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The ant-like litter beetle fauna from the Wumenshan National Nature Reserve, China, with description of eight new species (Staphylinidae: Pselaphinae)

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Abstract. This paper reports the occurrence of the subfamily Pselaphinae in the Wumeng Mountains, Yunnan, Southwest China. A total of eight species have been recognized, all of which are described as new: *Arthromelodes punctiventris* sp. nov., *A. weii* sp. nov., *Batrisiella ordinaria* sp. nov., *Batrisocenus asper* sp. nov., *Tribasodites ocellus* sp. nov., and *T. pectoralis* sp. nov. of the tribe Batrisini Reitter, 1882; *Nipponobythus flamma* sp. nov. of the tribe Iniocyphini Park, 1951; and *Triomicrus wumengmontis* sp. nov. of the tribe Brachyglutini Raffray, 1904. Illustrations depicting the habitus and diagnostic features of these species are provided to facilitate accurate identification. Additionally, a key to the species of Pselaphinae of Wumengshan is included. A related species, *Arthromelodes pengzhongi* (Jiang & Yin, 2017) comb. nov., is transferred from *Batriscenellus* Jeannel, 1958 to *Arthromelodes* Jeannel, 1954.

Keywords. Ant-like litter beetles, diversity, new taxa, Yunnan, Southwest China.

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Introduction

The Wumeng Mountains, an extensive range exceeding 250 km in length and situated at the confluence of Yunnan and Guizhou provinces, represent a notable natural biogeographical boundary between these two administrative regions (Wu *et al.* 2024). Despite the documentation of over 90 species of the hyper-diverse subfamily Pselaphinae Latreille, 1802 in Yunnan, accounting for approximately 15% of the total recorded pselaphine fauna of China (Newton 2025), the Wumeng mountainous region has heretofore lacked any described species from this subfamily. The initial scientific inquiry into the staphylinid fauna within this particular montane area was only recently initiated (Yin & Zhou 2025), which reported four species of the subfamily Scydmaeninae Leach, 1815, with two newly described taxa.

This paper elucidates the taxonomic findings derived from material of the subfamily Pselaphinae acquired via leaf litter sifting during the same collection period as the scydmaenine material examined in Yin & Zhou (2025), a task undertaken by Guo-Hao Wei, a former graduate student in our research group. We identify a total of eight new species, all described here as new. These discoveries intimate that the actual species richness of pselaphine beetles, and potentially that of the entire family Staphylinidae Latreille, 1802, within biogeographically complex montane ecosystems such as the Wumengshan region, remains considerably underestimated and necessitates substantial further exploratory investigation.

Material and methods

The material treated in this paper is deposited in the Insect Collection of Shanghai Normal University, Shanghai, China (SNUC). The label data of the material are quoted verbatim. Dissected parts were mounted in Euparal on plastic slides pinned with the specimen. The habitus images of the beetles were taken using a Canon EOS R5 camera, equipped with a 7.5× or 10× Mitutoyo M Plan Apo lens, and three 10 W LED bulbs (5500 K) were used as a light source. Images of morphological details were produced using a Canon G9 camera mounted to an Olympus CX31 microscope under reflected or transmitted light. Helicon Focus ver. 8.2.0 Pro was used for image stacking. All images were modified and grouped into plates using Adobe Photoshop CC 2020.

Measurements were taken as follows: total body length was measured from the anterior margin of the clypeus to the apex of the abdomen; head length was measured from the anterior margin of the clypeus to the head base, excluding the cervical constriction; head width was measured across the eyes; the length of the pronotum was measured along the midline, the width of the pronotum equals the maximum width; the length of the elytra was measured along the suture; the width of the elytra was measured as the maximum width across both elytra; the length of the abdomen is the length of the dorsally exposed part of the abdomen along its midline, the width is the maximum width. The terminology follows Chandler (2001) and Yin (2022). Abdominal tergites and sternites are numbered in Arabic (starting from the first visible segment) and Roman (reflecting true morphological position) numerals, e.g., tergite 1 (IV), or sternite 1 (III). Paired appendages in the descriptions are treated as singular. The orientations described in this paper correspond to those presented in the associated figures.

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Coleoptera Linnaeus, 1758
Superfamily Staphylinoidea Latreille, 1802
Family Staphylinidae Latreille, 1802
Subfamily Pselaphinae Latreille, 1802
Tribe Batrisini Reitter, 1882
Genus *Arthromelodes* Jeannel, 1954

Arthromelodes punctiventris sp. nov.
urn:lsid:zoobank.org:act:F9381946-124D-49AA-A82A-DD00BE8A03F6
Fig. 1

Chinese common name

糙点丽蚁甲.

Diagnosis

Male

Body length approximately 2.0–2.2 mm. Dorsal surface of head, pronotum, and tergite IV coarsely punctate. Head roundly rectangular; vertex with complete reversed U-shaped sulcus connecting large, asetose vertexal foveae; antenna elongate, lacking modifications; antennomeres each more or less elongate, 4 and 8 smallest, 11 as long as 9 and 10 combined. Dorsal surface with scattered long, thickened, erect setae and normal setae. Discal striae of elytra extending posteriorly to approximately ¾ of elytral length. Protibia with distinct apical trichome. Tergite 1 (IV) modified, with dense and coarse punctures as well as dense and markedly long setae oriented anteriorly. Aedeagus asymmetric, with markedly elongate ventral and dorsal lobes.

Female

Body length approximately 2.0–2.2 mm; legs and abdomen simple; genitalia as in Fig. 1H.

Etymology

The specific epithet '*punctiventris*' refers to the coarsely punctures occupying most surface of male tergite 1 (IV) of the new species. The name is an adjective in the masculine singular nominative form.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Miaoshan, Xiaocaoba; 27°30′7″ N, 104°10′56″ E; 1427–1650 m a.s.l.; 22 Jul. 2022; Wei leg.; 云南昭通市乌蒙山小草坝, 魏国豪采; SNUC.

Paratypes

CHINA • 1 ♂; same data as for holotype; SNUC • 3 ♂♂, 2 ♀♀; same data as for holotype; 27°29′33″ N, 104°10′19″ E; 1709–1800 m a.s.l.; 20 Jul. 2022; SNUC.

