



Twelve new species of *Priceiella* (Phthiraptera: Ischnocera: Philopteridae) from Old World babblers, with keys to species of two subgenera and checklists of species for the genus

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Abstract

Twelve new species of chewing lice in the genus *Priceiella* Gustafsson & Bush, 2017, are described from Old World “babblers” (Leiothrichidae, Paradoxornithiidae, Pellorneidae and Timaliidae). Eight species belong to the subgenus *Thescelovora* Gustafsson & Bush, 2017: *Priceiella* (*Thescelovora*) *calicola* n. sp. from *Turdinus crispifrons crispifrons*; *Priceiella* (*Thescelovora*) *fuscicaena* n. sp. from *Malacopteron magnum magnum* and *Malacopteron cinereum cinereum*; *Priceiella* (*Thescelovora*) *orichalca* n. sp. from *Turdinus brevicaudatus leucostictus* and four other host species; *Priceiella* (*Thescelovora*) *chanthaburiana* n. sp. from *Megapomatorhinus hypoleucos tickelli* and *Pomatorhinus schisticeps klossi*; *Priceiella* (*Thescelovora*) *macrocephala* n. sp. from *Megapomatorhinus hypoleucos wrayi*; *Priceiella* (*Thescelovora*) *coleyae* n. sp. ex *Stachyris striolata tonkinensis*; *Priceiella* (*Thescelovora*) *austini* n. sp. ex *Pomatorhinus ruficollis intermedius*; and *Priceiella* (*Thescelovora*) *ornata* n. sp. ex *Psittiparus gularis fokiensis*. The remaining four species belong to the subgenus *Camurnirmus* Gustafsson & Bush, 2017: *Priceiella* (*Camurnirmus*) *najeri* n. sp. from *Garrulax monileger stuarti* and three other hosts; *Priceiella* (*Camurnirmus*) *bohseae* n. sp. from *Garrulax strepitans*; *Priceiella* (*Camurnirmus*) *lindquistae* n. sp. ex *Ianthocinclia chinensis chinensis*; *Priceiella* (*Camurnirmus*) *sonorae* n. sp. ex *Garrulax maesi maesi*. We re-describe and illustrate *Priceiella* (*Camurnirmus*) *rhinocichlae* (Eichler, 1957). Keys to species of two subgenera, a comprehensive checklist of all the species of *Priceiella*, and a host-lice list are provided.

Key words: Phthiraptera, Ischnocera, Philopteridae, chewing lice, *Brueelia*-complex, *Priceiella*, *Camurnirmus*, *Thescelovora*, Leiothrichidae, Paradoxornithiidae, Pellorneidae, Timaliidae, new species

Introduction

The radiation of passeriform birds loosely referred to as “babblers” is almost exclusively restricted to the Old World. The taxonomy of babblers has fluctuated considerably in recent year but the core members of this assemblage include the laughing thrushes (Leiothrichidae), ground-babblers (Pellorneidae) and the tree- and scimitar-babblers (Timaliidae) (Cibois 2003; Gelang *et al.* 2008; Moyle *et al.* 2012). In addition, some genera that traditionally have been considered babblers have been moved to more distantly related groups (Reddy & Cracraft 2007; Oliveros *et al.* 2012). In the broad sense, babblers include over 250 species in approximately 50 genera (Moyle *et al.* 2012; Clements *et al.* 2016).

Despite that diversity, few species of chewing lice (Phthiraptera: Ischnocera) have been described from babblers (Price *et al.* 2003). Most of the louse species known from babblers belong to the *Brueelia*-complex (Ansari 1947, 1955, 1956; Eichler 1957; Sychra *et al.* 2009; Najer *et al.* 2012, 2014; Gustafsson & Bush 2017). Gustafsson & Bush (2017) recognized five genera of lice in the *Brueelia*-complex with species parasitic on babblers: *Brueelia* s. str. Kéler, 1936 and *Guimaraesiella* Eichler, 1949 (which also occur on many other passerine families), as well as *Ceratocista* Gustafsson & Bush, 2017, *Resartor* Gustafsson & Bush, 2017 and *Priceiella* Gustafsson & Bush, 2017, which are largely restricted to Old World babblers (families Leiothrichidae, Paradoxornithiidae, Pellorneidae, Timaliidae).

Gustafsson & Bush (2017) separated the species of the genus *Priceiella* into four subgenera based primarily on

characters of the male genitalia and abdominal chaetotaxy, as follows: *Priceiella* s. str., *Camurnirmus* Gustafsson & Bush, 2017, *Thescelovora* Gustafsson & Bush, 2017 and *Torosinirmus* Gustafsson & Bush, 2017. Species of the subgenus *Thescelovora* are known from members of the Pellorneidae and the crested jay, whereas the other three subgenera are known from host species placed in the Leiothrichidae. The subgenus *Torosinirmus* is extremely host specific and only associated with babblers of the genus *Turdoides* Cretzschmar, 1826. This paper focuses on species of the subgenera *Thescelovora* and *Camurnirmus*, which occur exclusively on babblers, with one exception: *Priceiella* (*Thescelovora*) *alliocephala* Gustafsson & Bush, 2017, parasitic on the crested jay, *Platylophus galericulatus ardesiacus* (Bonaparte, 1850). Although this bird species is traditionally placed in Corvidae (Clements *et al.* 2016), this position is not supported by some morphological and genetic studies (Manegold 2008; Jönsson *et al.* 2008; Aggerbeck *et al.* 2014).

We describe 12 new species of *Priceiella* of the subgenera *Camurnirmus* and *Thescelovora* parasitising babblers from Southeast Asia. These descriptions increase the number of known species of *Priceiella* to 26 (see Checklist of species, below) and include the first descriptions of *Priceiella* from members of the Timaliidae s. str. and Paradoxornithidae. Also, these new species expand the known range of host families associated with lice of the genus *Priceiella*.

While the present manuscript was under review, Mey (2017) described four new louse genera of the *Brueelia*-complex from the same host families mentioned above, as follows: *Protonirmus* Mey, 2017, *Garrulaxeus* Mey, 2017, *Leiothrichinirmus* Mey, 2017 and *Timaliinirmus* Mey, 2017. From our analysis of Mey's (2017) paper, we realise that several of his new taxa may belong to *Priceiella*. Although we have not been able to obtain any of the lice described by Mey (2017) or specimens from the same hosts that he studied, we are confident that none of his new species are the same as those described herein. We will address the new genera and species described by Mey (2017) in more detail in a forthcoming publication (Gustafsson & Bush, *in prep.*).

Material and methods

Holotypes of the new species described herein are deposited at the Natural History Museum, London (NHML) or the Oklahoma State University (OSUS). Paratypes and additional material are deposited at the NHML, OSUS, the Price Institute for Parasite Research, University of Utah (PIPeR), and the Swedish Museum of Natural History (SMNH). All examined material was mounted in Canada balsam on microscope slides. Specimens were examined and measured with a Nikon Eclipse E600 fitted with an Olympus DP25 camera and digital measuring software (ImageJ, 1.48v, Wayne Rasband). Illustrations were prepared using a drawing tube fitted to the microscope and edited in GIMP (www.gimp.org), from specimens associated with the type hosts, unless otherwise noted. Host taxonomy follows Clements *et al.* (2016).

Terminology of setal, structural and genital characters, and abbreviations thereof, follow Gustafsson and Bush (2017). These include: *ads* = anterior dorsal setae; *ames* = anterior mesosomal setae; *aps* = accessory postspiracular setae; *dsms* = dorsal submarginal setae; *mms* = marginal mesometanotal setae; *pms* = posterior mesosomal setae; *pns* = postnodal setae; *ps* = paratergal setae; *pst* = parameral setae; *ss* = sutural setae; *sts* = sternal setae; *tps* = tergal posterior setae; *vms* = vulval marginal setae; *vos* = vulval oblique setae; *vss* = vulval submarginal setae. Pigmentation patterns typically vary slightly between individuals of same species, particularly between specimens taken from different host species, and may vary in intensity between male and female (e.g. *Priceiella* (*Thescelovora*) *orichalca* n. sp.). The descriptions of pigmentation patterns given here should be interpreted as an approximate guide only. Measurements are given in millimeters for the following dimensions: TL = total length (along midline); HL = head length (along midline); HW = head width (at temples); PRW = prothoracic width; PTW = pterothoracic width; AW = abdominal width (at segment V, unless otherwise noted). The range of each of these dimensions are given; if at least 10 lice were measured then mean dimensions are also provided in parentheses.

Systematics

PHTHIRAPTERA Haeckel, 1896

Ischnocera Kellogg, 1896

Philopteridae Burmeister, 1838

Brueelia-complex

Priceiella Gustafsson & Bush, 2017

Brueelia K  ler, 1936: 257 (in part).

Allobrueelia Eichler, 1951: 36 (in part).

Priceiella Gustafsson & Bush, 2017: 173.

Type species: *Brueelia sternotypica* Ansari, 1956: 148, by original designation.

Included subgenera

Priceiella Gustafsson & Bush, 2017: 173.

Camurnirmus Gustafsson & Bush, 2017: 179.

Thescelovora Gustafsson & Bush, 2017: 185.

Torosinirmus Gustafsson & Bush, 2017: 189.

Priceiella (*Thescelovora*) Gustafsson & Bush, 2017

Brueelia K  ler, 1936a: 257 (in part).

Thescelovora Gustafsson & Bush, 2017: 185.

Type species: *Priceiella* (*Thescelovora*) *alliocephala* Gustafsson & Bush, 2017: 186, by original designation.

Included species

Priceiella (*Thescelovora*) *alliocephala* Gustafsson & Bush, 2017: 186.

Priceiella (*Thescelovora*) *austini* **new species**

Priceiella (*Thescelovora*) *calcicola* **new species**

Priceiella (*Thescelovora*) *chanthaburiana* **new species**

Priceiella (*Thescelovora*) *coleyae* **new species**

Priceiella (*Thescelovora*) *fuscicaena* **new species**

Priceiella (*Thescelovora*) *macrocephala* **new species**

Priceiella (*Thescelovora*) *malacocincl*a (Najer & Sychra [in Najer *et al.*], 2014) [in *Brueelia*].

Priceiella (*Thescelovora*) *orichalca* **new species**

Priceiella (*Thescelovora*) *ornata* **new species**

Priceiella (*Thescelovora*) *calcicola* Gustafsson, Clayton & Bush, new species

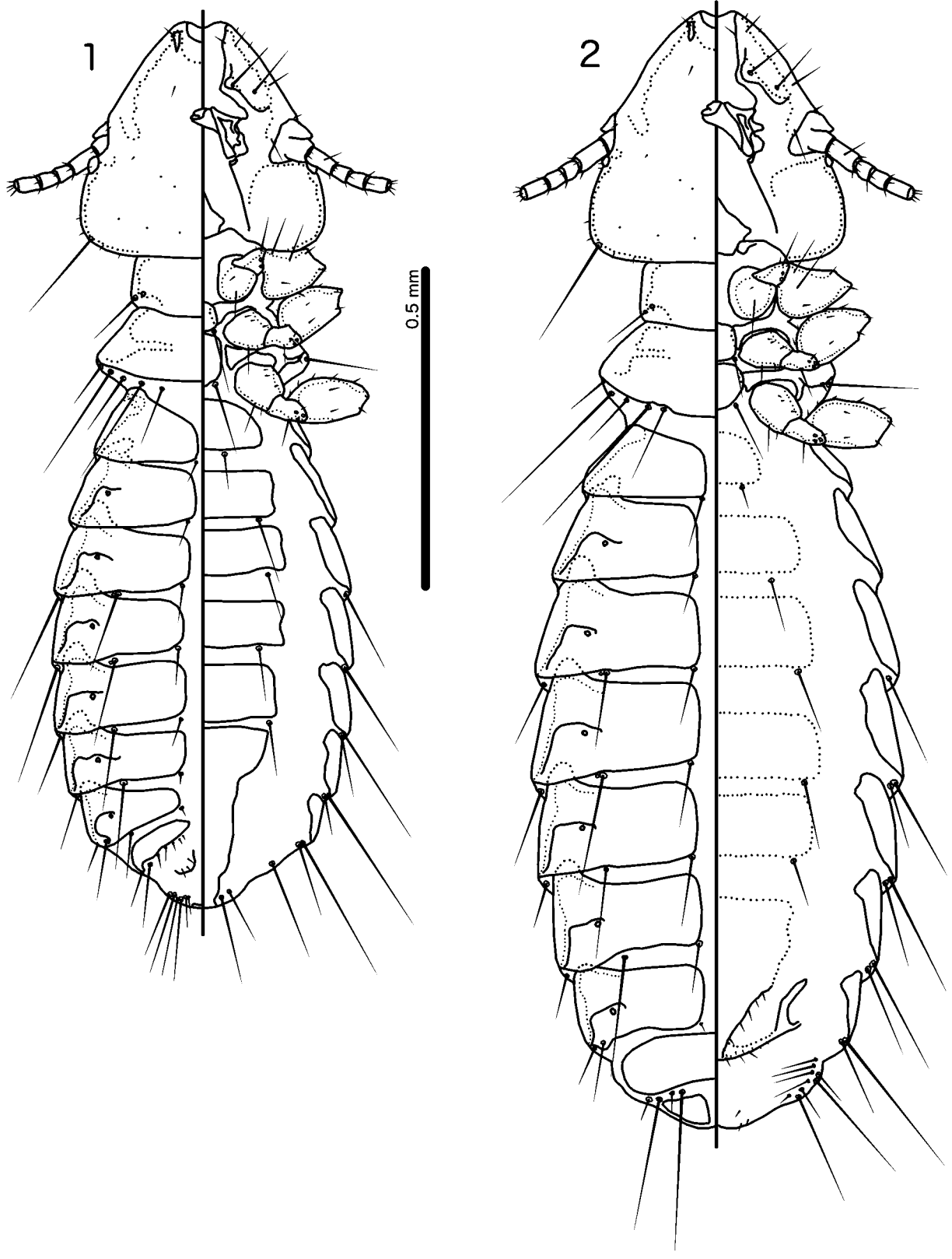
Figs 1–7

Type host. *Turdinus crispifrons crispifrons* (Blyth, 1855)—limestone wren-babbler (Pellorneidae).

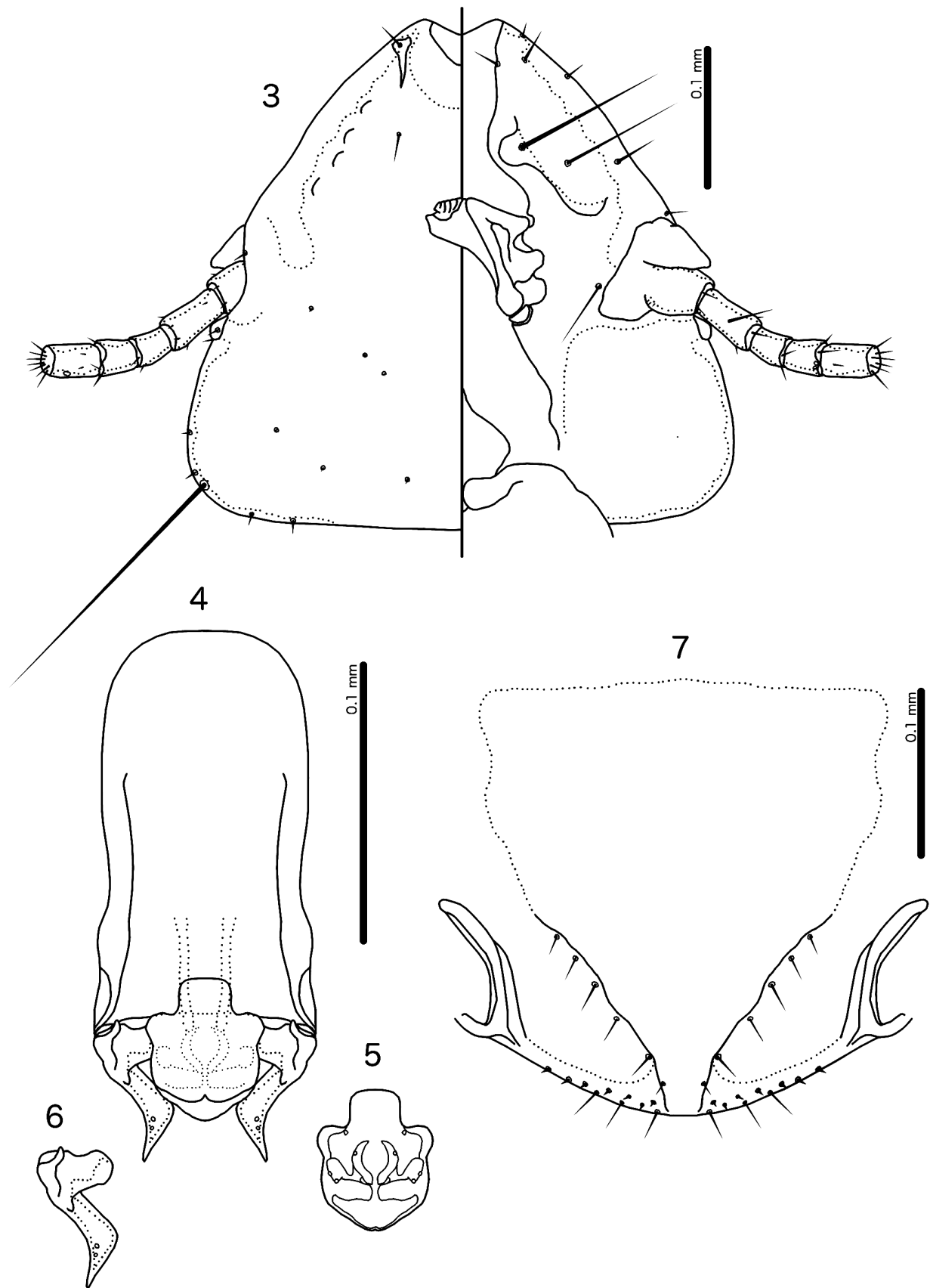
Type locality. Kanchanaburi Province, Thailand.

Diagnosis. The male genitalia of *Priceiella* (*Thescelovora*) *calcicola* **n. sp.** (Figs 4–6) have several morphological peculiarities that set them apart within the subgenus: there is a broad medially interrupted thickening distal to the gonopore that do not follow the distal margin of the mesosome (Fig. 5); the distribution of *ames* and *pmes* (Fig. 5), with only 1 *ames* anterior to gonopore on each side and 2 *pmes* postero-lateral to gonopore not located on lateral margins but on slightly raised lobes, is unique within the subgenus; the lateral thickening of the mesosomal lobes is not displaced medially at midlength (Fig. 5). The distally and proximally open gonopore (Fig. 5) of *P. (T.) calcicola* is similar to that of *P. (T.) austini* **n. sp.** (Fig. 12), *P. (T.) orichalca* **n. sp.** (Fig. 19) and *P. (T.) chanthaburiana* **n. sp.** (Fig. 26), perhaps suggesting that they are related. However, unlike all three of these

species *P. (T.) calcicola* lacks rugose nodi on the mesosome and the shape of the mesosome (Fig. 5) is different from all other species in the genus.



FIGURES 1–2. *Priceiella (Thescelovora) calcicola* **n. sp.** ex *Turdinus crispifrons crispifrons* (Blyth, 1855). 1, male habitus, dorsal and ventral views. 2, female habitus, dorsal and ventral views.



FIGURES 3–7. *Priceiella* (*Thescelovora*) *calcicola* n. sp. ex *Turdinus crispifrons crispifrons* (Blyth, 1855). **3**, male head, dorsal and ventral views. **4**, male genitalia, dorsal view. **5**, male mesosome, ventral view. **6**, male paramere, dorsal view. **7**, female subgenital plate and vulval margin, ventral view.

Description. Both sexes. Head broadly dome shaped with a flat posterior margin (Fig. 3). Frons deeply concave. Lateral margins of preantennal head convex. Dorsal preantennal sutures short, reaching *dsms* but not *ads*. Head chaetotaxy as in Fig. 3. Coni not reaching distal margin of scape. Pteronotum with 5 *mms* on each side (Figs 1–2). Pigmentation very weak, with most of body nearly translucent; marginal carina, head nodi, mandibular framework, gular plate, proepimera, metepisterna and pleural incrassations pale brown; sternal and subgenital plates and antero-lateral tergopleurites with weak brown shadowing.

Male. Abdominal plates and chaetotaxy as in Fig. 1; *aps* absent on tergopleurites VI–VII. Genitalia as in Figs 4–6. Basal apodeme rectangular (Fig. 4). Proximal mesosome short, rectangular. Mesosomal lobes broad with sinuous lateral margins. Lobes distally convergent to medial point. Gonopore open distally and proximally (Fig. 5). Rugose nodi absent; 1 *ames* sensillus on each side near proximal margin of lobes; 1 *pmes* sensillus on each side of gonopore; 2 *pmes* sensilla on each side near lateral margins of mesosome. Marginal thickening of mesosome not interrupted distally and not displaced medially at lateral margins. Broad, medially interrupted ridges distal to gonopore. Parameral heads large, irregular in shape, narrowing slightly medially and with rounded median margin (Fig. 6). Parameral blades medially convergent, distally divergent, short; *pst1*–2 close together, both sensilla. Measurements ex *Turdinus crispifrons crispifrons* (n = 3): TL = 1.30–1.36; HL = 0.34–0.35; HW = 0.35–0.36; PRW = 0.22; PTW = 0.32–0.33; AW = 0.44–0.45.

Female. Abdominal plates and chaetotaxy as in Fig. 2. Both available females with sternites and most sternal setae obscured by gut content are illustrated tentatively. Subgenital plate very pale and partially obscured by gut content, cross-piece not clearly visible; illustrated tentatively in Fig. 7. Vulval margin gently rounded (Fig. 7), with 3–4 slender *vms* and 5–7 short thorn-like *vss* on each side; 6 slender *vos* on each side, with most distal *vos* shorter than other *vos*. Measurements ex *Turdinus crispifrons crispifrons* (n = 2): TL = 1.55–1.61; HL = 0.36–0.37; HW = 0.38; PRW = 0.23; PTW = 0.34–0.35; AW = 0.48–0.52.

Etymology. The species epithet is derived from Latin “*calx*” for limestone, referring to the habitat of the host, and “*-cola*” for “inhabitor”.

Type material. Ex *Turdinus crispifrons crispifrons*: **Holotype** ♂, Kanchanaburi Province, Thailand, 15 Jan. 1972, J.T. Marshall, 6920 (specimen closest to species name label) (OSUS). **Paratypes**: 2♂, 2♀, same data as holotype (OSUS).

Priceiella (Thescelovora) austini Gustafsson, Clayton & Bush, new species

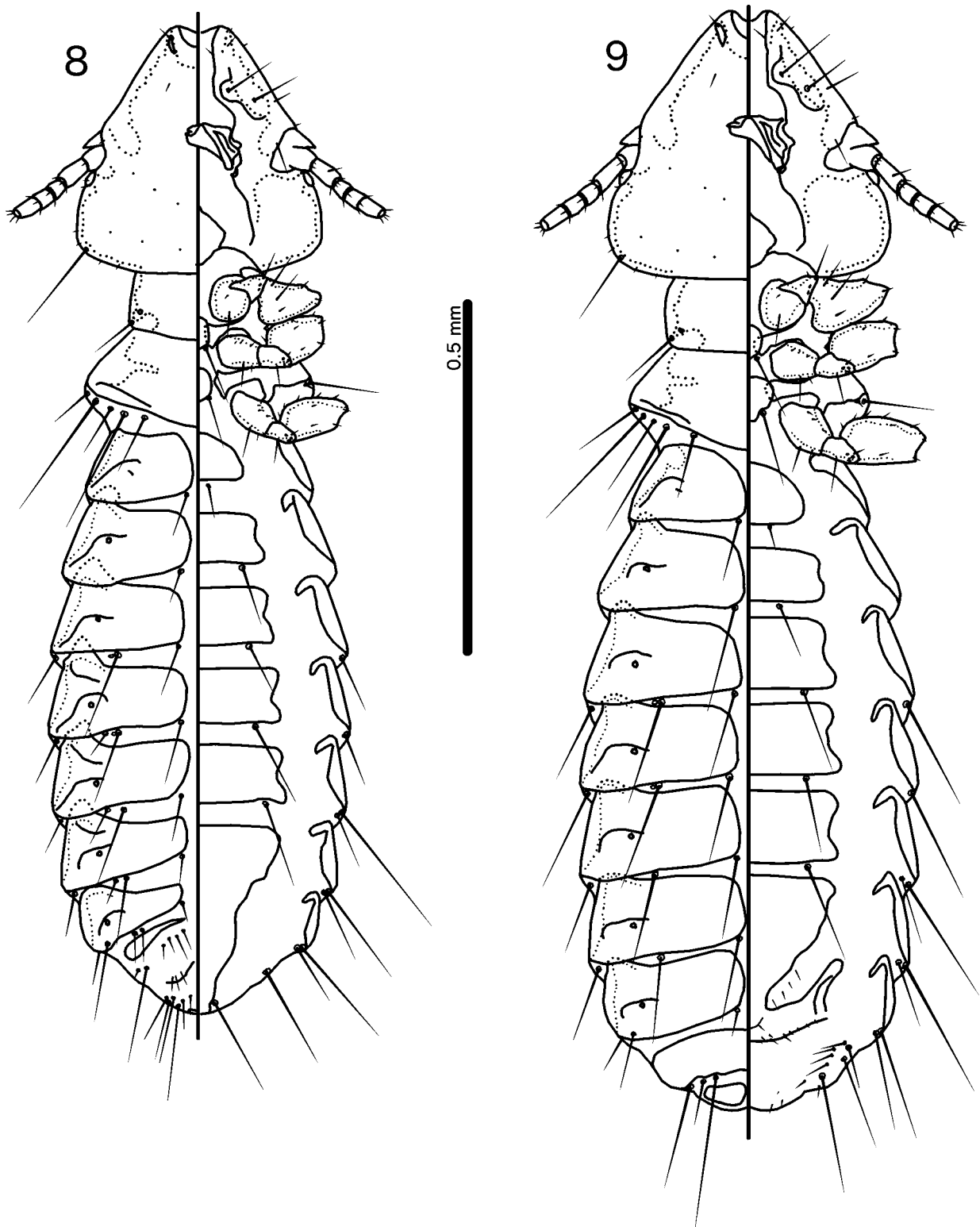
(Figs 8–14)

Type host. *Pomatorhinus ruficollis intermedius* Cheng 1962—streak-breasted scimitar-babbler (Timaliidae).

