterus* sp. from *Hemixos flavala* (= *Hypsipetes flavulus*), this is the first determination of a chewing louse from this host to the species level, and the first record of chewing lice from *Hemixos castanonotus*. There are 5 known species of *Philopteroides* in Southeast Asia (Giebel 1874; Uchida 1948; Tandan 1955; Mey 2004); *Philopteroides flavala* sp. nov. is morphologically closest to *Philopteroides cucphuongensis* Mey, 2004, with these two species differing greatly from the remaining, as shown by Mey (2004).

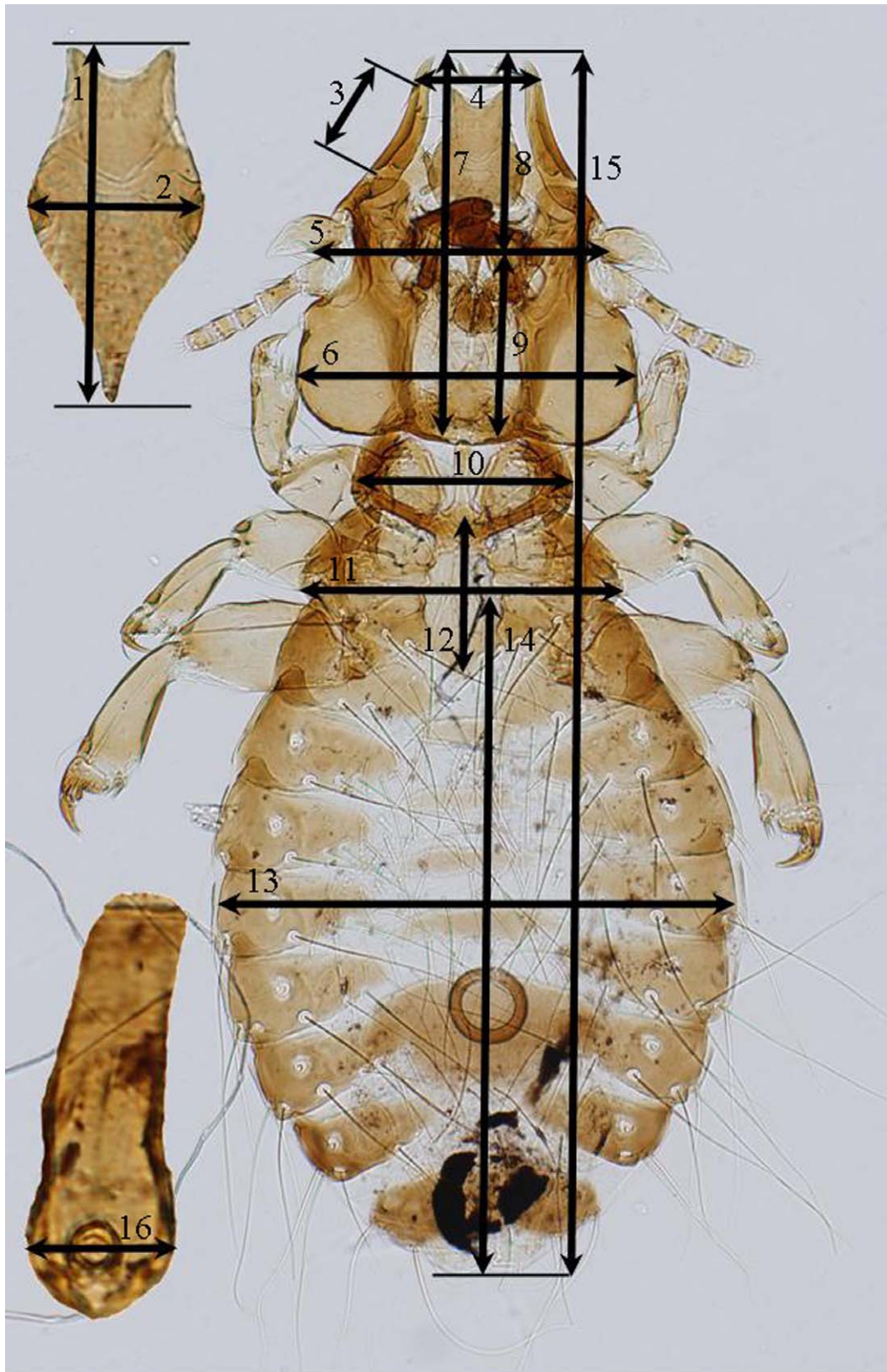


FIGURE 1. Female and male genitalia of *Philopterooides flavala* showing the morphological measurements taken for this study. Explanations: 1, DAPL, dorsoanterior head plate length; 2, DAPW, dorsoanterior head plate width, taken at the widest point; 3, LHCL, lateral head carina length; 4, FW, frons width; 5, PAW, preantennal width from the bases of the conic; 6, TW, temple width, taken at the widest point; 7, HL, head length; 8, PAL, preantennal length; 9, POL, postantennal length; 10, PW, prothorax width; 11, MW, metathorax width; 12, ML, metathorax length; 13, AWV, abdomen width, taken at the widest point; 14, AL, abdomen length; 15, TL, total length; 16, GW, male genitalia width, taken at the widest point.