Description

Male

Body (Fig. 1A). Length 2.04–2.15 mm; colour dark brown, elytra reddish-brown, tarsi and mouthparts lighter in colour. Dorsal surface of body covered with scattered long thickened, erect setae and normal ones.

Head (Fig. 1B). Roundly rectangular, truncate at base, much wider than long, length 0.40–0.42 mm, width 0.55–0.57 mm; dorsal surface coarsely punctate, with large punctures; centre of vertex smooth, with large, asetose vertexal foveae (dorsal tentorial pits), with complete, broad reversed U-shaped broad impression connecting foveae; antennal tubercles moderately raised, postantennal area and frons coarsely punctate; frons broadly impressed medially, anteriorly fused with clypeus; clypeus with coarse surface, its anterior margin carinate and moderately raised; ocular-mandibular carinae complete, distinct. Venter with small gular foveae (posterior tentorial pits) in shared small opening, with distinct median carina extending from opening anteriorly to mouthparts. Compound eyes prominent, each composed of approximately 20 ommatidia. Antenna 1.17–1.18 mm long, lacking modifications; antennomere 1 thick, subcylindrical, anterolateral margin slightly impressed and filled with short setae (but not to form prominent trichome), antennomere 2 elongate, 3–8 each submoniliform, 4 and 8 smallest, 9–11 moderately enlarged, loosely forming club, 10 as long as 9, 11 largest, as long as 9 and 10 combined (23:23), subfusiform.

Pronotum (Fig. 1B). Approximately as long as wide, length and width 0.50–0.51 mm, widest at middle, lateral margins rounded, with few long thickened, erect setae pointed anteriorly; disc moderately convex, coarsely punctate, with one median and one pair of semicircular lateral longitudinal sulci; lacking median antebasal fovea, with complete transverse antebasal sulcus connecting distinct lateral antebasal foveae; outer and inner pair of basolateral foveae small. Prosternum with basisternal (precoxal) portion longer than procoxal rests; with small lateral procoxal foveae; hypomeral grooves obliquely extending from base anteriorly to half-length of hypomera, with lateral antebasal hypomeral impression, hypomeral carinae short, close to margins of coxal cavities.

Elytra. Much wider than long, length 0.59–0.64 mm, width 0.76–0.79 mm; each elytron with two large, widely separated basal foveae; discal striae long, slightly curved, extending from outer basal foveae to

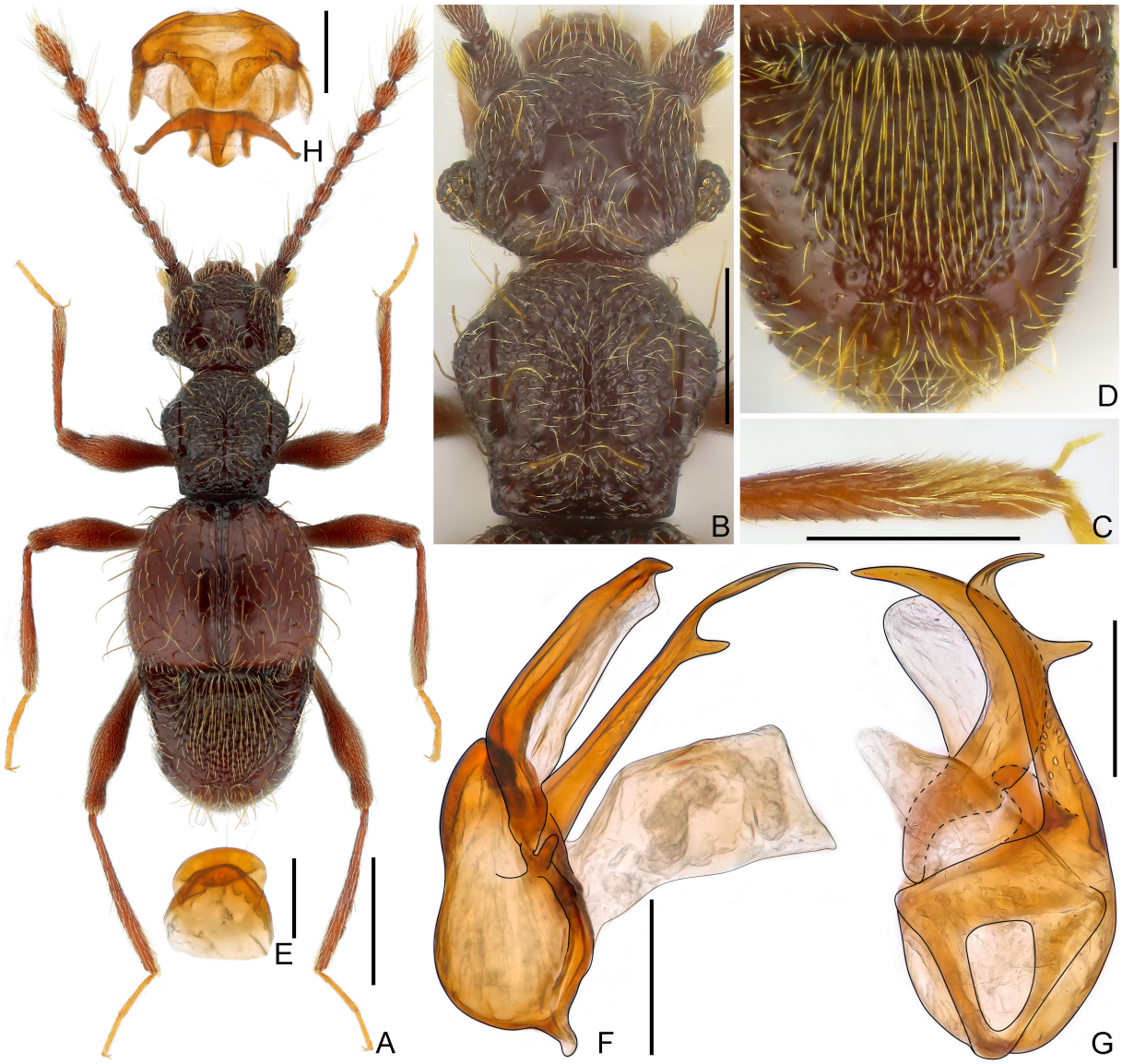

Fig. 1. *Arthromelodes punctiventris* sp. nov. **A–G**. Holotype, ♂ (SNUC). **H**. Paratype, ♀ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Protibia. **D**. Tergite 1 (IV). **E**. Sternite 7 (IX). **F**. Aedeagus, lateral view. **G**. Aedeagus, ventral view. **H**. Genitalia, ventral view. Scale bars: A = 0.5 mm; B = 0.3 mm; C–D = 0.2 mm; E = 0.05 mm; F–H = 0.1 mm.

approximately apical ¾ of elytral length; humeri roundly prominent; subhumeral foveae small, carinate marginal striae extending posteriorly from foveae to apices of elytra. Metathoracic wings remnant.