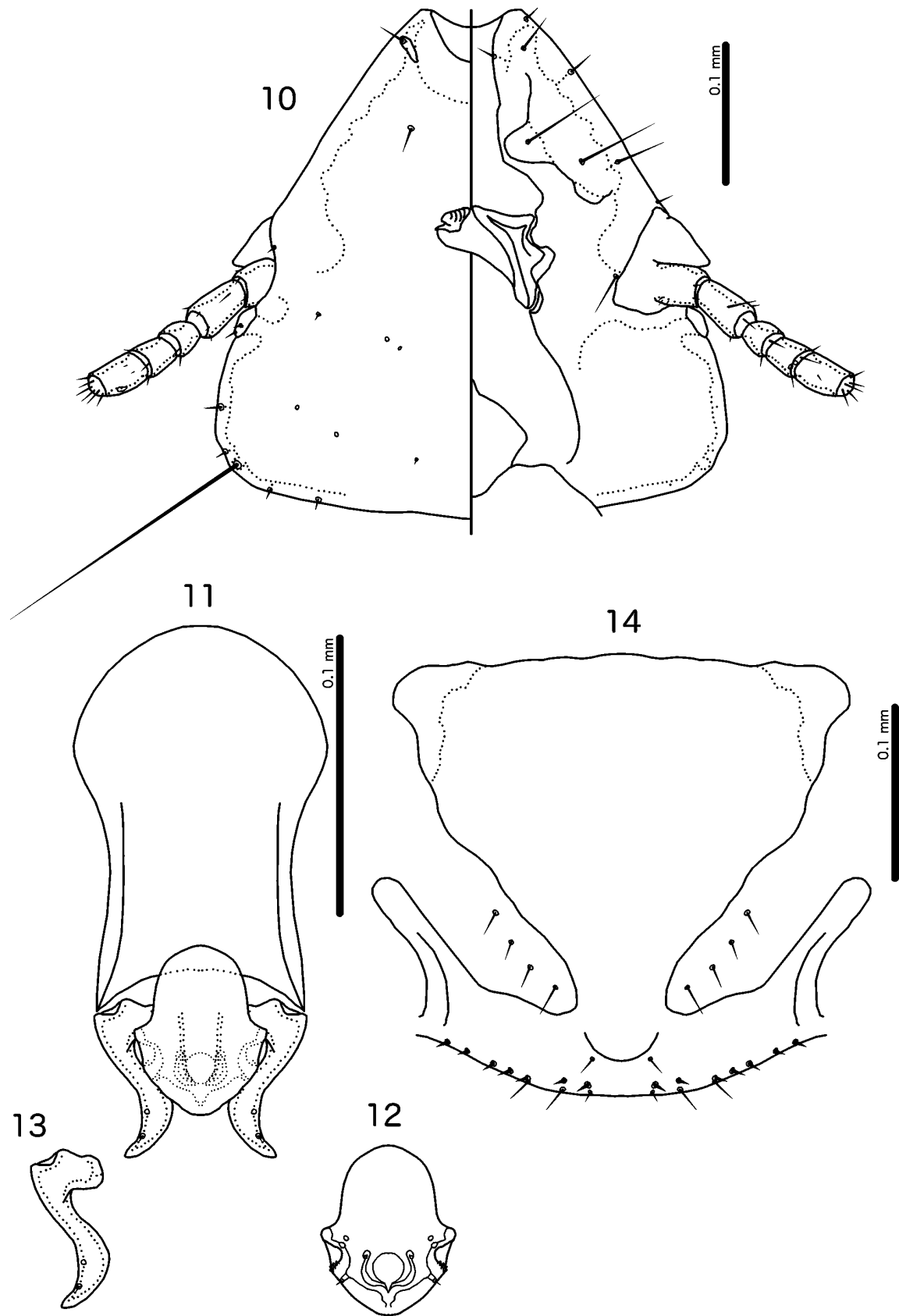
Type locality. Shiwandashan National Park, Guangxi Province, China.

Diagnosis. *Priceiella (Thescelovora) austini* n. sp. is most similar to *P. (T.) malacocinclae* (Najer & Sychra [in Najer *et al.*], 2014), with which it shares the following characters: lateral margins of preantennal head straight to slightly concave (Fig. 10); proximal mesosome rounded (Fig. 12); basal apodeme noticeably constricted at mid-length (Fig. 11). The two species can be separated on the following characters: *aps* present on male tergopleurites V–VII in *P. (T.) austini* (Fig. 8), but absent in *P. (T.) malacocinclae*; proximal mesosome broad in *P. (T.) austini* (Fig. 12) but slender in *P. (T.) malacocinclae*; parameres parallel distally in *P. (T.) malacocinclae*, but divergent distally in *P. (T.) austini* (Fig. 11); basal apodeme widening considerably in proximal end in *P. (T.) austini* (Fig. 11) but about as wide as in distal end in *P. (T.) malacocinclae*; male tergopleurite VIII with 2 *tps* on each side in *P. (T.) austini* (Fig. 8) but with 1 *tps* on each side in *P. (T.) malacocinclae*. Note that both *P. (T.) austini* and *P. (T.) malacocinclae* have *pns* and dorsal preantennal suture, but these were not illustrated in the original description of *P. (T.) malacocinclae* (T. Najer, pers. comm.).

Description. Both sexes. Head pentagonal (Fig. 10), frons deeply concave, lateral margins of preantennal area straight. Marginal carina deeply displaced and widened at osculum. Dorsal preantennal suture reaches *dsms* but not more than half-way to *ads*. Head chaetotaxy as in Fig. 10. Coni reach to or slightly beyond distal margin of scape. Pteronotum with 5 *mms* on each side (Figs 8–9). Marginal carina and head nodi medium brown; gular plate, proepimera, metepisterna, pleural incrassations, subgenital plates and antero-lateral sections of tergopleurites pale brown; anterior sternal plates near translucent, more posterior plates progressively darker to pale brown.



FIGURES 8–9. *Priceiella* (*Thescelovora*) *austini* n. sp. ex *Pomatorhinus ruficollis intermedius* Cheng, 1963. **8**, male habitus, dorsal and ventral views. **9**, female habitus, dorsal and ventral views.



FIGURES 10–14. *Priceiella* (*Thescelovora*) *austini* n. sp. ex *Pomatorhinus ruficollis intermedius* Cheng, 1963. **10**, male head, dorsal and ventral views. **11**, male genitalia, dorsal view. **12**, male mesosome, ventral view. **13**, male paramere, dorsal view. **14**, female subgenital plate and vulval margin, ventral view.

Male. Abdominal chaetotaxy as in Fig. 8; *aps* present on tergopleurites V–VIII. Male genitalia as in Figs 11–13. Basal apodeme constricted at mid-length, wide anteriorly (Fig. 11). Proximal mesosome broad, gently rounded (Fig. 12). Mesosomal lobes converge to rounded medial point distally. Lateral thickenings of lobes deeply sinuous, interrupted medially but diffuse distally. Ventral nodi with restricted rugose area; 2 *ames* sensilla sublaterally on each side near anterior ends of lobes; 1 *pmes* sensilla on each side immediately lateral to gonopore; 1 *pmes* microseta laterally on each side on postero-lateral margins of lobes, distal to rugose nodi. Parameral heads irregularly shaped (Fig. 13), median section near-quadratic. Parameral blades divergent, short and widen at about mid-length; *pst1* sensilla, sublateral; *pst2* microseta, lateral. Measurements ex *Pomatorhinus ruficollis intermedius* (n = 3): TL = 1.22–1.36; HL = 0.32–0.34; HW = 0.34–0.35; PRW = 0.20; PTW = 0.30–0.31; AW = 0.41–0.45.

Female. Abdominal chaetotaxy as in Fig. 9. Antero-lateral corners of subgenital plate with slightly darker pigmentation (dotted lines in Fig. 14). Vulval margin gently rounded (Fig. 14), with 3 slender *vms* and 5–8 thorn-like *vss* on each side; 4–5 *vos* on each side; distal *vos* just anterior to *vss*. Measurements ex *Pomatorhinus ruficollis intermedius* (n = 8 except TL where n = 7): TL = 1.50–1.80; HL = 0.35–0.39; HW = 0.37–0.40; PRW = 0.21–0.23; PTW = 0.33–0.35; AW = 0.45–0.61.

Etymology. This species is named after Austin Roy Clayton, the twin son of Dale H. Clayton and Sarah E. Bush, for assistance in the collection of bird lice and other field work since he was seven years old.

Type material. Ex *Pomatorhinus ruficollis intermedius*: **Holotype** ♂, Shiwandashan National Park, Guanxi Province, China, 21 Apr. 2005, S.E. Bush & D.H. Clayton, host MBR-6692, louse P-913 (NHML). **Paratypes:** 2♂, 3♀, same data as holotype, host TJD-6220, lice P-918 (PIPeR); 1♀, same locality and collectors, 15 Apr. 2005, host TJD-6182, lice P-653 (PIPeR); 2♀, Jingxi County, Guangxi Province, China, 23 Sep. 2004, S.E. Bush, GC-2004-2, P-184 (PIPeR); 2♀, same locality and collector, 26 Sep. 2004, AN-415, P-263 (PIPeR).

Priceiella (Thescelovora) orichalca Gustafsson, Clayton, & Bush, new species

(Figs 15–21)

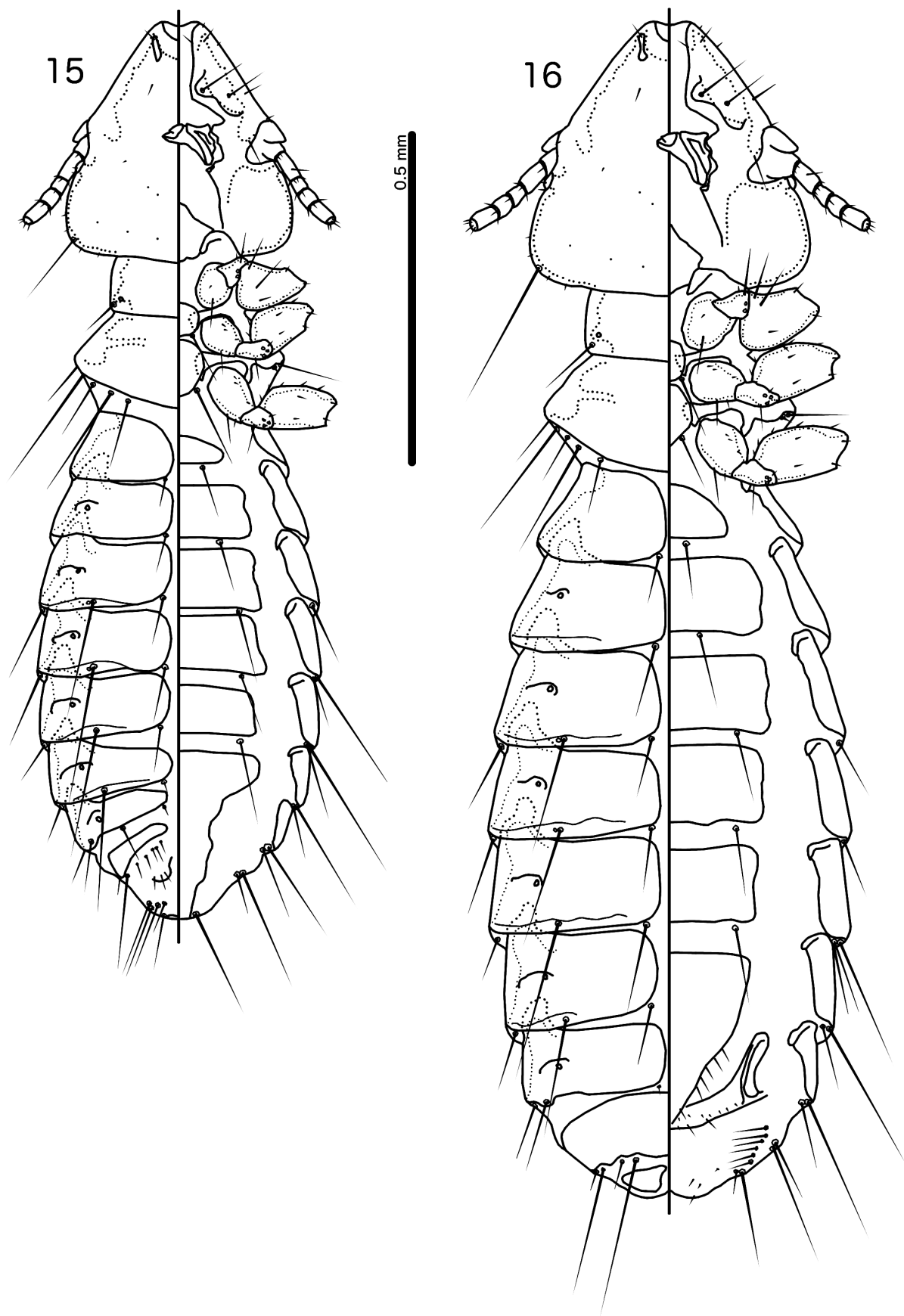
Type host. *Turdinus brevicaudatus leucostictus* (Sharpe, 1887)—streaked wren-babbler (Pellorneidae).

Type locality. Terengganu, elev. 4200 ft., 102° 36' E, 5° 25' N, Malaysia.

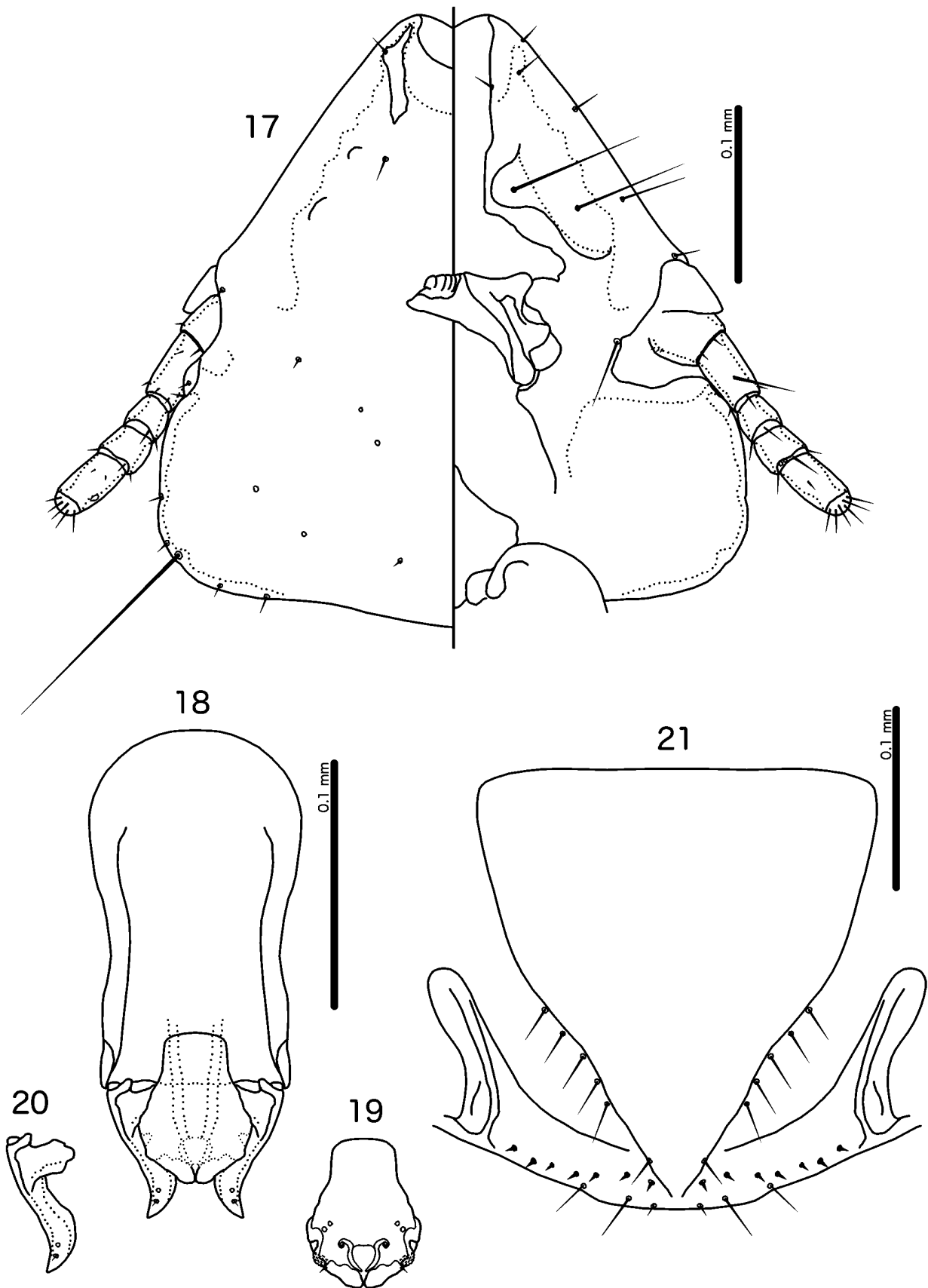
Other hosts. *Pellorneum tickelli tickelli* Blyth, 1859—buff-breasted babbler (Pellorneidae). *Stachyris maculata pectoralis* (Blyth, 1842)—chestnut-rumped babbler (Timaliidae). *Stachyris nigriceps davisoni* Sharpe, 1892—gray-throated babbler (Timaliidae). *Turdinus brevicaudatus stevensi* (Kinnear, 1925)—streaked wren-babbler (Pellorneidae). *Turdinus macrodactylus macrodactylus* (Strickland, 1844)—large wren-babbler (Pellorneidae).

Diagnosis. *Priceiella (Thescelovora) orichalca* n. sp. is most similar to *P. (T.) austini* n. sp., with which it shares the following characters: lateral margins of preantennal area more or less straight (Figs 10, 17); dorsal preantennal suture present (Figs 10, 17); antero-lateral portions of gonopore curled laterally to encircle *pmes* (Figs 12, 19); *pmes* on lateral margin of mesosome distal to rugose nodi clearly visible as microsetae (Figs 12, 19). These two species can be separated on the following characters: frons narrower and less concave in *P. (T.) orichalca* (Fig. 17) than in *P. (T.) austini* (Fig. 10); dorsal preantennal suture reaches more than half-way between *dsms* and *ads* in *P. (T.) orichalca* (Fig. 17), but is shorter *P. (T.) austini* (Fig. 10); proximal end of basal apodeme about as wide as distal end in *P. (T.) orichalca* (Fig. 18), but much wider in *P. (T.) austini* (Fig. 11); proximal mesosome bulbous in *P. (T.) austini* (Fig. 12), but rounded rectangular in *P. (T.) orichalca* (Fig. 19); marginal thickenings of mesosomal lobes diffuse distally in *P. (T.) austini* (Fig. 12), but distinct and clearly separated medially in *P. (T.) orichalca* (Fig. 19); parameres short with *pst1*–2 located close together in *P. (T.) orichalca* (Fig. 20), but parameres longer, clearly divergent distally, with *pst1*–2 further apart in *P. (T.) austini* (Fig. 13); *aps* present on male tergopleurites V–VII in *P. (T.) austini* (Fig. 8), but absent in *P. (T.) orichalca* (Fig. 15); *ss* on female tergopleurite VIII minute in *P. (T.) orichalca* (Fig. 16), but moderate in *P. (T.) austini* (Fig. 9).

Description. **Both sexes.** Head pentagonal (Fig. 17). Frons slightly concave. Lateral margins of preantennal head straight. Dorsal preantennal suture broad, reaching *dsms* and at least half-way to *ads*; suture may extend anterior to *dsms* as in Fig. 17, but does not reach margin of head. Head chaetotaxy as in Fig. 17. Coni not reaching distal margin of scape. Pteronotum with 5 *mms* on each side (Figs 15–16). Pigmentation slightly variable between material from different host species, darkest in material from *T. brevicaudatus stevensi*; marginal carina, head nodi, most of marginal temporal carina, mandibular framework, flagellomeres, gular plate, proepimera, metepisterna and



FIGURES 15–16. *Priceiella* (*Thescelovora*) *orichalca* n. sp. ex *Turdinus brevicaudatus leucostictus* (Sharpe, 1887). **15**, male habitus, dorsal and ventral views. **16**, female habitus, dorsal and ventral views.



FIGURES 17–21. *Priceiella* (*Thescelovora*) *orichalca* n. sp. ex *Turdinus brevicaudatus leucostictus* (Sharpe, 1887). 17, male head, dorsal and ventral views. 18, male genitalia, dorsal view. 19, male mesosome, ventral view. 20, male paramere, dorsal view. 21, female subgenital plate and vulval margin, ventral view.

pleural incrassations medium to pale coppery brown; meso- and metasterna and sternal and subgenital plates pale brown to near translucent. Females typically darker than males taken from same host individual.

Male. Abdominal plates and chaetotaxy as in Fig. 15; *aps* absent on tergopleurites VI–VII. Male genitalia as in Figs 18–20. Basal apodeme proximally rounded, slightly constricted at mid-length (Fig. 18). Proximal mesosome broad, rectangular (Fig. 19). Mesosomal lobes with rugose ventral nodi. Marginal thickening of mesosomal lobes sinuous laterally, interrupted medially; 2 *ames* sensilla on each side near proximal ends of lobes; 1 *pmes* sensillus on each side near gonopore, encircled by thickenings of gonopore; 1 *pmes* microseta laterally on each side distal to rugose nodi. Parameral heads large (Fig. 20), irregular in shape, with slight median protrusion at mid-length. Parameral blades short, slightly divergent; *pst1*–2 close together. Measurements ex *Turdinus brevicaudatus leucostictus* (n = 2): TL = 1.29–1.31; HL = 0.34–0.35; HW = 0.34; PRW = 0.21; PTW = 0.30–0.31; AW = 0.41–0.44. Measurements ex *Pellorneum tickelli tickelli* (n = 2): TL = 1.26–1.27; HL = 0.34–0.35; HW = 0.34–0.35; PRW = 0.21; PTW = 0.30; AW = 0.42. Measurements ex *Stachyris maculata pectoralis* (n = 1): TL = 1.27; HL = 0.34; HW = 0.34; PRW = 0.20; PTW = 0.29; AW = 0.41. Measurements ex *Stachyris nigriceps davisoni* (n = 1): TL = 1.29; HL = 0.35; HW = 0.34; PRW = 0.21; PTW = 0.30; AW = not measured. Measurements ex *Turdinus macrodactylus macrodactylus* (n = 1): TL = 1.24; HL = 0.33; HW = 0.35; PRW = 0.21; PTW = 0.29; AW = 0.38. Measurements ex *Turdinus brevicaudatus stevensi* (n = 1): TL = 1.31; HL = 0.35; HW = 0.37; PRW = 0.21; PTW = 0.32; AW = 0.43.

Female. Abdominal plates and chaetotaxy as in Fig. 16. Vulval margin slightly flattened medially (Fig. 21), with 2–3 slender *vms* on each side (medial-most *vms* much shorter than other *vms*) and 5–7 thorn-like *vss* on each side; 4–6 slender *vos*; distal *vos* anterior to *vss*. Measurements ex *Turdinus brevicaudatus leucostictus* (n = 2): TL = 1.64–1.73; HL = 0.38; HW = 0.39–0.40; PRW = 0.23–0.24; PTW = 0.34–0.35; AW = 0.51–0.54. Measurements ex *Pellorneum tickelli tickelli* (n = 4): TL = 1.44–1.54; HL = 0.35–0.39; HW = 0.36–0.40; PRW = 0.21–0.24; PTW = 0.32–0.34; AW = 0.43–0.47. Measurements ex *Stachyris maculata pectoralis* (n = 1): TL = 1.52; HL = 0.35; HW = 0.36; PRW = 0.21; PTW = 0.31; AW = 0.46. Measurements ex *Stachyris nigriceps davisoni* (n = 1): TL = 1.48; HL = 0.39; HW = 0.39; PRW = 0.23; PTW = 0.32; AW = 0.46. Measurements ex *Turdinus macrodactylus macrodactylus* (n = 1): TL = 1.41; HL = 0.35; HW = 0.36; PRW = 0.22; PTW = 0.31; AW = 0.44.

Etymology. The species epithet is derived from Greek “*oreikhalkos*”, for “mountain copper”, which refers to an unidentified ancient copper alloy considered almost as valuable as gold. This seems a fitting name for a copper-edged louse found mainly at high elevations sites.

Type material. Ex *Turdinus brevicaudatus leucostictus*: **Holotype** ♂, Terengganu, elev. 4200 ft., 102° 36' E. 5° 25' N, Malaysia, 16 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974–2 (NHML). **Paratypes:** 1♂, 2♀, same data as holotype (NHML).

Additional material examined (non-types). Ex *Pellorneum tickelli tickelli*: 2♂, 5♀, Terengganu, elev. 4200 ft., 102° 36' E. 5° 25' N, Malaysia, 16 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974–2 (NHML).

Ex *Stachyris maculata pectoralis*: 1♂, 1♀, Gombak, Malaysia, 29 Jan. 1963, M-02278 (OSUS).

Ex *Stachyris nigriceps davisoni*: 1♂, 1♀, Terengganu, elev. 4200 ft., 102° 36' E, 5° 25' N, Malaysia, 14 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974–2 (NHML).

Ex *Turdinus brevicaudatus stevensi*: 1♂, Shiwandashan National Park [elev. 300–900m], Guanxi, China, 21 Apr. 2005, S.E. Bush & D.H. Clayton, host TJO-6217, RP-911 (PIPeR).

Ex *Turdinus macrodactylus macrodactylus*: 1♂, 1♀, Terengganu, elev. 140 ft., 102° 40' E. 5° 28' N, Malaysia, 30 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974–2 (NHML).

Remarks. No significant differences have been found between material from the different host species except for differences in size. Due to the small number of examined specimens from all hosts, we do not presently attach any significance to these size differences.

Parameres (Figs 18, 20) are drawn from a male collected from *Stachyris maculata pectoralis* since all males from the type host had partially everted parameres

Priceiella (Thescelovora) chanthaburiana Gustafsson, Clayton, & Bush, new species

(Figs 22–28)

Type host. *Megapomatorhinus hypoleucos tickelli* Hume, 1877—large scimitar-babbler (Timaliidae).

Type locality. Khao Soi Dao Tai, Chanthaburi Province, Thailand.

Other host. *Pomatorhinus schisticeps klossi* Baker, 1917—white-browed scimitar-babbler (Timaliidae).

