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NEW SPECIES AND NEW RECORDS OF *PRICEIELLA* (PHTHIRAPTERA: ISCHNOCERA: *BRUEELIA*-COMPLEX) FROM SOUTH CHINA

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KEY WORDS

Phthiraptera
Brueelia-complex
Priceiella
New species
Babblers
China

ABSTRACT

Seven new species of chewing lice in the genus *Priceiella* Gustafsson and Bush, 2017, are described and illustrated based on specimens collected in south China. They are *Priceiella* (*Camurnirmus*) *tanydrepanus* n. sp. from *Garrulax castanotis castanotis* (Ogilvie-Grant, 1899); *Priceiella* (*Camurnirmus*) *nanlingensis* n. sp. from *Garrulax maesi maesi* (Oustalet, 1890); *Priceiella* (*Thescelovora*) *brutifrons* n. sp. from *Turdinus brevicaudatus stevensi* (Kinnear, 1925); *Priceiella* (*Thescelovora*) *chuae* n. sp. from *Pellorneum albiventre cinnamomeus* (Rippon, 1900); *Priceiella* (*Thescelovora*) *catanachei* n. sp. from *Stachyris strialata swinhoei* Rothschild, 1903; *Priceiella* (*Thescelovora*) *dehongensis* n. sp. from *Stachyris nigriceps yunnanensis* La Touche, 1921; and *Priceiella* (*Thescelovora*) *rotundiceps* n. sp. from *Pomatorhinus ruficollis styani* Seebohm, 1884. Several of these new species constitute the second species of *Priceiella* known from the host, suggesting that local endemism may be high in this louse genus. We also provide new host records for *Priceiella* (*Thescelovora*) *coleyae* Gustafsson et al., 2018, and *Priceiella* (*Thescelovora*) *austini* Gustafsson et al., 2018, and correct the type host subspecies for the latter. Finally, we amend the subgenus descriptions of *Camurnirmus* Gustafsson and Bush, 2017, and *Thescelovora* Gustafsson and Bush, 2017. As a result of these changes, *Priceiella najeri* Gustafsson et al., 2018, is moved to subgenus *Thescelovora*. An updated checklist of the genus *Priceiella* is provided.

The chewing louse fauna of many Southeast Asian birds is poorly known. In recent decades, many publications have expanded our knowledge of the chewing louse fauna of China, Malaysia, Thailand, and Vietnam (e.g., Sychra et al., 2011; Najer et al., 2012, 2014; Gustafsson and Bush, 2017; Mey, 2017; Gustafsson et al., 2018, 2019b, 2019c), but no reports of chewing lice have ever been published for most birds in the region. In particular, lice are generally unknown from birds with relatively small ranges, but also for birds that are divided into a large number of subspecies with limited geographical distribution.

Several cases of different species of chewing lice occurring on different host subspecies have been published in recent years (Gustafsson and Bush, 2017; Gustafsson et al., 2018). However, several cases where different host subspecies are parasitized by the same species of louse have also been published, as well as some cases where the same species of chewing louse parasitizes several different host species (Gustafsson et al., 2018). Overall, no general pattern for the host associations between chewing lice and their hosts in Southeast Asia has emerged.

Priceiella Gustafsson and Bush, 2017, is a small genus of chewing lice primarily parasitizing "babblers" (Aves: Leiothrichidae, Paradoxornithidae, Pellorneidae, Timaliidae). The genus presently comprises 31 species divided into 4 subgenera (Gustafsson and Bush, 2017; Mey, 2017; Gustafsson et al., 2018, 2019a, 2019b). The geographical range of most species in this genus is poorly known. However, in the few cases where more than 1 subspecies of the same host species have been examined, there are both examples of different species of *Priceiella* occurring on different host subspecies and examples of the same species of *Priceiella* occurring across multiple host subspecies.

Here, we present new data for the *Brueelia*-complex chewing lice of several populations of babblers (here Leiothrichidae, Pellorneidae, and Timaliidae) in south China. This includes the description of 7 new species: *Priceiella* (*Camurnirmus*) *tanydrepa-*

Version of Record, first published online with fixed content and layout, in compliance with ICZN Arts. 8.1.3.2, 8.5, and 21.8.2 as amended, 2012. ZooBank publication registration: urn:lsid:zoobank.org:pub:BEDD01EA-22BA-48CC-89DF-722B0B4F4271.

Table I. Characters differentiating the subgenera *Priceiella* (*Camurnirmus*) and *Priceiella* (*Thescelovora*). Note that the descriptions and illustrations of the species described by Mey (2017) are inadequate to establish whether all the characters listed here apply to them. Moreover, 2 of the species Mey (2017) described are known only from females and cannot be placed to the correct subgenus presently; these have not been taken into account in the construction of this table.

Character	Subgenus *Camurnirmus*	Subgenus *Thescelovora*
Dorsal preantennal suture (if present)	Arising from around *ads*	Arising from around *dsms* (but may reach *ads* as well)
Rugose nodi on ventral surface of mesosome	Absent	Present (except in *Priceiella calcicola* and *Priceiella ornata*?)
Gonopore	Always clearly demarcated proximally, small, may be elongated distally or have lateral extensions	Not clearly demarcated proximally, or large and rounded or roughly square-shaped
Proximal mesosome	Roughly trapezoidal, not narrowed abruptly proximal to mesosomal lobes	Generally rounded and elongated, narrowed abruptly proximal to mesosomal lobes
Thickenings of distal mesosome	Complicated, often with finger-like extensions towards gonopore; may be medianly continuous	Simple, as more or less rectangular, medianly convergent, nodi on each side; always divided medianly
aps on male tergopleurites	Present on IV–VII	Typically absent on at least some of IV–VII, but present on all 4 tergopleurites in *Priceiella najeri* and *Priceiella nanlingensis*

na n. sp. (Figs. 1–8), *Priceiella* (*Camurnirmus*) *nanlingensis* n. sp. (Figs. 9–16), *Priceiella* (*Thescelovora*) *catanachei* n. sp. (Figs. 17–23), *Priceiella* (*Thescelovora*) *dehongensis* n. sp. (Figs. 24–28), *Priceiella* (*Thescelovora*) *rotundiceps* n. sp. (Figs. 29–35), *Priceiella* (*Thescelovora*) *chuae* n. sp. (Figs. 36–42), and *Priceiella* (*Thescelovora*) *brutifrons* n. sp. (Figs. 43–49). In addition, we provide records for a new host association for *Priceiella* (*Thescelovora*) *coleyae* Gustafsson et al., 2018, and *Priceiella* (*Thescelovora*) *austini* Gustafsson et al., 2018, and a correction of the type host subspecies name for the latter species.

MATERIALS AND METHODS

Slide-mounted holotypes and other specimens are deposited at the Institute for Zoology, Guangdong Academy of Science (IZGAS). Specimens were examined under a Nikon Eclipse N*i* microscope (Nikon Corporation, Tokyo, Japan), and line drawings were made from specimens using a drawing tube attached to the same microscope. Illustrations were edited in GIMP (www.gimp.org).

Terminology of setal, structural, and genital characters, and the abbreviations thereof, follows Gustafsson and Bush (2017) and Gustafsson et al. (2019b), including the following abbreviations: *ads* = *anterior dorsal seta*; *ames* = *anterior mesosomal seta*; *aps* = *accessory post-spiracular seta*; *gpmes* = *gonoporal posterior mesosomal seta*; *lpmes* = *lateral posterior mesosomal seta*; *mms* = *marginal mesometathoracic seta*; *pmes* = *posterior mesosomal seta*; *ps* = *pleural setae*; *pst1–2* = *parameral setae 1–2*; *tps* = *tergal posterior seta*; *vms* = *vulval marginal seta*; *vos* = *vulval oblique seta*; *vss* = *vulval submarginal seta*. For clarity, *Priceiella* is abbreviated *Pr*., whereas *Pomatorhinus* is abbreviated *Po*.

Illustrations of reticulation is intended to show approximate size of cells and their distribution, not be an accurate representation of actual patterns. Host taxonomy follows Clements et al. (2019). 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).

SYSTEMATICS

Phthiraptera Haeckel, 1896
Ischnocera Kellogg, 1896
Philopteridae Burmeister, 1838
Brueelia-complex *sensu* Gustafsson and Bush, 2017
Priceiella Gustafsson and Bush, 2017

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

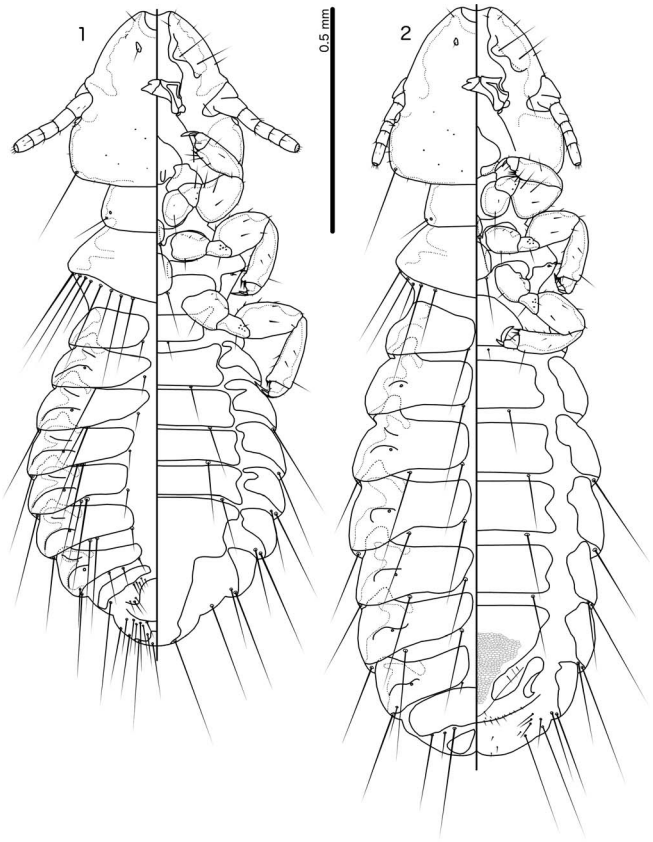
Remarks

When Gustafsson and Bush (2017) described *Camurnirmus* and *Thescelovora*, only 2 and 4 species were known in these subgenera, respectively. Since then, Gustafsson et al. (2018) described another 5 species of *Camurnirmus* and 8 species of *Thescelovora*, and Mey (2017) described 4 *Camurnirmus* and 1 *Thescelovora*, as well as 2 species that cannot be assigned to the correct subgenus because of lack of sufficient illustrations and descriptions. Here we provide descriptions of another 2 *Camurnirmus* and 5 *Thescelovora*. With new descriptions comes new information about the morphological variation within each subgenus, and we, therefore, find the original descriptions of these subgenera inadequate and herein revise the morphological descriptions of both subgenera (Table I). This redefinition has necessitated the moving of 1 species from 1 subgenus to another; an updated checklist of the species of these 2 subgenera can be found in Table II.