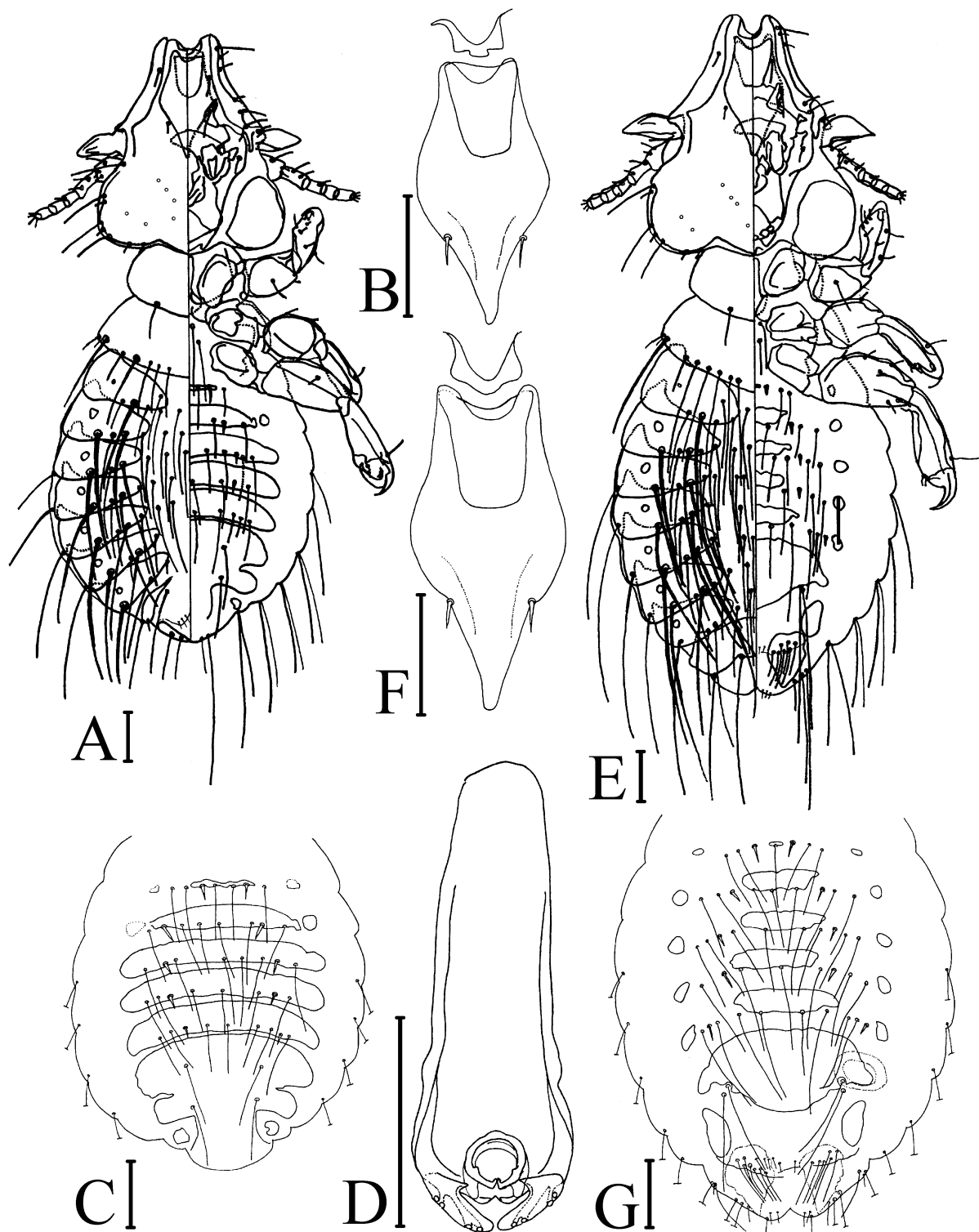


FIGURE 2. *Philopteroides flavala*. A, Male. B, Dorsal and ventral anterior head plate with the anterior hyaline margin of male. C, Male sternites and subgenital plate. D, Male genitalia. E, Female. F, Dorsal and ventral anterior head plate with the anterior hyaline margin of female. G, Female sternites and subgenital plate. Scales 0.10 mm for all figures. For Figs. A and E dorsal side on left, ventral side on right.

Philopteroides flavala is the second species of *Philopteroides* known from the passerine family Pycnonotidae, as well as the second species of *Philopteroides* found in Vietnam, with *P. cucphuongensis* being the first in both cases. The new species can be morphologically distinguished from the latter by the following features: (1) an

unique shape of male genitalia with stout parameres with short latero-anterior processes and rounded mesomere with a small posterior lobe on each side; (2) smaller median sternites and large gaps between them and the lateral sclerites in females; (3) relatively large dimensions, compared to *P. cucphuongensis*.

Etymology. The species epithet derives from the species name of the type host.

***Brueelia flavala* Najer & Sychra, sp. nov.**

(Figs. 3 A–F, 5 C–D)

Type host: *Hemixos flavala* Blyth, 1845, the Ashy Bulbul

Male (n = 2) (Figs. 3A and 5C). Preantennal region as long as the postantennal, with straight anterior margin. The marginal carina with lateral interruptions and complete medial interruptions formed by a pair of sutures originating in the anterior hyaline margin, sutures run along either side of a moderately sclerotized dorsal anterior head plate, but leave the plate continuous with the remainder of the head's dorsal sclerotization (type “e” in Johnson *et al.* 2002; Fig. 3B). Metanotum with 3–5 setae on each side of posterior margin. Metapleurite with two medium long and one short seta.