Diagnosis. *Priceiella* (*Thescelovora*) *chanthaburiana* **n. sp.** is most similar to *P. (T.) austini* **n. sp.** The relatively broad preantennal area and deeply concave frons of *P. (T.) chanthaburiana* (Fig. 24) is similar to the shape of the preantennal area in *P. (T.) austini* **n. sp.** (Fig. 10), but the lateral margins of the preantennal area are clearly convex in *P. (T.) chanthaburiana*, rather than straight or slightly concave as in *P. (T.) austini*. The dorsal preantennal suture is absent in *P. (T.) chanthaburiana* (Fig. 24), but is present in *P. (T.) austini* as well as in other similar species [*P. (T.) fuscicaena* **n. sp.** and *P. (T.) malacocinclia* (Najer, pers. comm.)]. The lateral thickenings of the gonopore do not curl around the *pmes* in *P. (T.) chanthaburiana* (Fig. 26) as they do in *P. (T.) austini* (Fig. 12) and *P. (T.) orichalca* **n. sp.** (Fig. 21). Unlike in *P. (T.) austini* (Fig. 12) and *P. (T.) orichalca* (Fig. 19), there are 2 *pmes* antero-lateral to the gonopore in *P. (T.) chanthaburiana* (Fig. 26) and no discernable *pmes* on lateral margin distal to the rugose nodi; but these *pmes* may be overlooked due to being sensilla. The proximal mesosome of *P. (T.) chanthaburiana* (Fig. 26) is rectangular as in *P. (T.) orichalca* (Fig. 19), whereas the distal section of the mesosome in *P. (T.) chanthaburiana* is more similar in shape to that of *P. (T.) austini* (Fig. 12). Male tergopleurites VI–VII have *aps* in *P. (T.) chanthaburiana* (Fig. 22) as in *P. (T.) austini* (Fig. 8), but these are absent in *P. (T.) orichalca* (Fig. 15) and *P. (T.) malacocinclia*.

Description. Both sexes. Head broad, dome shaped with a flat posterior margin (Fig. 24). Frons deeply concave. Lateral margins of preantennal head convex. Dorsal preantennal suture absent. Head chaetotaxy as in Fig. 24. Coni reach distal margin of scape. Pteronotum with 5 *mms* on each side (Figs 22–23). Marginal and marginal temporal carinae, head nodi, flagellomeres, proepimera, metepisterna and pleural incrassations dark brown; mandibular framework and gular plate medium brown; metasternum and sternal and subgenital plates pale brown, progressively darker in more posterior segments.

Male. Abdominal plates and chaetotaxy as in Fig. 22; *aps* present on tergopleurites VI–VII (may be absent on one side). Male genitalia as in Figs 25–27. Basal apodeme broad, slightly constricted at mid-length (Fig. 25). Proximal mesosome broad, rounded rectangular (Fig. 26). Mesosomal lobes gently rounded with medial point. Ventral node rugose apically. Lateral thickening of mesosome sinuous, interrupted medially. Marginal thickenings of gonopore do not curl around *pmes* anteriorly; 2 *ames* sensilla on each side near antero-lateral portions of mesosomal lobes; 2 *pmes* sensilla on each side of gonopore. No lateral *pmes* are visible distal to gonopore; these may be overlooked due to being sensilla. Parameral heads large, irregular in shape with clearly serrated posterior margin and slight constriction on anterior margin (Fig. 27). Parameral blades stout, slightly divergent distally; *pst1*–2 close together. Measurements ex *Pomatorhinus hypoleucos tickelli* (n = 7): TL = 1.35–1.55; HL = 0.33–0.34; HW = 0.35–0.36; PRW = 0.20–0.21; PTW = 0.32–0.33; AW = 0.44–0.53. Measurements ex *Pomatorhinus schisticeps klossi* (n = 3): TL = 1.35–1.50; HL = 0.33–0.34; HW = 0.34–0.36; PRW = 0.20–0.21; PTW = 0.30–0.32; AW = 0.42–0.45.

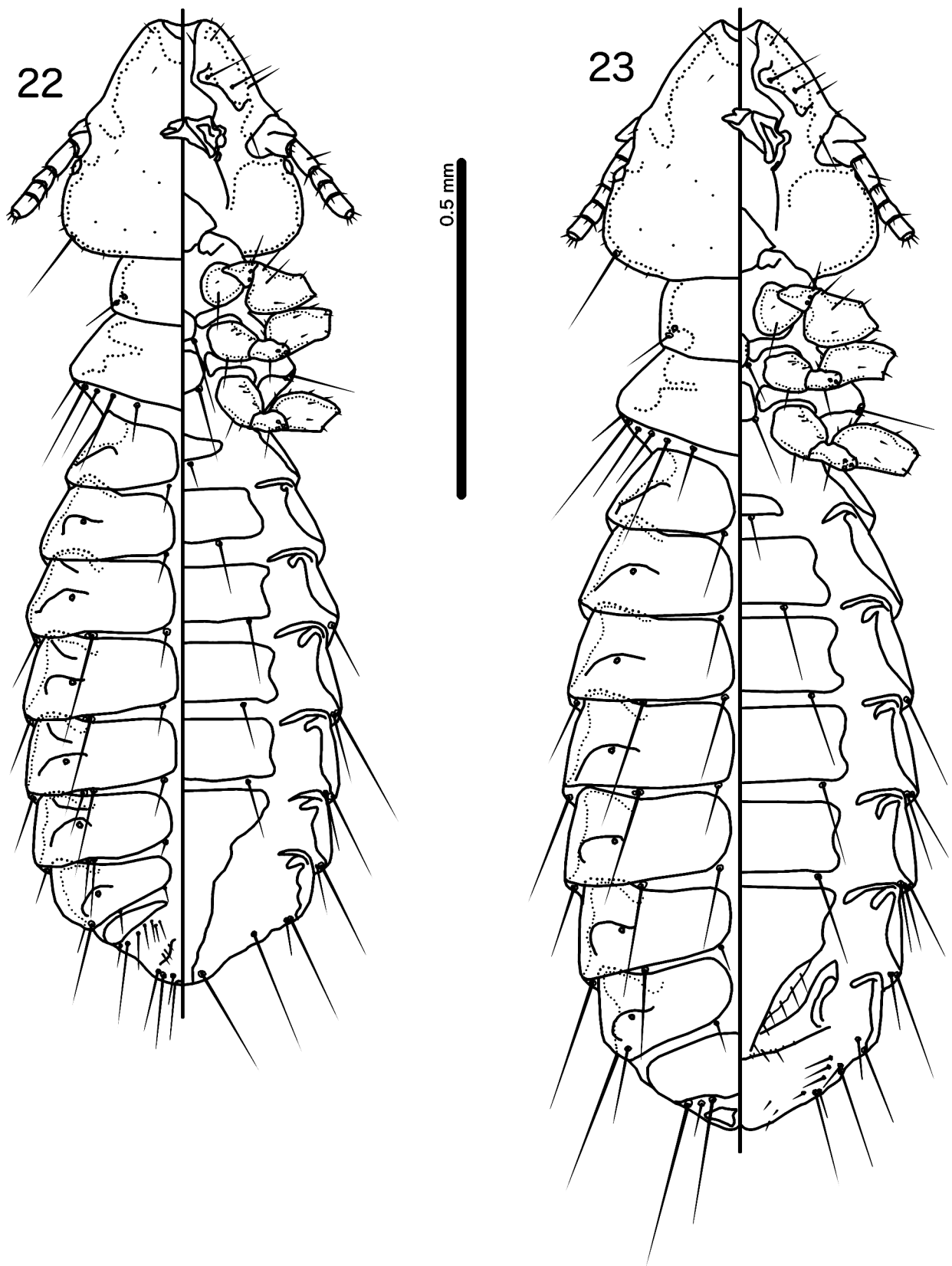
Female. Abdominal plates and chaetotaxy as in Fig. 23. Vulval margin gently rounded (Fig. 28), with 2–3 slender *vms* and 4–5 thorn-like *vss* on each side. Medialmost *vms* shorter than *vss*; 4–6 long, slender *vos* on each side; distal *vos* anterior to *vss*. Measurements ex *Pomatorhinus hypoleucos tickelli* (n = 7): TL = 1.55–1.69; HL = 0.35–0.36; HW = 0.38–0.39; PRW = 0.22–0.23; PTW = 0.34–0.35; AW = 0.50–0.54. Measurements ex *Pomatorhinus schisticeps klossi* (n = 3): TL = 1.49–1.64; HL = 0.34–0.35; HW = 0.36–0.38; PRW = 0.20–0.22; PTW = 0.32–0.34; AW = 0.45–0.51.

Etymology. The species epithet is derived from the type locality.

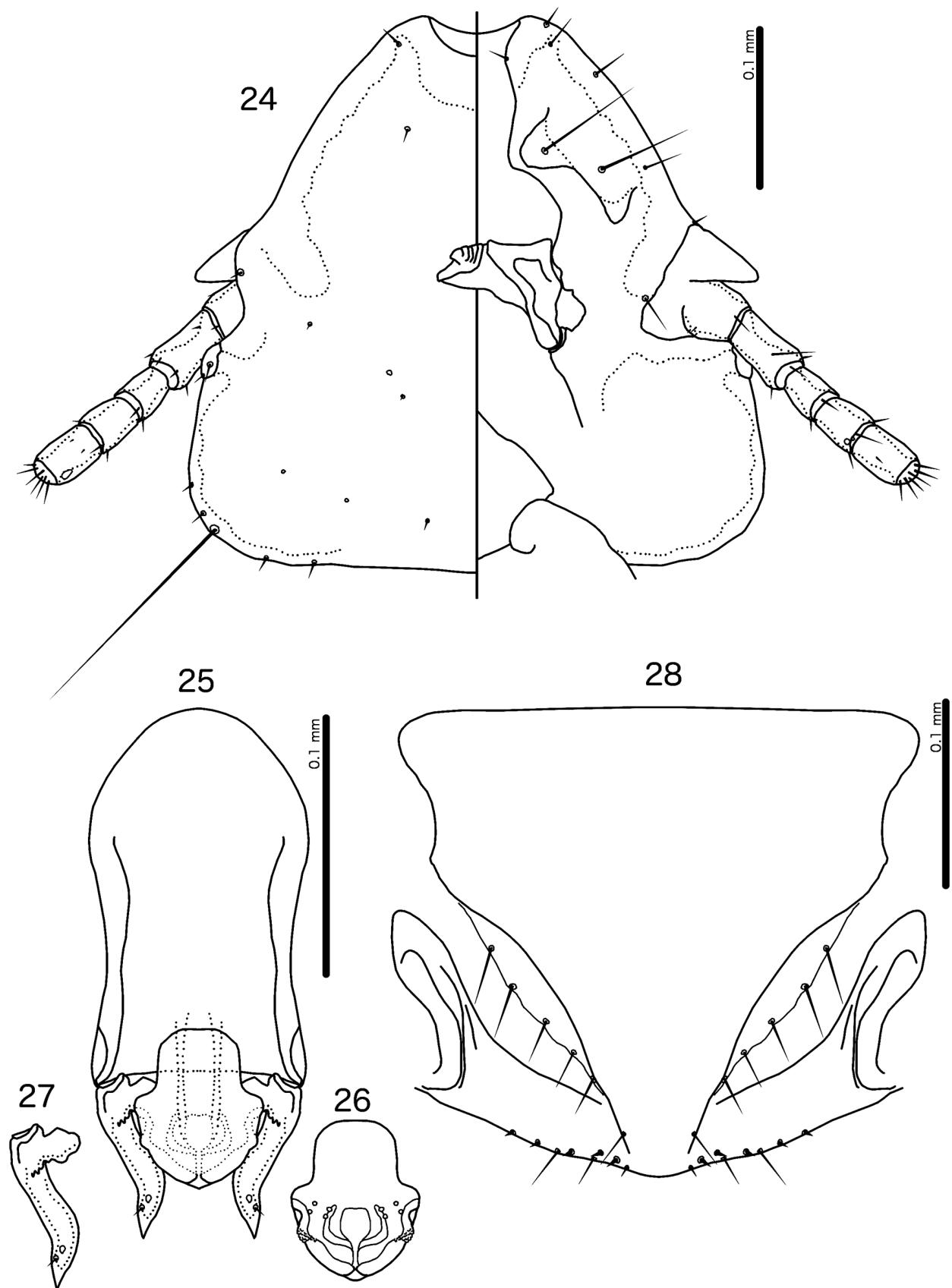
Type material. Ex *Megapomatorhinus hypoleucos tickelli*: **Holotype** ♂, Khao Soi Dao Tai, Chanthaburi Province, Thailand, 21 Mar. 1966, 24705 on reverse (OSUS). **Paratypes:** 6♂, 7♀, same data as holotype, 24705–24711 on reverse (OSUS).

Additional material examined (non-types). Ex *Pomatorhinus schisticeps klossi*: 3♂, 3♀, Khao Soi Dao Tai, Chanthaburi Province, Thailand, Feb.–Mar. 1966, 24717–24719 on reverse (OSUS).

Remarks. No significant differences have been found between material from the two host species. Males from *P. schisticeps* generally have a more pointed proximal mesosome and slightly longer and more bent parameres than material from *P. hypoleucos*, but individual variation overlaps between specimens from the two hosts. Females from *P. schisticeps* tend to have fewer *vos* (4–5) and more *vss* (5–7), but the overlap in both characters is large, and vulval setae are typically asymmetrical and variable between individuals. All examined material from both host species was collected at the same locality during the same period.



FIGURES 22–23. *Priceiella* (*Thescelovora*) *chanthaburiana* n. sp. ex *Pomatorhinus hypoleucos tickelli* Hume, 1877. **22**, male habitus, dorsal and ventral views. **23**, female habitus, dorsal and ventral views.



FIGURES 24–28. *Priceiella* (*Thescelovora*) *chanthaburiana* n. sp. ex *Pomatorhinus hypoleucos tickelli* Hume, 1877. **24**, male head, dorsal and ventral views. **25**, male genitalia, dorsal view. **26**, male mesosome, ventral view. **27**, male paramere, dorsal view. **28**, female subgenital plate and vulval margin, ventral view.

***Priceiella (Thescelovora) fuscicaena* Gustafsson, Clayton, & Bush, new species**
(Figs 29–35)

Type host. *Malacopteron magnum magnum* Eyton, 1839—rufous-crowned babbler (Pellorneidae).

Type locality. Terengganu, elev. 140 ft., 102° 40' E. 5° 28' N, Malaysia.

Other hosts. *Malacopteron cinereum cinereum* Eyton, 1839—scaly-crowned babbler (Pellorneidae).

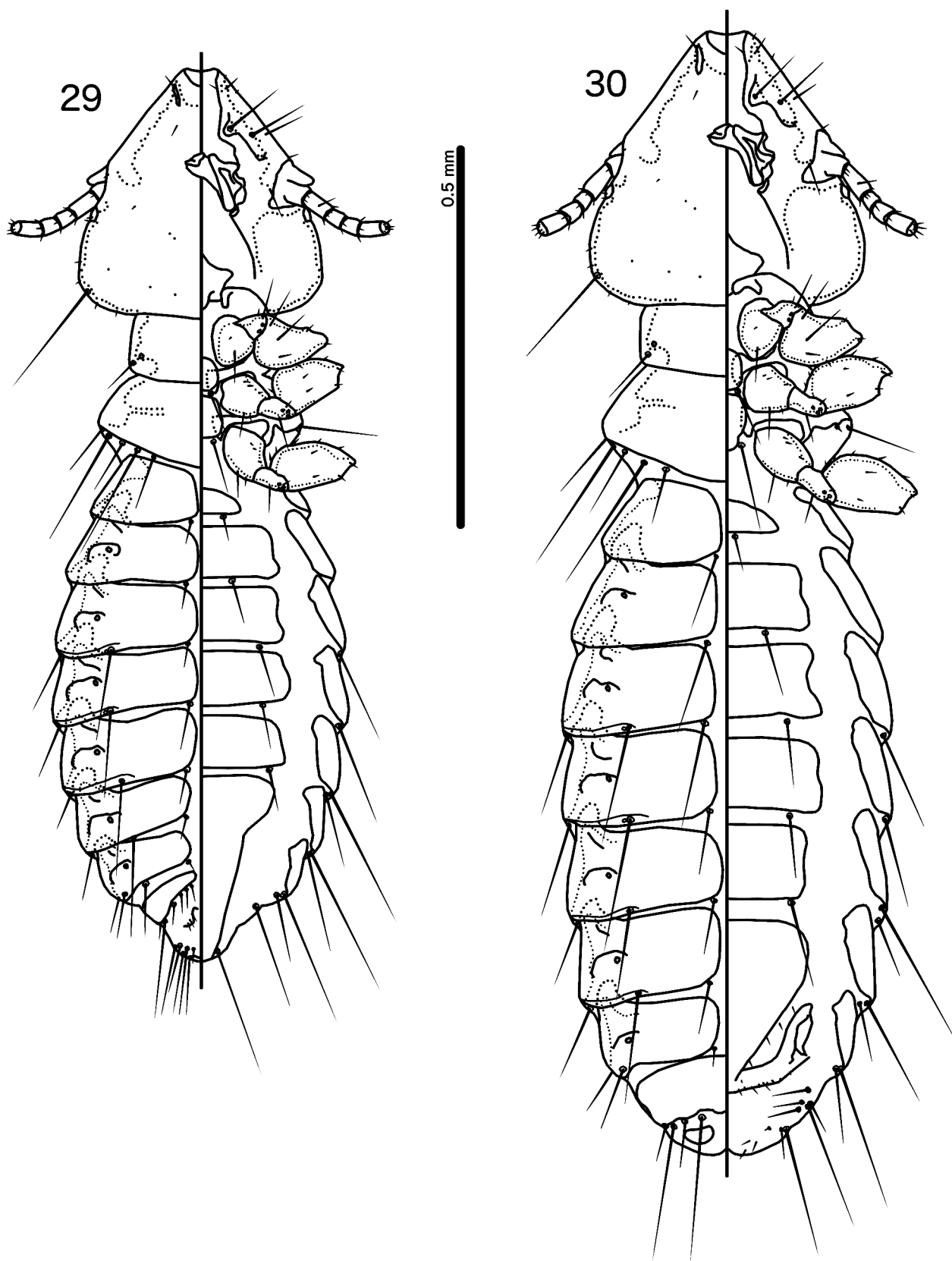
Diagnosis. The general structure of the male genitalia places *P. (T.) fuscicaena* **n. sp.** (Figs 32–34) close to *P. (T.) coleyae* **n. sp.** (Figs 39–41). Both of these species have a rounded proximal mesosome and mesosomal lobes with broad marginal thickening (Figs 33, 40), which separate both from the angular proximal mesosome and mesosomal lobes with slender marginal thickening of *P. (T.) macrocephala* **n. sp.** (Fig. 47). However, the elongated head shape and extended dorsal preantennal suture (Figs 31, 45) and absence of *aps* on male tergopleurites VI–VII (Figs 29, 43) places *P. (T.) fuscicaena* closer to *P. (T.) macrocephala* than to *P. (T.) coleyae*, which has a shorter head and less extensive dorsal preantennal suture (Fig. 38) and *aps* on male tergopleurites VI–VII (Fig. 36). It is not clear which of these species is the closest relative to *P. (T.) fuscicaena*.

Priceiella (Thescelovora) fuscicaena can be separated from *P. (T.) coleyae* on the following characters: preantennal head short and rounded in *P. (T.) coleyae* (Fig. 38) but more elongated in *P. (T.) fuscicaena* (Fig. 31); dorsal preantennal suture extending at least half-way between *dsms* and *ads* in *P. (T.) fuscicaena* (Fig. 31) but less than half-way between these setae in *P. (T.) coleyae* (Fig. 38); *aps* absent on male tergopleurites VI–VII in *P. (T.) fuscicaena* (Fig. 29) but present there in *P. (T.) coleyae* (Fig. 36); basal apodeme slender, notably constricted at mid-length in *P. (T.) fuscicaena* (Fig. 32) but broader and less or not constricted in *P. (T.) coleyae* (Fig. 39); distal mesosome roughly rounded in *P. (T.) fuscicaena* (Fig. 33) but convergent to medial point in *P. (T.) coleyae* (Fig. 40); proximal mesosome with ventral rugose area in *P. (T.) fuscicaena* (Fig. 33) but without such area in *P. (T.) coleyae* (Fig. 40); parameres parallel distally in *P. (T.) fuscicaena* (Fig. 34) but divergent distally in *P. (T.) coleyae* (Fig. 41); *vos* longer in *P. (T.) coleyae* (Fig. 42) than in *P. (T.) fuscicaena* (Fig. 35) but vulval chaetotaxy otherwise similar.

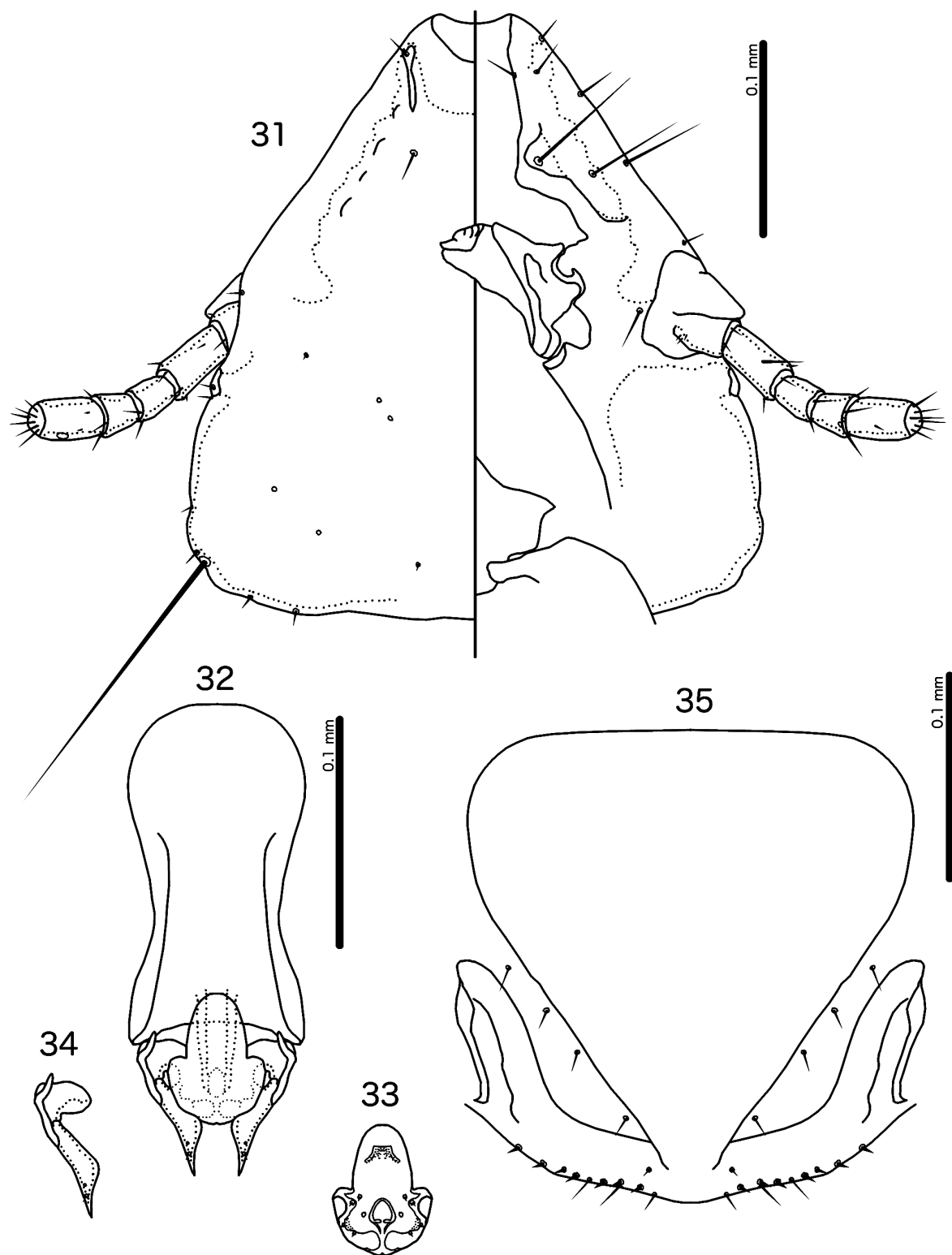
Priceiella (Thescelovora) fuscicaena can be separated from *P. (T.) macrocephala* on the following characters: size (see measurements and cf. Figs 29–30, 43–44); both sexes of *P. (T.) macrocephala* with 2 *sts* on abdominal segment VI (Figs 43–44), but only 1 *sts* on abdominal segment VI in both sexes of *P. (T.) fuscicaena* (Figs 29–30); male with 1 *tps* on tergopleurite VIII in *P. (T.) fuscicaena* (Fig. 29) but 2 *tps* in *P. (T.) macrocephala* (Fig. 43); basal apodeme slender, notably constricted at mid-length in *P. (T.) fuscicaena* (Fig. 32) but broader and less or not constricted in *P. (T.) macrocephala* (Fig. 46); proximal mesosome rounded in *P. (T.) fuscicaena* (Fig. 33) but rectangular with roughly flattened anterior margin in *P. (T.) macrocephala* (Fig. 47); proximal mesosome with ventral rugose area in *P. (T.) fuscicaena* (Fig. 33) but without such area in *P. (T.) macrocephala* (Fig. 47); marginal thickening of mesosomal lobes broad distally in *P. (T.) fuscicaena* (Fig. 33) but slender distally in *P. (T.) macrocephala* (Fig. 47); *vos* much longer in *P. (T.) macrocephala* (Fig. 49) than in *P. (T.) fuscicaena* (Fig. 35), but vulval chaetotaxy otherwise similar.

Description. Both sexes. Head pentagonal (Fig. 31). Frons flat to shallowly concave. Lateral margins of preantennal head straight to slightly concave. Dorsal preantennal suture reaches *dsms* but only half-way to *ads*. Head chaetotaxy as in Fig. 31. Coni reach distal margin of scape. Pteronotum with 5 *mms* on each side (Figs 29–30). Pigmentation pale and most of body near translucent; marginal carina, head nodi, gular plate, proepimera, metepisterna and pleural incrassations pale brown; sternal plate VI and subgenital plate very pale brown.

Male. Abdominal plates and chaetotaxy as in Fig. 29; *aps* absent on tergopleurites VI–VII. Male genitalia as in Figs 32–34. Basal apodeme rounded, slender, constricted at mid-length (Fig. 32). Proximal mesosome half-oval, narrow, with rugose ventral area (Fig. 33). Mesosomal lobes gently rounded; distal end of mesosome rounded. Ventral nodi slightly rugose submarginally. Gonopore open only distally; 2 *ames* sensilla on each side near antero-lateral corners of mesosomal lobes; 1 *pmes* sensillus on each side of posterior end of gonopore; 2 *pmes* sensilla on each side distal to gonopore, 1 lateral to rugose nodi and 1 medio-posterior to rugose nodi. Parameral heads large, rounded medially (Fig. 34). Parameral blades slender, convergent. Measurements ex *Malacopteron magnum magnum* (n = 4, except TL where n = 3): TL = 1.15–1.42; HL = 0.32–0.34; HW = 0.32–0.35; PRW = 0.20–0.21; PTW = 0.27–0.30; AW = 0.37–0.44. Measurements ex *Malacopteron cinereum cinereum* (n = 1): TL = 1.24; HL = 0.33; HW = 0.33; PRW = 0.19; PTW = 0.28; AW = 0.39.