Mesoventrite. Short, demarcated from metaventrite by oblique ridges; setose median mesoventral foveae moderately separated, originating from shared setose, transverse opening, lateral mesoventral foveae large and setose, forked internally; prepectus massive, collar-shaped; mesoventral intercoxal process short, apically blunt, marginal striae complete. Metaventrite weakly convex admesally, with setose lateral mesocoxal and two lateral metaventral foveae, metaventral intercoxal process with small and narrow split at middle.

Legs. Elongate; protibia (Fig. 1C) with small apical trichome.

Abdomen. Distinctly narrower than elytra, widest at basolateral margins of tergite 1 (IV), length 0.60–0.62 mm, width 0.68–0.70 mm. Tergite 1 (IV) (Fig. 1D) in dorsal view longer than tergites 2–4 (V–VII) combined, basal sulcus separated by mediobasal and one pair of basolateral foveae, with pair of relatively long discal carinae, dense and coarsely punctures occupying most surface of tergite, markedly long setae oriented anteriorly, posterior margin moderately protruding at middle; tergites 2 and 3 (V and VI) each short, 4 (VII) approximately as long as 2 and 3 combined along middle, 2–4 (V–VII) each with one pair of small basolateral foveae, 5 (VIII) semicircular, posterior margin broadly and roundly emarginate at middle. Sternite 2 (IV) with large mediobasal and two pairs of basolateral foveae in setose basal impression; midlength of sternite 2 (IV) approximately as long as 3 and 4 (V and VI) combined, 3 as long as 4 (VI), 5 (VII) slightly longer than 4, lacking fovea, 6 (VIII) greatly transverse, posterior margin evenly roundly curved, sternite 7 (IX) (Fig. 1E) suboval, weakly sclerotized, apex rounded and with few long setae along apical margin.

Aedeagus (Fig. 1F–G). 0.35 mm long, greatly asymmetric; median lobe with large, elongate basal capsule and small foramen, basoventral projection short, ventral stalk at middle with one branch on right side (orientation according to Fig. 1G), obliquely erect; dorsal lobe broad and protruding, in lateral view narrowing toward apex; parameres reduced to broad membranous structure.

Female

Similar to male in external morphology; antenna slightly shorter, abdomen simple, protibia lacking trichome; each compound eye composed of approximately 15 ommatidia; humeri of elytra weakly raised; metathoracic wings absent. Measurements (as for male): body length 2.05–2.15 mm; length/width of head 0.40–0.45/0.53–0.56 mm, pronotum 0.46–0.49/0.49 mm, elytra 0.58–0.61/0.74–0.76 mm; abdomen 0.62–0.63/0.70 mm; length of antenna 1.03–1.08 mm; genitalia (Fig. 1H) moderately sclerotized, broad, maximum width 0.24 mm.

Remarks

The scape of *Batriscenellus pengzhongi* Jiang & Yin, 2017 from Guizhou lacks glandular structures on the anterolateral margin; whereas the presence of such structures is diagnostic for the genera *Batriscenellus* and *Batrisiella* Raffray, 1904. Consequently, *Batriscenellus pengzhongi* is transferred to *Arthromelodes* Jeannel, 1954, resulting in *A. pengzhongi* comb. nov. This species exhibits close affinities with *A. punctiventris* sp. nov., based on several shared morphological features: the presence of robust, dispersed setae on the dorsal body surface; a trichome at the protibial apex; a similarly modified male tergite 1 (IV); and a comparable aedeagus (cf. Fig. 1F–G with Jiang & Yin 2017: fig. 7d–e). Nevertheless, these two species are readily distinguishable: *A. punctiventris* is characterized by a coarsely punctate head and pronotum (Fig. 1B), while *A. pengzhongi* possesses a finely punctate head and pronotum (Jiang & Yin 2017: fig. 7b). Furthermore, disparities are evident in the conformation of the abdominal modifications (cf. Fig. 1D with Jiang & Yin 2017: fig. 7c) and in the structure of the aedeagus.

Distribution

Southwest China: Yunnan.

Arthromelodes weii sp. nov.
urn:lsid:zoobank.org:act:E0D65BA1-22CD-4063-8879-6E243C5409CA
Fig. 2

Chinese common name

魏氏丽蚁甲.

Diagnosis

Male

Body length approximately 2.0–2.1 mm. Head and pronotum coarsely punctate. Head subrectangular, truncate at base; vertexal foveae small and asetose, lacking sulcus connecting them; gular with small, lamellar-like protuberance at middle; antenna relatively long, antennomeres each more or less elongate, lacking modifications. Prosternite densely setose at middle. Elytra constricted and truncate at bases; shallow discal striae extending posteriorly to approximately $^{3}/_{5}$ of elytral length. Mesotrochanter with short tubercle on ventral margin. Abdomen with tergite 1 (IV) slightly longer than 2–4 (V–VII) combined, simple. Aedeagus strongly asymmetric, median lobe with large basal capsule and subtriangular foramen, ventral stalk of median lobe broad in ventral view, narrowing apically in lateral view; dorsal lobe as long as ventral stalk, expanded at middle in lateral view, with narrowed apex.

Female

Body length approximately 1.8–2.0 mm; gular, prosternite and mesotrochanter simple; genitalia as in Fig. 2J.

Etymology

This species is named in honour of Guo-Hao Wei, who collected the type series. The specific epithet is a patronym formed as a noun in the genitive singular case.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Laziping; 28°9′0″ N, 103°33′49″ E; 1952 m a.s.l.; 15 Jul. 2022; Wei leg.; 云南昭通市乌蒙山小草坝, 魏国豪采; SNUC.