Tergal setae: postspiracular accessory setae: II–III, 0; IV–VI, 0–1; VII, 1–2 on each side of abdominal segments; sutural setae: II–VII, medium long to long extending through next two segments; VIII, short. Tergite VIII with one short seta in each postero-lateral corner and 1–2 short tergo posterior setae mediad of each spiracle (Fig. 3C), on each side; tergite IX with 2 long and 4–6 short setae, on each side; terminal dorsal sclerite with 4 setae (Fig. 3C). Abdominal sterna II–VI with a pair of short lateral setae. Pleural plates markedly dark brown, contrasting with the pale rest of body. Paratergal setae: II–III, 0; IV–V, 2; VI–VIII, 3. Male genitalia as in Fig. 3D, with quite short and stout parameres with enlarged rounded base, endomerical complex conspicuously Y-shaped with serrated anterior parts and small rounded area of sclerotization in its central part. Dimensions: PAW, 0.29–0.30; PAL, 0.17; TW, 0.35–0.36; POL, 0.16–0.18; HL, 0.34–0.35; PW, 0.21–0.22; ML, 0.14–0.15; MW, 0.31–0.32; AWV, 0.47; AL, 0.73–0.76; GW, 0.07; TL, 1.30–1.32.

Female (n = 6) (Figs. 3E and 5D). Generally as for male. Tergite VIII with one short seta in each postero-lateral corner and 1–2 short tergo posterior setae mediad of each spiracle; tergite IX with 2 long and 2 short setae on each side, as in Fig. 3E. Paratergal setae: II–III, 0; IV, 1; V, 2; VI–VIII, 3. Ventral terminalia as in Fig. 3F; subgenital plate wide slightly convex posteriorly, with 12–18 spine-like and 4–6 fine minute setae. Dimensions: PAW, 0.31–0.34; PAL, 0.16–0.18; TW, 0.39–0.40; POL, 0.17–0.18; HL, 0.37–0.39; PW, 0.23–0.24; ML, 0.14–0.16; MW, 0.34–0.36; AWV, 0.50–0.56; AL, 0.95–1.04; TL, 1.60–1.68.