FIGURES 29–30. *Priceiella* (*Thescelovora*) *fuscicaena* n. sp. ex *Malacopteron magnum magnum* Euton, 1839. 29, male habitus, dorsal and ventral views. 30, female habitus, dorsal and ventral views.



FIGURES 31–35. *Priceiella* (*Thescelovora*) *fuscicaena* n. sp. ex *Malacopteron magnum magnum* Euton, 1839. **31**, male head, dorsal and ventral views. **32**, male genitalia, dorsal view. **33**, male mesosome, ventral view. **34**, male paramere, dorsal view. **35**, female subgenital plate and vulval margin, ventral view.

Female. Abdominal plates and chaetotaxy as in Fig. 30. Vulval margin gently rounded (Fig. 35), with 2–3 slender *vms* and 6–7 thorn-like *vss* on each side; 4–7 short, slender *vos* on each side; distal *vos* much shorter than proximal *vos* and located just anterior to *vss*. Measurements ex *Malacopteron magnum magnum* (n = 3): TL = 1.43–1.47; HL = 0.34–0.35; HW = 0.35–0.36; PRW = 0.21; PTW = 0.31; AW = 0.42–0.47. Measurements ex *Malacopteron cinereum cinereum* (n = 1): TL = 1.60; HL = 0.37; HW = 0.38; PRW = 0.22; PTW = 0.31; AW = 0.49.

Etymology. The species epithet is derived from Latin “*fuscus*” for “brown” and “*caeno*” for “to dine”, referring to the brownish color of both host species.

Type material. Ex *Malacopteron magnum magnum*: **Holotype** ♂, Terengganu, elev. 140 ft., 102° 40'E, 5° 28' N, Malaysia, 26 Feb. 1974, Gn. Lawit Expedition, Brit. Mus. 1974–2 (NHML). **Paratypes**: 2♂, 2♀, same data as holotype (NHML).

Additional material examined (non-types). Ex *Malacopteron magnum magnum*: 1♂, 1♀ Subang, Malaysia, 7 Mar. 1962, M-00957 (OSUS).

Ex *Malacopteron cinereum cinereum*: 1♂, 1♀ Gombak, Malaysia, 14 Feb. 1963, M-02390 (OSUS).

Remarks. No significant differences have been found between the samples from the two host species.

Priceiella (Thescelovora) coleyae Gustafsson, Clayton, & Bush, new species (Figs 36–42)

Type host. *Stachyris striolata tonkinensis* Kinnear, 1938—spot-necked babbler (Timaliidae).

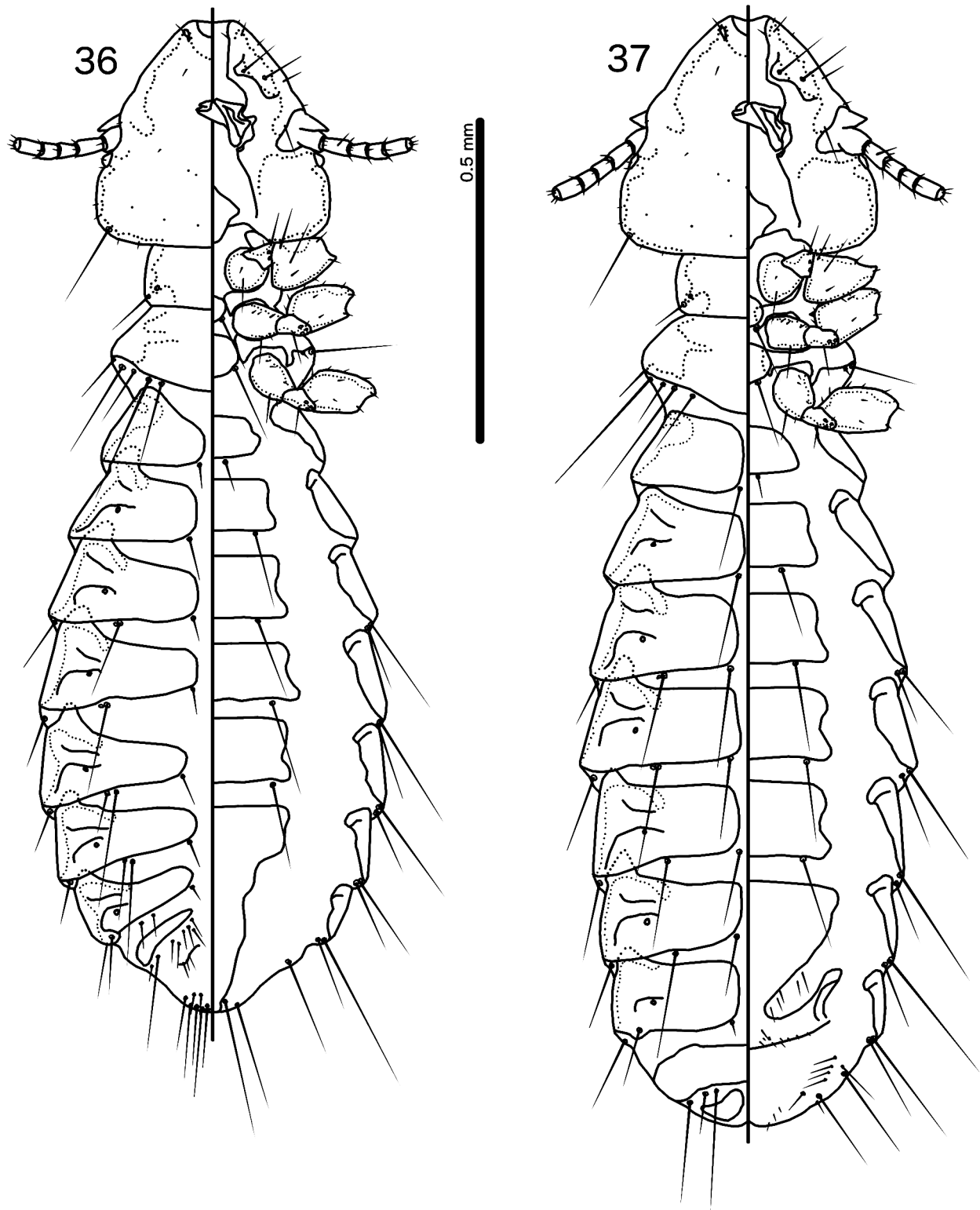
Type locality. Jingxi County, Guangxi Province, China.

Diagnosis. *Priceiella (Thescelovora) coleyae* n. sp. (Figs 36–42) is most similar to *P. (T.) fuscicaena* n. sp. (Figs 29–35), with which it shares the following characters: frons shallowly concave (Figs 31, 38); proximal mesosome rounded (Figs 33, 40); marginal thickening of mesosomal lobes broad (Figs 33, 40). The two species can be separated on the following characters: lateral margins of preantennal area convex in *P. (T.) coleyae* (Fig. 38), but straight in *P. (T.) fuscicaena* (Fig. 31); dorsal preantennal suture reaches at least half-way between *dsms* and *ads* in *P. (T.) fuscicaena* (Fig. 31) but is much shorter in *P. (T.) coleyae* (Fig. 38); *aps* present on male tergopleurites VI–VII in *P. (T.) coleyae* (Fig. 36) but absent in *P. (T.) fuscicaena* (Fig. 29); basal apodeme slender, notably constricted at mid-length in *P. (T.) fuscicaena* (Fig. 32) but broader and less or not constricted in *P. (T.) coleyae* (Fig. 39); distal mesosome convergent to medial point in *P. (T.) coleyae* (Fig. 40), but rounded in *P. (T.) fuscicaena* (Fig. 33); proximal mesosome with ventral rugose area in *P. (T.) fuscicaena* (Fig. 33) but without such area in *P. (T.) coleyae* (Fig. 40); parameres divergent distally in *P. (T.) coleyae* (Fig. 41), but parallel distally in *P. (T.) fuscicaena* (Fig. 34); *vos* longer in *P. (T.) coleyae* (Fig. 42) than in *P. (T.) fuscicaena* (Fig. 35) but vulval chaetotaxy otherwise similar.

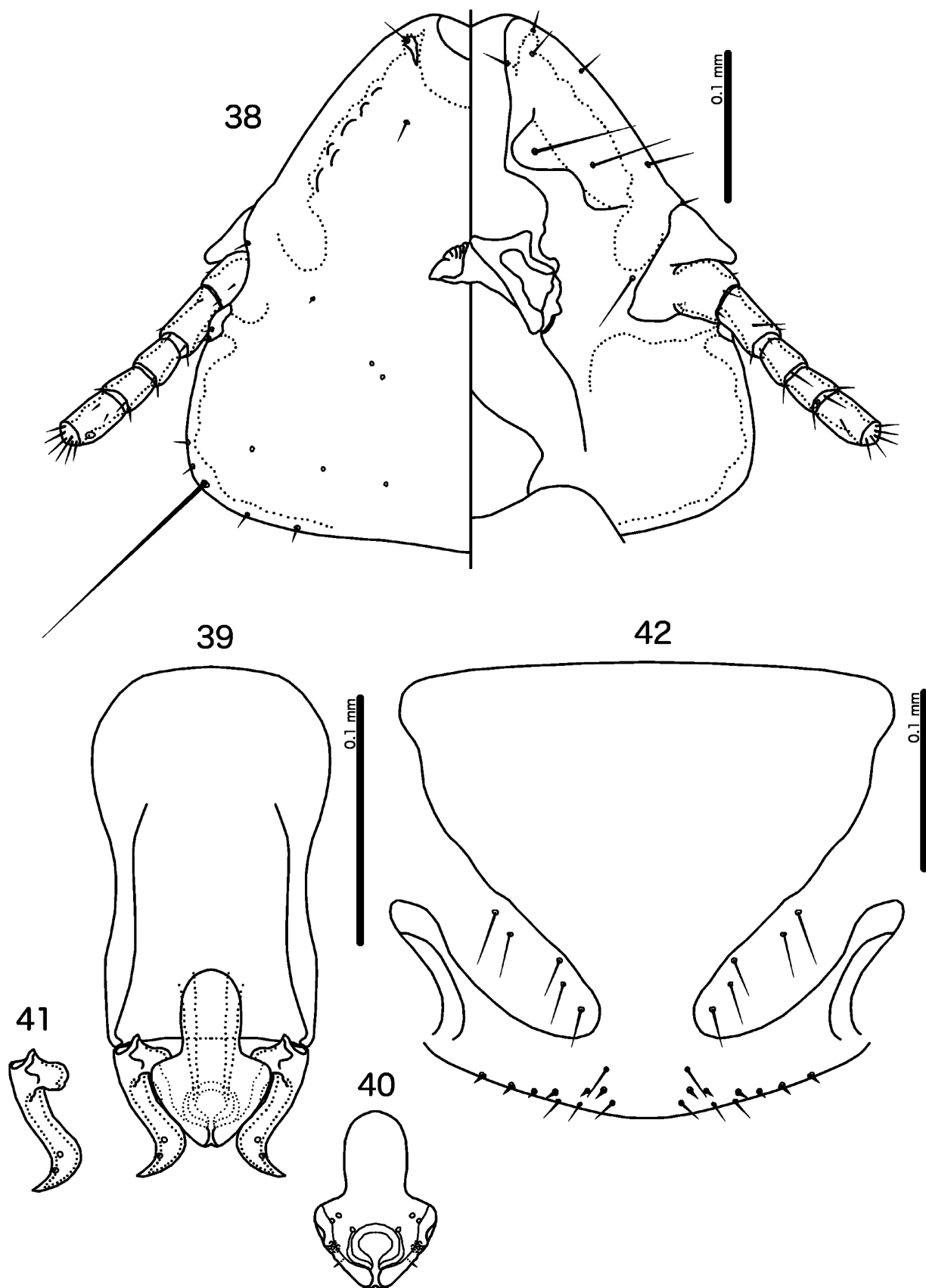
Description. Both sexes. Head broad, dome shaped, with convex posterior margin (Fig. 38). Frons slightly concave. Lateral margins of preantennal head clearly convex. Dorsal preantennal suture present around *dsms*, does not reach even half-way to *ads*. Head chaetotaxy as in Fig. 38. Coni do not reach distal margin of scapes. Pteronotum with 5 *mms* on each side (Figs 36–37). Base pigmentation pale yellowish brown; marginal and temporal marginal carinae, head nodi, flagellomere II, proepimera, metepisterna and pleural incrassations dark brown; margins of antennal socket, mandibular framework, flagellomeres I and III, gular plate and subgenital and sternal plates IV–VI medium brown; sternal and subgenital plates darkening laterally.

Male. Abdominal plates and chaetotaxy as in Fig. 36; *aps* present on tergopleurites VI–VII. Male genitalia as in Figs 39–41. Basal apodeme roughly rectangular, slightly or not constricted at mid-length (Fig. 39). Proximal mesosome slender, rounded (Fig. 40). Mesosomal lobes rounded triangular, distally convergent to blunt medial point. Lateral thickening of mesosome slightly sinuous, broad. Rugose nodi present. Gonopore open only distally; marginal thickening wide; 2 *ames* sensilla on each side near antero-lateral corners of mesosomal lobes; 1 *pmes* sensilla on each side of anterior end of gonopore; 1 *pmes* microseta laterally on each side distal to rugose nodi. Parameral heads rounded but slightly irregular in shape with slightly sinuous median margin (Fig. 41). Parameral blades clearly divergent distally; *pst1*–2 close together. Measurements ex *Stachyris striolata tonkinensis* (n = 11): TL = 1.35–1.54 (1.41); HL = 0.33–0.35 (0.34); HW = 0.34–0.36 (0.35); PRW = 0.20–0.22 (0.21); PTW = 0.29–0.34 (0.31); AW = 0.43–0.53 (0.47).

Female. Abdominal plates and chaetotaxy as in Fig. 37. Vulval margin (Fig. 42) shallowly rounded, with 3 short, slender *vms* and 6 short thorn-like *vss* on each side; 5–6 long, slender *vos* on each side; distal *vos* near *vss*. Measurements ex *Stachyris striolata tonkinensis* (n = 18, except TL where n = 16 and AW where n = 15): TL = 1.57–1.79 (1.70); HL = 0.36–0.38 (0.37); HW = 0.37–0.41 (0.39); PRW = 0.22–0.24 (0.23); PTW = 0.33–0.36 (0.35); AW = 0.51–0.62 (0.55).



FIGURES 36–37. *Priceiella* (*Thescelovora*) *coleyae* n. sp. ex *Stachyris striolata tonkinensis* Kinnear, 1938. **36**, male habitus, dorsal and ventral views. **37**, female habitus, dorsal and ventral views.



FIGURES 38–42. *Priceiella* (*Thescelovora*) *coleyae* n. sp. ex *Stachyris strialata tonkinensis* Kinnear, 1938. **38**, male head, dorsal and ventral views. **39**, male genitalia, dorsal view. **40**, male mesosome, ventral view. **41**, male paramere, dorsal view. **42**, female subgenital plate and vulval margin, ventral view.

Etymology. This species is named for Phyllis D. Coley, University of Utah, in recognition of her distinguished contributions to ecology and her friendship and support of authors Bush and Clayton.

Type material. Ex *Stachyris striolata tonkinensis*: **Holotype** ♂, Jingxi County, Guangxi Province, China, 29 Sep. 2004, S.E. Bush, ATP-2004-129, P-364 (NHML). **Paratypes:** 2♂, 5♀, same data as holotype (PIPeR); 1♂, same data, ATP-2004-120, P-345 (PIPeR); 7♂, 13♀, same data, AN-434, P-351 (PIPeR).

***Priceiella (Thescelovora) macrocephala* Gustafsson, Clayton, & Bush, new species**
(Figs 43–49)

Type host. *Megapomatorhinus hypoleucos wrayi* Sharpe, 1887—large scimitar-babbler (Timaliidae).

Type locality. Gunong Benom, elev. 6000 ft., Malaysia.

Diagnosis. *Priceiella (Thescelovora) macrocephala* n. sp. is most similar to *P. (T.) fuscicaena* n. sp., with which it shares the following characters: preantennal area long, with straight lateral margins (Figs 31, 45); dorsal preantennal suture reaching at least half-way between *dsms* and *ads* (Figs 31, 45); parameres not divergent distally (Figs 34, 48); *aps* absent from male tergopleurites VI–VII. These two species can be separated on the following characters: proximal mesosome rectangular without rugose ventral area in *P. (T.) macrocephala* (Fig. 47), but rounded and with rugose ventral area in *P. (T.) fuscicaena* (Fig. 33); marginal thickening of mesosomal lobes slender in *P. (T.) macrocephala* (Fig. 47), but broad in *P. (T.) fuscicaena* (Fig. 33); *pmes* not visible near rugose nodi in *P. (T.) macrocephala* (Fig. 47), but visible in *P. (T.) fuscicaena* (Fig. 33); parameres tapering gradually, with distal ends slender in *P. (T.) fuscicaena* (Fig. 34), but tapering only in distal end and with roughly same width for most of length in *P. (T.) macrocephala* (Fig. 48); *vos* longer in *P. (T.) macrocephala* (Fig. 49) than in *P. (T.) fuscicaena* (Fig. 35), but vulval chaetotaxy otherwise similar.

Description. Both sexes. Head pentagonal (Fig. 45). Frons deeply concave. Lateral margins of preantennal head roughly straight. Dorsal preantennal suture reaches *dsms* and at least half-way to *ads*. Head chaetotaxy as in Fig. 45. Coni reach distal margin of scape. Base pigmentation very pale brown; marginal and marginal temporal carinae, head nodi, flagellomeres I–II, proepimera, metepisterna and pleural incrassations dark reddish brown; mandibular framework, margins of antennal sockets, gular plate, flagellomere III and sternal and subgenital plates medium brown; sternal plates paler medianly.

Male. Pteronotum with 7–8 *mms* on each side (Fig. 43) (one male with 10 on one side). Abdominal plates and chaetotaxy as in Fig. 43; *aps* absent on tergopleurites VI–VII. Male genitalia as in Figs 46–48. Basal apodeme broad, rectangular, slightly constricted at mid-length (Fig. 46). Proximal mesosome broad, with flat anterior margin (Fig. 47); typically widened proximally. Mesosomal lobes gently rounded to blunt medial point. Lateral thickening of mesosome sinuous. Ventral nodi rugose. Gonopore open only distally; 2 *ames* sensilla on each side near antero-lateral corner of mesosomal lobes; 1 *pmes* sensilla on each side lateral to anterior end of gonopore. No lateral *pmes* discernable near rugose nodi, but these may be overlooked due to being sensilla. Parameral heads roughly triangular, with irregularly serrated posterior margin (Fig. 48). Parameral blades short, of roughly the same width for most of length; *pst1*–2 close together. Measurements ex *Pomatorhinus hypoleucos wrayi* (n = 6): TL = 1.62–1.77; HL = 0.40–0.43; HW = 0.40–0.43; PRW = 0.24–0.26; PTW = 0.37–0.41; AW = 0.53–0.59.

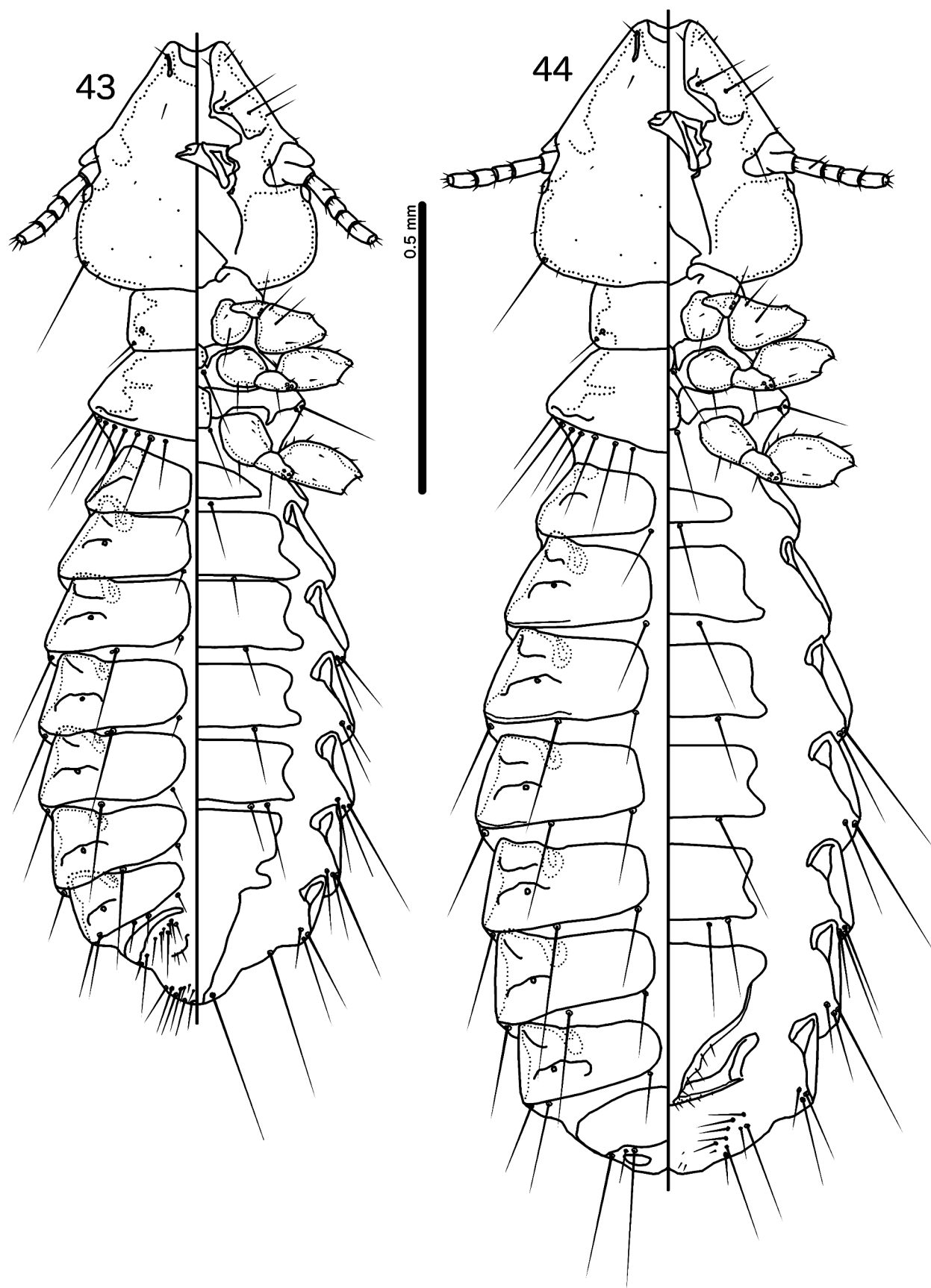
Female. Pteronotum with 7 *mms* on each side (Fig. 44). Abdominal plates and chaetotaxy as in Fig. 44. Vulval margin gently rounded (Fig. 49) with 3–4 slender *vms* on each side (lateral *vms* much shorter than more medial *vms*), 5–6 thorn-like *vss* on each side; 5–7 slender *vos* on each side; distal *vos* medial to *vss*. Measurements ex *Pomatorhinus hypoleucos wrayi* (n = 6): TL = 1.83–2.01; HL = 0.42–0.44; HW = 0.43–0.46; PRW = 0.25–0.28; PTW = 0.39–0.42; AW = 0.57–0.65.

Etymology. The species epithet is derived from Greek “*makros*” for “large” and “*kefali*” for head, referring to its much larger head compared with closely related species.

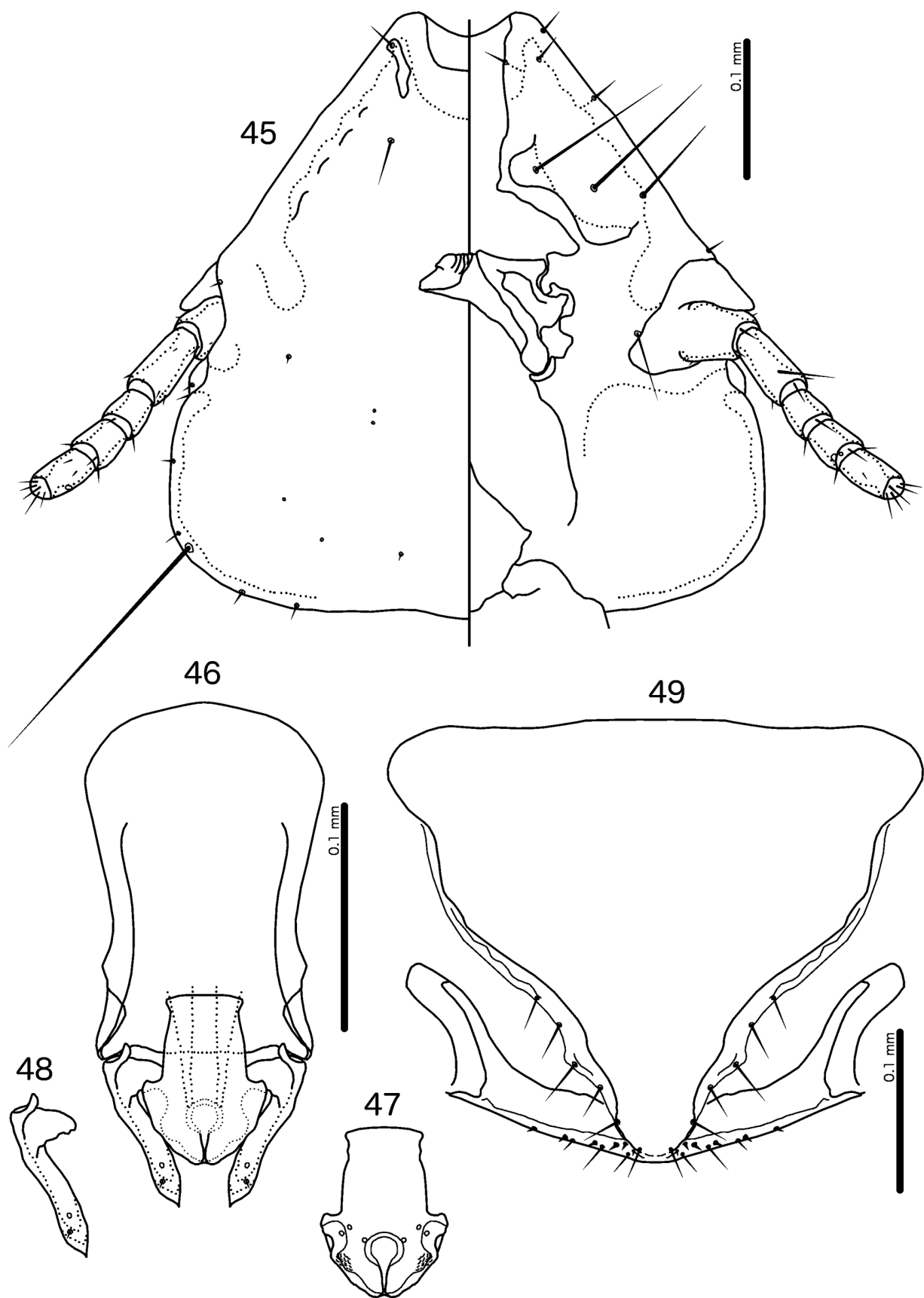
Type material. Ex *Pomatorhinus hypoleucos wrayi*: **Holotype** ♂, Gunong Benom, elev. 6000 ft., Malaysia, 28 Mar. 1967, BA-40, Brit. Mus. 1967-400 (NHML). **Paratypes:** 5♂, 6♀, same data as holotype (NHML).