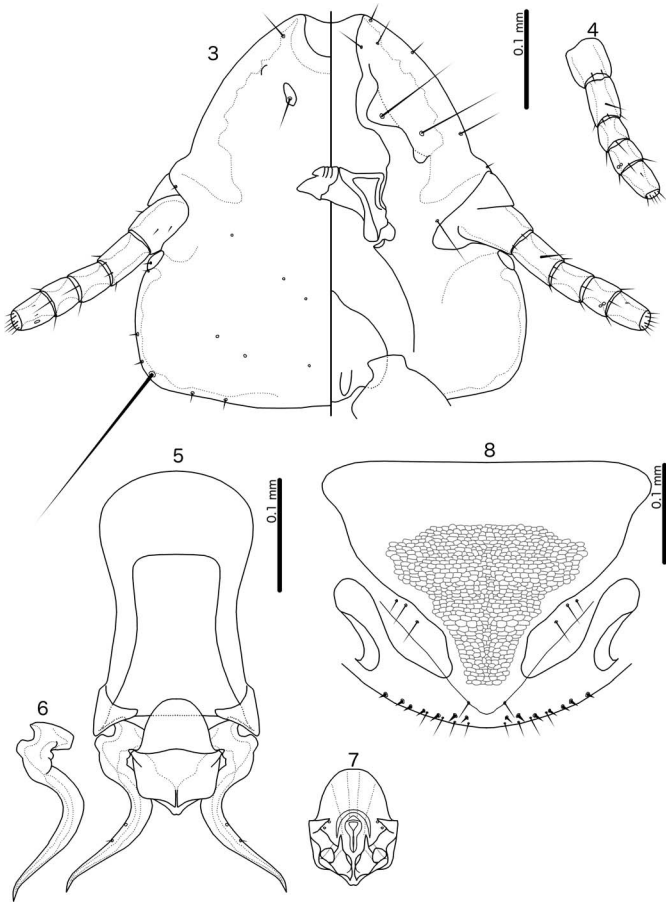
Subgenus *Camurnirmus* Gustafsson and Bush, 2017

Brueelia Kéler, 1936: 257 (*in partim*); *Allobrueelia* Eichler, 1951: 36 (*in partim*); *Priceiella* (*Camurnirmus*) Gustafsson and Bush, 2017: 179; *Garrulaxeus* Mey, 2017: 160 (*in partim*).

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



Figures 1, 2. *Priceiella* (*Camurnirmus*) *tanydrepana* n. sp. from *Garrulax castanotis castanotis* (Ogilvie-Grant, 1899). (**1**) Male habitus, dorsal and ventral views. (**2**) Female habitus, dorsal and ventral views. Both figures are to the same scale.



Figures 3–8. *Priceiella* (*Camurnirmus*) *tanydrepana* n. sp. from *Garrulax castanotis castanotis* (Ogilvie-Grant, 1899). (**3**) Male head, dorsal and ventral views. (**4**) Female antenna, ventral view, at same scale as previous. (**5**) Male genitalia, dorsal view. (**6**) Male paramere, dorsal view, at same scale as previous. (**7**) Male mesosome, ventral view, at same scale as previous 2. (**8**) Female subgenital plate and vulval margin, ventral view.

Remarks

See Table I for a revised set of characters that separate the subgenus *Priceiella* (*Camurnirmus*) from the subgenus *Priceiella* (*Thescelovora*). Based on this revised delimitation of these 2 subgenera, *Priceiella* (*Camurnirmus*) *najeri* Gustafsson et al., 2018, is hereby moved to the subgenus *Thescelovora* to become *Priceiella* (*Camurnirmus*) *najeri* new combination.

DESCRIPTION

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

(Figs. 1–8)

Diagnosis (male): Head rounded triangular, frons rather narrow, lateral margins of preantennal head convex (Fig. 3). Dorsal preantennal suture limited to near *ads*. Marginal carina variable in width. Preantennal nodi large, bulging. Head chaetotaxy as in Figure 3. Antennae with scape swollen and elongated. Preocular nodi much larger than postocular nodi. Marginal temporal carina narrow. Gular plate with convex lateral margins. Thoracic and abdominal segments and chaetotaxy as in Figure 1; 7–8 *mms* on each side; *aps* present on tergopleurite III; abdominal segments IV–V with 2 *ps* on each side; 2 *tps* on tergopleurite VIII on each side. Sternites long, almost meeting ventral sections of tergopleurites laterally. Basal apodeme rounded (Fig. 5), with lateral margins slightly concave. Proximal mesosome rounded. Distal mesosome with dorsal, roughly rectangular, plate, but distal margin convergent to median point. Gonopore small, with simple distal elongations (Fig. 7); vague crescent-shaped thickening present anterior to gonopore. Marginal thickening of mesosomal lobes displaced medianly at mid-length; *pmes* not visible in examined specimens; *ames* lateral to gonopore. Distal nodi with slender anterior extensions. Parameral heads as in Figure 6; parameral blades elongated, attenuated, divergent; *pst1–2* widely separated. Measurements as in Table III.

Female: Head largely as in male, except scape not swollen (Fig. 4). Thoracic and abdominal segments and chaetotaxy as in Figure 2; abdominal segment III without *ps*; abdominal segments IV–V with 2 *ps* on each side; *tps* absent on tergopleurite VIII. Subgenital plate broad, with median reticulation and broad connection to cross-piece (Fig. 8). Vulval margin gently rounded, with 3–4 short, slender *vms* and 5–8 short, thorn-like *vss* on each side; 2–4 short, slender *vos* on each side of subgenital plate; distal 1 *vos* near *vss*. Measurements as in Table III.

Table II. Updated checklist of the species of *Priceiella* Gustafsson & Bush, 2017, and their known hosts, arranged by subgenus.

Louse species	Host species (and subspecies)
Subgenus *Priceiella* Gustafsson & Bush, 2017	
Priceiella (*Priceiella*) *longisterna* (Ansari, 1956: 146) [in *Brueelia*]	*Cutia nipalensis nipalensis* Hodgson, 1837
Priceiella (*Priceiella*) *mahrastan* (Ansari, 1956: 164) [in *Brueelia*]	*Turdoides striata sindiana* (Ticehurst, 1920)
	Turdoides striata striata (Dumont, 1823)
Priceiella (*Priceiella*) *sternotransversa* (Ansari, 1956: 147) [in *Brueelia*]	*Ianthocincla albogularis albogularis* (Gould, 1836)
Priceiella (*Priceiella*) *sternotypica* (Ansari, 1956: 148) [in *Brueelia*]	*Ianthocincla pectoralis pectoralis* (Gould, 1936)
	Ianthocincla pectoralis subfusa Kinnear, 1924
Priceiella (*Priceiella*) *ventrata* (Ansari, 1956: 150) [in *Brueelia*]	*Garrulax ruficollis* (Jardine and Selby, 1838)
Subgenus *Camurnirmus* Gustafsson & Bush, 2017	
Priceiella (*Camurnirmus*) *babaxiphila* (Mey, 2017: 162) [in *Garrulaxeus*]	*Ianthocincla waddelli jomo* (Vaurie, 1955)
Priceiella (*Camurnirmus*) *bohsae* Gustafsson, Clayton & Bush, 2018: 437	*Garrulax strepitans* Blyth, 1855
Priceiella (*Camurnirmus*) *ecki* (Mey, 2017: 164) [in *Garrulaxeus*]	*Ianthocincla treacheri* (Sharpe, 1879)
Priceiella (*Camurnirmus*) *hwameicola* Gustafsson & Bush, 2017: 179	*Garrulax taewanus* Swinhoe, 1859
Priceiella (*Camurnirmus*) *lindquistae* Gustafsson, Clayton & Bush, 2018: 428	*Ianthocincla chinensis chinensis* (Scopoli, 1786)
Priceiella (*Thescelovora*) *nanlingensis* n. sp.	*Garrulax maesi maesi* (Oustalet, 1890)
Priceiella (*Camurnirmus*) *nipalensis* (Ansari, 1956: 143) [in *Brueelia*]	*Grammatoptila striata sikkimensis* (Ticehurst, 1924)
Priceiella (*Camurnirmus*) *paulbrowni* Gustafsson & Bush, 2017: 182	*Garrulax leucolophus belangeri* Lesson, 1831
	Garrulax leucolophus diardi (Lesson, 1831)
Priceiella (*Camurnirmus*) *rhinocichlae* (Eichler, 1957: 579) [in *Allobrueelia*]	*Ianthocincla mitrata major* (Robinson & Kloss, 1919)
	Ianthocincla mitrata mitrata (Muller, 1836)
Priceiella (*Camurnirmus*) *sichuanensis* (Mey, 2017: 162) [in *Garrulaxeus*]	*Ianthocincla berthemyi* (Oustalet, 1876)
Priceiella (*Camurnirmus*) *sonorae* Gustafsson, Clayton & Bush, 2018: 431	*Garrulax maesi maesi* (Oustalet, 1890)
Priceiella (*Camurnirmus*) *tanydrepana* n. sp.	*Garrulax castanotis castanotis* (Ogilvie-Grant, 1899)
Priceiella (*Camurnirmus*) *tibetana* (Mey, 2017: 162) [in *Garrulaxeus*]	*Ianthocincla lanceolata lanceolata* (Verreaux, 1871)
Subgenus *Thescelovora* Gustafsson & Bush, 2017	
Priceiella (*Thescelovora*) *alliocephala* Gustafsson & Bush, 2017: 186	*Platylophus galericulatus ardesiacus* (Bonaparte, 1850)
Priceiella (*Thescelovora*) *austini* Gustafsson, Clayton & Bush, 2018: 406	*Pomatorhinus ruficollis hunanensis* Cheng, 1962
	Pomatorhinus ruficollis similis Rothschild, 1926
	Pomatorhinus ruficollis stridulus Swinhoe, 1861
Priceiella (*Thescelovora*) *brutifrons* n. sp.	*Turdinus brevicaudatus stevensi* (Kinnear, 1925)
Priceiella (*Thescelovora*) *calcicola* Gustafsson, Clayton & Bush, 2018: 403	*Turdinus crispifrons crispifrons* (Blyth, 1855)
Priceiella (*Thescelovora*) *catanachae* n. sp.	*Stachyris strialata swinhoei* Rothschild, 1903
Priceiella (*Thescelovora*) *chanthaburiana* Gustafsson, Clayton & Bush, 2018: 412	*Megapomatorhinus hypoleucus tickelli* Hume, 1877
	Pomatorhinus schisticeps klossi Baker, 1917
Priceiella (*Thescelovora*) *chuae* n. sp.	*Pellorneum albiventre cinnamomeus* (Rippon, 1900)
Priceiella (*Thescelovora*) *coleyae* Gustafsson, Clayton & Bush, 2018: 419	*Stachyris nigriceps yunnanensis* La Touche, 1921
	Stachyris strialata tonkinensis Kinnear, 1938
Priceiella (*Thescelovora*) *dehongensis* n. sp.	*Stachyris nigriceps yunnanensis* La Touche, 1921
Priceiella (*Thescelovora*) *formosa* (Mey, 2017: 163) [in *Garrulaxeus*]	*Ianthocincla poecilorhyncha* (Gould, 1863)
Priceiella (*Thescelovora*) *fuscicaena* Gustafsson, Clayton & Bush, 2018: 416	*Malacopteron cinereum cinereum* Eyton, 1839
	Malacopteron magnum magnum Eyton, 1839
Priceiella (*Thescelovora*) *macrocephala* Gustafsson, Clayton & Bush, 2018: 422	*Megapomatorhinus hypoleucus wrayi* Sharpe, 1887
Priceiella (*Thescelovora*) *malacocincla* (Najer & Sychra [in Najer *et al.*], 2014: 426) [in *Brueelia*]	*Turdinus abbotti* Blyth, 1845
Priceiella (*Thescelovora*) *najeri* Gustafsson, Clayton & Bush, 2018: 433 n. comb.	*Alcippe poioicephala haringtoniae* Hartert, 1909
	Garrulax monileger fuscatus Baker, 1918
	Garrulax monileger schauenseei Delacour & Greenway, 1939
	Garrulax monileger stuarti Meyer de Schauensee, 1955
Priceiella (*Thescelovora*) *orichalca* Gustafsson, Clayton & Bush, 2018: 433	*Pellorneum tickelli tickelli* Blyth, 1859
	Stachyris maculata pectoralis (Blyth, 1842)
	Stachyris nigriceps davisoni Sharpe, 1892
	Turdinus brevicaudatus leucostictus (Sharpe, 1887)
	Turdinus brevicaudatus stevensi (Kinnear, 1925)
	Turdinus macrodactylus macrodactylus (Strickland, 1844)
Priceiella (*Thescelovora*) *ornata* Gustafsson, Clayton & Bush, 2018: 433	*Psittiparus gularis fokiensis* (David, 1874)
Priceiella (*Thescelovora*) *rotundiceps* n. sp.	*Pomatorhinus ruficollis styani* Seebohm, 1884
Subgenus *Torosinirmus* Gustafsson & Bush, 2017	
Priceiella (*Torosinirmus*) *brueliodes* (Ansari, 1956: 164) [in *Brueelia*]	*Turdoides aylmeri aylmeri* (Shelley, 1885)
Priceiella (*Torosinirmus*) *koka* Gustafsson & Bush, 2017: 189	*Turdoides tenebrosa* (Hartlaub, 1883)
Priceiella (*Torosinirmus*) *nivea* (Ansari, 1956: 162) [in *Brueelia*]	*Turdoides hartlaubii* (Bocage, 1868)
Incerta sedis	
Priceiella sikkimensis (Mey, 2017: 165) [in *Garrulaxeus*]	*Pomatorhinus superciliaris superciliaris* (Blyth, 1842)
Priceiella taivana (Mey, 2017: 165) [in *Garrulaxeus*]	*Megapomatorhinus erythrocnemis* (Gould, 1863)