Type material. Holotype male ex *Hemixos flavala*, VIETNAM: Botanical Garden, Cuc Phuong, Province of Ninh Binh (20°15' N 105°42' E), 7 February 2010, coll. I. Literak. Deposited in IEBR VAST (O. Sychra V16). Paratypes: 3 females with the same data as holotype in IEBR VAST (O. Sychra V16 and V17); 2 females with the same data as holotype in MMBC (O. Sychra V18); 1 male ex *Hemixos castanonotus*, other data as in holotype, in MMBC (O. Sychra V19).

Remarks. Together with *B. alophoixi* Sychra, 2009 and *B. guldum* Ansari, 1955, *Brueelia flavala* is the third species of *Brueelia* known from the passerine family Pycnonotidae, and the second species known from Vietnam. There are 40 other species of *Brueelia* known from passerine and non-passerine birds (Price *et al.* 2003), which may potentially occur in Vietnam, but so far are known from other countries. *Brueelia flavala* can be separated from all of them by the following combinations of features: (1) different configuration of frontal part of head, especially by a dorsal anterior head plate that is almost completely encircled by sutures (Fig. 3B); (2) interrupted marginal carina on its lateral margin; (3) the presence of sutural setae on all tergites II–VIII; (4) noticeably dark pleurites in comparison of the rest of body; (5) characteristic male genitalia with short and stout parameres and a Y-shaped endomerical complex.

Etymology. The species epithet derives from the species name of the type host.