Additional material examined (non-types)

Ex *Pomatorhinus hypoleucos wrayi*: 1♂, 1♀, Mount Brinchang, Malaysia, 16 Mar. 1963, M-02691, 24716 on reverse (OSUS).



FIGURES 43–44. *Priceiella* (*Thescelovora*) *macrocephala* n. sp. ex *Pomatorhinus hypoleucos wrayi* Sharpe, 1887. **43**, male habitus, dorsal and ventral views. **44**, female habitus, dorsal and ventral views.



FIGURES 45–49. *Priceiella* (*Thescelovora*) *macrocephala* **n. sp.** ex *Pomatorhinus hypoleucos wrayi* Sharpe, 1887. **45**, male head, dorsal and ventral views. **46**, male genitalia, dorsal view. **47**, male mesosome, ventral view. **48**, male paramere, dorsal view. **49**, female subgenital plate and vulval margin, ventral view.

***Priceiella (Thescelovora) ornata* Gustafsson, Clayton, & Bush, new species**

(Figs 50–56)

Type host. *Psittiparus gularis fokiensis* (David 1874)—gray-headed parrotbill (Paradoxornithiidae).

Type locality. Jingxi County, Guangxi Province, China.

Diagnosis. *Priceiella (Thescelovora) ornata* n. sp. does not appear to be particularly close to any of the other species in the subgenus. The following characters found in *P. (T.) ornata* are unique within *Thescelovora*: *pns* absent (Fig. 52); female subgenital plate slender (Fig. 56); posterior margin of head clearly rounded in male (Fig. 52); *ps* present on abdominal segment III in both sexes (Figs 50–51); sternites III–VI of both sexes with distinct pale band across medial section of each plate (Figs 50–51).

The male genitalia of *P. (T.) ornata* (Figs 53–55) are most similar to those of *P. (T.) alliocephala*: gonopore shaped as two roughly parallel ridges, open distally and proximally; the proximal mesosome elongated; mesosomal lobes roughly rectangular, with posterior margin not forming distinct medial point. However, these two species can be separated by the unique characters listed above, as well as the following characters: head pentagonal in *P. (T.) alliocephala* but dome shaped with convex posterior margin in *P. (T.) ornata* (Fig. 52); dorsal preantennal suture present in *P. (T.) alliocephala* but absent in *P. (T.) ornata* (Fig. 52); distal thickening of mesosomal lobes medially interrupted in *P. (T.) ornata* (Fig. 54) but medially continuous in *P. (T.) alliocephala*; *pmes* almost directly medial to *ames* in *P. (T.) alliocephala*, but *ames* much anterior to *pmes* in *P. (T.) ornata* (Fig. 54); *pst1*–2 close together in *P. (T.) alliocephala*, but widely separated in *P. (T.) ornata* (Fig. 55).

Description. Both sexes. Head with distinct shape (Fig. 52); frons broadly flattened, slightly concave; temples gently rounded; lateral margins of preantennal area convex. Displaced section of marginal carina broad. Dorsal preantennal suture absent. Head chaetotaxy as in Fig. 52; *pns* absent. Coni reach to distal half of scape. Dark pigmentation patterns occur on: marginal carina (except displaced section), preantennal, preocular and postocular nodi, occipital and marginal temporal carinae, pedicel, flagellomeres I–III, gular plate, proepimera, metepisterna, mesosternum, metasternum and nodi and carinae of the legs. Tergopleurites not pigmented except laterally where pleural incrassations (Figs 51–51) are almost black. Sternite II of both sexes transparent. Sternite III with brown pigmentation only along posterior margin. Sternites IV–VI with brown pigmentation along anterior and posterior margins (delimited by dotted lines in Figs 50–51). Subgenital plates and tergopleurites IX+X in both sexes, and tergopleurite XI in female with brown pigmentation.

Male. Pteronotum with 5 *mms* on each side, and abdominal chaetotaxy as in Fig. 50; *aps* absent on tergopleurite VI. Male genitalia as in Figs 53–55. Basal apodeme slender, constricted at midlength (Fig. 53). Proximal mesosome rounded rectangular. Mesosomal lobes broad (Fig. 54). Lateral thickening of lobes sinuous, widening distally. Ventral nodi smooth; 2 *ames* sensilla sublaterally on each side at anterior end of mesosomal lobes; 2 *pmes* sensilla just lateral to gonopore on each side; 1 *pmes* microseta on lateral margins of mesosomal lobes. Parameral heads roughly rectangular, somewhat arched (Fig. 55). Parameral blades short, divergent; *pst1* sensilla, sublateral, distant from sublateral *pst2* microseta. Measurements ex *Psittiparus gularis fokiensis*: (n = 1): TL = 1.62; HL = 0.36; HW = 0.37; PRW = 0.24; PTW = 0.37; AW = 0.50.

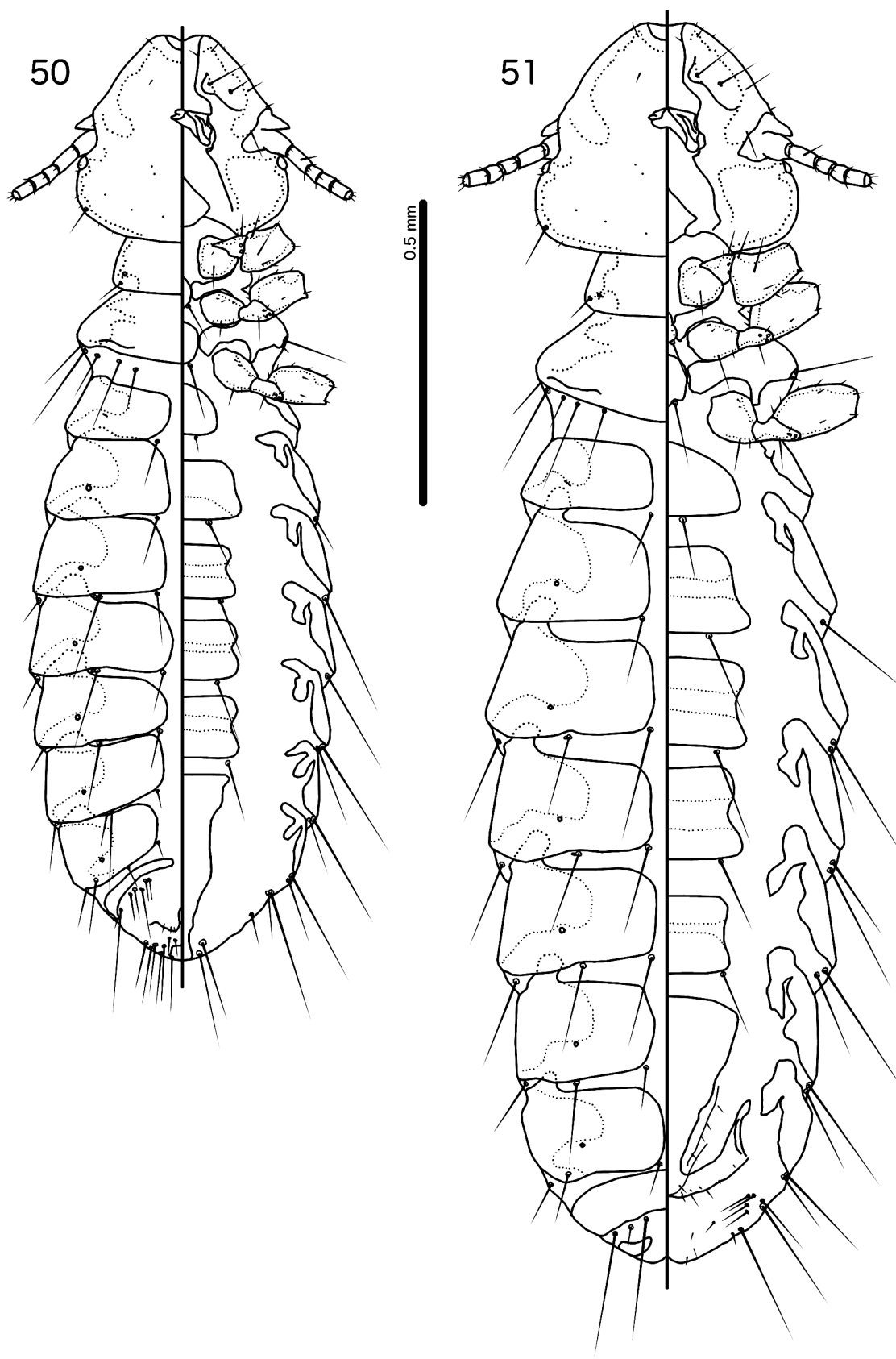
Female. Pteronotum with 5–6 *mms* on each side (one female with 1 *mms*), and abdominal chaetotaxy as in Fig. 51. Subgenital plate slender (Fig. 56). Vulval margin gently rounded, slightly flattened medially (Fig. 56), with 3 slender *vms* and 5 thorn-like *vss* on each side; 5–7 slender *vos* on each side, distal *vos* near *vss*. Measurements ex *Psittiparus gularis fokiensis*: (n = 2): TL = 1.81–2.09; HL = 0.38–0.39; HW = 0.41–0.43; PRW = 0.26–0.28; PTW = 0.40–0.44; AW = not available.

Etymology. The species epithet is derived from Latin “*ornatus*” for “adorned”, referring to the intricate pigmentation patterns of the species.

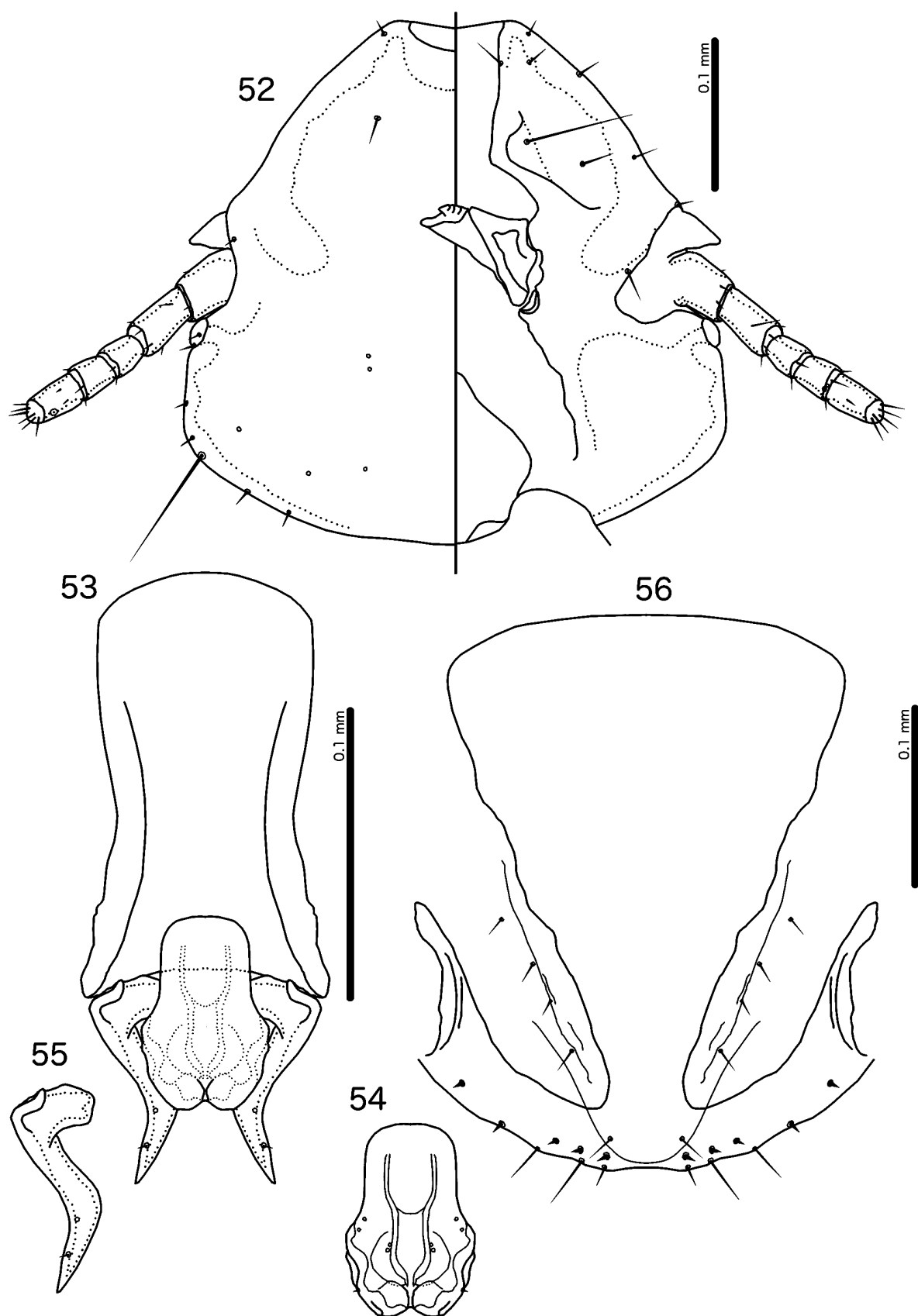
Type material. Ex *Psittiparus gularis fokiensis*: **Holotype** ♂, Jingxi County, Guangxi Province, CHINA, 30 Sep. 2004, S.E. Bush, PH-383, AN-445 (NHML). **Paratypes**: 2♀, Shiwandashan National park, Guangxi, China, 2 May 2005, S.E. Bush & D.H. Clayton, host MBR-6744, louse-P-785 (PIPeR).

Remarks. *Priceiella (Thescelovora) ornata* is the first species of *Priceiella* and the first species in the *Brueelia*-complex described from a member of the host family Paradoxornithiidae. The members of this family have previously been included in the family Timaliidae, but have recently been shown to be more closely related to *Sylvia* warblers (Cibois 2003; Alström *et al.* 2006; Gelang *et al.* 2008; Moyle *et al.* 2012). All other hosts of species of the subgenus *Thescelovora* occur on members of the host families Timaliidae and Pellorneidae, and the great

morphological differences between *P. (T.) ornata* and all other species in the subgenus may suggest that *P. (T.) ornata* is not particularly closely related to the other *P. (Thescelovora)*.



FIGURES 50–51. *Priceiella (Thescelovora) ornata* n. sp. ex *Psittiparus gularis fokiensis* (David, 1874). **50**, male habitus, dorsal and ventral views. **51**, female habitus, dorsal and ventral views.



FIGURES 52–56. *Priceiella* (*Thescelovora*) *ornata* n. sp. ex *Psittiparus gularis fokiensis* (David, 1874). **52**, male head, dorsal and ventral views. **53**, male genitalia, dorsal view. **54**, male mesosome, ventral view. **55**, male paramere, dorsal view. **56**, female subgenital plate and vulval margin, ventral view.

***Priceiella* (*Camurnirmus*) Gustafsson & Bush, 2017**

Brueelia Kéler, 1936a: 257 (in part).

Allobrueelia Eichler, 1951b: 36 (in part).

Camurnirmus Gustafsson & Bush, 2017: 179.

Type species: *Priceiella* (*Camurnirmus*) *hwameicola* Gustafsson & Bush, 2017: 179, by original designation.

Included species

Priceiella (*Camurnirmus*) *bohsae* **new species**

Priceiella (*Camurnirmus*) *hwameicola* Gustafsson & Bush, 2017: 179.

Priceiella (*Camurnirmus*) *lindquistae* **new species**

Priceiella (*Camurnirmus*) *najeri* **new species**

Priceiella (*Camurnirmus*) *nipalensis* (Ansari, 1956a: 143) [in *Brueelia*].

Priceiella (*Camurnirmus*) *paulbrowni* Gustafsson & Bush, 2017: 182.

Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957: 579) [in *Allobrueelia*].

Priceiella (*Camurnirmus*) *sonorae* **new species**

***Priceiella* (*Camurnirmus*) *lindquistae* Gustafsson, Clayton, & Bush, new species**

(Figs 57–63)

Type host. *Ianthocincla chinensis chinensis* (Scopoli 1786)—black-throated laughing-thrush (Leiothrichidae).

Type locality. Shiwandashan National Park, Guangxi Province, China.

Diagnosis. *Priceiella* (*Camurnirmus*) *lindquistae* **n. sp.** is closely related to *P. (C.) sonorae* **n. sp.**, with which it shares the following characters: female subgenital plate with medial reticulation (Figs 63, 70); parameres elongate and widely diverging distally (Figs 62, 69); antennae sexually dimorphic (Figs 57–58, 64–65); dorsal preantennal suture absent (Figs 59, 66); no *tps* on female tergopleurite VIII (Figs 58, 65). These two species can be separated on the following characters: *ps* present on female abdominal segment III in *P. (C.) lindquistae* (Fig. 58) but absent in *P. (C.) sonorae* (Fig. 65); basal apodeme barely or not constricted at mid-length in *P. (C.) lindquistae* (Fig. 60), but with considerably constriction at mid-length in *P. (C.) sonorae* (Fig. 67); gonopore long and slender with long anterior projection and hook-shaped distal ends in *P. (C.) lindquistae* (Fig. 61), but short and broad with short anterior projection and without hooks in *P. (C.) sonorae* (Fig. 68); proximal mesosome gently rounded in *P. (C.) lindquistae* (Fig. 61) but more angular in *P. (C.) sonorae* (Fig. 68); parameres much longer in *P. (C.) lindquistae* (Fig. 62) than in *P. (C.) sonorae* (Fig. 69); *pst1–2* close together in *P. (C.) sonorae* (Fig. 69), but widely separated in *P. (C.) lindquistae* (Fig. 62); female subgenital plate more constricted at base of cross-piece in *P. (C.) sonorae* (Fig. 70) than in *P. (C.) lindquistae* (Fig. 63), but vulval chaetotaxy overlaps between these two species.

Description. Both sexes. Head pentagonal (Fig. 59). Frons broad, concave. Dorsal preantennal suture absent. Head chaetotaxy as in Fig. 59. Antennae sexually dimorphic. Base pigmentation pale yellowish brown; marginal and marginal temporal carinae, head nodi, proepimera, metepisterna and pleural incrassations dark, slightly reddish, brown; gular plate, margins of antennal sockets, sternal plates IV–VI, subgenital plates and lateral sections of tergopleurites medium brown; metasternum and sternal plates II–III pale brown.

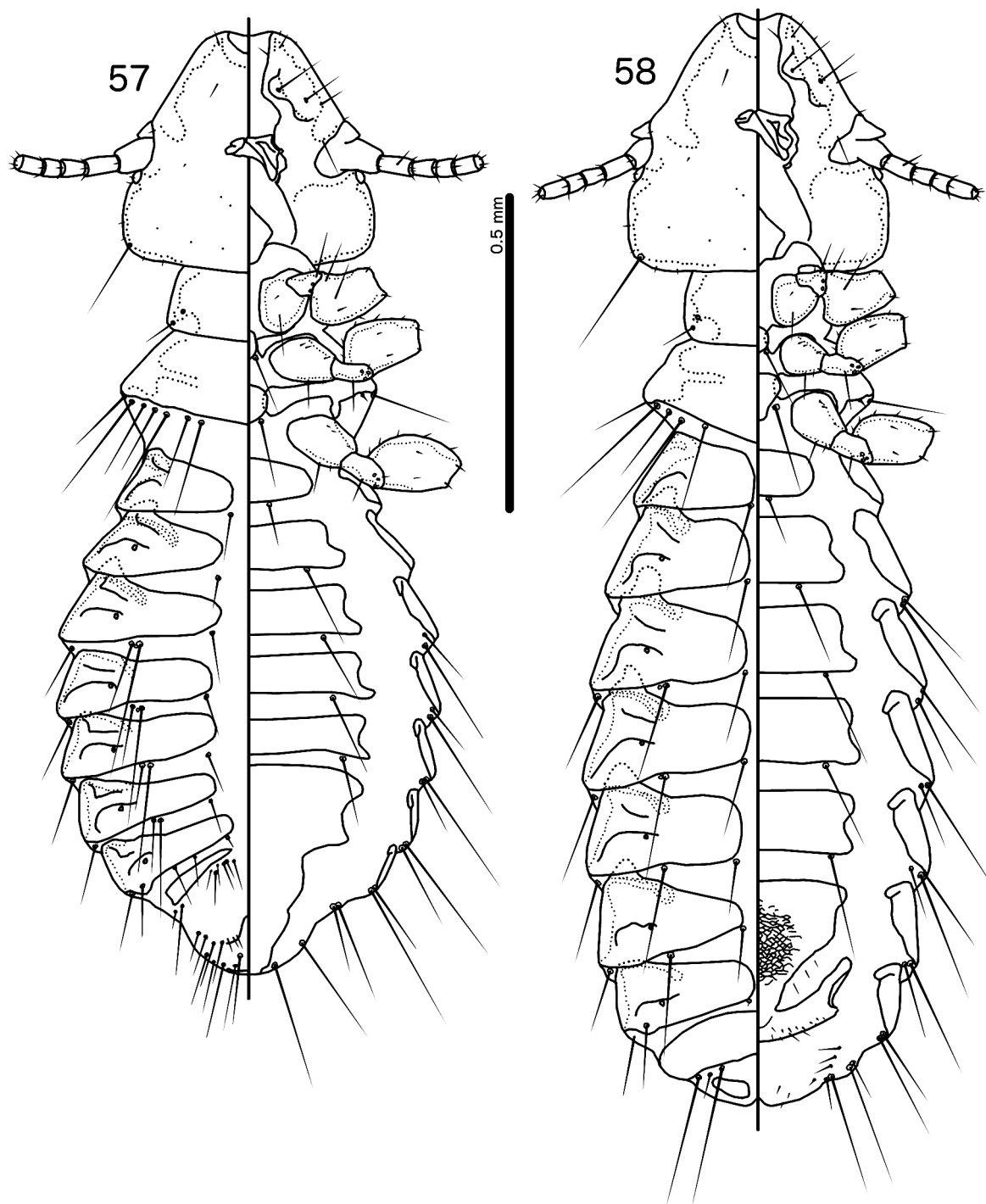
Male. Scape swollen and elongated (Fig. 59). Pteronotum with 7–9 *mms* on each side. Abdominal plates and chaetotaxy as in Fig. 57. Male genitalia as in Figs 60–62. Basal apodeme roughly rectangular, barely or not expanded in anterior end (Fig. 60). Proximal mesosome broad, gently rounded (Fig. 61). Mesosomal lobes comparatively slender. Marginal thickening of mesosomal lobes deeply sinuous laterally, not medially continuous. Gonopore longer than broad, with long, slender proximal projection. Distal ends of gonopore hook-like; 2 *ames* microsetae on each side antero-lateral to gonopore; 1 *pmes* sensillus on each side on distal hooks of gonopore; 2 *pmes* microsetae on each side on lateral margins of mesosome. Parameral heads with sinuous margins and medio-posterior bulge (Fig. 62). Parameral blades very long, tapered, highly divergent; *pst1–2* widely separated. Measurements ex *Ianthocincla chinensis chinensis* (n = 2): TL = 1.44–1.48; HL = 0.37; HW = 0.38–0.39; PRW = 0.23–0.24; PTW = 0.38; AW = 0.60.

Female. Scape as in Fig. 58. Pteronotum with 5 *mms* on each side. Abdominal plates and chaetotaxy as in Fig. 58. Subgenital plate with dense reticulation (Fig. 63). Vulval margin (Fig. 63) gently rounded, with 3–4 long,

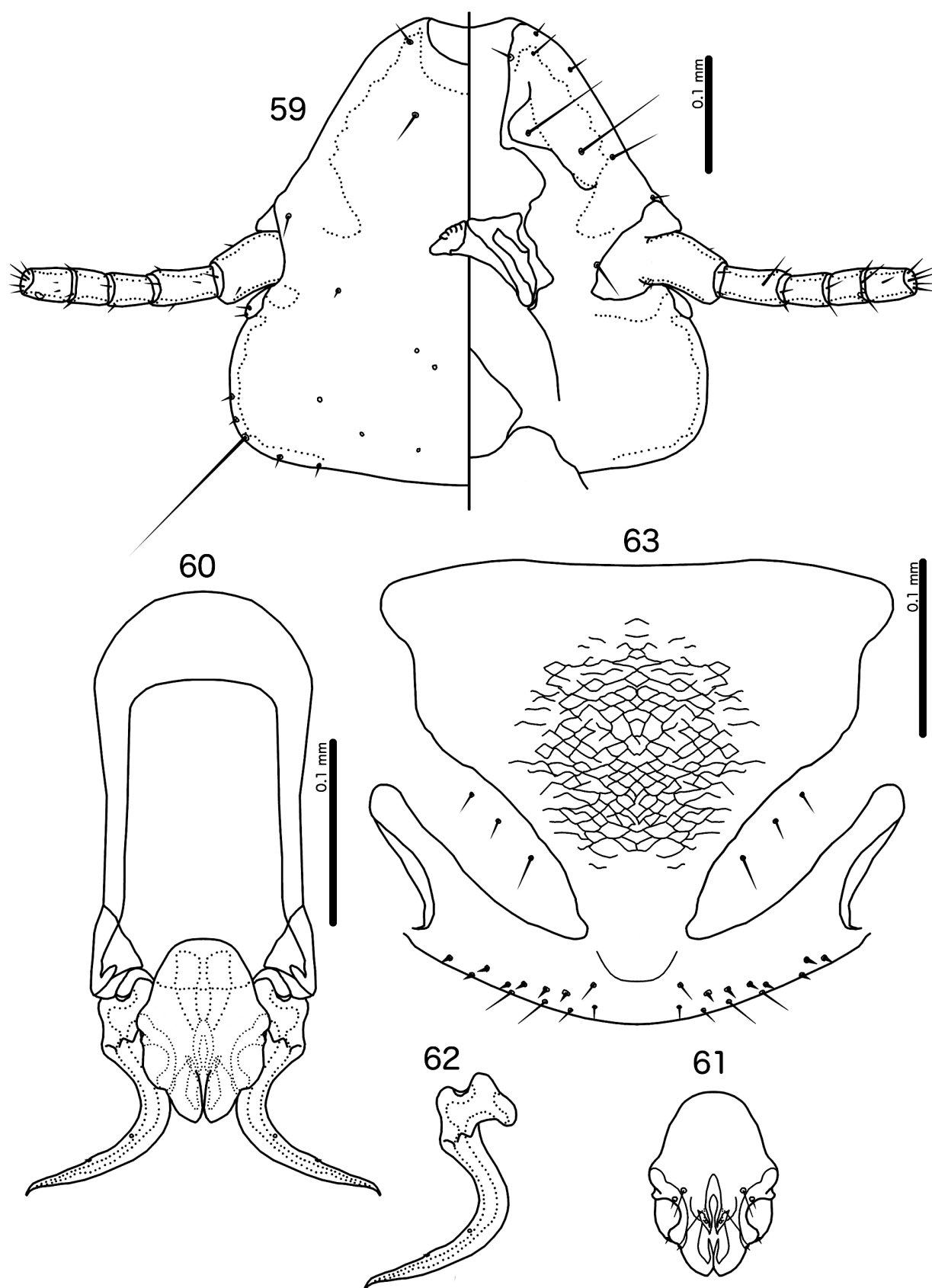
slender *vms* on each side (medial-most *vms* on each side shorter than others) and 6–7 short thorn-like *vss* on each side; 3–4 long, slender *vos* on each side; distal *vos* near *vss*. Measurements ex *Ianthocincla chinensis chinensis* (n = 2): TL = 1.70–1.71; HL = 0.39; HW = 0.40–0.41; PRW = 0.22–0.24; PTW = 0.35–0.37; AW = 0.53–0.54.