Paratypes

CHINA • 3 ♂♂, 7 ♀♀; same data as for holotype; SNUC.

Description

Male

Body (Fig. 2A). Length 2.04–2.08 mm; colour reddish-brown, tarsi and mouthparts lighter in colour. Dorsal surface of body covered with relatively short pubescence.

Head (Fig. 2B). Subrectangular, truncate at base, slightly wider than long, length 0.42–0.45 mm, width 0.48–0.49 mm; vertex coarsely punctate, with small, asetose and moderately separated vertexal foveae (dorsal tentorial pits), lacking mediobasal carina; antennal tubercles moderately raised; frons broadly and shallowly impressed medially, anteriorly fused with clypeus; clypeus short, roughened, its anterior margin carinate and moderately raised; ocular-mandibular carinae complete. Venter with tiny gular foveae (posterior tentorial pits) in shared small opening, with small lamellar-like protuberance (Fig. 2C–

Fig. 2. *Arthromelodes weii* sp. nov. **A–I**. Holotype, ♂ (SNUC). **J**. Paratype, ♀ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Head venter. **D**. Head, in lateral view. **E**. Prosternum. **F**. Mesotrochanter. **G**. Sternite 7 (IX). **H**. Aedeagus, lateral view. **I**. Aedeagus, ventral view. **J**. Genitalia, ventral view. Scale bars: A = 0.5 mm; B = 0.3 mm; C–F = 0.2 mm; G = 0.05 mm; H–J = 0.1 mm.

D) at middle, with faint median carina present for short distance posterior to mouthparts. Compound eyes prominent, each composed of approximately 25 ommatidia. Antenna 1.0–1.14 mm long, lacking modifications; antennomere 1 thick and short, anterolateral margin with dense setae, antennomeres 2–7 each slightly elongate, 8 smallest, moniliform, 9 and 10 approximately subequal in width, 11 slightly longer than 9 and 10 combined (24:20), subconical.

Pronotum (Fig. 2B). Slightly wider than long, length 0.45–0.48 mm, width 0.46–0.49 mm, widest at middle; lateral margins rounded; disc moderately convex, coarsely punctate, with median longitudinal sulcus slightly longer than semicircular lateral sulci in dorsal view; with median antebasal impression, with complete, deep transverse antebasal sulcus connecting lateral antebasal foveae. Prosternum (Fig. 2E) with basisternal (precoxal) portion longer than procoxal rests, at middle with deep, setose transverse sulcus, anterior margin of sulcus protruding and densely setose; hypomeral grooves obliquely extending from base anteriorly to half-length of hypomera, with lateral antebasal hypomeral impression, hypomeral ridges short, close to margins of coxal cavities.

Elytra. Much wider than long, length 0.61–0.66 mm, width 0.73–0.74 mm; distinctly constricted and truncate at bases; each elytron with one small basal fovea; shallow discal striae extending from bases posteriorly to $^{3}/_{5}$ of elytral length; humeri lacking prominence or denticle; subhumeral foveae absent, thin marginal striae extending posteriorly from foveae to posterior margins of elytra. Metathoracic wings absent.

Mesoventrite. Short, laterally fully demarcated from metaventrite by oblique ridges; median mesoventral foveae moderately separated, originating from shared setose, transverse opening, lateral mesoventral foveae large and setose, forked internally; prepectus massive, collar-shaped; mesoventral intercoxal process short, apically acute; marginal striae complete. Metaventrite weakly impressed at middle, with large, setose lateral mesocoxal foveae and pair of smaller, setose lateral metaventral foveae, metaventral intercoxal process with small and narrow split at middle.

Legs. Elongate, fore and hind legs simple; mesotrochanter (Fig. 2F) with short, blunt tubercle on ventral margin.

Abdomen. Distinctly narrower than elytra, widest at basolateral margins of tergite 1 (IV), length 0.63–0.65 mm, width 0.66–0.67 mm; lacking modifications. Tergite 1 (IV) slightly longer than 2–4 (V–VII) combined, thin basal sulcus interrupted by one pair of mediobasal and two pairs of basolateral foveae, discal carinae short and distinct; tergites 2 and 3 (V and VI) each short, lacking fovea, 4 (VII) slightly shorter than 2 and 3 combined along middle, with one pair of small basolateral foveae, tergite 5 (VIII) semicircular, transverse. Sternite 2 (IV) with one pair of mediobasal foveae and two pairs of large basolateral sockets, lacking lateral carinae; midlength of sternite 2 slightly shorter than 3–5 (V–VII) combined, 3–5 each short, successively shorter, lacking fovea, 6 (VIII) transverse, posterior margin roundly emarginate at middle, sternite 7 (IX) (Fig. 2G) with weakly sclerotized, rounded apex and few setae along apical margin.

Aedeagus (Fig. 2H–I). 0.36 mm long, strongly asymmetric; median lobe with large basal capsule and subtriangular foramen, basoventral projection short, ventral stalk of median lobe in lateral view narrowing apically, dorsoventrally broad through length; dorsal lobe in lateral view elongate and expanded at middle, with narrowed apex; parameres reduced.

Female

Similar to male in external morphology; antenna slightly shorter, mesotrochanter lacking tubercles; each compound eye composed of approximately 20 ommatidia; head venter and prosternum lacking modifications. Measurements (as for male): body length 1.86–1.94 mm; length/width of head 0.39–

0.40/0.44–0.46 mm, pronotum 0.42–0.43/0.42–0.43 mm, elytra 0.57–0.59/0.59–0.66 mm; abdomen 0.61–0.65/0.61 mm; length of antenna 0.92–0.97 mm; genitalia (Fig. 2J) moderately sclerotized, broad, maximum width 0.26 mm.

Remarks

This species of *Arthromelodes* is easily recognizable based on its coarsely punctate head and pronotum, as well as the simple male abdomen. Notably, the modifications present on the head venter and prosternite are uniquely observed within the genus, making this species particularly distinctive.

Distribution

Southwest China: Yunnan.