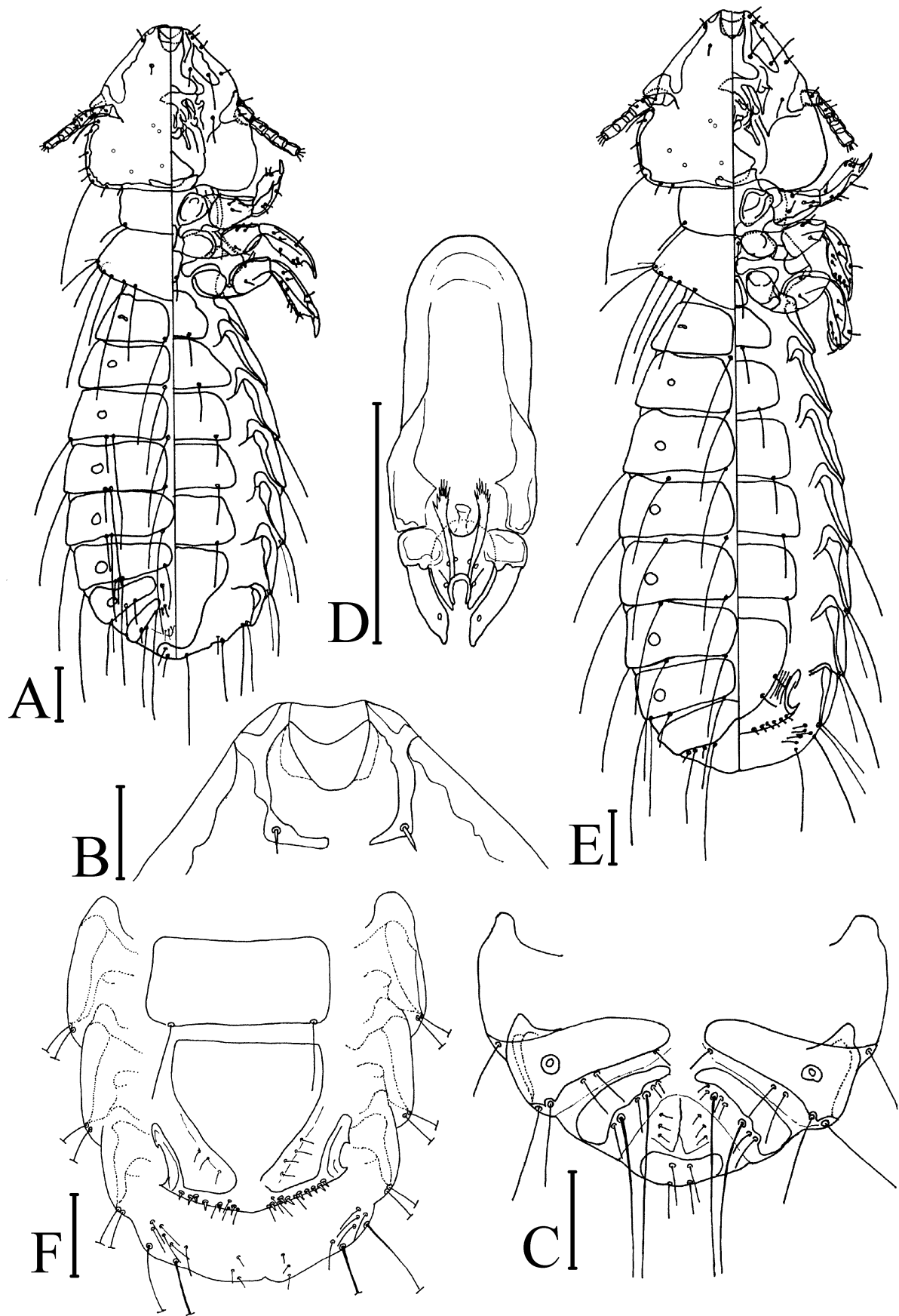


FIGURE 3. *Brueelia flavala*. A, Male. B, Dorso-anterior part of head of male with dorsal and ventral anterior head plate. C, Male dorsal terminalia. D, Male genitalia. E, Female. F, Female ventral terminalia. Scales 0.10 mm (Figs. A, C–F), 0.05 mm (Fig. B). For Figs. A and E dorsal side on left, ventral side on right.

***Brueelia cucphuongensis* Najer & Sychra, sp. nov.**

(Figs. 4 A–D, 5 E–F)

Type host: *Pycnonotus finlaysoni* Strickland, 1844, the Stripe-throated Bulbul

Male (n = 6) (Figs. 4A and 5E). Preantennal region as long as the postantennal, the anterior margin straight or slightly concave. Metanotum with 3–5 setae on each side of posterior margin. Metapleurite with two medium long and one short seta.

Tergal setae: postspiracular accessory setae: II–IV, 0; V–VII, 0–1 on each side of abdominal segments; sutural setae: II–VIII, short not extending beyond the posterior margin of next segment. Tergite VIII with one short seta in each postero-lateral corner and one short tergo-posterior setae mediad of each spiracle; tergite IX with 2 long and 3–4 short setae; terminal dorsal sclerite with 5–6 setae (Fig. 4A). Abdominal sterna II–VI with a pair of short lateral setae, on sternite II shifted medially. Sternites unicolour light brown, but quite darker than the pale membrane between sternites and pleurites (Fig. 5E). Paratergal setae: II–III, 0; IV–V, 1–2; VI–VIII, 3. Male genitalia as in Fig. 4B, with thin margins and somewhat bigger rounded area between the arms of Y-shaped endomeral plate, compared to *B. flavala*. Dimensions: PAW, 0.26–0.28; PAL, 0.14–0.16; TW, 0.32–0.34; POL, 0.15–0.17; HL, 0.31–0.32; PW, 0.19–0.20; ML, 0.11–0.13; MW, 0.27–0.28; AWV, 0.40–0.42; AL, 0.68–0.72; GW, 0.06–0.07; TL, 1.22–1.25.

Female (n = 4) (Figs. 4C and 5F). Generally as for male. Tergite VIII with one short seta in each postero-lateral corner and one short tergo-posterior setae mediad of each spiracle; tergite IX with 2 long and 2 short setae on each side. Paratergal setae: II–III, 0; IV, 1; V, 2; VI–VIII, 3. Ventral terminalia as in Fig. 4D; subgenital plate wide slightly convex posteriorly, with 10–11 spine-like and 6–8 fine minute setae. Dimensions: PAW, 0.29–0.32; PAL, 0.15–0.16; TW, 0.35–0.38; POL, 0.16–0.19; HL, 0.34–0.36; PW, 0.21–0.23; ML, 0.13–0.15; MW, 0.31–0.32; AWV, 0.48–0.50; AL, 0.96–1.03; TL, 1.53–1.64.

Type material. Holotype male ex *Pycnonotus finlaysoni*, VIETNAM: the area surrounding the tourist centre and ranger station in the centre of Cuc Phuong National Park, Cuc Phuong, Province of Ninh Binh (20°15' N 105°42' E), 4 February 2010, coll. I. Literak. Deposited in IEBR VAST (O.Sychra V20). Paratypes: 1 female with the same data as holotype in IEBR VAST (O.Sychra V20); 1 male, 1 females with the same data as holotype in MMBC (O. Sychra V21); 1 male, 1 female ex *Pycnonotus flaviventris* (Tickell, 1833), other data as in holotype, in IEBR VAST (O. Sychra V22); 1 male, 1 female ex *Iole propinqua* (Oustalet, 1903), other data as in holotype, in IEBR VAST (O. Sychra V23).