Table III. Measurements of the species of *Priceiella* Gustafsson & Bush, 2017, described here. Abbreviations used: AW = abdominal width (at posterior end of segment V); HL = head length (at midline); HW = head width (at temples); PRW = prothoracic width; PTW = pterothoracic width; TL = total length (at midline). All measurements are in millimeters.

Louse species	Host	Sex	N	TL	HL	HW	PRW	PTW	AW
Priceiella brutifrons	*Turdinus brevicaudatus stevensi*	M	30	1.21–1.56 (1.38)	0.34–0.54 (0.44)	0.35–0.42 (0.38)	0.21–0.28 (0.24)	0.29–0.34 (0.31)	0.38–0.54 (0.46)
		F	27*	1.52–1.91 (1.71)	0.37–0.43 (0.40)	0.39–0.46 (0.43)	0.22–0.27 (0.25)	0.31–0.38 (0.35)	0.43–0.57 (0.50)
Priceiella catanachae	*Stachyris strialata swinhoei*	M	3	1.40–1.45	0.34–0.35	0.35–0.37	0.23	0.33–0.34	0.45–0.47
		F	2	1.59–1.64	0.36–0.38	0.38	0.23–0.24	0.34–0.35	0.50–0.53
Priceiella chuae	*Pellorneum albiventre cinnamomeus*	M	1	1.33	0.35	0.36	0.22	0.31	0.42
		F	2	1.43–1.83	0.37–0.40	0.36–0.41	0.22–0.26	0.32–0.38	0.43–0.53
Priceiella dehongensis	*Stachyris nigriceps yunnanensis*	M	1	1.44	0.34	0.36	0.20	0.32	0.47
Priceiella nanlingensis	*Garrulax maesi maesi*	M	30†	1.33–1.90 (1.61)	0.39–0.45 (0.42)	0.38–0.42 (0.40)	0.23–0.26 (0.24)	0.34–0.40 (0.37)	0.52–0.62 (0.57)
		F	37‡	1.47–2.01 (1.72)	0.40–0.46 (0.43)	0.40–0.46 (0.43)	0.23–0.28 (0.25)	0.35–0.44 (0.40)	0.53–0.69 (0.61)
Priceiella rotundiceps	*Pomatorhinus ruficollis styani*	M	7	1.56–1.67	0.36–0.39	0.38–0.41	0.22–0.23	0.33–0.35	0.52–0.54
		F	6	1.86–1.95	0.40–0.42	0.42–0.44	0.24–0.25	0.35–0.37	0.56–0.60
Priceiella tanydrepana	*Garrulax castanotis castanotis*	M	3§	1.41–1.56	0.38–0.40	0.37–0.42	0.23–0.29	0.40–0.42	0.55–0.61
		F	8	1.64–1.88	0.39–0.42	0.39–0.43	0.24–0.29	0.37–0.43	0.55–0.65

* N for TL = 26.
† N for TL = 27; N for PTW = 14.
‡ N for TL = 34; for PTW = 25.
§ N for PRW = 2.

Taxonomic summary

Type host: *Garrulax castanotis castanotis* (Ogilvie-Grant, 1899)—rufous-cheeked laughingthrush.

Type locality: Jianfengling National Natural Reserve, Hainan Province, China.

Type material: Holotype ♂, Jianfengling National Nature Reserve, Tainchi, Ledong County, Hainan Province, China, 24 March 2015, Che Xianli and Chu Xingchi, bird ID: J2569, GD-PHTH-00424 (IZGAS). Paratypes: 1♂, 5♀, same data as holotype, GD-PHTH-00425–00430 (IZGAS).

ZooBank registration: urn:lsid:zoobank.org:act:B0708924-E77D-4A21-986D-215C2A687737.

Etymology: The specific epithet is constructed from "*tanaos*," Greek for "long, outstretched," and "*drepane*," Greek for "sickle," referring to the shape of the parameres.

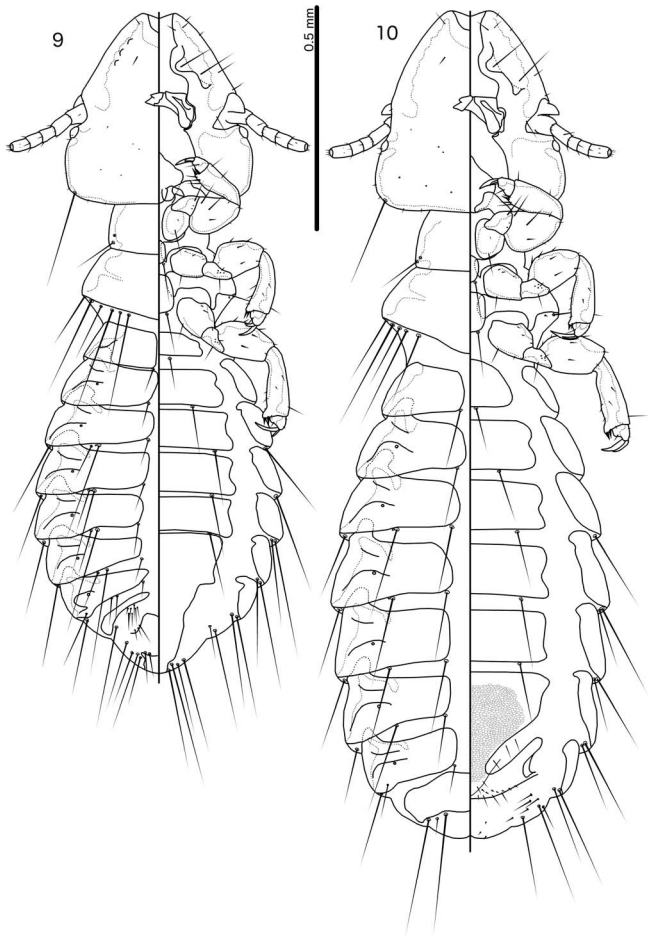
Remarks

Priceiella tanydrepana keys to *Priceiella sonorae* Gustafsson et al., 2018, in the key of Gustafsson et al. (2018). These 2 species can be separated by the following characters: male tergopleurite III with *aps* in *Pr*. *tanydrepana* (Fig. 1), but without *aps* in *Pr*. *sonorae*; abdominal segment V of both sexes with 2 *ps* on each side in *Pr*. *tanydrepana* (Figs. 1, 2), but with 3 *ps* on each side in *Pr*. *sonorae*; dorsal preantennal suture present in *Pr*. *tanydrepana* (Fig. 3), but absent in *Pr*. *sonorae* (note that in poorly mounted specimens, this character may be difficult to see); proximal mesosome more gently rounded in *Pr*. *tanydrepana* (Fig. 7) than in *Pr*. *sonorae*; gonopore broader than long, with rugose proximal margin but no crescent-shaped thickening in *Pr*. *sonorae*, but longer than wide (due to distal elongations), with smooth proximal margin and associated with a vague crescent-shaped thickening anterior to gonopore in *Pr*. *tanydrepana* (Fig. 7); parameres longer and more attenuated in *Pr*. *tanydrepana* (Fig. 6) than in *Pr*. *sonorae*; vulval margin with 5–8 *vss* in *Pr*. *tanydrepana* (Fig. 8), but with 8–10 *vss* in *Pr*. *sonorae*.

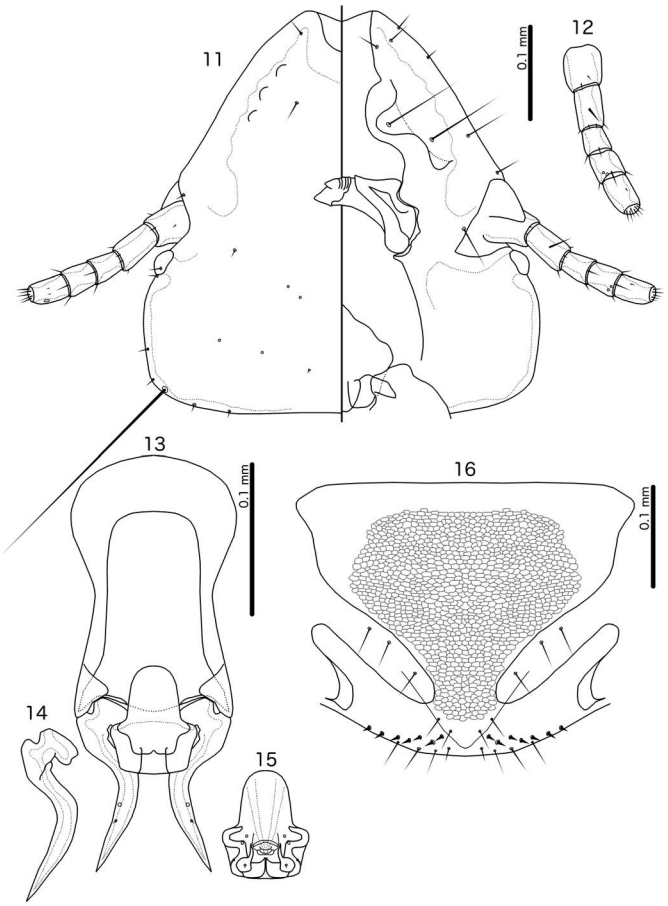
Priceiella (*Camurnirmus*) *nanlingensis* n. sp.