Genus *Batrisiella* Raffray, 1904

Batrisiella ordinaria sp. nov.
Chinese common name: 普通小毛唇蚁甲
urn:lsid:zoobank.org:act:9C4B90AB-55C1-489C-BB43-E710F28C0AC8
Fig. 3

Diagnosis

Male

Body elongate, length approximately 2.1 mm. Head subrectangular; vertex with shallow, slightly curved transverse sulcus between antennal tubercles and moderately long mediobasal carina, vertexal foveae relatively small and asetose. Antenna elongate, antennomeres submoniliform, lacking modifications; antennomere 11 longer than 9 and 10 combined. Discal striae of elytra extending to approximately apical ¾ of elytral length. Mesotrochanter with small tubercle on ventral margin, mesotibia with small apical spur. Abdomen with large tergite 1 (IV) longer than tergites 2–4 (V–VII) combined in dorsal view, unmodified. Aedeagus strongly asymmetric, median lobe with greatly enlarged basal capsule and roundly triangular foramen, both ventral stalk of median lobe and dorsal lobe elongate, recumbent, parameres reduced and forming single membranous structure.

Female

Unknown.

Etymology

The specific epithet is derived from the Latin adjective '*ōrdinārius*', meaning 'usual', 'regular', 'ordinary', reflecting that the male of this species lacks prominent secondary sexual characteristics. The name is an adjective in the feminine singular nominative form.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Miaoshan, Xiaocaoba; 27°29′33″ N, 104°10′19″ E; 1709–1800 m a.s.l.; 20 Jul. 2022; Wei leg.; 云南昭通市乌蒙山小草坝, 魏国豪采; SNUC.

Description

Male

Body (Fig. 3A). Length 2.06 mm; colour reddish-brown, tarsi and mouthparts slightly lighter. Dorsal surface of body covered with short pubescence.

Head (Fig. 3B). Subrectangular, truncate at base, as long as wide, length and width 0.41 mm; vertex finely punctate, with relatively small, asetose vertexal foveae (dorsal tentorial pits), with shallow, slightly curved transverse sulcus between antennal tubercles, thin mediobasal carina extending from near head base anteriorly to transverse, slightly curved sulcus, antennal tubercles moderately raised, surrounding area coarsely punctate; tempora slightly shorter than eyes, convergent posteriorly; frons slightly impressed medially, confluent with clypeus; clypeus smooth, anterior margin carinate and moderately

Fig. 3. *Batrisiella ordinaria* sp. nov., holotype, ♂ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Antennal club. **D**. Mesotrochanter. **E**. Mesotibia. **F**. Sternite 7 (IX). **G**. Aedeagus, anterior view. **H**. Aedeagus, lateral view. **I**. Aedeagus, ventral view. Scale bars: A = 0.5 mm; B, D = 0.3 mm; C, E = 0.2 mm; F = 0.05 mm; G–I = 0.1 mm.

raised; ocular-mandibular carinae complete, distinct. Venter with small gular foveae (posterior tentorial pits) in single pit, with distinct median carina extending from pit anteriorly to mouthparts. Compound eyes prominent, composed of approximately 35 ommatidia. Maxillary palpus with palpomere 1 minute, 2 elongate, curved, pedunculate basally and enlarged apically, 3 short, subtrapezoidal, 4 fusiform, widest near middle. Antenna moderately elongate, length 0.96 mm; club (Fig. 3C) loosely formed by enlarged apical three antennomeres; antennomere 1 thick, subcylindrical, anterolateral margin with tuft of setae, 2–7 each elongate, 8 shortest, 9 longer and broader than 8, 10 shorter than 9, 11 longest, longer than 9 and 10 combined (21:17), subfusiform.

Pronotum (Fig. 3B). As long as wide, length and width 0.43 mm, widest at middle; lateral margins rounded; disc moderately convex, finely punctate, with median longitudinal sulcus slightly longer than semicircular lateral sulci in dorsal view; lacking median antebasal fovea, with complete, deep transverse antebasal sulcus connecting lateral antebasal foveae; lacking outer and inner pair of basolateral foveae. Prosternum with basisternal (precoxal) portion longer than procoxal rests; with small lateral procoxal foveae; hypomeral grooves obliquely extending from base anteriorly to half-length of hypomera, lacking lateral antebasal pits, hypomeral carinae short, close to margins of coxal cavities.

Elytra. Slightly wider than long, length 0.64 mm, width 0.77 mm; truncate at bases; each elytron with two large, asetose basal foveae; discal striae long, curved, extending from outer basal foveae posteriorly to ¾ of elytral length; humeri prominent, small subhumeral foveae present, thin marginal striae extending posteriorly from foveae to posterior margins of elytra. Metathoracic wings fully developed.

Mesoventrite. Short, laterally fully demarcated from metaventrite by oblique ridges; median mesoventral foveae moderately separated, originating from shared setose, transverse opening, lateral mesoventral foveae large and setose, forked internally; prepectus massive, collar-shaped; mesoventral intercoxal process short, apically acute; marginal striae complete. Metaventrite broadly and slightly impressed at middle and densely setose at lateral portions of impression, with large, setose lateral mesocoxal foveae and pair of smaller, setose lateral metaventral foveae, metaventral intercoxal process with small and narrow split at middle.

Legs. Moderately elongate; mesotrochanter (Fig. 3D) with small tubercle on ventral margin, mesotibia (Fig. 3E) with small apical spur.

Abdomen. Slightly narrower than elytra, widest at lateral margins of tergite 1 (IV), length 0.63 mm, width 0.67 mm; lacking modifications. Tergite 1 (IV) slightly longer than 2–4 (V–VII) combined, setose basal sulcus separated by mediobasal and two pairs of basolateral foveae, with pair of short discal carinae; 2–3 (V–VII) lacking foveae; 4 (VII) slightly shorter than 2 and 3 combined along middle, with one pair of basolateral foveae; 5 (VIII) semicircular, posterior margin roundly emarginate at middle. Sternite 2 (IV) with small mediobasal and broad, setose basolateral foveae, with pair of long lateral carinae, slightly shorter than 3–5 (V–VII) combined; 3–5 each lacking basolateral foveae; 6 (VIII) transverse, posterior margin sinuate; sternite 7 (IX) (Fig. 3F) suboval, weakly sclerotized, with scattered long setae along apical margin.