Remarks. This is the first record of a chewing louse species from *Iole propinqua*. *Brueelia cucphuongensis* is morphologically similar to *B. flavala*, but it can be separated from the latter, as well as from all other *Brueelia*, which may occur in Vietnam (Price *et al.* 2003), by the following features: (1) lighter pleurites and markedly darker sternites than in *B. flavala*; (2) male genitalia with thin margins and somewhat bigger rounded area between the arms of the Y-shaped endomeral plate; (3) in the male, a short sutural setae on II–VII not reaching the posterior margin of the next tergite and (4) smaller dimensions.

Etymology. The species epithet derives from the name of the Cuc Phuong National Park, situated in northern Vietnam, also the type locality of this new louse species.

Discussion

In this study, chewing lice of the genera *Myrsidea*, *Brueelia*, *Philopteroides*, and *Sturnidoecus* were identified from bulbuls of three genera: *Hemixos*, *Iole* and *Pycnonotus*. There are 8 species of *Sturnidoecus* known from birds of the passerine family Sturnidae (Price *et al.* 2003), which may occur in Vietnam. The single specimen of *Sturnidoecus* found in this study is the first record of this genus in Vietnam, as well as the first record from the passerine family Pycnonotidae. However, being a female, only the genus could be accurately determined, as males are needed for a species identification.

Notwithstanding the small number of birds examined, we are able to record chewing lice from *Hemixos castanonotus* and *Iole propinqua* for the first time, we record a new host for *Myrsidea ochracei*, i.e. *Iole propinqua*, and include descriptions of three new species that were found on five species of bulbuls, representing almost a quarter of the species occurring in Vietnam.