(Figs. 9–16)

Diagnosis (male): Head rounded triangular (Fig. 11), frons relatively narrow, lateral margins of preantennal head slightly convex. Dorsal preantennal suture absent. Marginal carina of moderate width, with undulating inner margin. Preantennal nodi large, bulging. Head chaetotaxy as in Figure 11. Scape slightly elongated. Preocular nodi larger than post-ocular nodi. Marginal temporal carina narrow, more or less even in width. Gular plate with more or less straight lateral margins. Thoracic and abdominal segments and chaetotaxy as in Figure 9; 6–7 *mms* on each side; *aps* absent of tergopleurite III; abdominal segment V with 2 *ps* on each side. Basal apodeme with constriction at about mid-length (Fig. 13). Proximal mesosome slender, gently rounded (Fig. 15). Marginal thickenings of mesosomal lobes broad. Gonopore wide, in all examined specimens bulging out, making exact shape difficult to establish, but seemingly wider than long, small; *ames* lateral to gonopore; *lpmes* ventral, distal to gonopore. Distal margin of mesosome more or less flat, or in some specimens bulging slightly in median section. Distal nodi strongly sclerotized, with more weakly sclerotized finger-like extension reaching towards gono-



Figures 9, 10. *Priceiella* (*Thescelovora*) *nanlingensis* n. sp. from *Garrulax maesi maesi* (Oustalet, 1890). (**9**) Male habitus, dorsal and ventral views. (**10**) Female habitus, dorsal and ventral views. Both figures are to the same scale.



Figures 11–16. *Priceiella* (*Thescelovora*) *nanlingensis* n. sp. from *Garrulax maesi maesi* (Oustalet, 1890). (**11**) Male head, dorsal and ventral views. (**12**) Female antenna, ventral view, at same scale as previous. (**13**) Male genitalia, dorsal view. (**14**) Male paramere, dorsal view, at same scale as previous. (**15**) Male mesosome, ventral view, at same scale as previous 2. (**16**) Female subgenital plate and vulval margin, ventral view.

pore. Parameral heads as in Figure 14; parameres elongated and attenuated; *pst1–2* close together. Measurements as in Table III.

Female: Preantennal head broader and with more convex lateral margins than in male (Fig. 10). Scape short (Fig. 12). Thoracic and abdominal segments and chaetotaxy as in Figure 10. Subgenital plate broad, extensively reticulated, with broad connection to cross-piece (Fig. 16). Vulval margin flattened medianly, with 3–4 short, slender *vms* and 4–7 short, thorn-like *vss* on each side; 4–5 short, slender *vos* on each side of subgenital plate; distal 2 *vos* near *vss*. Measurements as in Table III.

Taxonomic summary

Type host: Garrulax maesi maesi (Oustlet, 1890)—grey laughingthrush.

Type locality: Babaoshan, Nanling Mountains, Guangdong Province, China.

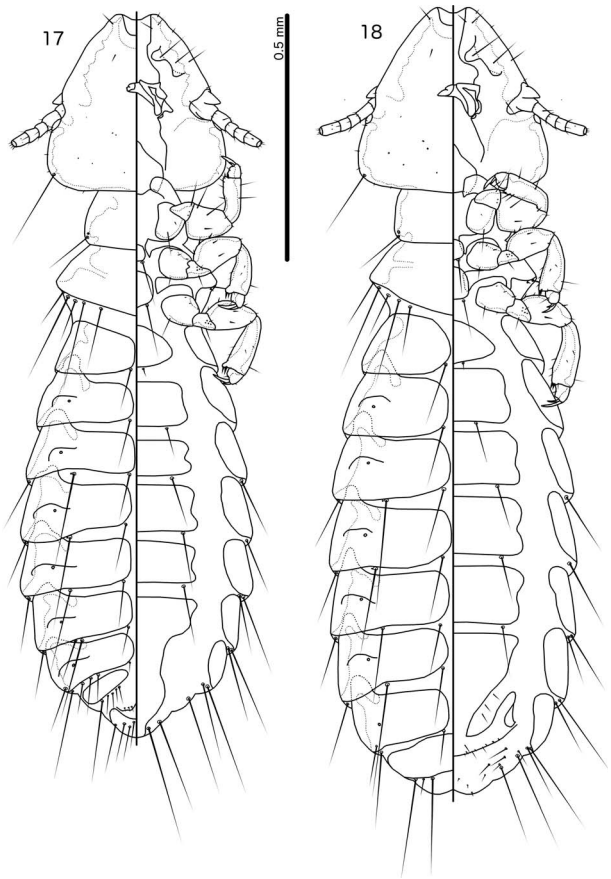
Type material: Holotype ♂, Babaoshan Management Station, Ruyang Management Office Nanling Mountains, Guangdong Province, China, 11 April 2013, Zhang Qiang, Zhang Yanhua, Huang Zhirong, bird ID: J0819, GD-PHTH-00433 (IZGAS). Paratypes: 28♂, 35♀, same data as holotype, GD-PHTH-00433–00.469 (IZGAS).

ZooBank registration: urn:lsid:zoobank.org:act:660BE675-B166-4FAD-89D0-5DCBBFA6B99E.

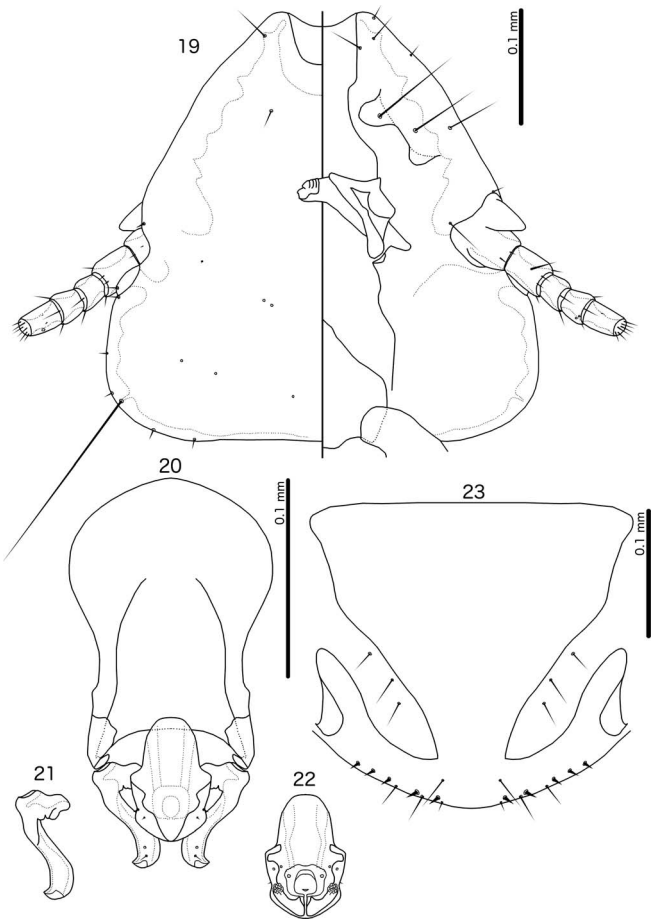
Etymology: The specific name is derived from the type locality, the Nanling Mountains, south China.

Remarks

Priceiella nanlingensis n. sp. keys to *Priceiella sonorae* in the key of Gustafsson et al. (2018), with the exception that the distal margin of the mesosome (couplet 1) is more or less flat in *Pr. nanlingensis*; the other character in couplet one, the length of the mesosome, fits with *Pr. nanlingensis*. These 2 species can be separated by the following characters: male abdominal segment V with 2 *ps* on each side in *Pr. nanlingensis* (Fig. 9), but with 3 *ps* on each side in *Pr. sonorae*; proximal mesosome slender, gently rounded in *Pr. nanlingensis* (Fig. 15), but irregularly trapezoidal in *Pr. sonorae*; posterior margin of mesosome more or less flat, and distal *lpmes* situated ventrally in *Pr. nanlingensis* (Fig. 15), but distal margin convergent to median point, and distal *lpmes* situates laterally in *Pr. sonorae*; reticulation of female subgenital plate more extensive in *Pr. nanlingensis* (Fig. 16) than in *Pr. sonorae*.



Figures 17, 18. *Priceiella* (*Thescelovora*) *catanachei* n. sp. from *Stachyris strialata swinhoei* Rothschild, 1903. (**17**) Male habitus, dorsal and ventral views. (**18**) Female habitus, dorsal and ventral views. Both figures are to the same scale.



Figures 19–23. *Priceiella* (*Thescelovora*) *catanachei* n. sp. from *Stachyris strialata swinhoei* Rothschild, 1903. **(19)** Male head, dorsal and ventral views. **(20)** Male genitalia, dorsal view. **(21)** Male paramere, dorsal view, at same scale as previous. **(22)** Male mesosome, ventral view, at same scale as previous 2. **(23)** Female subgenital plate and vulval margin, ventral view.

Subgenus *Thescelovora* Gustafsson and Bush, 2017

Brueelia Kéler, 1936: 257 (*in partim*); *Priceiella* (*Thescelovora*) Gustafsson and Bush, 2017: 185; *Garrulaxeus* Mey, 2017: 160 (*in partim*).

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

Priceiella (*Thescelovora*) *catanachei* n. sp.

(Figs. 17–23)

Diagnosis (male): Head rounded triangular, frons moderately wide, lateral margins of preantennal head convex (Fig. 19). Dorsal preantennal suture absent. Marginal carina broad, with irregular inner margin. Preantennal nodi large, bulging. Head chaetotaxy as in Figure 19. Pre- and post-ocular nodi approximately same size. Marginal temporal carina of moderate width, narrower near occiput. Gular plate with more or less straight or concave lateral margins. Thoracic and abdominal segments and chaetotaxy as in Figure 17; *aps* present on tergopleurite VII. Basal apodeme broad, constricted at mid-length (Fig. 20). Proximal mesosome rounded (Fig. 22). Mesosomal lobes slender, lateral margins slightly displaced medianly at about mid-point; marginal thickenings broad except for anterior part, which is narrow. Gonopore large, roughly square-shaped; *gpmes* situated on marginal thickening; *ames* lateral to gonopore. Rugose nodi prominent. Distal thickenings with concave anterior margin. Distal *lpmes* seemingly displaced to dorsal side, but position overlaps with rugose nodi on ventral side, and not certain; proximal *lpmes* lateral. Parameral heads as in Figure 21; parameral blades short, distal ends curved laterally; *pst1–2* close together. Measurements as in Table III.

Female: Thoracic and abdominal plates and chaetotaxy as in Figure 18. Subgenital plate relatively slender, with broad connection to cross-piece (Fig. 23). Vulval margin gently rounded, with 2–3 short, slender *vms* and 5 short, thorn-like *vss* on each side; 3–4 short, slender *vos* on each side of subgenital plate; distal 1 *vos* near *vss*. Measurements as in Table III.

Taxonomic summary

Type host: Stachyris strialata swinhoei Rothschild, 1903—spot-necked babbler.

Type locality: Jianfengling National Nature Reserve, Tianchi, Ledong County, Hainan Province, China.