Aedeagus (Fig. 3G–I). 0.30 mm in length, dorso-ventrally strongly asymmetric; median lobe with large, extended basal capsule and roundly triangular foramen, ventral stalk broadened at base, strongly curved rightwards (orientation according to Fig. 3I) in ventral view, with pointed apex; dorsal lobe recumbent and curved ventrally, narrowing at apex; parameres reduced to single broad membranous structure.

Female

Unknown.

Remarks

This species is characterized by the absence of distinct male sexual characters, which contrasts with most species in the genus that typically exhibit modified abdomens, and, less frequently, modified legs or antennae. The unique form of the aedeagus, along with its distribution, leads to reliable identification of this species. The recumbent dorsal lobe of the aedeagus is a typical character state for members of the genus *Batrisiella* Raffray, 1904 (e.g., Yin & Zeng 2023; Yin 2024).

Distribution

Southwest China: Yunnan.

Genus *Batrisocenus* Raffray, 1903

Batrisocenus asper sp. nov.
Chinese common name: 粗糙隆脊蚁甲
urn:lsid:zoobank.org:act:8F10A035-1841-4420-BAB9-DA55AA584D55
Fig. 4

Diagnosis

Male

Body elongate, length approximately 2.0 mm. Head and pronotum with coarse punctation. Head subrectangular; vertex with complete, shallow U-shaped sulcus connecting relatively small, asetose vertexal foveae. Antenna elongate, antennomeres more or less elongate, lacking modifications; antennomere 11 approximately as long as 9 and 10 combined. Discal striae of elytra extending to approximately apical ¾ of elytral length. Protibia triangularly expanded on apicomesal margin; mesotibia with distinct apical denticle. Abdomen with large tergite 1 (IV) longer than tergites 2–4 (V–VII) combined in dorsal view, posteriorly with posteromedial cavity and oval, setose lateral patches. Aedeagus strongly asymmetric, ventral stalk much longer than dorsal lobe, dorsal lobe greatly curved, parameres reduced and forming large membranous structure.

Female

Body length approximately 1.9 mm; legs simple, genitalia as in Fig. 4I.

Etymology

The name is derived from the Latin adjective '*asper*', meaning 'rough', 'coarse'. This refers to the coarsely punctate head and pronotum of this species. The name is an adjective in the masculine singular nominative form.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Miaoshan, Xiaocaoba; 27°29′33″ N, 104°10′19″ E; 1709–1800 m a.s.l.; 20 Jul. 2022; Wei leg.; 云南昭通市乌蒙山小草坝, 魏国豪采; SNUC.

Paratypes

CHINA • 3 ♂♂, 1 ♀; same data as for holotype; SNUC.

Description

Male

Body (Fig. 4A). Length 2.00–2.01 mm; head, pronotum and abdomen dark reddish-brown, elytra and legs reddish-brown, tarsi and mouthparts lighter in colour. Dorsal surface of body covered with short pubescence.

Head (Fig. 4B). Subrectangular, truncate at base, wider than long, length 0.39 mm, width 0.47 mm; vertex coarsely punctate, with relatively small, asetose vertexal foveae (dorsal tentorial pits), with complete, shallow U-shaped sulcus connecting foveae, with thin mediobasal carina extending from base to level of eye midlength; tempora much shorter than eyes, convergent posteriorly; antennal