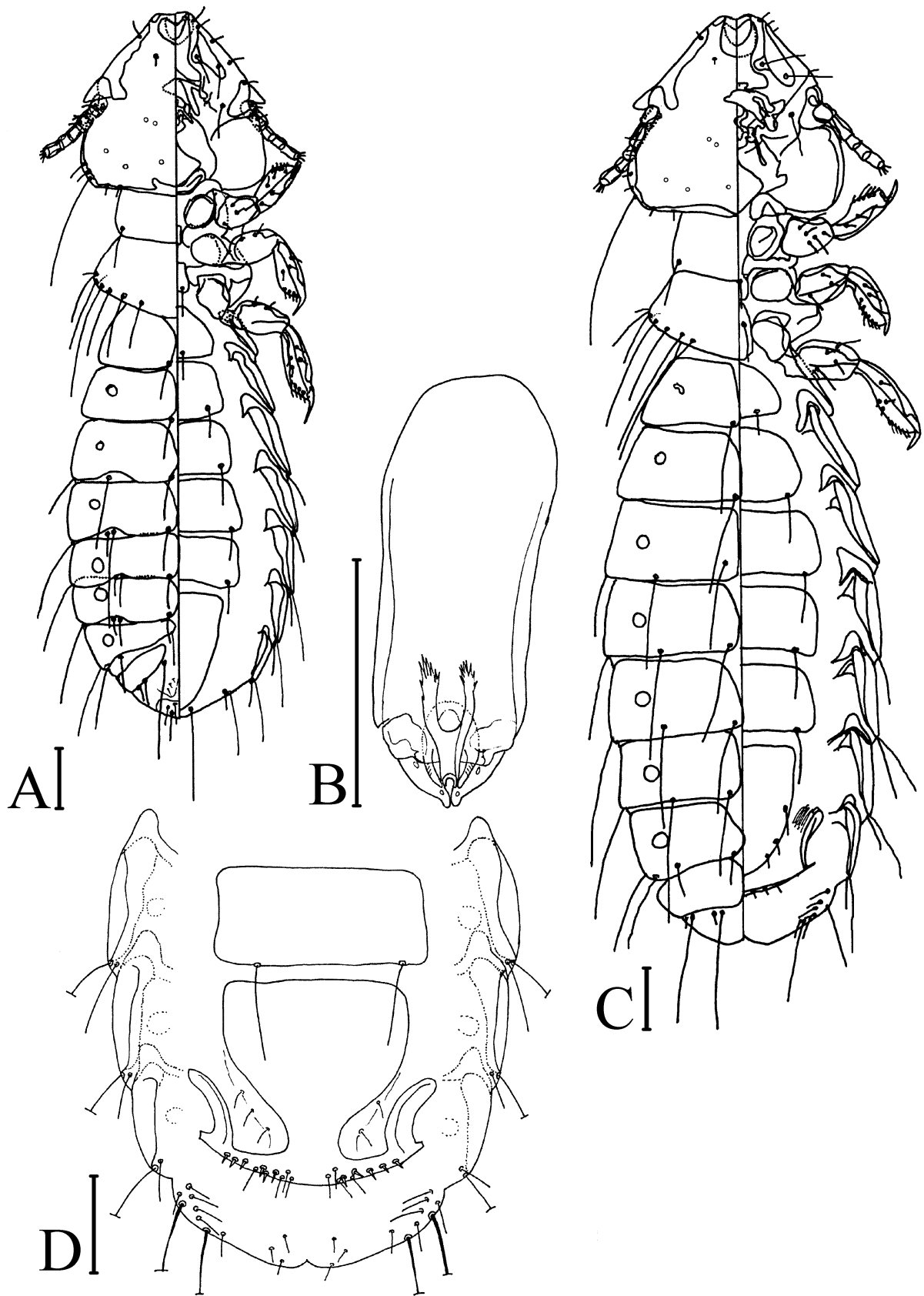


FIGURE 4. *Brueelia cucphuongensis*. A, Male. B, Male genitalia. C, Female. D, Female ventral terminalia. Scales 0.10 mm for all figures. For Figs. A and C dorsal side on left, ventral side on right.