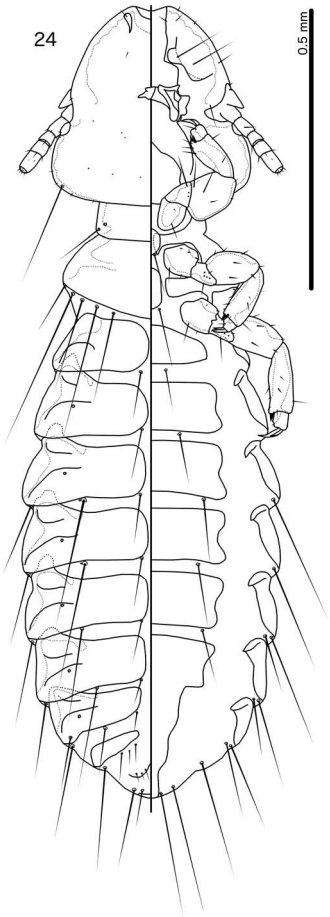
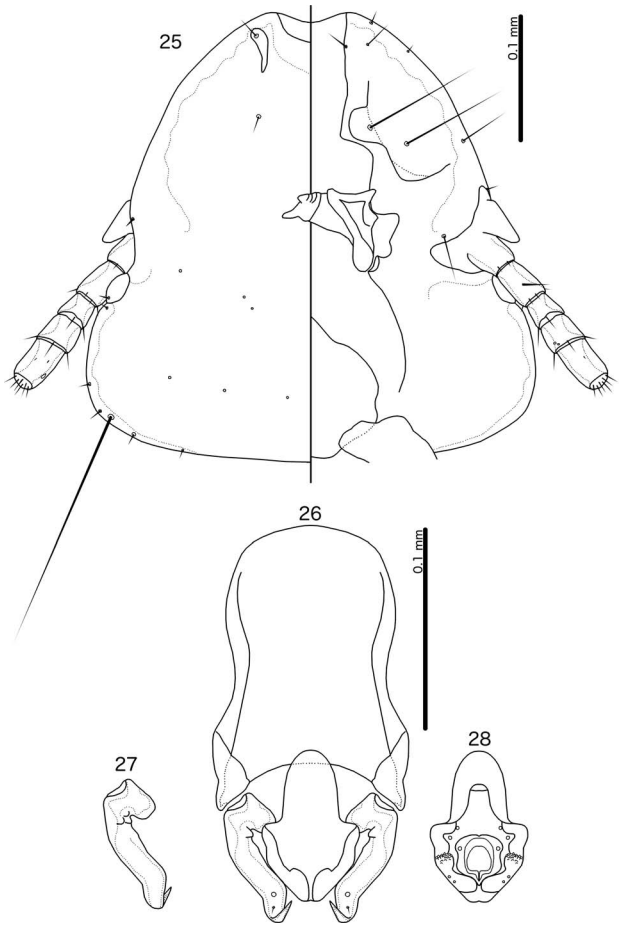


Figure 24. *Priceiella* (*Thescelovora*) *dehongensis* n. sp. from *Stachyris nigriceps yunnanensis* La Touche, 1921. Male habitus, dorsal and ventral views.



Figures 25–28. *Priceiella* (*Thescelovora*) *dehongensis* n. sp. from *Stachyris nigriceps yunnanensis* La Touche, 1921. (**25**) Male head, dorsal and ventral views. (**26**) Male genitalia, dorsal view. (**27**) Male paramere, dorsal view, at same scale as previous. (**28**) Male mesosome, ventral view, at same scale as previous 2.

Type material: Holotype ♂, Jianfengling National Nature Reserve, Tianchi, Ledong County, Hainan Province, China, 26 March 2015, Che Xianli and Chu Xingzhi, bird ID J2590, GD-PHTH-00486 (IZGAS) [marked with black dot on slide]. Paratypes: 2♂, 2♀, same data as holotype, GD-PHTH-00486–487 (IZGAS).

ZooBank registration: urn:lsid:zoobank.org:act:C403DF56-4DEE-4D16-AE75-00F197727D2D.

Etymology: The specific epithet is in honor of our friend and colleague Therese A. Catanach (Drexel University, Philadelphia, Pennsylvania), who through detailed examinations of the phylogenies of several groups of lice has revealed how little we understand of the systematics of some groups of lice. The ending "-*ei*" is neutral gender.

Remarks

Priceiella catanachei keys to couplet 5 in the key of Gustafsson et al. (2018). However, the absence of *aps* on male tergopleurite VI separates *Pr. catanachei* (Fig. 17) from *Pr. coleyae*, and the presence of *aps* on male abdominal segment VII separates *Pr. catanachei* from the other 2 alternatives (*Pr. macrocephala* Gustafsson et al., 2018, and *Pr. fuscicaena* Gustafsson et al., 2018). Ignoring this character, *Pr. catanachei* keys to *Pr. fuscicaena*, based on the sternal chaetotaxy; however, the male genitalia of *Pr. catanachei* (Figs. 20–22) are structurally more similar to those of *Pr. macrocephala*, lacking the rugose area of the proximal mesosome found in *Pr. fuscicaena*. The shape of the basal apodeme of *Pr. catanachei* (Fig. 20) is more similar to that of *Pr. macrocephala* than that of *Pr. fuscicaena*. *Priceiella catanachei* can be separated from *Pr. macrocephala* by the following additional characters: proximal mesosome rectangular in *Pr. macrocephala*, but rounded in *Pr. catanachei* (Fig. 22); gonopore and distal thickenings of mesosomal lobes both wider and more conspicuous in *Pr. catanachei* (Fig. 22) than in *Pr. macrocephala*; lateral margins of preantennal head convex in *Pr. catanachei* (Fig. 19), but more or less straight in *Pr. macrocephala*; dorsal preantennal suture absent in *Pr. catanachei* (Fig. 19), but present in *Pr. macrocephala.*

Priceiella (*Thescelovora*) *dehongensis* n. sp.

(Figs. 24–28)

Diagnosis (male): Head broadly rounded, frons broad, lateral margins of preantennal head clearly convex (Fig. 25). Dorsal preantennal suture at *dsms*, extending about halfway to *ads*. Marginal carina narrow, with undulating inner margin. Prean-

tennal nodi large, bulging. Head chaetotaxy as in Figure 25. Preocular nodi slightly larger than postocular nodi. Marginal temporal carina slender. Gular plate with convex lateral margins. Thoracic and abdominal segments and chaetotaxy as in Figure 24; *aps* absent on tergopleurites IV–VII. Basal apodeme slender rounded (Fig. 26). Proximal mesosome slender, rounded (Fig. 28), with clearly demarcated ventral sclerite. Mesosomal lobes slender, with slight lateral depression at about mid-length. Marginal thickening broad, not displaced medianly. Gonopore large, roughly quadratic, with *gpmes* situated on marginal thickening of gonopore; *ames* antero-lateral to gonopore; *lpmes* near lateral margins of mesosome. Rugose nodi prominent, distal thickenings curved. Parameral heads as in Figure 27; parameral blades elongated distal to *pst1–2*, but exact shape unknown, as parameres are everted and recurved dorsally in only examined male; *pst1–2* close together. Measurements as in Table III.

Female: Unknown.

Taxonomic summary

Type host: Stachyris nigriceps yunnanensis La Touche, 1921—grey-throated babbler.

Type locality: Rongshuwang, Dehong Autonomous Prefecture, Yunnan Province, China.

Type material: Holotype ♂, Rongshuwang, Dehong Autonomous Prefecture, Yunnan Province, China, 30 December 2012, Wu Yuchun and Zhang Yanhua, bird ID: J0580, GD-PHTH-00432 (IZGAS).

ZooBank registration: urn:lsid:zoobank.org:act:6477FA48-5E8F-4B98-93CE-AABB6907E3DA.

Etymology: The specific name is derived from the type locality.

Remarks

Priceiella dehongensis n. sp. keys to couplet 5 in the key of Gustafsson et al. (2018), placing it near *Pr. coleyae*, *Pr. macrocephala*, and *Pr. fuscicaena*. However, the choices in this couplet contradict each other with regards to *Pr. dehongensis*, due to the convex lateral margins of the preantennal head of this species, which is more similar to *Pr. coleyae*, whereas the other characters are more similar to *Pr. macrocephala* and *Pr. fuscicaena*. Ignoring head shape, the relatively slender basal apodeme, and lack of second *sts* of sternite VI places *Pr. dehongensis* near *Pr. fuscicaena*. In both these species, but not in *Pr. coleyae* or *Pr. macrocephala*, there is a ventral sclerite in the proximal half of the mesosome, anterior to the gonopore, which further strengthens their relationship.

Priceiella dehongensis is separated from *Pr. fuscicaena* by the following characters: lateral margins of preantennal head clearly convex in *Pr. dehongensis* (Fig. 25), but more or less straight in *Pr. fuscicaena*; ventral sclerite of proximal mesosome rugose in *Pr. fuscicaena*, but not in *Pr. dehongensis* (Fig. 28); marginal thickenings of mesosomal lobes not displaced medianly in *Pr. dehongensis* (Fig. 28), but displaced in *Pr. fuscicaena*; gonopore of different shapes in the 2 species (Fig. 28).

***Priceiella* (*Thescelovora*) *rotundiceps* n. sp.**

(Figs. 29–35)

Diagnosis (male): Head rounded, almost quadratic in shape (Fig. 31), frons broadly concave, lateral margins of preantennal area strongly convex. Dorsal preantennal suture absent. Marginal carina of moderate width, inner margin irregularly undulating. Preantennal nodi large. Head chaetotaxy as in Figure 31. Preocular nodi larger than postocular nodi. Marginal temporal carina narrow, inner margin irregularly undulating. Gular plate with slightly concave lateral margins. Thoracic and abdominal segments and chaetotaxy as in Figure 29; presence of *aps* varies between specimens. In holotype and one paratype, *aps* is present on tergopleurites VI–VII on both sides; in 1 paratype *aps* is the same as in holotype except absent on VII on 1 side; in 2 paratypes *aps* is only present on VII on 1 side; in 2 paratypes *aps* is present only on tergopleurite VI on 1 side. We have here illustrated *aps* as present on both tergopleurites VI–VII, but more specimens are needed to establish how common this is. Basal apodeme broad, roughly rectangular (Fig. 32). Proximal mesosome rounded, constricted distally (Fig. 34). Ventral sclerite visible. Mesosomal lobes broad, lateral margins slightly convergent distally, but distal margin of mesosome slightly rounded. Marginal thickening of mesosomal lobes displaced medianly at about mid-length. Rugose nodi prominent. Gonopore open proximally, with 1 *gpmes* on marginal thickening on each side; *ames* as visible microsetae anterior to gonopore; *lpmes* submarginal, situated distal to rugose nodi. Parameral heads as in Figure 33; parameral blades tapered distally, not much elongated; *pst1–2* as in Figure 32. Measurements as in Table III.

Female: Thoracic and abdominal plates and chaetotaxy as in Fig. 30; 1 *ps* present on each side of abdominal segment III (in 1 specimen 2 *ps* present on this segment). Subgenital plate comparatively narrow, with narrow connection to cross-piece (Fig. 35). Vulval margin flattened medianly, with 2–3 short, slender *vms* and 5–6 short, thorn-like *vss* on each side; 3–4 short, slender *vos* on each side of subgenital plate; distal 1 *vos* on each side median to *vss*. In 2 specimens, 1 *vos* on 1 side modified into macroseta. Measurements as in Table III.

Taxonomic summary

Type host: Pomatorhinus ruficollis styani Seebohm, 1884—streak-breasted scimitar-babbler.

Type locality: Baiguo Village, Yuexi County, Anhui Province, China.