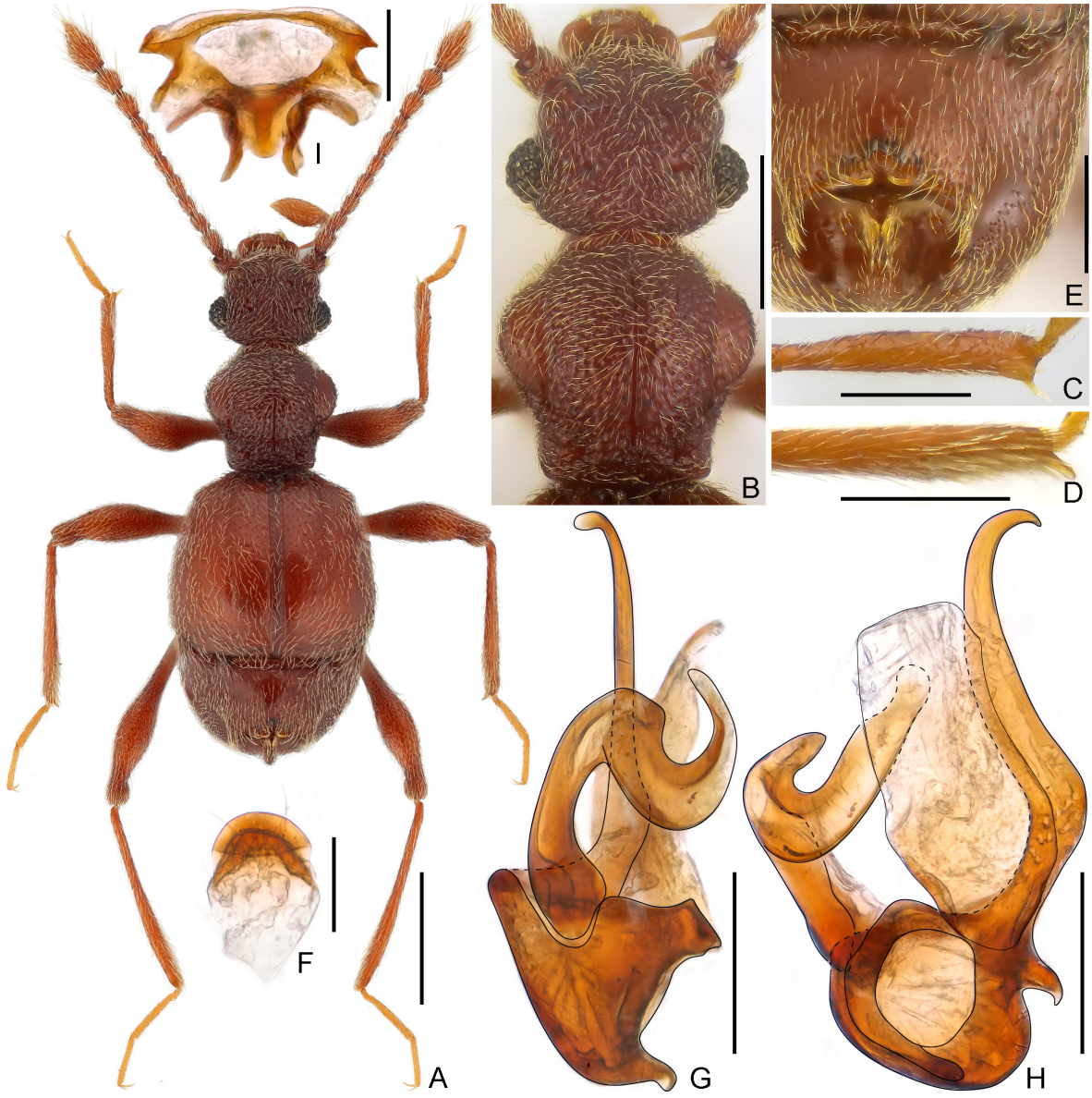

Fig. 4. *Batrisocenus asper* sp. nov. **A–H**. Holotype, ♂ (SNUC). **I**. Paratype, ♀ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Protibia. **D**. Mesotibia. **E**. Tergite 1 (IV). **F**. Sternite 7 (IX). **G**. Aedeagus, lateral view. **H**. Aedeagus, ventral view. **I**. Genitalia, ventral view. Scale bars: A = 0.5 mm; B = 0.3 mm; C–E = 0.2 mm; F = 0.05 mm; G–I = 0.1 mm.

tubercles moderately raised; frons slightly impressed medially, confluent with clypeus; clypeus with coarse surface, its anterior margin carinate and moderately raised; ocular-mandibular carinae complete, distinct. Venter with small gular foveae (posterior tentorial pits) in single pit, with distinct median carina extending from pit anteriorly to mouthparts. Compound eyes prominent, composed of approximately 35 ommatidia. Maxillary palpus with palpomere 1 minute, 2 elongate, curved, pedunculate basally and enlarged apically, 3 short, subtrapezoidal, 4 fusiform, widest near middle. Antenna moderately elongate, length 1.11–1.12 mm; club loosely formed by enlarged apical three antennomeres; antennomere 1 thick, subcylindrical, 2–7 each elongate, successively longer, 8 shortest, 9 much longer and broader than 8, 10 shorter than 9, 11 longest, approximately as long as 9 and 10 combined (22:23), subfusiform.

Pronotum (Fig. 4B). Slightly wider than long, length 0.44–0.47 mm, width 0.47–0.51 mm, widest slightly anterior to middle; lateral margins rounded; disc moderately convex, coarsely punctate, with median longitudinal sulcus slightly longer than semicircular lateral sulci in dorsal view; lacking median antebasal fovea, with complete transverse antebasal sulcus connecting lateral antebasal foveae; outer and inner pair of basolateral foveae punctiform. Prosternum with basisternal (precoxal) portion longer than procoxal rests; with small lateral procoxal foveae; hypomeral grooves obliquely extending from base anteriorly to half-length of hypomera, with lateral antebasal hypomeral impressions, hypomeral ridges close to margins of coxal cavities.

Elytra. Slightly wider than long, length 0.65–0.69 mm, width 0.78 mm; moderately constricted and truncate at bases; each elytron with two tiny, asetose basal foveae; discal striae long, curved, extending from outer basal foveae posteriorly to $^{7.7}/_{10}$ of elytral length; humeri distinctly raised, small subhumeral foveae present, thin marginal striae extending posteriorly from foveae to posterior margins of elytra. Metathoracic wings fully developed.

Mesoventrite. Short, laterally fully demarcated from metaventrite by oblique ridges; median mesoventral foveae widely separated, originating from shared setose, transverse opening, lateral mesoventral foveae large and setose, broadly forked internally; prepectus massive, collar-shaped; mesoventral intercoxal process short, apically acute; marginal striae complete. Metaventrite weakly impressed at middle, with large, setose lateral mesocoxal foveae and pair of tiny lateral metaventral foveae, metaventral intercoxal process with loop-shaped notch at middle.

Legs. Moderately elongate; protibia triangularly projected and with apical trichome on apicomesal margin (Fig. 4C); profemur widened to middle; mesotibia with distinct apical denticle (Fig. 4D).

Abdomen. Slightly narrower than elytra, widest at lateral margins of tergite 1 (IV), length 0.57–0.60 mm, width 0.67–0.71 mm; tergite 1 (IV) (Fig. 4E) strongly modified, longer than tergites 2–4 (V–VII) combined; posterior portion with broad central cavity, anterior margin with pair of trichomes, with large, greatly prominent projection at middle; areas lateral to cavity impressed and forming setose patched; setose basal sulcus separated by mediobasal and one pair of basolateral foveae, with short discal carinae; tergites 2–4 (V–VII) each with one pair of basolateral foveae, tergite 4 (VII) as long as 2 and 3 combined along middle, tergite 5 (VIII) semicircular, posterior margin roundly emarginate at middle. Sternite 2 (IV) with one mediobasal foveae and three basolateral foveae, lacking basal impression or sulcus; midlength of sternite 2 (IV) as long as sternites 3–5 (V–VII) combined, 3–5 each lacking basolateral foveae, sternite 6 (VIII) transverse, posterior margin sinuate, sternite 7 (IX) (Fig. 4F) suboval, weakly sclerotized, with scattered long setae along apical margin.

Aedeagus (Fig. 4G–H). 0.33 mm in length, moderately sclerotized, dorso-ventrally strongly asymmetric; median lobe with relatively small basal capsule and round foramen, ventral stalk narrow and elongate, curved at basal $^{2}/_{5}$, narrowing toward apex; dorsal lobe strongly bent at approximately middle, broadened in lateral view, with narrowed apex; parameres reduced to single broad membranous structure.

Female

Similar to male in external morphology; antenna shorter; legs and abdomen lacking spines or projections; each compound eye composed of approximately 30 ommatidia; humeral angles of elytra rounded; metathoracic wings absent. Measurements (as for male): body length 2.01 mm; length/width of head 0.39/0.48 mm, pronotum 0.44/0.48 mm, elytra 0.63/0.77 mm; abdomen 0.72/0.72 mm; length of antenna 1.01 mm; genitalia (Fig. 4I) slightly sclerotized, greatly transverse, maximum width 0.27 mm.