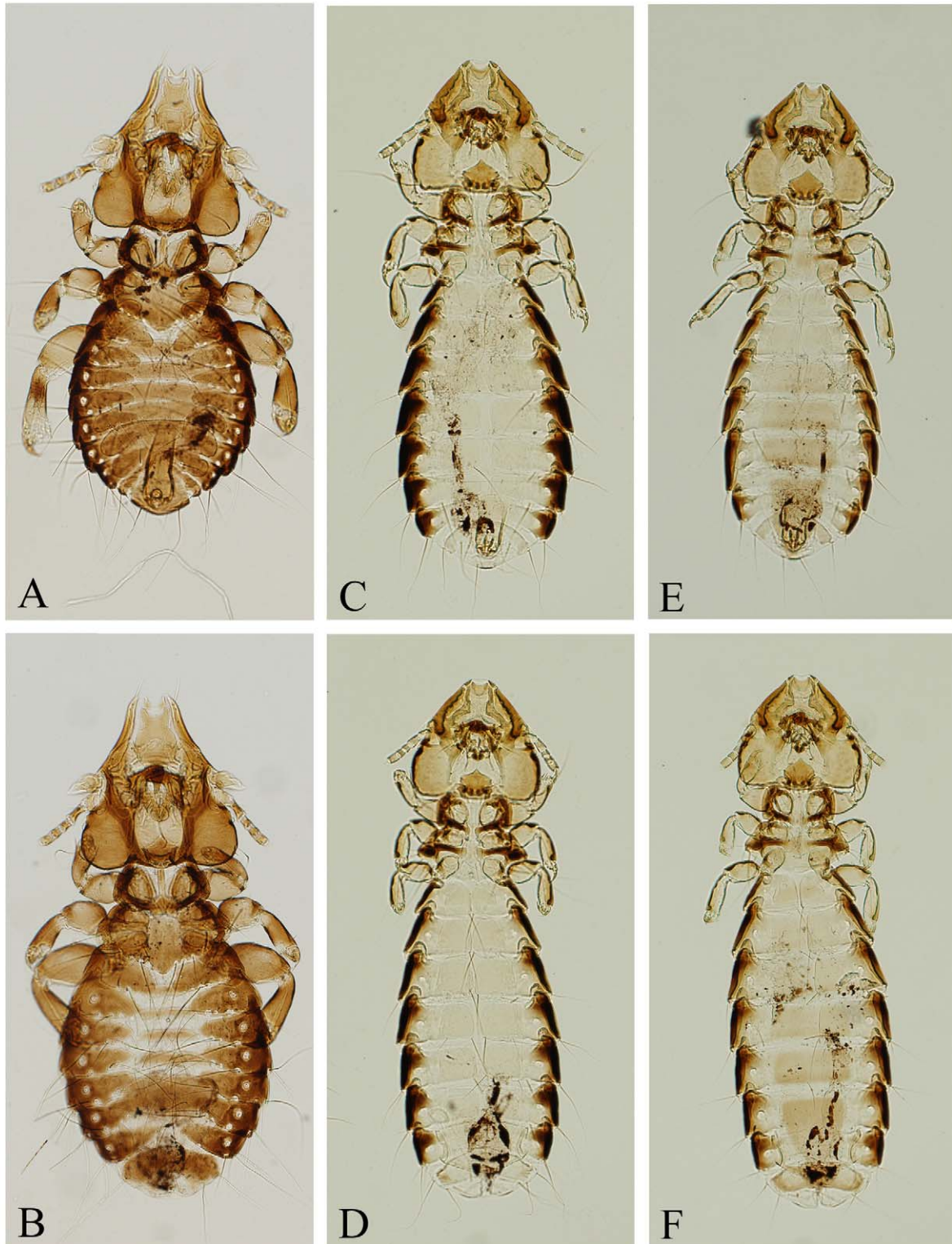


FIGURE 5. *Philopterooides flavala*. A, Holotype male. B, Paratype female. *Brueelia flavala*. C, Holotype male. D, Paratype female. *Brueelia cucphuongensis*. E, Holotype male. F, Paratype female.

Chewing lice of the genus *Brueelia* seem to be relatively host-specific. All currently recognized species of *Brueelia* are restricted to one or, much less often, a few host species (Price *et al.* 2003). This fact is interesting if we consider that several species of *Brueelia* are known to use other arthropods, especially louse-flies (Hippoboscidae), to colonize new hosts in a process called phoresis (Keirans 1975). This type of louse transferral is largely non-host

specific. In their DNA-based analysis of co-evolutionary relationships, Johnson *et al.* (2002) found that the phylogeny of some species of the louse genus *Brueelia* does not reflect that of their hosts. The reasons given by the authors are phoresis and the chewing lice ability to adapt to new hosts. Our finding of *B. flavala* on two different hosts and *B. cucphuongensis* on three hosts may be an example of such a scenario. Although the hosts of *B. flavala*: *Hemixos flavala* and *H. castanonotus* are closely related and form a superspecies with *H. cinereus* (Blyth, 1845), and are all often treated as conspecific (Fishpool & Tobias 2005), the hosts of *B. cucphuongensis*, bulbuls of the genera *Pycnonotus* and *Iole*, are not closely related (Pasquet *et al.* 2001). Weckstein (2004) and Bueter *et al.* (2009) supported the hypothesis that sympatry or syntopy of hosts may provide an opportunity for lice to switch hosts. Moreover, Bush & Clayton (2006) indicated that host switching is most likely between hosts of similar body size. Hosts of *B. cucphuongensis* – *P. finlaysoni*, *P. flaviventris* and *I. propinqua* are approximately of similar body size (Fishpool & Tobias 2005). On the other hand, for example, *Alophoixus pallidus* (Swinhoe, 1870), a bird with larger body size (Fishpool & Tobias 2005) that is the sister taxon to the genus *Iole* (Pasquet *et al.* 2001), harbors a different species of *Brueelia* (Sychra *et al.* 2009) although it is sympatric with the aforementioned bulbuls. This example further supports that hypothesis.

The finding of *Myrsidea plumosi* on *Pycnonotus flaviventris* would appear to be a new parasite-host association (Hellenthal & Price 2003) but, actually, it is not. This bird species forms a superspecies along with *P. dispar* (Horsfield, 1821), *P. gularis* (Gould, 1836), *P. melanicterus* (J. F. Gmelin, 1789) and *P. montis* (Sharpe, 1879), and have often been treated as conspecific with *P. melanicterus* (see Fishpool & Tobias 2005; Robson 2007). According to current view, *P. melanicterus* “sensu stricto” occurs only on Sri Lanka (Fishpool & Tobias 2005; Clements *et al.* 2010). Since Hellenthal & Price (2003) record *M. plumosi* on *P. melanicterus* (“sensu lato”) from Thailand, their host is actually *P. flaviventris* not *P. melanicterus*. Our finding confirms this parasite-host association.

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