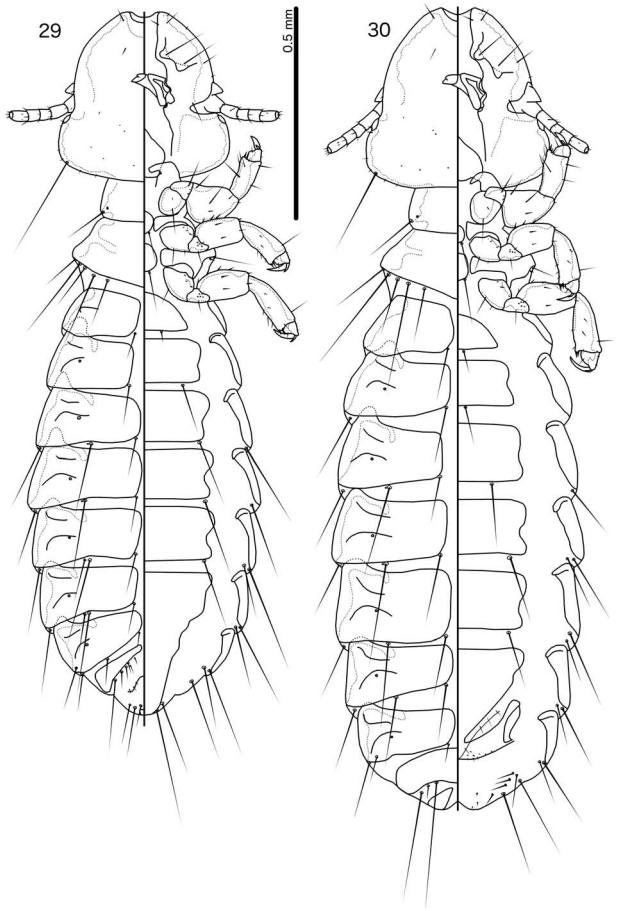
Type material: Holotype ♂, Baiguo Village, Xiubo Township, Yuexi County, Anhui Province, China, 18 November 2015, Che Xianli and Chu Xingzhi, bird ID: J2788, GD-PHTH-00488 (IZGAS). Paratypes: 3♂, 4♀, same data as holotype, GD-PHTH-00489–00495 (IZGAS); 3♂, 2♀, same data as holotype, except bird ID J2787, GD-PHTH-00495–00500 (IZGAS).

ZooBank registration: urn:lsid:zoobank.org:act:C461CB00-C939-474D-8F68-1447D68A5C89.

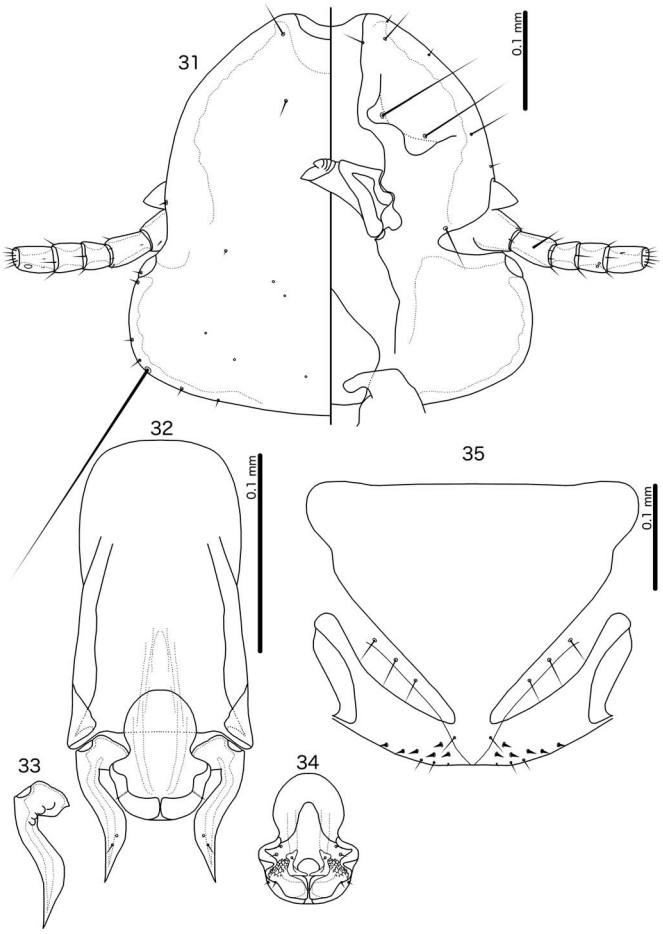
Etymology: The specific name is constructed from "*rotundus*," Latin for "round," and "*caput*," Latin for "head," referring to the rounded preantennal area.

Remarks

Priceiella rotundiceps keys to couplet 8 in the key of Gustafsson et al. (2018), but cannot be keyed further due to the conflict of characters. This places *Pr. rotundiceps* near *Pr. austini* Gustafsson et al., 2018, and *Pr. chanthaburiana* Gustafsson et al., 2018, both of which are known from hosts in the genus *Pomatorhinus* Horsfield, 1821. *Priceiella rotundiceps* can be separated from both



Figures 29, 30. *Priceiella* (*Thescelovora*) *rotundiceps* n. sp. from *Pomatorhinus ruficollis styani* Seebohm, 1884. (**29**) Male habitus, dorsal and ventral views. (**30**) Female habitus, dorsal and ventral views. Both figures are to the same scale.



Figures 31–35. *Priceiella* (*Thescelovora*) *rotundiceps* n. sp. from *Pomatorhinus ruficollis styani* Seebohm, 1884. (**31**) Male head, dorsal and ventral views. (**32**) Male genitalia, dorsal view. (**33**) Male paramere, dorsal view, at same scale as previous. (**34**) Male mesosome, ventral view, at same scale as previous 2. **(35)** Female subgenital plate and vulval margin, ventral view.

of these species by the shape of the head (Fig. 31), which is more triangular with less convex lateral margins of the preantennal area in *Pr. austini* and *Pr. chanthaburiana*. Moreover, distal margin of mesosome is more or less flat, and proximal mesosome has a clear ventral sclerite in *Pr. rotundiceps* (Fig. 34), whereas in the other 2 species the distal margin is convergent to a median point, and the ventral sclerite is not visible; *ps* present on female abdominal segment III in *Pr. rotundiceps* (Fig. 30), but absent in the other 2 species.

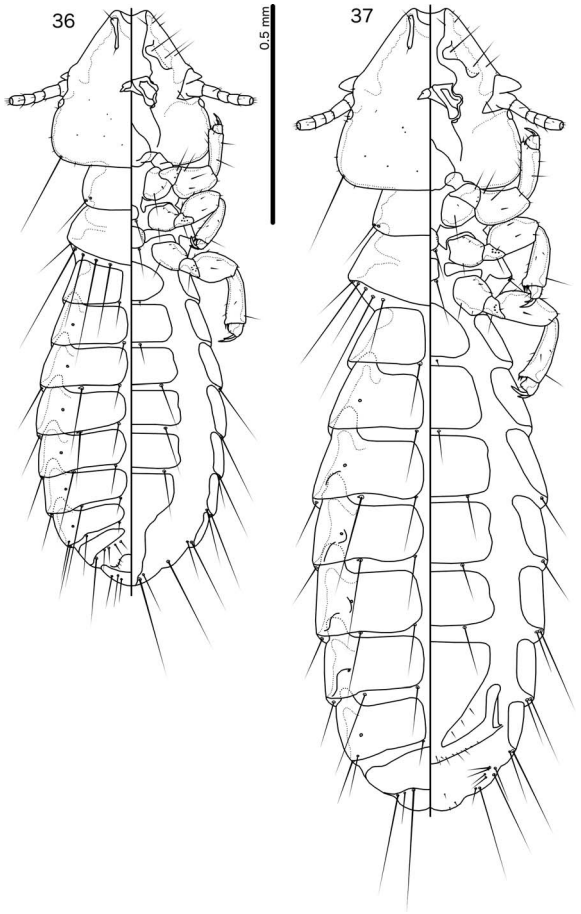
Priceiella rotundiceps can be separated from *Pr. austini* by the following additional characters: male tergopleurite VIII with 1 *tps* on each side in *Pr. rotundiceps* (Fig. 29), but with 2 *tps* on each side in *Pr. austini*; dorsal preantennal suture absent in *Pr. rotundiceps* (Fig. 31), but present in *Pr. austini*; rugose nodi more prominent in *Pr. rotundiceps* (Fig. 34) than in *Pr. austini*.

Priceiella rotundiceps can be separated from *Pr. chanthaburiana* by the following characters: male abdominal segment V with 2 *ps* on each side in *Pr. rotundiceps* (Fig. 29), but with 3 *ps* on each side in *Pr. chanthaburiana*; proximal mesosome more rounded in *Pr. rotundiceps* (Fig. 34) than in *Pr. chanthaburiana*.

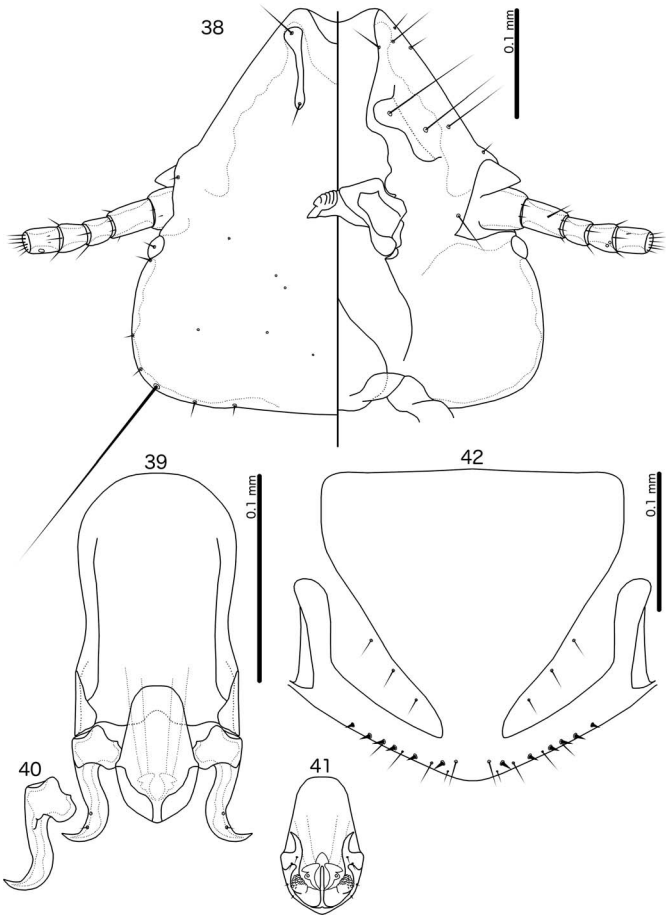
Priceiella (*Thescelovora*) *chuae* n. sp.

(Figs. 36–42)

Diagnosis (male): Head rounded triangular (Fig. 38), frons concave, lateral margins of preantennal head more or less straight or slightly convex. Dorsal preantennal suture present, reaching both *dsms* and *ads*. Marginal carina broad, widening anteriorly, with irregularly undulating inner margin. Preantennal nodi large, bulging. Head chaetotaxy as in Figure 38. Preocular nodi larger than postocular nodi. Marginal temporal carina narrow, inner margin irregularly undulating. Gular plate with concave lateral margins. Thoracic and abdominal plates and chaetotaxy as in Fig. 36; abdominal segment IV with 1 *ps* on 1 side and 2 *ps* on 1 side in single examined male, here illustrated with 2 *ps*. Basal apodeme rounded rectangular, with slight constriction at about mid-length (Fig. 39). Proximal mesosome rounded trapezoidal, widening distally (Fig. 41). Mesosomal lobes distally convergent to median point; marginal thickenings displaced medianly at mid-length, extended anteriorly. Rugose nodi prominent. Gonopore with margins thickened only laterally; *gpmes* situated on marginal thickenings; *ames* antero-lateral to gonopore; *lpmes* on lateral



Figures 36, 37. *Priceiella* (*Thescelovora*) *chuae* n. sp. from *Pellorneum albiventre cinnamomeus* (Rippon, 1900). (**36**) Male habitus, dorsal and ventral views. (**37**) Female habitus, dorsal and ventral views. Both figures are to the same scale.