Etymology. The species epithet is in honor of Emelie Lindquist (University of Gothenburg, Gothenburg, Sweden), in recognition of her assistance in collecting lice in Sweden during DG's PhD studies.

Type material. Ex *Ianthocincla chinensis chinensis*: **Holotype** ♂, Shiwandashan National Park, Guangxi, China, 26 Apr. 2005, S.E. Bush & D.H. Clayton, host MBR-6716, lice P-664 (NHML). **Paratypes:** 1♂, 2♀, same data as holotype (PIPeR).



FIGURES 57–58. *Priceiella* (*Camurnirmus*) *lindquistae* n. sp. ex *Ianthocincla chinensis chinensis* (Scopoli 1786). **57**, male habitus, dorsal and ventral views. **58**, female habitus, dorsal and ventral views.

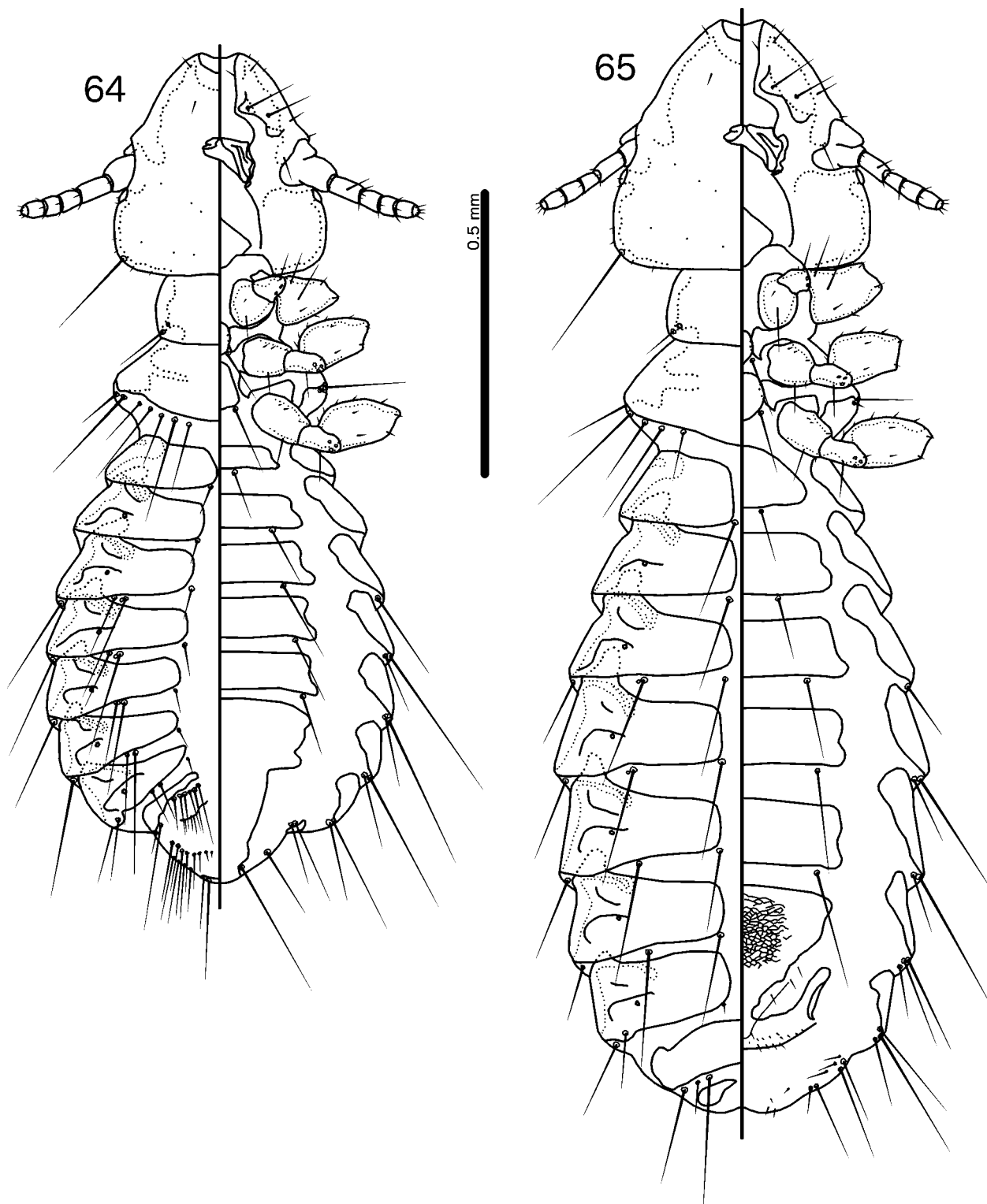


FIGURES 59–63. *Priceiella* (*Camurnirmus*) *lindquistae* n. sp. ex *Ianthocincla chinensis chinensis* (Scopoli 1786). **59**, male head, dorsal and ventral views. **60**, male genitalia, dorsal view. **61**, male mesosome, ventral view. **62**, male paramere, dorsal view. **63**, female subgenital plate and vulval margin, ventral view.

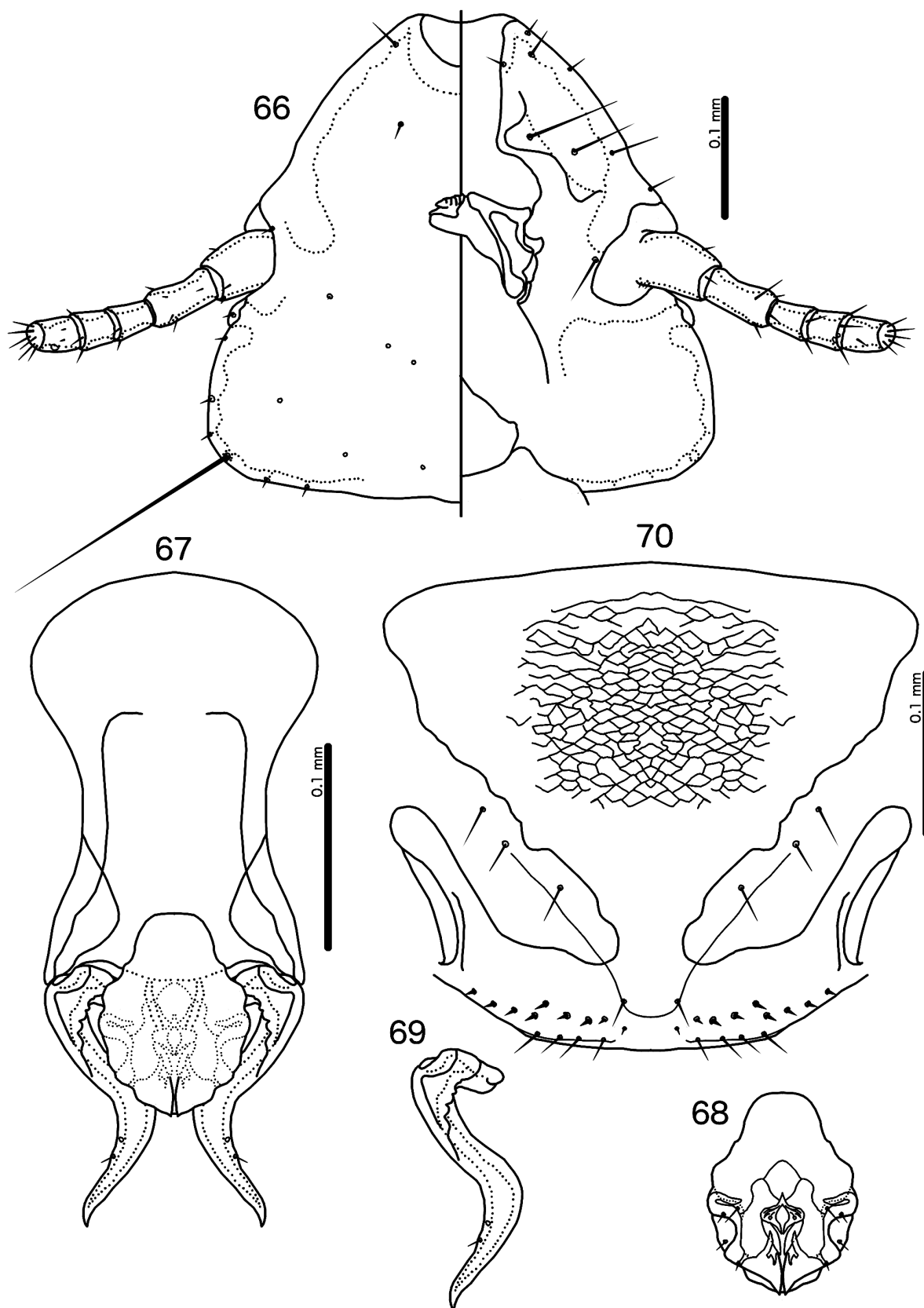
***Priceiella (Camurnirmus) sonoreae* Gustafsson, Clayton, & Bush, new species**
(Figs 64–70)

Type host. *Garrulax maesi maesi* (Oustalet 1890)—gray laughing-thrush (Leiothrichidae).

Type locality. Jing Xi County, Guangxi Province, China.



FIGURES 64–65. *Priceiella (Camurnirmus) sonoreae* n. sp. ex *Garrulax maesi maesi* (Oustalet, 1890). **64**, male habitus, dorsal and ventral views. **65**, female habitus, dorsal and ventral views.



FIGURES 66–70. *Priceiella* (*Camurnirmus*) *sonorae* n. sp. ex *Garrulax maesi maesi* (Oustalet, 1890). 66, male head, dorsal and ventral views. 67, male genitalia, dorsal view. 68, male mesosome, ventral view. 69, male paramere, dorsal view. 70, female subgenital plate and vulval margin, ventral view.

Diagnosis. *Priceiella (Camurnirmus) sonora* **n. sp.** is most similar to *P. (C.) lindquistae* **n. sp.**, with which it shares the following characters: parameres long and tapered (Figs 62, 69); female subgenital plate with medial reticulation (Figs 63, 70); antennae sexually dimorphic and dorsal preantennal suture absent (Figs 59, 66); *tps* on female tergopleurite VIII absent (Figs 58, 65). The differences between *P. (C.) sonora* and *P. (C.) lindquistae* are mainly in the male genitalia (Figs 60–62, 67–69; see *P. (C.) lindquistae* above for a more detailed comparison of these). However, the two species can also be separated on the following characters: female subgenital plate more constricted at base of cross-piece in *P. (C.) sonora* (Fig. 70) than in *P. (C.) lindquistae* (Fig. 63); *ps* present on female abdominal segment III in *P. (C.) lindquistae* (Fig. 58), but not in *P. (C.) sonora* (Fig. 65); female abdominal segments VII–VIII each with 4 *ps* on each side in *P. (C.) sonora* (Fig. 65), but each with 3 *ps* on each side in *P. (C.) lindquistae* (Fig. 58).

Description. Both sexes. Head broad, dome shaped with flat posterior margin (Fig. 66). Frons broad, shallowly concave. Lateral margins of preantennal head convex. Dorsal preantennal suture absent. Head chaetotaxy as in Fig. 66. Antennae sexually dimorphic. Base pigmentation pale yellowish brown; marginal and lateral section of marginal temporal carinae, head modi, proepimera, metepisterna and pleural incrassations dark, slightly reddish, brown; margins of antennal sockets, mandibular framework, gular plate, sternal plates IV–VI and subgenital plates medium brown; metasternum and sternal plates II–III pale brown.

Male. Scape swollen and elongated (Fig. 66). Pteronotum with 7 *mms* on each side. Abdominal plates and chaetotaxy as in Fig. 64. Male genitalia as in Figs 67–69. Basal apodeme much widened anteriorly, markedly constricted at mid-length (Fig. 67). Proximal mesosome rounded quadratic (Fig. 68). Mesosomal lobes broad, of irregular shape. Marginal thickening of mesosomal lobes deeply sinuous laterally, not medially continuous. Gonopore wide and short, with short anterior projection; 2 *ames* microsetae on each side near antero-lateral corner of mesosomal lobes; 1 *pms* sensillus on lateral projections of gonopore; 2 *pms* microsetae on each side on or near lateral margins of mesosome. Parameral heads irregular, somewhat elongated and arched, with serrated distal margin (Fig. 69). Parameral blades elongated, tapered and widely divergent distally; *pst1*–2 close together. Measurements ex *Garrulax maesi maesi* (n = 5): TL = 1.37–1.45; HL = 0.36–0.40; HW = 0.36–0.40; PRW = 0.23–0.24; PTW = 0.37–0.38; AW = 0.55–0.61.

Female. Scape as in Fig. 65. Pteronotum with 5 *mms* on each side. Abdominal plates and chaetotaxy as in Fig. 65. Subgenital plate (Fig. 70) with medial reticulations. Vulval margin (Fig. 70) flat medially, with 4–5 long, slender *vms* on each side (medial-most *vms* much shorter than others and situated submarginally as in Fig. 70) and 8–10 short thorn-like *vss* on each side; 3–5 long, slender *vos* on each side; distal *vos* situated near *vss*. Measurements ex *Garrulax maesi maesi* (n = 5): TL = 1.80–1.81; HL = 0.40–0.44; HW = 0.41–0.46; PRW = 0.24–0.26; PTW = 0.39–0.42; AW = 0.59–0.64.

Etymology. This species is named after Sonora Fay Clayton, the twin daughter of Dale H. Clayton and Sarah E. Bush, for assistance with collection of bird lice and other field work since she was seven years old.

Type material. Ex *Garrulax maesi maesi*: **Holotype** ♂, Jing Xi County, Guangxi, China, 30 Sep. 2004, S.E. Bush, ATP-2004-135 (NHML). **Paratypes:** 3♂, 4♀, same data as holotype (PIPeR); 1♂, 2♀, Shiwandashan National Park, Guangxi, China, 29 Apr. 2005, S.E. Bush & D.H. Clayton, host TJD-6263, lice P-737 (PIPeR).

Priceiella (Camurnirmus) najeri Gustafsson, Clayton, & Bush, new species (Figs 71–77)

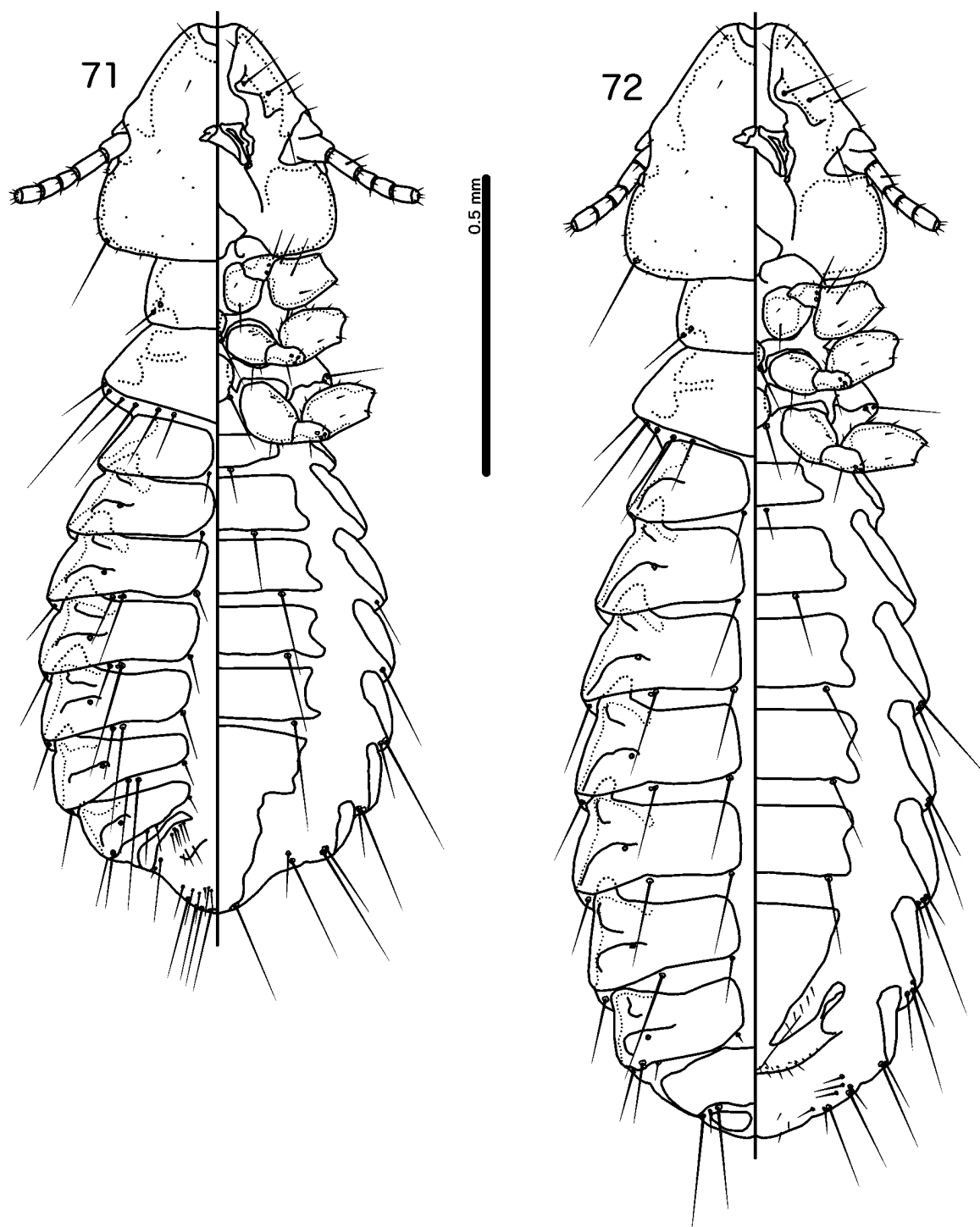
Type host. *Garrulax monileger stuarti* Meyer de Schauensee, 1955—lesser necklaced laughingthrush (Leiothrichidae).

Type locality. Chiang Mai Province, Thailand.

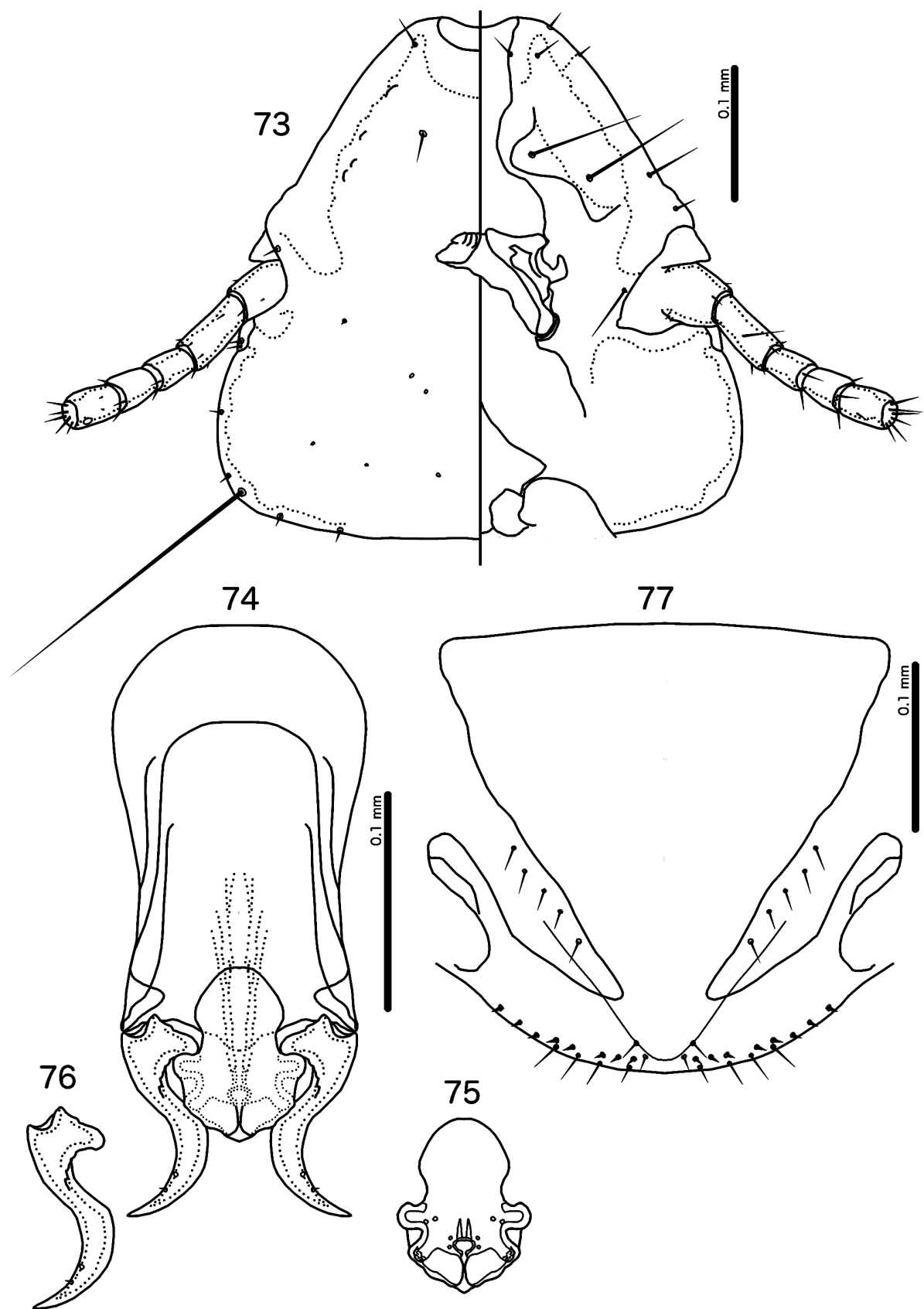
Other hosts. *Garrulax monileger fuscatus* Baker, 1918—lesser necklaced laughingthrush (Leiothrichidae). *Garrulax monileger schauenseei* Delacour & Greenway, 1939—lesser necklaced laughingthrush (Leiothrichidae). *Alcippe poioicephala harringtoniae* Hartert, 1909—brown-cheeked fulvetta (Leiothrichidae). *Ianthocincla chinensis lochmia* Deignan, 1941—black-throated laughingthrush (Leiothrichidae).

Diagnosis. Morphological features [large mesosome overlapping basal apodeme; no *aps* on tergopleurites III; no lateral accessory plates at male subgenital plate; see Gustafsson & Bush (2017)] align *Priceiella (Camurnirmus) najeri* **n. sp.** with the subgenus *Camurnirmus* Gustafsson & Bush, 2017, but it is not particularly similar to any of the other known species in this subgenus. The most similar species are *P. (C.) hwameicola* Gustafsson & Bush,

2017, *P. (C.) lindquistae* **n. sp.**, *P. (C.) nipalensis* (Ansari, 1956), *P. (C.) paulbrowni* Gustafsson & Bush, 2017 and *P. (C.) sonora* **n. sp.**, with which it shares the following characters: marginal thickening of mesosomal lobes displaced at about mid-length; mesosomal lobes convergent to distal point. However, *P. (C.) najeri* can be separated from all these species by the following characters: gonopore not extended laterally or proximally in *P. (C.) najeri* (Fig. 75), but extended in the other species (e.g. Figs 61, 68); rugose nodi present in *P. (C.) najeri* (Fig. 75), but absent in all other *Camurnirmus* (e.g. Figs 61, 68), except *P. (C.) bohssae* (Fig. 82); 2 *pms* sensilla laterally on each side of gonopore in *P. (C.) najeri* (Fig 75), but at most 1 *pms* on each side in all other *Camurnirmus* (e.g. Figs 61, 68), except *P. (C.) bohssae* **n. sp.** (Fig. 82).



FIGURES 71–72. *Priceiella (Camurnirmus) najeri* **n. sp.** ex *Garrulax monileger stuarti* Meyer de Schauensee, 1955. **71**, male habitus, dorsal and ventral views. **72**, female habitus, dorsal and ventral views.



FIGURES 73–77. *Priceiella* (*Camurnirmus*) *najeri* n. sp. ex *Garrulax monileger stuarti* Meyer de Schauensee, 1955. 73, male head, dorsal and ventral views. 74, male genitalia, dorsal view. 75, male mesosome, ventral view. 76, male paramere, dorsal view. 77, female subgenital plate and vulval margin, ventral view.

Priceiella (C.) *najeri* can be separated from *P.* (C.) *bohssae* by the following characters: *tps* present on female tergopleurite VIII in *P.* (C.) *najeri* (Fig. 72), but absent in *P.* (C.) *bohssae* (Fig. 79); male tergopleurite IV with 2 *ps* on each side in *P.* (C.) *najeri* (Fig. 71), but 3 *ps* on each side in *P.* (C.) *bohssae* (Fig. 78); proximal mesosome longer than wide, with rounded anterior margin and slightly constricted posterior end in *P.* (C.) *najeri* (Fig. 75), but wider than long, with flattened anterior margin and no constriction in *P.* (C.) *bohssae* (Fig. 82).