Figures 38–42. *Priceiella* (*Thescelovora*) *chuae* n. sp. from *Pellorneum albiventre cinnamomeus* (Rippon, 1900). (**38**) Male head, dorsal and ventral views. (**39**) Male genitalia, dorsal view. (**40**) Male paramere, dorsal view, at same scale as previous. (**41**) Male mesosome, ventral view, at same scale as previous 2. (**42**) Female subgenital plate and vulval margin, ventral view.

margins. Parameral heads as in Fig. 40; parameral blades curved laterally; *pst1–2* as in Figure 39. Measurements as in Table III.

Female: Thoracic and abdominal plates and chaetotaxy as in Figure 37. Subgenital plate roughly triangular (Fig. 42), with moderately wide connection to cross-piece. Vulval margin convergent to rounded median point, with 4 short, slender *vms* and 6 short, thorn-like *vss* on each side; 4 short, slender *vos* on each side of subgenital plate; distal 1 *vos* on each side median to *vss*. Measurements as in Table III.

Taxonomic summary

Type host: Pellorneum albiventre cinnamomeus (Rippon, 1900)—spot-throated babbler.

Type locality: Near Xinhuikuan and Manpa Villages, Mengla County, Banna Prefecture, Yunnan Province, China.

Type material: Holotype ♂, "Primitive forests" near Xinhuikuan and Manpa Villages, Mengla County, Banna Prefecture, Yunnan Province, China, 2 June 2013, Su Dongdong and Zhang Yanhua, bird ID: J1081, GD-PHTH-00501 (IZGAS). Paratypes: 2♀, same data as holotype, GD-PHTH-00502–503 (IZGAS).

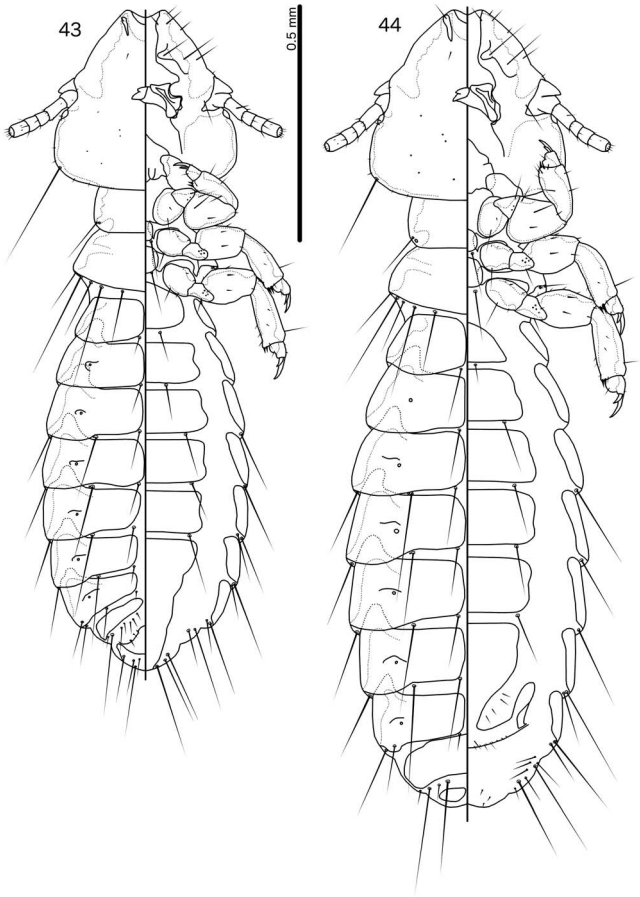
ZooBank registration: urn:lsid:zoobank.org:act:0237275F-332A-4D21-B6C8-1830A2F18341.

Etymology: The specific name is in honor of our former colleague Xingzhi Chu (previously at IZGAS), in recognition of the enormous amount of chewing lice she has collected from across south China and her pioneering studies into the factors that structure chewing louse communities in subtropical China.

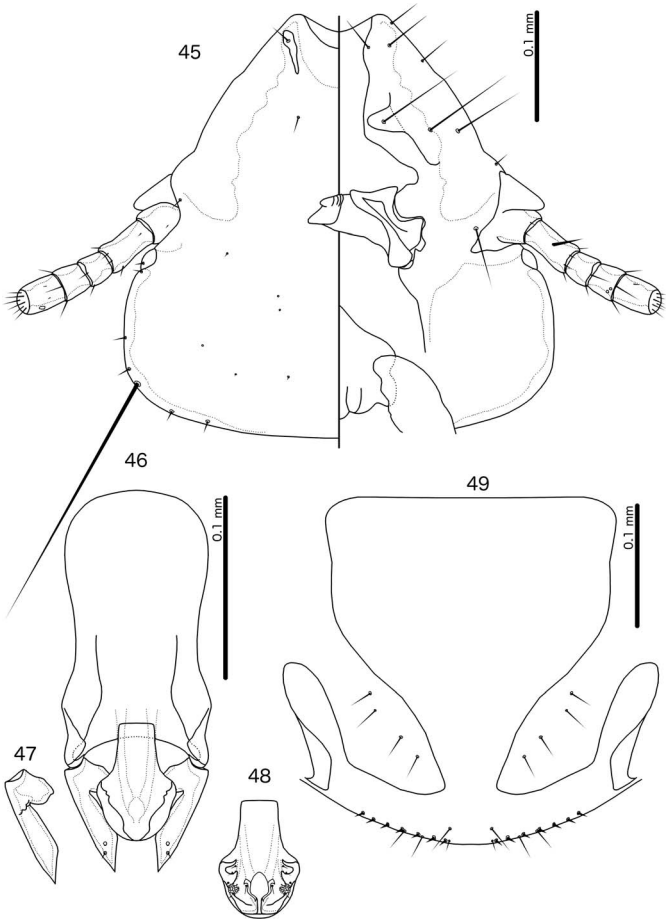
Remarks

Priceiella chuae keys to *Priceiella alliocephala* Gustafsson and Bush, 2017, in the key of Gustafsson et al. (2018), based on the extent of the dorsal preantennal suture. However, the presence of lateral thickenings of the gonopore in *Pr. chuae* (Fig. 41) do not fit with the key characters leading to *Pr. alliocephala*. If the extent of the dorsal preantennal suture is considered convergent, and thus ignored in the key, *Pr. chuae* keys to *Pr. orichalca*.

Priceiella chuae can be separated from *Pr. alliocephala* by the following characters: lateral margins of preantennal head more or less straight, or slightly convex, in *Pr. chuae* (Fig. 38), but clearly concave in *Pr. alliocephala*; *ss* of female tergopleurite VIII not reaching posterior margin of tergopleurite IX+X in *Pr. chuae* (Fig. 37), but reaching beyond distal margin of abdomen in *Pr.*



Figures 43, 44. *Priceiella* (*Thescelovora*) *brutifrons* n. sp. from *Turdinus brevicaudatus stevensi* (Kinnear, 1925). **(43)** Male habitus, dorsal and ventral views. **(44)** Female habitus, dorsal and ventral views. Both figures are to the same scale.



Figures 45–49. *Priceiella* (*Thescelovora*) *brutifrons* n. sp. from *Turdinus brevicaudatus stevensi* (Kinnear, 1925). (**45**) Male head, dorsal and ventral views. (**46**) Male genitalia, dorsal view. (**47**) Male paramere, dorsal view, at same scale as previous. (**48**) Male mesosome, ventral view, at same scale as previous 2. (**49**) Female subgenital plate and vulval margin, ventral view.

alliocephala; proximal mesosome with distal constriction in *Pr. alliocephala*, but without such constriction in *Pr. chuae* (Fig. 41); gonopore with marginal thickenings laterally in *Pr. chuae* (Fig. 41), but without such thickenings in *Pr. alliocephala*; rugose nodi more extensive and distal thickenings of mesosome interrupted medianly in *Pr. chuae* (Fig. 41), but rugose nodi less conspicuous and distal thickening medianly continuous in *Pr. alliocephala*; female subgenital plate roughly triangular and vulval margin convergent to rounded median point in *Pr. chuae* (Fig. 42), but subgenital plate more square-shaped and vulval margin flattened medianly in *Pr. alliocephala*.

Priceiella chuae can be separated from *Pr. orichalca* by the following characters: dorsal preantennal suture reaching *ads* in *Pr. chuae* (Fig. 38), but not in *Pr. orichalca*; male abdominal segment V with 2 *ps* on each side in *Pr. chuae* (Fig. 36), but with 3 *ps* on each side in *Pr. orichalca*; *ss* of female tergopleurite VIII mesoseta in *Pr. chuae* (Fig. 37), but microseta in *Pr. orichalca*; gonoporal marginal thickenings, rugose nodi, and marginal and distal thickenings of mesosomal lobes differently shaped in *Pr. chuae* (Fig. 41) than in *Pr. orichalca*; female vulval margin convergent to rounded median point in *Pr. chuae* (Fig. 42), but flattened medianly in *Pr. orichalca*.

***Priceiella* (*Thescelovora*) *brutifrons* n. sp.**

(Figs. 43–49)

Diagnosis (male): Head rounded triangular (Fig. 45), frons concave lateral margins of preantennal head convex. Dorsal preantennal suture present around *dsms*, reaching about halfway to *ads*. Marginal carina very broad, narrowing only distally; inner margins irregularly undulating. Preantennal nodi large, bulging. Head chaetotaxy as in Fig. 45. Preocular nodi larger than postocular nodi. Marginal temporal carina slender, inner margin more or less straight or gently undulating. Gular plate with concave lateral margins. Thoracic and abdominal plates and chaetotaxy as in Fig. 43; abdominal segment V with 2 *ps* on each side. Basal apodeme relatively slender (Fig. 46), constricted at about mid-length. Proximal mesosome slender (Fig. 48), roughly trapezoidal, widening distally, with concave lateral margins. Mesosomal lobes slender, marginal thickenings shallowly displaced medianly at mid-length; distal margin rounded. Rugose nodi prominent. Gonopore thickened only laterally, with apparent *gpmes* microseta near marginal thickening on each side; *ames* antero-lateral to gonopore; *lpmes* submarginal near rugose

nodi. Parameral heads as in Figure 47; parameral blades short, not curved; *pst1–2* as in Figure 46. Measurements as in Table III.

Female: Thoracic and abdominal plates and chaetotaxy as in Fig. 44. Subgenital plate slender, somewhat rectangular (Fig. 49), with rather broad connection to cross-piece. Vulval margin gently rounded, mid-section may be flattened, with 2–3 short, slender *vms* and 6–8 short, thorn-like *vss* on each side; 4–5 short, slender *vos* on each side of subgenital plate; distal 1 *vos* on each side near *vss*. Measurements as in Table III.

Taxonomic summary

Type host: Turdinus brevicaudatus stevensi (Kinnear, 1925)—streaked wren-babbler.

Type locality: Pairu Village, Guanghe Village, Zuozhou Township, Jiangzhou District, Chongzuo City, Guangxi Province, China.

Type material: Holotype ♂, Pairu Village, Guanghe Village, Zuozhou Township, Jiangzhou District, Chongzuo City, Guangxi Province, China, Wu Yuchun and Chu Xingzhi, 27 May 2016, bird ID: J2925, GD-PHTH-00504 (IZGAS). Paratypes: 6♂, 7♀, same data as holotype, GD-PHTH-00505–517 (IZGAS); 6♂, 4♀, same data as holotype, except bird ID: J2924, GD-PHTH-00518–00527 (IZGAS); 7♂, 7♀, same data as holotype, except 25 May 2016, bird ID: J2885, GD-PHTH-00528–00541 (IZGAS); 10♂, 9♀, same data as previous, except bird ID: J2900, GD-PHTH-00542–00560 (IZGAS).

ZooBank registration: urn:lsid:zoobank.org:act:C424890B-C43C-40DC-B8CA-4948644B121C.

Etymology: The specific name is constructed from *brutus*, Latin for "heavy, unwieldy," and *frons*, Latin for "front." This refers to the bulky-looking marginal carinae.

Remarks

Priceiella brutifrons keys to *Pr. orichalca* in the key of Gustafsson et al. (2018). Both species are known from the same host subspecies in the same area, but can be separated by the following characters: lateral margins of preantennal head convex in *Pr. brutifrons* (Fig. 45), but more or less straight in *Pr. orichalca*; male abdominal segment V with 2 *ps* on each side in *Pr. brutifrons* (Fig. 43), but with 3 *ps* on each side in *Pr. orichalca*; marginal carina much wider in *Pr. brutifrons* (Fig. 45) than in *Pr. orichalca*; mesosome proportionately more slender in *Pr. brutifrons* (Fig. 48) than in *Pr. orichalca*; moreover, the shape and size of gonoporal marginal thickenings, rugose nodi, marginal mesosomal thickenings, and distal mesosome differ between the 2 species (Fig. 48); female subgenital plate more quadratic in *Pr. brutifrons* (Fig. 49) than in *Pr. orichalca*.

We have reexamined photos of the specimen of *Pr. orichalca* reported from *T. b. stevensi* by Gustafsson et al. (2018). Their specimen is not conspecific with the specimens here described as *Pr. brutifrons*, and head shape, pigmentation patterns, and other characters of that specimen correspond well with the specimens of *Pr. orichalca* taken from the type host (in Malaysia). Potentially, the specimen examined by Gustafsson et al. (2018) represents a straggler; alternatively, both species of *Priceiella* parasitize the same birds in Guangxi. At least 3 of the other reported host species of *Pr. orichalca* also occur in Guangxi, and it is possible that the specimen from *T. b. stevensi* originated from any of these. More collections from babblers in Guangxi are needed to establish which hosts are parasitized by *Pr. orichalca* in this area.

NEW RECORDS

Priceiella (*Thescelovora*) *coleyae* Gustafsson, Clayton and Bush, 2018

Taxonomic summary

Type host: Stachyris strialata tonkinensis Kinnear, 1938—spot-necked babbler.

Type locality: Jingxi County, Guangxi Province, China.

Additional hosts: Stachyris nigriceps yunnanensis La Touche, 1921—grey-throated babbler new host record.

Material examined: 2♂, 2♀, Pairu Village, Guanghe Village, Zuozhou Township, Jiangzhou District, Chongzuo City, Guangxi Province, China, 9 January 2013, Wu Yuchun and Chu Xingzhi, bird ID: J2884, GD-PHTH-00147–00150 (IZGAS).

Remarks

Two male and 2 female specimens collected from *Stachyris nigriceps yunnanensis* in Pairucun, Guangxi Province, China, key out to *Pr. coleyae* in the key of Gustafsson et al. (2018) and cannot be separated morphologically from this species. They are not conspecific with *Pr. dehongensis*, which is a congeneric species known from the same host species in other parts of its range. The type locality of *Pr. coleyae* is not far from the collection locality of these specimens, suggesting that *Pr. coleyae* may naturally occur on both host species in Guangxi Province. More data are needed from Yunnan and other parts of the range of *Stachyris nigriceps* to determine whether more species of *Priceiella* occur on this host species, whether they co-occur on the same hosts in some areas, and if so where the limits in distribution are.

Priceiella (*Thescelovora*) *austini* Gustafsson, Clayton and Bush, 2018

Taxonomic summary

Type host: Pomatorhinus ruficollus hunanensis Cheng, 1962—streak-breasted scimitar babbler.

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

Additional hosts: Pomatorhinus ruficollis similis Rothschild, 1926 new host record. *Pomatorhinus ruficollis stridulus* Swinhoe, 1861 new host record.

Material examined: Ex Pomatorhinus ruficollis hunanensis: 4♂, 4♀, Pairucun, Guanghe Village, Zuozhou Township, Jiangzhou District, Chongzuo County, Guangxi Province, China, 28 May 2016, Wu Yuchun and Chu Xingzhi, bird ID J2959, GD-PHTH-00187–00194 (IZGAS); 1♂, 2♀, same data as previous, except bird ID J2958, GD-PHTH-00220–00222 (IZGAS).

Ex Pomatorhinus ruficollis similis: 1♂, 1♀, 1 nymph, Wudiancun Village, Dehong Autonomous Prefecture, Yunnan Province, China, 7 January 2013, Wu Yuchun and Chu Xingzhi, bird ID J0658, GD-PHTH-0223–0225 (IZGAS).

Ex Pomatorhinus ruficollis stridulus: 7♂, 3♀, Tongle Nature Reserve, Yunan County, Guangdong Province, China, 6 April

2015, Xi Changhai and Zhao Yanyan, bird ID J2639, GD-PHTH-00206–00210 (IZGAS); 2♂, 6♀, same data as previous, except bird ID J2635, GD-PHTH-00197–00200 (IZGAS); 2♀, same locality and collectors, 6 February 2015, bird ID J2439, GD-PHTH-00196 (IZGAS); 3♂, 3♀, same locality and collector, 12 May 2015, bird ID J2659, GD-PHTH-00213–215 (IZGAS), 1♀, same locality and collector, 6 February 2015, bird ID J2441, GD-PHTH-00216 (IZGAS); 1♂, 1♀, same locality, 31 October 2015, Li Wanming, Zhao Yanyan, bird ID J2786, GD-PHTH-00211–00212 (IZGAS); 1♀, 1 nymph, Dinhushan National Nature Reserve, Zhaoqing County, Guangdong Province, China, 14 March 2015, Che Xianli and Chu Xingzhi, bird ID J2528, GD-PHTH-00195 (IZGAS); 3♂, 12♀, same data as previous, except bird ID J2529, GD-PHTH-00201–00205 (IZGAS); 2♂, 1♀, same data as previous, except 17 July 2015, bird ID J2547, GD-PHTH-00219 (IZGAS), 3♂, same locality as previous, 17 July 2015, Chu Xinzhi and He Dongqing, bird ID J2700, GD-PHTH-00217–00218 (IZGAS).

Remarks

The type host was originally given as *Pomatorhinus ruficollis intermedius* Cheng, 1962, but this name is preoccupied and replaced by *Po. r. hunanensis* Cheng, 1974 (Collar and Robson, 2020). We here, therefore, correct the type host name.

Among the male specimens examined for this study, the majority lack *aps* on tergopleurites V–VI; in some specimens these setae are present only on 1 side. We, therefore, recommend that option 1 in couplet 7 of the key of Gustafsson et al. (2018) should be changed to read "Male tergopleurite VII with *aps* present," and strike the second character of couplet 8 in the same key.

Specimens from Guangdong Province (from host subspecies *Po. r. stridulus*) have more convex lateral margins of the preantennal area and more slender proximal mesosomes than specimens we have examined from other provinces. In many male specimens from this province there are also 3 *tps* on each side of tergopleurite VIII, whereas in specimens from the type locality there are typically only 2 *tps* on each side. Possibly, the specimens from Guangdong represent a separate subspecies or species. However, as the specimens are otherwise similar to the type specimens of *Pr. austini* and the differences are often slight and inconsistent, we presently consider them to be conspecific, until genetic data have been examined.

Specimens from Yunnan Province (from host subspecies *Po. r. similis*) are similar to those from the type host subspecies but have slightly more convex lateral margins of the preantennal area than the type series. The single examined male has genitalia obscured by gut contents. We here consider this material to be conspecific with the types of *Pr. austini* until more specimens have been examined or genetic data become available.

DISCUSSION

The geographical distribution of most species of chewing lice parasitizing babblers is poorly known, and many species have been collected only once or a few times, often from birds caught at the same locality. It is therefore largely unknown whether most species of *Priceiella* occur across the range of their host species or are more geographically isolated. In some cases, the same species of *Priceiella* is known to occur on more than one host subspecies (Table II); however, several cases are also known where different host subspecies are parasitized by different species of *Priceiella*. No general pattern of host specificity seems to apply across the genus *Priceiella*.

Lice in the genus *Priceiella* we have examined from *Po. ruficollis* are here separated into 2 species: *Pr. rotundiceps* from central China, and *Pr. austini* from south China. Slight morphological differences among the specimens here treated as *Pr. austini* are not considered to be significant enough to warrant taxonomic recognition. Possibly, the diversity of *Priceiella* lice on this host may be partially cryptic, and genetic data may be necessary to fully understand the host relationships and species limits among the lice from *Po. ruficollis*. Notably, this division into 2 main groups in the *Priceiella* lice parallels the division of the host species into 2 different groups, 1 central and 1 southern (Reddy et al., 2015). Similar patterns may perhaps also be found in other host species when more specimens have been examined.

In 2 cases, different species of *Priceiella* occur in different parts of the range of the same host subspecies (Table II). The 2 species of *Priceiella* known from *Stachyris nigriceps yunnanensis* are from different extremes of this host subspecies' range, separated by numerous large rivers and mountain ranges. Similarly, the 2 species of *Priceiella* that parasitize *Garrulax maesi maesi* are from different mountain ranges separated geographically by the Pearl River and lowlands that are intensely farmed and developed by humans. While the range of both of these hosts may be largely continuous between the collection localities of each louse species, geographical differences such as these may effectively form barriers to the distribution of lice.

Little is known about such effects. Bush et al. (2013) showed that fragmentation of habitats may reduce the species richness of lice in an area, even if the hosts are present. Hosts living on islands are also known to have reduced parasite richness compared to mainland populations of the same or closely related species (e.g., Literák et al., 2015; Regolin et al., 2015). Weckstein (2004) suggested that in at least some cases, biogeographical regions separated by rivers might form important geographical limits to the distribution of lice. However, more densely sampled host populations are needed to establish the effect of barriers such as rivers, mountain ranges, and even densely populated lowlands.

An alternative explanation for the occurrence of 2 species of *Priceiella* on the same host subspecies is that one or both louse species originated on a different host species and has locally switched hosts. Both *Pr. coleyae* and *Pr. orichalca* are known to occur on more than 1 host species in the same area, which may be the result of the birds participating in mixed-species feeding flocks (Gustafsson et al., 2018). More sampling of different host species across south China and Southeast Asia is needed to establish the host and geographical ranges of these species.

In summary, the examples described here indicate that lice should not be identified on host associations alone. It may be common for different species of chewing lice to occur on different subspecies or populations of the same host, especially in the tropics. Routine identification based on host associations may thus lead to misidentifications or mean that distinct species are overlooked. This may in turn impede our understanding of the processes that lead to patterns of louse diversity and underestimate the biodiversity of chewing lice in a given area.

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