Description. Both sexes. Head pentagonal (Fig. 73). Frons shallowly concave. Lateral margins of preantennal head slightly convex. Head chaetotaxy as in Fig. 73. Coni about half as long as scape. Antennae sexually dimorphic. Pigmentation patterns slightly variable between material from different host species; base pigmentation near translucent, faintly brown; marginal carina, head nodi and pleural incassations dark to medium brown, with reddish (material from *Garrulax* and *Ianthocincla* spp.) or yellowish (material from *Alcippe*) tint; margins of antennal socket, gular plate, flagellomeres, proepimera and metepisterna medium to pale brown; sternal plate IV–VI and subgenital plates pale brown (material from *Garrulax* and *Ianthocincla* spp.) to yellowish (material from *Alcippe*).

Male. Scape as in Fig. 73. Pteronotum with 5–8 *mms* on each side (Fig. 71), in most specimens differing between sides. Abdominal plates and chaetotaxy as in Fig. 71. Male genitalia as in Figs 74–76. Basal apodeme broad, slightly constricted at mid-length (Fig. 74). Proximal mesosome rounded, constricted distally (Fig. 75). Mesosomal lobes wide, with clearly defined lateral sinuous thickening. Thickening along distal margin of mesosome narrow, of even thickness. Gonopore simple, without lateral or proximal extensions. One triangular fold on each side just proximal to gonopore; 2 *ames* sensilla on each side near antero-lateral corner of mesosomal lobes; 2 *pmes* sensilla on each side near gonopore; no *pmes* on lateral margins of mesosome, but these may be overlooked due to being sensilla. Parameral heads large, with median bulge and slightly serrated posterior margin (Fig. 76). Parameral blades long, divergent; *pts* 1–2 close together. Measurements ex *Garrulax monileger stuarti* (n = 6): TL = 1.37–1.43; HL = 0.35–0.37; HW = 0.35–0.38; PRW = 0.22–0.24; PTW = 0.33–0.36; AW = 0.51–0.57. Measurements ex *Garrulax monileger fuscatus* (n = 2): TL = 1.48–1.50; HL = 0.38; HW = 0.37–0.39; PRW = 0.23–0.24; PTW = 0.37; AW = 0.55–0.59. Measurements ex *Garrulax monileger schauenseei* (n = 1): TL = 1.44; HL = 0.38; HW = 0.36; PRW = 0.23; PTW = 0.36; AW = 0.54. Measurements ex *Alcippe poioicephala harrintoniae* (n = 4): TL = 1.35–1.44; HL = 0.35–0.37; HW = 0.35–0.38; PRW = 0.22–0.23; PTW = 0.33–0.36; AW = 0.52–0.59. Measurements ex *Ianthocincla chinensis lochmia* (n = 4): TL = 1.40–1.50; HL = 0.36–0.39; HW = 0.36–0.39; PRW = 0.23–0.24; PTW = 0.37–0.39; AW = 0.55–0.60.

Female. Scape as in Fig. 72. Pteronotum with 5 *mms* on each side (Fig. 72) (2 females with 6 on 1 side). Abdominal plates and chaetotaxy as in Fig. 72. Vulval margin gently rounded (Fig. 77), typically with 4–5 slender *vms* and 6–8 (but specimens from host subspecies *G. m. fuscatus* with 9) thorn-like *vss* on each side; 4–6 short, slender *vos* on each side; distal *vos* situated near *vss*. Measurements ex *Garrulax monileger stuarti* (n = 8): TL = 1.48–1.82; HL = 0.37–0.41; HW = 0.37–0.43; PRW = 0.22–0.26; PTW = 0.34–0.40; AW = 0.52–0.66. Measurements ex *Garrulax monileger fuscatus* (n = 1): TL = 1.79; HL = 0.42; HW = 0.43; PRW = 0.25; PTW = 0.39; AW = 0.57. Measurements ex *Garrulax monileger schauenseei* (n = 4, except TL where n = 2 and AW where n = 3): TL = 1.69–1.76; HL = 0.38–0.41; HW = 0.40–0.42; PRW = 0.24–0.26; PTW = 0.36–0.40; AW = 0.59–0.62. Measurements ex *Alcippe poioicephala harrintoniae* (n = 4): TL = 1.75–1.84; HL = 0.38–0.41; HW = 0.42–0.43; PRW = 0.24–0.27; PTW = 0.38–0.40; AW = 0.59–0.64. Measurements ex *Ianthocincla chinensis lochmia* (n = 10): TL = 1.69–1.89 (1.78); HL = 0.38–0.41 (0.40); HW = 0.39–0.42 (0.41); PRW = 0.23–0.25 (0.24); PTW = 0.37–0.40 (0.39); AW = 0.53–0.65 (0.60).

Etymology. The species epithet is in honor of Tomáš Najer (University of Veterinary and Pharmaceutical Sciences, Brno, Czech Republic), in recognition of his work with chewing lice of Vietnamese birds.

Type material. Ex *Garrulax monileger stuarti*: **Holotype** ♂, Chiang Mai Province, Thailand, 21 Oct. 1972, GMP-729, 24736 on reverse (OSUS). **Paratypes**: 5♂, 6♀, same data as holotype, 24735–24740 on reverse (OSUS); 1♂, 1♀, Ban Tham, Chiang Mai Province, Thailand, 19 Oct, 1972, GMP-692, 24741 on reverse (OSUS).

Additional material examined (non-types)

Ex *Alcippe poioicephala harrintoniae*: 4♂, 4♀, Ban Tham, Chiang Mai Province, Thailand, 20 Oct. 1972, GMP-704, 25720 and 24722–24724 on reverse (OSUS).

Ex *Garrulax monileger fuscatus*: 1♂, 1♀, Bangkok, Thailand, 26 Nov. 1966, 7E-0084, 24742 on reverse (OSUS); 1♂, Bangkok, Thailand, 26 Nov. 1966, 7E-0082, 24743 on reverse (OSUS).

Ex *Garrulax monileger schauenseei*: 1♂, 1♀, Ban Muang Khai, Tha Li, Loei Province, Thailand, 18 Jan.

1955, R.E. Elbel, RE-4513, B-31123 (PIPeR); 1♀, Ban Na Muang, Na Haeo, Dan Sai District, Loei Province, Thailand, 31 Oct. 1954, R.E. Elbel, RE-4238, B-31016 (PIPeR); 1♀, Hin Laem, Tha Khanun, Kanchanaburi Province, Thailand, 29 Oct. 1952, R.E. Elbel & H.G. Deignan, RE-1328, RT-B-15811 (PIPeR); 1♀, Hin Laem, Tha Khanun, Kanchanaburi Province, Thailand, R.E. Elbel & H.G. Deignan, RE-1408, RT-B-15839 (PIPeR).

Ex *Ianthocincla chinensis lochmia*: 1♂, 1♀, Chiang Saen Kai, Chiang Rai Province, Thailand, R.E. Elbel & H.G. Deignan, RE-2318, RT-B-17821, 24746 on reverse (OSUS); 1♂, 2♀, Phu Lom Lo Mountain, Kok Sathon, Dan Sai District, Loei Province, Thailand, 20 Feb. 1955, R.E. Elbel, RE-4728, 24744–24745 on reverse (OSUS); 1♂, 4♀, Phu Lom Lo Mountains, Kok Sathon, Dan Sai District, Loei Province, Thailand, 20 Feb. 1955, R.E. Elbel, RE-4728 (PIPeR); 1♂, 4♀, Chiang Saen Kai, Chiang Rai Province, Thailand, 23 Feb. 1953, R.E. Elbel & H.G. Deignan, RE-2318, RT-B-17821 (PIPeR).

Remarks. Females from *Ianthocincla chinensis lochmia* tend to have fewer *vms* (2–4, versus 4–5 in material from other hosts) and males tend to have more *mms* (7–8, versus 5–7 in material from other hosts); however, both character sets overlap. Males from *I. ch. lochmia* also tend to have shorter mesosomes than males from other hosts, with proximal mesosomes broader distally (narrowing distally in material from type host) and narrower marginal thickening. We do not consider any of these characters sufficient to separate the material from *I. ch. lochmia* from the material from the other hosts, and consider *P. (C.) najeri* to be a widely distributed and somewhat variable species.

***Priceiella (Camurnirmus) bohssae* Gustafsson, Clayton, & Bush, new species**

(Fig 78–84)

Type host. *Garrulax strepitans* Blyth, 1855—white-necked laughingthrush (Leiothrichidae).

Type locality. Doi Pui, elev. 1200 m, Chiang Mai Province, Thailand.

Diagnosis. Male genitalia (Figs 81–83) very distinct, separating *P. (C.) bohssae* n. sp. from all other *Camurnirmus*. *Priceiella (Camurnirmus) bohssae* is most similar to *P. (C.) rhinocichlae* (Eichler, 1957), with which it shares the following characters: *ads* very long (Figs 80, 87); mesosome about as long as wide (Figs 82, 89); distal margin of mesosome flattened (Figs 82, 89); parameres elongated, attenuated, widely diverging (Figs 83, 90); female subgenital plate not reticulated. These two species can be separated on the following characters: marginal thickening of mesosome displaced medially in *P. (C.) bohssae* (Fig. 82), but not in *P. (C.) rhinocichlae* (Fig. 89); proximal mesosome rectangular in *P. (C.) rhinocichlae* (Fig. 89), but trapezoidal in *P. (C.) bohssae* (Fig. 82); *pst1*–2 situated close together in *P. (C.) bohssae* (Fig. 83), but widely separated in *P. (C.) rhinocichlae* (Fig. 90); gonopore with medio-anterior extension in *P. (C.) bohssae* (Fig. 82), but with lateral extensions in *P. (C.) rhinocichlae* (Fig. 89). Vulval and abdominal chaetotaxy is similar between the two species.

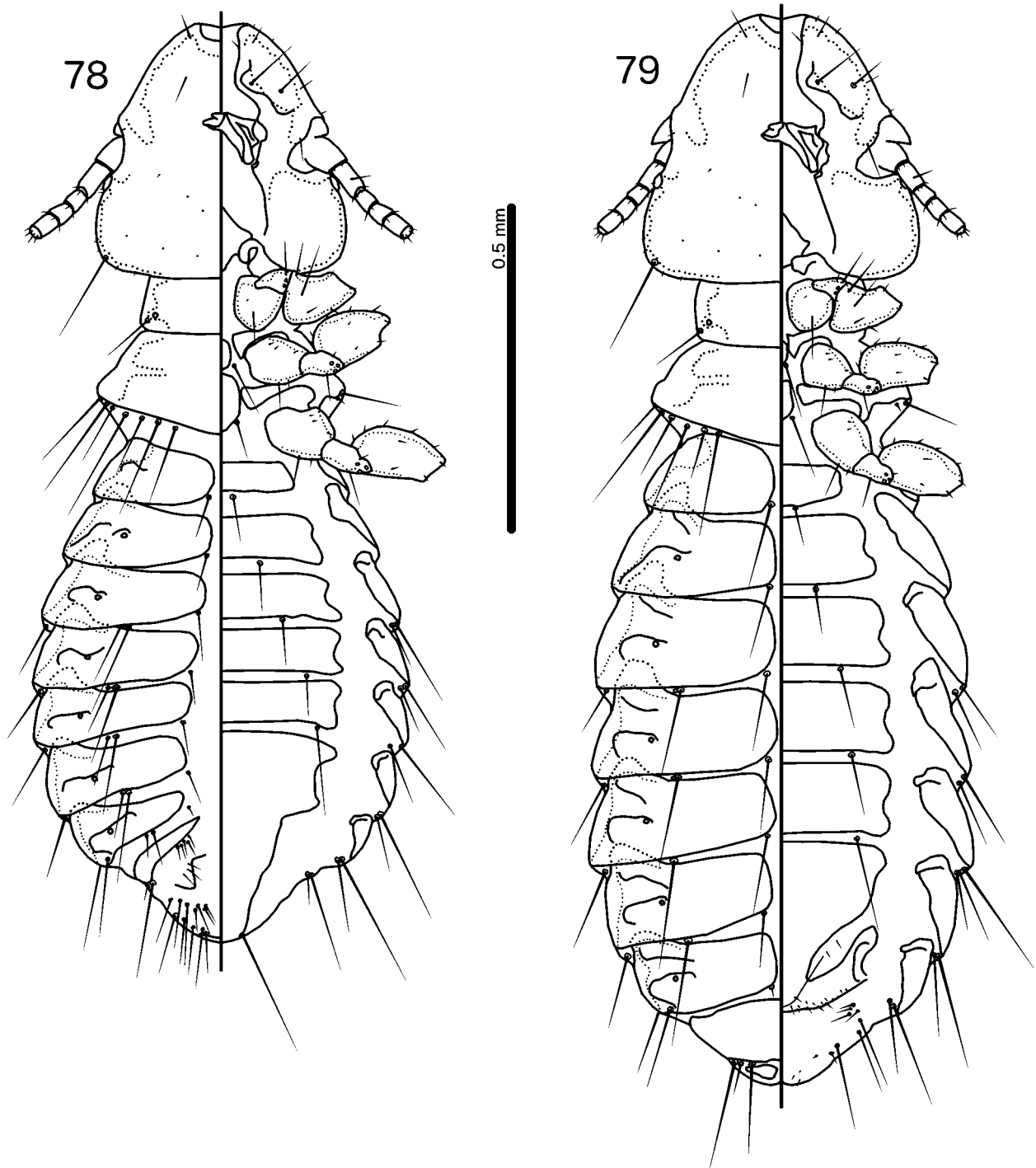
Description. Both sexes. Head broadly acorn-shaped (Fig. 80). Frons shallowly concave. Lateral margins of preantennal head clearly convex. Head chaetotaxy as in Fig. 80; *ads* mesosetae. Coni very short. Antennae sexually dimorphic. Base pigmentation pale yellowish brown; marginal and marginal temporal carinae, margins of antennal sockets, proepimera, metepisterna and pleural incrassations dark reddish brown; gular plate, sternal plates III–VI and subgenital plate medium brown; meso- and metasternal plates and sternal plate II pale brown.

Male. Scape swollen and slightly elongated as in Fig. 80. Pteronotum with 7–8 *mms* on each side (Fig. 78). Abdominal plates and chaetotaxy as in Fig. 78. Male genitalia as in Figs 81–83. Basal apodeme broad, constricted at mid-length, slightly wider distally than proximally (Fig. 81). Proximal mesosome broadly trapezoidal (Fig. 82). Mesosomal lobes with pronounced sinuous lateral thickening. Ventral nodi with very small rugose area. Gonopore with medio-anterior elongation; 2 *ames* sensilla on each side near antero-lateral corner of mesosomal lobes; 2 *pms* sensilla on each side of gonopore; no *pms* discernable on lateral margins of mesosome, but may be overlooked due to being sensilla. Parameral heads slender, slightly arched, with sinuous median margin (Fig. 83). Parameral blades long, slender, divergent; *pst1*–2 close together. Measurements ex *Garrulax strepitans* (n = 1): TL = 1.33; HL = 0.36; HW = 0.36; PRW = 0.24; PTW = 0.37; AW = 0.55.

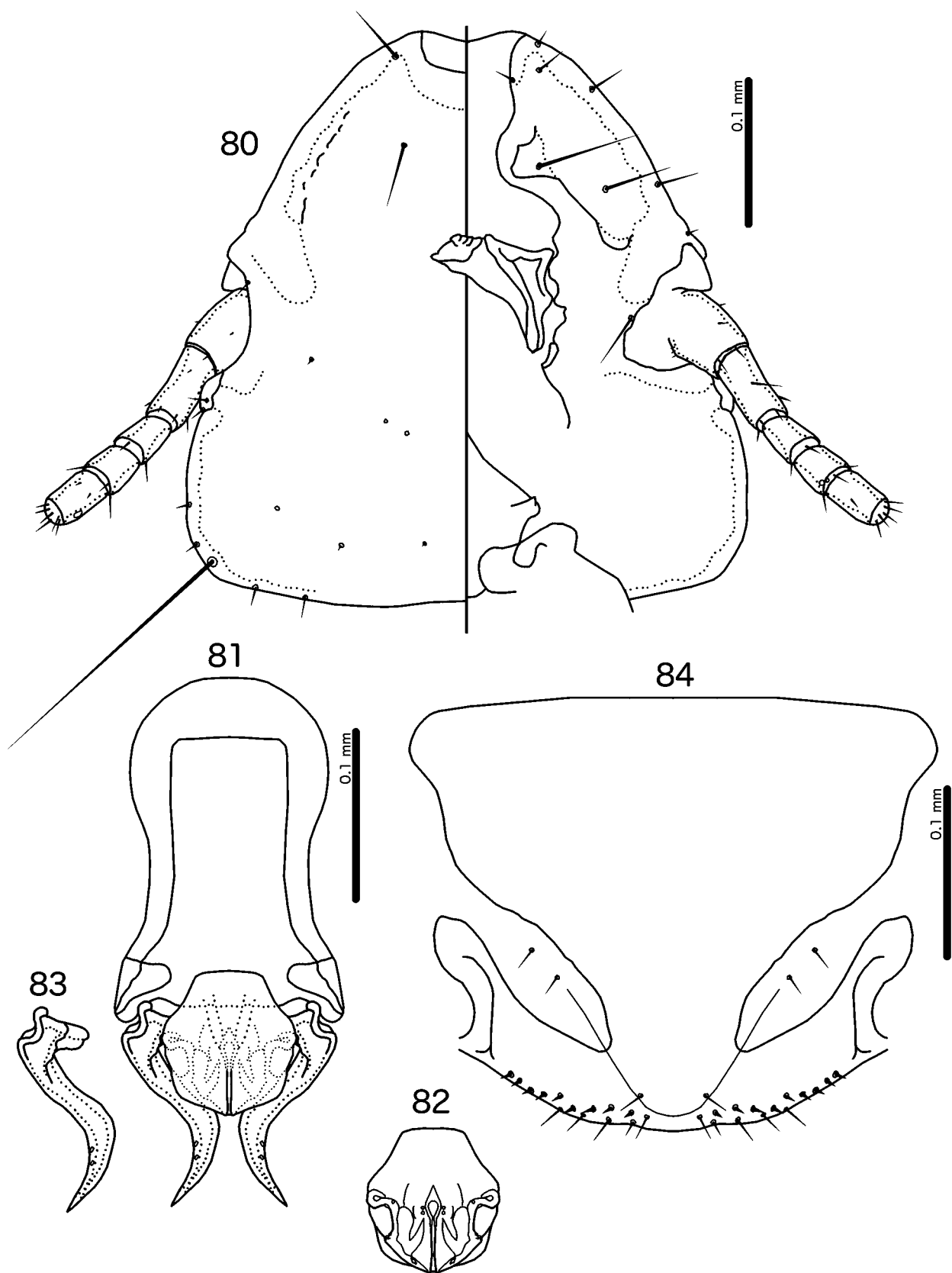
Female. Scape as in Fig. 79. Pteronotum with 5–6 *mms* on each side (Fig. 79). Abdominal plates and chaetotaxy as in Fig. 79. Vulval margin (Fig. 84) gently rounded, somewhat flattened medially, with 4–5 slender *vms* and 5–9 thorn-like *vss* on each side; 2–4 *vos* on each side; distal *vos* just anterior to *vss*. Measurements ex *Garrulax strepitans* (n = 2): TL = 1.56–1.62; HL = 0.38–0.39; HW = 0.40–0.41; PRW = 0.23; PTW = 0.37–0.38; AW = 0.56–0.57.

Etymology. This species is named for Lynn A. Bohs, University of Utah, in recognition of her distinguished contributions to botany and her friendship and support of authors Bush and Clayton.

Type material. Ex *Garrulax strepitans*: **Holotype** ♂, Doi Pui, elev. 1200 m, Chiang Mai Province, Thailand, 17 Jan. 1969, XIE-819, 23725 on reverse (OSUS). **Paratypes**: 2♀, same data as holotype, 23724 and 23726 on reverse (OSUS).



FIGURES 78–79. *Priceiella* (*Camurnirmus*) *bohssae* n. sp. ex *Garrulax strepitans* Blyth, 1855. **78**, male habitus, dorsal and ventral views. **79**, female habitus, dorsal and ventral views.



FIGURES 80–84. *Priceiella* (*Camurnirmus*) *bohsae* n. sp. ex *Garrulax strepitans* Blyth, 1855. **80**, male head, dorsal and ventral views. **81**, male genitalia, dorsal view. **82**, male mesosome, ventral view. **83**, male paramere, dorsal view. **84**, female subgenital plate and vulval margin, ventral view.

***Priceiella* (*Camurnirmus*) *rhinocichlae* (Eichler, 1957)**
(Figs 85–91)

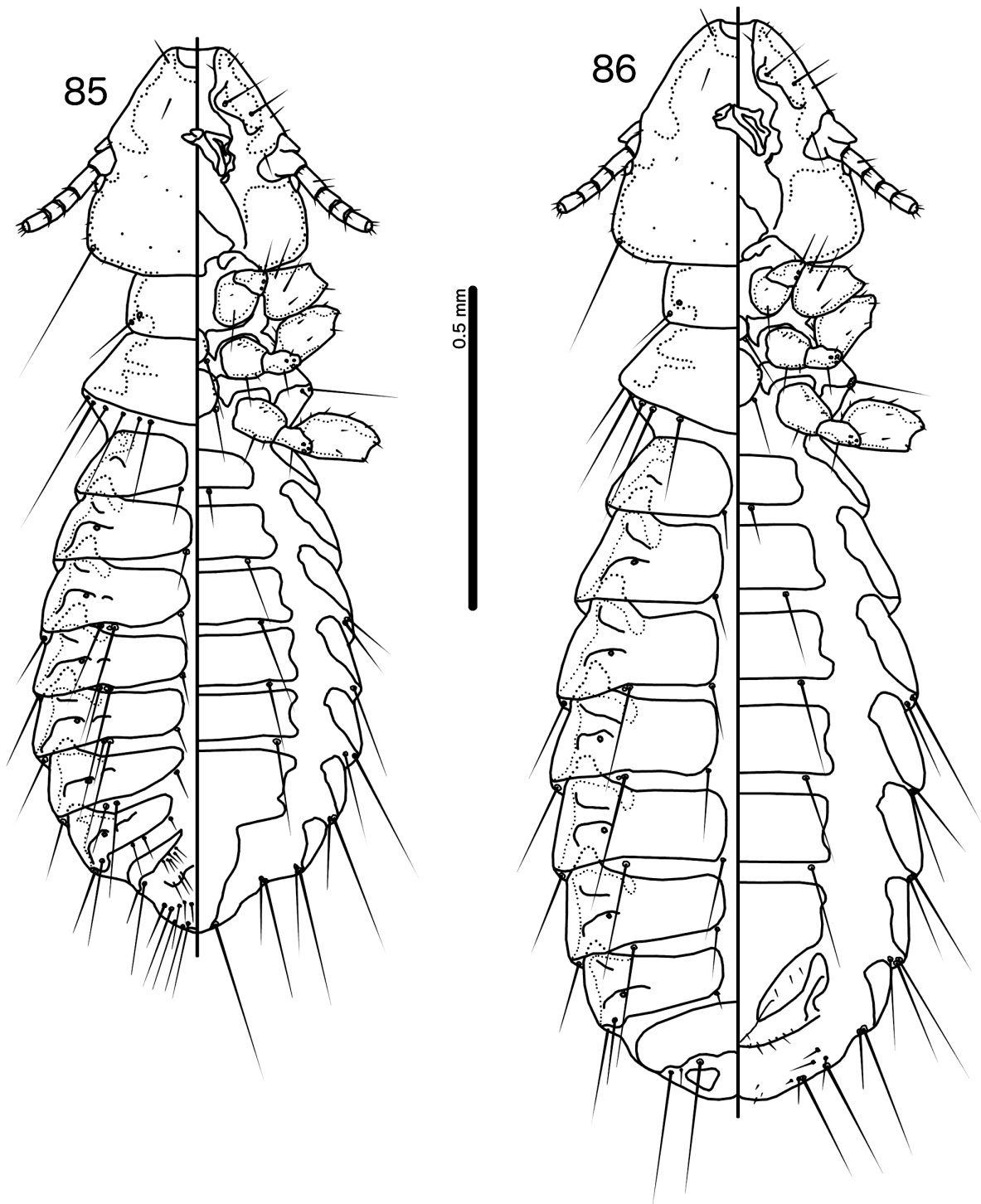
Allobrueelia rhinocichlae Eichler, 1957: 579.

Brueelia rhinocichlae (Eichler, 1957); Price *et al.* 2003: 158.

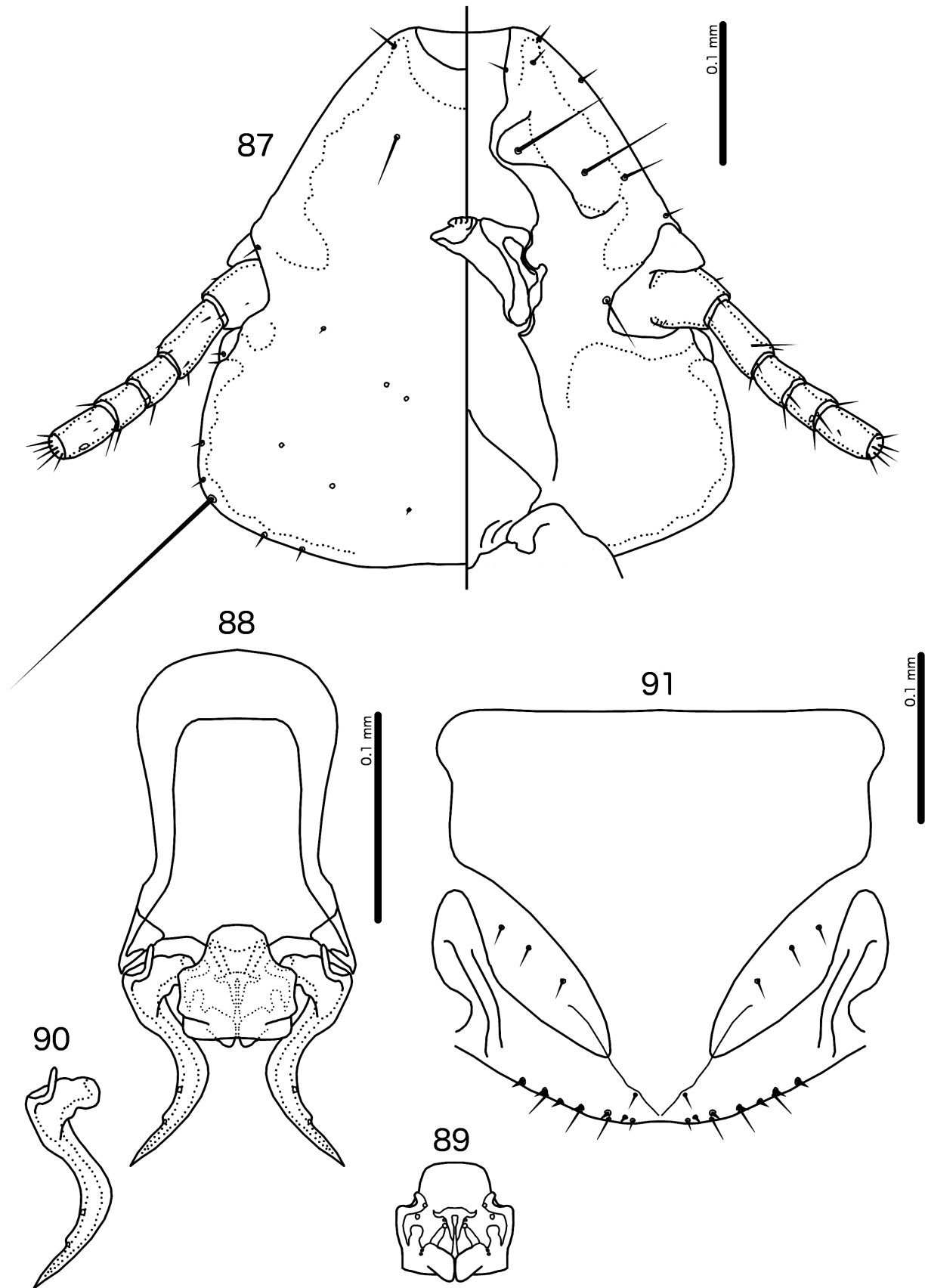
Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957); Gustafsson & Bush 2017: 175.

Type host. *Ianthocichla mitrata mitrata* (Muller, 1836)—chestnut-capped laughingthrush (Leiothrichidae).

Type locality: Sumatra, Indonesia.



FIGURES 85–86. *Priceiella* (*Camurnirmus*) *rhinocichlae* (Eichler, 1957) ex *Ianthocincla mitrata major* (Robinson and Kloss, 1919). **85**, male habitus, dorsal and ventral views. **86**, female habitus, dorsal and ventral views.



FIGURES 87–91. *Priceiella* (*Camurnirmus*) *rhinocichlae* (Eichler, 1957) ex *Ianthocinclia mitrata major* (Robinson and Kloss, 1919). **87**, male head, dorsal and ventral views. **88**, male genitalia, dorsal view. **89**, male mesosome, ventral view. **90**, male paramere, dorsal view. **91**, female subgenital plate and vulval margin, ventral view.

Other hosts. *Ianthocincla mitrata major* (Robinson & Kloss, 1919)—chestnut-capped laughingthrush (Leiothrichidae).

Description. Both sexes. Head broadly acorn-shaped (Fig. 87). Frons flat to slightly concave. Lateral margins of preantennal head convex. Head chaetotaxy as in Fig. 87; *ads* mesosetae. Coni and antennae sexually dimorphic. Base pigmentation pale brown; marginal and marginal temporal carinae, head nodi, margins of antennal socket, proepimera, metepisterna and pleural incassations dark brown with slight red tint; gular plate, sternal plates IV–VI and subgenital plate medium brown; meso- and metasternal plates and sternal plates II–III pale brown.

Male. Coni short, blunt, about half as long as scape (Fig. 87). Pteronotum with 5–6 *mms* on each side (Fig. 85). Abdominal plates and chaetotaxy as in Fig. 85. Male genitalia as in Figs 88–90. Basal apodeme constricted at mid-length, distal end wider than proximal end (Fig. 88). Proximal mesosome rectangular, with flat proximal margin (Fig. 89). Mesosomal lobes rectangular, distal margin almost flat dorsally. Large submedial ventral nodi project distal to dorsal margin of mesosome. Marginal thickening of mesosomal lobes not displaced medially. Gonopore with lateral extensions in anterior end; 2 *ames* sensilla on each side near antero-lateral corners of mesosomal lobes; 2 *pmes* sensilla on each side lateral to gonopore; 2 *pmes* sensilla submedially near postero-lateral corners of mesosomal lobes. Parameral heads roughly rounded rectangular, with sinuous posterior margin (Fig. 90). Parameral blades elongated, tapered, widely divergent distally; *pst1*–2 widely separated. Measurements ex *Ianthocincla mitrata major* (n = 1): TL = 1.32; HL = 0.34; HW = 0.34; PRW = 0.22; PTW = 0.34; AW = 0.50.

Female. Coni long, pointed, reaching beyond distal margin of scape (Fig. 86). Pteronotum with 5 *mms* on each side (Fig. 86). Abdominal plates and chaetotaxy as in Fig. 86. Vulval margin gently rounded (Fig. 91), in 2 of 3 females slightly flattened medially, with 4 slender *vms* and 5–7 thorn-like *vss* on each side. Medial-most *vms* much shorter than other *vms*; 3–5 slender *vos*; distal *vos* just anterior to *vss*. Measurements ex *Ianthocincla mitrata mitrata* (n = 1): TL = 1.45; HL = 0.36; HW = 0.37; PRW = 0.22; PTW = 0.33; AW = 0.53. Measurements ex *Ianthocincla mitrata major* (n = 3): TL = 1.48–1.60; HL = 0.36–0.37; HW = 0.38–0.39; PRW = 0.22–0.23; PTW = 0.35–0.36; AW = 0.51–0.55.

Type material. Ex *Ianthocincla mitrata mitrata*: Holotype ♀, [Sumatra, Indonesia], NHRS-GULI000010336 (SMNH).

Additional material examined (non-types). Ex *Ianthocincla mitrata major*: 1♂: Gunong Benom, elev. 5000 ft., Malaysia, 21 Mar. 1967, BN-381, Brit. Mus. 1967-400 (NHML); 3♀, Terengganu, elev. 4200 ft., 102° 36' E 5° 25' N, Malaysia, 17 Mar. 1974, Gn. Lawit Expedition, Brit. Mus. 1974-2 (NHML).

Remarks. We have examined the holotype and the only other previously known specimen of *Brueelia rhinocichlae* Eichler, 1957, to confirm that this species is a member of *Priceiella* (*Camurnirmus*). However, the holotype is poorly preserved. Few characters of the head or female genitalia can be clearly seen, and the abdominal chaetotaxy is partially obscured. What can be seen of the overall morphology is indistinguishable from that of a female from *Ianthocincla mitrata major* (Robinson and Kloss, 1919). Therefore, we redescribe and reillustrate *P. (C.) rhinocichlae* based on material from this host subspecies. Future collections from both host subspecies will be necessary to establish with more certainty whether the *Camurnirmus* on both hosts represent the same species.

Discussion

Collectively, the babbler host families Leiothrichidae, Paradoxornithiidae, Pellorneidae and Timaliidae contain a total of 288 species in 48 genera (Clements *et al.* 2016). However, only 32 species in 13 genera are known to be parasitized by lice of the genus *Priceiella* (Table 3). Clearly, this group of birds has not been thoroughly sampled for lice, and future collections will likely reveal additional new species.

Species of *Priceiella* exhibit several levels of host specificity. Three subgenera (*Priceiella* s. str., *Camurnirmus* and *Torosinirmus*) are almost exclusively restricted to hosts in the family Leiothrichidae. In contrast, lice of the fourth subgenus (*Thescelovora*) are found in several babbler families, but not on members of Leiothrichidae. The single species of *Priceiella* known from a non-babbler host, the corvid *Platylophus galericulatus ardesiacus*, is also a member of the subgenus *Thescelovora*. Several thousand specimens of *Brueelia*-complex lice from a broad range of hosts from Southeast Asia were examined in connection with our previous revision (Gustafsson & Bush 2017). This study has not revealed any further examples of *Priceiella* from non-babbler hosts.

Species of the subgenera *Priceiella* and *Torosinirmus* are quite host specific, with most of them known from

only a single host species. In contrast, many species of *Camurnirmus* and *Thescelovora* are known from multiple host species. Host specificity in these latter subgenera appears to be governed by both host relatedness and shared host geography. For example, five of the six hosts of *Priceiella* (*Thescelovora*) *orichalca* were collected in the Malay Peninsula, and specimens from both hosts of *Priceiella* (*Thescelovora*) *chanthaburiana* were collected from the same locality in Thailand.

Within the *Brueelia*-complex, several groups of species show similar patterns of host relationships, with host specialists and host generalists occurring in the same genus. Also, louse species with different degrees of host specificity are often closely related (Johnson *et al.* 2002; Bust *et al.* 2016). Host generalists appear to be more common in tropical and subtropical areas, particularly within genus *Guimaraesiella*, the closest relative to *Priceiella* (Bush *et al.* 2016). Similar patterns are also found in some other chewing louse genera on passeriform birds, such as *Menacanthus* (Martinů *et al.* 2015).

While sharing the same host species may be the result of contamination during collection, an alternative explanation is that babblers have been often recorded in mixed-species foraging flocks (McClure 1967; Partridge & Ashcroft 1976; Chen & Hsieh 2002; Kotagama & Goodale 2004). Repeated and prolonged proximity among bird species in mixed flocks may provide lice with opportunities to switch between different host species, as seems to be the case in some shorebird (Gustafsson & Olsson 2012, 2017). More extensive sampling of hosts likely to harbour species of *Priceiella* is needed to shed light on the host and geographic distributions of these lice.

Key to the species of the subgenus *Thescelovora*

A key to the subgenera of *Priceiella* is available in Gustafsson & Bush (2017).

1. *pns* absent (Fig. 52); *ps* present on abdominal segment III (Figs 50–51); female subgenital plate very slender (Fig. 56); male with clearly rounded posterior margin of head (Fig. 52) *Priceiella* (*Thescelovora*) *ornata*
- 1' *pns* present; *ps* absent on abdominal segment III; female subgenital plate broad; male with flat or slightly rounded posterior margin of head 2.
2. Dorsal preantennal suture reached *ads*; gonopore not thickened marginally *Priceiella* (*Thescelovora*) *alliocephala*
- 2' Dorsal preantennal suture, if present, does not reach *ads*; gonopore thickened at least laterally 3.
3. Rugose nodi absent (Fig. 5); transverse medially interrupted thickening present distal to gonopore (Fig. 5); marginal thickening of mesosomal lobes medially continuous (Fig. 5) *Priceiella* (*Thescelovora*) *calicicola*
- 3' Rugose nodi present; no transverse thickening distal to gonopore; marginal thickening of mesosomal lobes interrupted medially 4.
4. Gonopore closed proximally 5.
- 4' Gonopore open proximally 7.
5. Dorsal preantennal suture does not reach half-way between *dsms* and *ads* (Fig. 38); *aps* present on male tergopleurites VI–VII (Fig. 36); lateral margins of preantennal head clearly convex (Fig. 38) *Priceiella* (*Thescelovora*) *coleyae*
- 5' Dorsal preantennal suture reaches at least half-way between *dsms* and *ads*; *aps* absent on male tergopleurites VI–VII; lateral margins of preantennal head more or less straight 6.
6. Abdominal segment VI with 2 *sts* on each side (Figs 43–44); basal apodeme broad, roughly rectangular (Fig. 46); proximal mesosome rectangular with no rugose area (Fig. 47) *Priceiella* (*Thescelovora*) *macrocephala*
- 6' Abdominal segment VI with 1 *sts* on each side (Figs 29–30); basal apodeme slender, rounded (Fig. 32); proximal mesosome rounded and with small rugose area (Fig. 33) *Priceiella* (*Thescelovora*) *fuscicaena*
7. Male tergopleurites VI–VII with *aps* present 8.
- 7' Male tergopleurites VI–VII with *aps* absent 9.
8. Dorsal preantennal suture present (Fig. 10); *aps* present on male tergopleurite V (Fig. 8); proximal mesosome rounded (Fig. 12) *Priceiella* (*Thescelovora*) *austini*
- 8' Dorsal preantennal suture absent (Fig. 24); *aps* absent on male tergopleurite V (Fig. 22); proximal mesosome angular (Fig. 26) *Priceiella* (*Thescelovora*) *chanthaburiana*
9. Proximal mesosome rounded; female with 7 *mms*, male with 6 *mms*; male with 2 *ps* on abdominal segment V; *ss* of female tergopleurite VIII mesosetae *Priceiella* (*Thescelovora*) *malacocinclia*
- 9' Proximal mesosome angular (Fig. 19); both sexes with 5 *mms* (Figs 15–16); male with 3 *ps* on abdominal segment V; *ss* of female tergopleurite VIII microsetae *Priceiella* (*Thescelovora*) *orichalca*

Key to the species of the subgenus *Camurnirmus*

1. Mesosome short, with more or less flat distal margin (Figs 82, 89) 2.
- 1' Mesosome long, with distal margin convergent to extended medial point 3.

2. Proximal mesosome narrowed abruptly (Fig. 89); marginal thickening of mesosomal lobes follow lateral margins throughout (Fig. 89); gonopore with antero-lateral extensions (Fig. 89); rugose nodi absent (Fig. 89); *pst1*–2 situated far apart (Fig. 90) *Priceiella* (*Camurnirmus*) *rhinocichlae*
- 2' Proximal mesosome narrowed gradually (Fig. 82); marginal thickening of mesosomal lobes displaced medially at about mid-length (Fig. 82); gonopore with antero-medial extension (Fig. 82); small rugose nodi present sublaterally (Fig. 82); *pst1*–2 situated close together (Fig. 83) *Priceiella* (*Camurnirmus*) *bohsae*
3. Proximal mesosome constricted distally (Fig. 75); rugose nodi present (Fig. 75); 2 *pmes* sensilla lateral to gonopore (Fig. 75). *Priceiella* (*Camurnirmus*) *najeri*
- 3' Proximal mesosome not constricted distally; rugose nodi absent; at most 1 *pmes* sensillum lateral to gonopore. 4.
4. Female subgenital plate with medial reticulation (Figs 63, 70); parameres very long, tapered (Figs 62, 69); female tergopleurite VIII without *ss* (Figs 58, 65). 5.
- 4' Female subgenital plate without reticulation; parameres of moderate length, not attenuated; female tergopleurite VIII with *ss* 6.
5. Female abdominal segment III without *ps* (Fig. 65); basal apodeme with considerable constriction at about mid-length (Fig. 67); gonopore (Fig. 68) short and broad, with no posterior extensions; *pst1*–2 situated close together (Fig. 69) *Priceiella* (*Camurnirmus*) *sonorae*
- 5' Female abdominal segment III with *ps* (Fig. 58); basal apodeme with no or very slight constriction at mid-length (Fig. 60); gonopore (Fig. 61) long and slender, with hook-shaped posterior extensions; *pst1*–2 situated far apart (Fig. 62) *Priceiella* (*Camurnirmus*) *lindquistae*
6. Mesosome slender, with near-parallel lateral margins; parameres parallel distally *Priceiella* (*Camurnirmus*) *nipalensis*
- 6' Mesosome broader, with distinctly bulging lateral margins; parameres divergent distally 7.
7. Basal apodeme narrowed considerably in proximal end; marginal thickening of mesosomal lobes with no antero-medial extensions but medially continuous. *Priceiella* (*Camurnirmus*) *paulbrowni*
- 7' Basal apodeme about as wide proximally as distally; marginal thickening of mesosomal lobes extended antero-medially and interrupted medially *Priceiella* (*Camurnirmus*) *hwameicola*

Checklist of the species included in the genus *Priceiella*

Louse taxa are arranged alphabetically by subgenus and species, with known hosts indented below, arranged alphabetically by genus, with host family in square brackets, according to the taxonomy of Clements *et al.* (2016).

Priceiella Gustafsson & Bush, 2017

Subgenus *Camurnirmus* Gustafsson & Bush, 2017

Priceiella (*Camurnirmus*) *bohsae* n. sp.

Garrulax strepitans Blyth, 1855 [Leiothrichidae]

Priceiella (*Camurnirmus*) *hwameicola* Gustafsson & Bush, 2017

Garrulax taewanus Swinhoe, 1859 [Leiothrichidae]

Priceiella (*Camurnirmus*) *lindquistae* n. sp.

Ianthocincla chinensis chinensis (Scopoli, 1786) [Leiothrichidae]

Priceiella (*Camurnirmus*) *najeri* n. sp.

Alcippe poioicephala haringtonae Hartert, 1909 [Leiothrichidae]

Garrulax monileger fuscatus Baker, 1918 [Leiothrichidae]

Garrulax monileger schauenseei Delacour and Greenway, 1939 [Leiothrichidae]

Garrulax monileger stuarti Meyer de Schauensee, 1955 [Leiothrichidae]

Ianthocincla chinensis lochmia Deignan, 1941 [Leiothrichidae]

Priceiella (*Camurnirmus*) *nipalensis* (Ansari, 1956b)

Grammatoptila striata sikkimensis (Ticehurst, 1924) [Leiothrichidae]

Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957)

Ianthocincla mitrata major (Robinson and Kloss, 1919) [Leiothrichidae]

Ianthocincla mitrata mitrata (Muller, 1836) [Leiothrichidae]

Priceiella (*Camurnirmus*) *sonorae* n. sp.

Garrulax maesi maesi (Oustalet, 1890) [Leiothrichidae]

Subgenus *Priceiella* Gustafsson & Bush, 2017

- Priceiella* (*Priceiella*) *longisterna* (Ansari, 1956b)
 Cutia nipalensis nipalensis Hodgson, 1837 [Leiothrichidae]
Priceiella (*Camurnirmus*) *paulbrowni* Gustafsson & Bush, 2017
 Garrulax leucolophus belangeri Lesson, 1831 [Leiothrichidae]
 Garrulax leucolophus diardi (Lesson, 1831) [Leiothrichidae]
Priceiella (*Priceiella*) *sternotransversa* (Ansari, 1956b)
 Ianthocincla albogularis albogularis (Gould, 1836) [Leiothrichidae]
Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956b)
 Ianthocincla pectoralis pectoralis (Gould, 1836) [Leiothrichidae]
 Ianthocincla pectoralis subfusa Kinnear, 1924 [Leiothrichidae]

Subgenus *Thescelovora* Gustafsson & Bush, 2017

- Priceiella* (*Thescelovora*) *alliocephala* Gustafsson & Bush, 2017
 Platylophus galericulatus ardesiacus (Bonaparte, 1850) [Corvidae]
Priceiella (*Thescelovora*) *austini* **n. sp.**
 Pomatorhinus ruficollis intermedius Cheng, 1962 [Timaliidae]
Priceiella (*Thescelovora*) *chanthaburiana* **n. sp.**
 Megapomatorhinus hypoleucos tickelli Hume, 1877 [Timaliidae]
 Pomatorhinus schisticeps klossi Baker, 1917 [Timaliidae]
Priceiella (*Thescelovora*) *coleyae* **n. sp.**
 Stachyris striolata tonkinensis Kinnear, 1938 [Timaliidae]
Priceiella (*Thescelovora*) *fuscicaena* **n. sp.**
 Malacopteron cinereum cinereum Eyton, 1839 [Pellorneidae]
 Malacopteron magnum magnum Eyton, 1839 [Pellorneidae]
Priceiella (*Thescelovora*) *macrocephala* **n. sp.**
 Megapomatorhinus hypoleucos wrayi Sharpe, 1887 [Timaliidae]
Priceiella (*Thescelovora*) *malacocincla* (Najer and Sychra [in Najer *et al.*], 2014)
 Malacocincla abbotti Blyth, 1845 [Pellorneidae]
Priceiella (*Thescelovora*) *orichalca* **n. sp.**
 Pellorneum tickelli tickelli Blyth, 1859 [Pellorneidae]
 Stachyris maculata pectoralis (Blyth, 1842) [Timaliidae]
 Stachyris nigriceps davisoni Sharpe, 1892 [Timaliidae]
 Turdinus brevicaudata leucostictus (Sharpe, 1887) [Pellorneidae]
 Turdinus brevicaudata stevensi (Kinnear, 1925) [Pellorneidae]
 Turdinus crispifrons crispifrons (Blyth, 1855) [Pellorneidae]
 Turdinus macrodactylus macrodactylus (Strickland, 1844) [Pellorneidae]
Priceiella (*Thescelovora*) *ornata* **n. sp.**
 Psittiparus gularis fokiensis (David, 1874) [Paradoxornithiidae]

Subgenus *Torosinirmus* Gustafsson & Bush, 2017

- Priceiella* (*Torosinirmus*) *brueliodes* (Ansari, 1956b)
 Turdoides aylmeri aylmeri (Shelley, 1885) [Leiothrichidae]
Priceiella (*Torosinirmus*) *koka* Gustafsson & Bush, 2017
 Turdoides tenebrosa (Hartlaub, 1883) [Leiothrichidae]
Priceiella (*Priceiella*) *mahrastan* (Ansari, 1956b)
 Turdoides striata somervillei (Sykes, 1832) [Leiothrichidae]
 Turdoides striata striata (Dumont, 1823) [Leiothrichidae]
Priceiella (*Torosinirmus*) *nivea* (Ansari, 1956b)
 Turdoides hartlaubii (Bocage, 1868) [Leiothrichidae]

Checklist of species included in the genus *Priceiella* arranged by host

Host taxa are arranged alphabetically by bird family, genus and species according to the taxonomy of Clements *et al.* (2016), with louse taxa indented below each host.

Passeriformes

Corvidae (crows, jays and magpies)

Platylophus galericulatus ardesiacus (Bonaparte, 1850)

Priceiella (*Thescelovora*) *alliocephala* Gustafsson & Bush, 2017

Leiothrichidae (laughing-thrushes and allies)

Alcippe poioicephala haringtonae Hartert, 1909

Priceiella (*Camurnirmus*) *najeri* **n. sp.**

Cutia nipalensis nipalensis Hodgson, 1837

Priceiella (*Priceiella*) *longisterna* (Ansari, 1956b)

Garrulax leucolophus belangeri Lesson, 1831

Priceiella (*Camurnirmus*) *paulbrowni* Gustafsson & Bush, 2017

Garrulax leucolophus diardi (Lesson, 1831)

Priceiella (*Camurnirmus*) *paulbrowni* Gustafsson & Bush, 2017

Garrulax maesi maesi (Oustalet, 1890)

Priceiella (*Camurnirmus*) *sonorae* **n. sp.**

Garrulax monileger fuscatus Baker, 1918

Priceiella (*Camurnirmus*) *najeri* **n. sp.**

Garrulax monileger schauenseei Delacour and Greenway, 1939

Priceiella (*Camurnirmus*) *najeri* **n. sp.**

Garrulax monileger stuarti Meyer de Schauensee, 1955

Priceiella (*Camurnirmus*) *najeri* **n. sp.**

Garrulax strepitans Blyth, 1855

Priceiella (*Camurnirmus*) *bohsae* **n. sp.**

Garrulax taewanus Swinhoe, 1859

Priceiella (*Camurnirmus*) *hwameicola* Gustafsson & Bush, 2017

Grammatoptila striata sikkimensis (Ticehurst, 1924)

Priceiella (*Camurnirmus*) *nipalensis* (Ansari, 1956b)

Ianthocincla albogularis albogularis (Gould, 1836)

Priceiella (*Priceiella*) *sternotransversa* (Ansari, 1956b)

Ianthocincla chinensis chinensis (Scopoli, 1786)

Priceiella (*Camurnirmus*) *lindquistae* **n. sp.**

Ianthocincla chinensis lochmia Deignan, 1941

Priceiella (*Camurnirmus*) *najeri* **n. sp.**

Ianthocincla mitrata major (Robinson and Kloss, 1919)

Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957)

Ianthocincla mitrata mitrata (Muller, 1836)

Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957)

Ianthocincla pectoralis pectoralis (Gould, 1836)

Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956b)

Ianthocincla pectoralis subfusa Kinnear, 1924

Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956b)

Turdoides aylmeri aylmeri (Shelley, 1885)

Priceiella (*Torosinirmus*) *brueliodes* (Ansari, 1956b)

Turdoides hartlaubii (Bocage, 1868)

Priceiella (*Torosinirmus*) *nivea* (Ansari, 1956b)

Turdoides striata somervillei (Sykes, 1832)

Priceiella (Priceiella) mahrastan (Ansari, 1956b)
Turdoides striata striata (Dumont, 1823)
Priceiella (Priceiella) mahrastan (Ansari, 1956b)
Turdoides tenebrosa (Hartlaub, 1883)
Priceiella (Torosinirmus) koka Gustafsson & Bush, 2017

Paradoxornithidae (parrotbills, wrenit and allies)

Psittiparus gularis fokiensis (David, 1874)
Priceiella (Thescelovora) ornata **n. sp.**

Pellorneidae (ground babblers and allies)

Malacocincla abbotti Blyth, 1845
Priceiella (Thescelovora) malacocincla (Najer and Sychra [in Najer *et al.*], 2014)
Malacopteron cinereum cinereum Eyton, 1839
Priceiella (Thescelovora) fuscicaena **n. sp.**
Malacopteron magnum magnum Eyton, 1839
Priceiella (Thescelovora) fuscicaena **n. sp.**
Pellorneum tickelli tickelli Blyth, 1859
Priceiella (Thescelovora) orichalca **n. sp.**
Turdinus brevicaudata leucostictus (Sharpe, 1887)
Priceiella (Thescelovora) orichalca **n. sp.**
Turdinus brevicaudata stevensi (Kinnear, 1925)
Priceiella (Thescelovora) orichalca **n. sp.**
Turdinus crispifrons crispifrons (Blyth, 1855)
Priceiella (Thescelovora) calcicola **n. sp.**
Turdinus macrodactylus macrodactylus (Strickland, 1844)
Priceiella (Thescelovora) orichalca **n. sp.**

Timaliidae (tree-babblers, scimitar-babblers and allies)

Megapomatorhinus hypoleucos tickelli Hume, 1877
Priceiella (Thescelovora) chanthaburiana **n. sp.**
Megapomatorhinus hypoleucos wrayi Sharpe, 1887
Priceiella (Thescelovora) macrocephala **n. sp.**
Pomatorhinus ruficollis intermedius Cheng, 1962
Priceiella (Thescelovora) austini **n. sp.**
Pomatorhinus schisticeps klossi Baker, 1917
Priceiella (Thescelovora) chanthaburiana **n. sp.**
Stachyris maculata pectoralis (Blyth, 1842)
Priceiella (Thescelovora) orichalca **n. sp.**
Stachyris nigriceps davisoni Sharpe, 1892
Priceiella (Thescelovora) orichalca **n. sp.**
Stachyris striolata tonkinensis Kinnear, 1938
Priceiella (Thescelovora) coleyae **n. sp.**

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