Remarks

A similar species occurring in a cave environment has been described from Sichuan (Yin & He 2020), sharing a small trichome at the apex of the protibia. *Batrisocenus asper* sp. nov. is an epigean species that lacks the adaptive traits typically associated with cave-dwelling beetles, e.g., exceptionally elongate appendages. This species can be readily distinguished from its cavernicolous counterparts by the coarsely punctate head and pronotum, the specific shape of the modifications on the male first tergite, and the unique form of the aedeagus.

Distribution

Southwest China: Yunnan.

Genus *Tribasodites* Jeannel, 1960

Tribasodites ocellus sp. nov.
Chinese common name: 小眼脊胸蚁甲
urn:lsid:zoobank.org:act:33F969AF-08C4-4E15-97AF-967347498CC3
Fig. 5

Diagnosis

Male

Body. Elongate, length approximately 2.4 mm. Head subglobose, slightly narrower than pronotum, vertex lacking sulcus, with small, asetose foveae; eyes small; antenna moderately elongate, lacking modifications. Pronotum lacking marginal spines, with distinct lateral longitudinal sulci, with one pair of short antebasal spines. Discal striae extending posteriorly to approximately $^{3}/_{10}$ of elytral length. Mesotrochanter with distinct ventral spine; metatrochanter with hook-like projection. Aedeagus elongate, asymmetric; median lobe with moderately large capsule and rounded foramen, ventral stalk dorsoventrally broad, apically twisted to form large apical plate, dorsal lobe elongate plate-like, embracing endophallus armature which is split apically into two lobes, parameres broadened, slightly sclerotized in lateral portions.

Female

Unknown.

Etymology

The specific epithet is a Latin noun meaning ‘little eye’, indicating the small compound eyes of this species. The name is a nominative singular noun in apposition.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Luohanba, Chechangping; 27°33′15″ N, 104°1′32″ E; 1573 m a.s.l.; 17 Jul. 2022; Wei leg.; 云南乌蒙山罗汉坝车广坪, 魏国豪采; SNUC.

Fig. 5. *Tribasodites ocellus* sp. nov., holotype, ♂ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Antennal club. **D**. Mesotrochanter. **E**. Metatrochanter. **F**. Aedeagus, lateral view. **G**. Aedeagus, ventral view. Scale bars: A = 0.5 mm; B, D–E = 0.3 mm; C = 0.2 mm; F–G = 0.1 mm.

Description

Male

Body (Fig. 5A). Length 2.41 mm; colour dark reddish-brown, tarsi and mouthparts lighter. Dorsal surface of body covered with dense pubescence.

Head (Fig. 5B). Subglobose, rounded at base, slightly wider than long, length 0.42 mm, width 0.48 mm; vertex finely punctate, with small, asetose vertexal foveae (dorsal tentorial pits), lacking sulcus and mediobasal carina, lacking lateral postantennal carinae; frons demarcated from clypeus by thin, oblique carinae, area between moderately raised antennal tubercles impressed; clypeus with smooth surface, its entire anterior margin strongly carinate and moderately raised; ocular-mandibular carinae thin, complete. Venter with smooth surface; small gular foveae (posterior tentorial pits) originating from shared oval opening, with thin median carina extending from opening anteriorly to mouthparts. Compound eyes small, each composed of approximately 10 ommatidia. Antenna elongate, length 1.21 mm, indistinct club (Fig. 5C) loosely formed by slightly enlarged apical three antennomeres; antennomere 1 thick, subcylindrical, 2–7 each elongate, 8 shortest, 9 wider and longer than 8, 10 slightly shorter than 9, 11 largest, as long as 9 and 10 combined (24:24), subconical.

Pronotum (Fig. 5B). Slightly longer than wide, length 0.47 mm, width 0.45 mm, widest anterior to middle; lateral margins rounded, convergent basally and parallel at basal ¼; disc moderately convex, finely punctate, lacking median longitudinal sulcus, with oval antebasal impression and short mediobasal carina, with pair of short discal carinae present at basal half of disc, with thin lateral longitudinal sulci; with one pair of short antebasal spines; lateral antebasal foveae distinct and setose; lacking outer and inner pair of basolateral foveae. Prosternum with basisternal (precoxal) portion slightly longer than procoxal rests, with small lateral procoxal foveae; hypomeral grooves obliquely extending from base anteriorly for almost entire length of hypomeron, with lateral antebasal hypomeral impressions, hypomeral ridges close to margins of coxal cavities, extending anteriorly to meet hypomeral grooves.

Elytra. Much wider than long, length 0.67 mm, width 0.79 mm; each elytron with three small, asetose basal foveae; discal striae extending posteriorly from outer basal fovea to 3/10 of elytral length; humeri lacking prominence or denticle, subhumeral foveae small, carinate marginal striae extending from foveae to posterior margins of elytron. Metathoracic wings reduced.

Mesoventrite. Short, demarcated from metaventrite by oblique ridges; median mesoventral foveae slightly separated, originating from shared setose, transverse opening, large lateral mesoventral foveae forked internally; prepectus massive, collar-shaped; mesoventral intercoxal process short, apically acute, marginal striae complete. Metaventrite slightly impressed at middle, with pairs of lateral mesocoxal and close lateral metaventral foveae, metaventral intercoxal process with small and narrow split at middle.

Legs. Elongate; mesotrochanter (Fig. 5D) with distinct ventral spine; metatrochanter with hook-like projection (Fig. 5E) on ventral margin, mesal margin of metatibia with row of stiff setae at apical portion.

Abdomen. Widest at lateral margins of tergite 1 (IV), length 0.82 mm, width 0.72 mm. Tergite 1 (IV) at middle slightly shorter than 2 (V) and 3 (VI) combined and twice as long as 2, thin basal sulcus interrupted by one pair of mediobasal and two pairs of basolateral foveae, with pair of short discal carinae, oblique inner marginal carinae complete, lacking outer carinae; tergite 2 (V) shorter than 3 (VI), 4 (VII) shorter than tergites 2 and 3 combined, with pair of small lateral nodules; 2–4 (V–VII) each with one pair of small basolateral foveae and thin marginal carinae; tergite 5 (VIII) semicircular, transverse, posterior margin roundly emarginate at middle. Sternite 2 (IV) with one pair of mediobasal and three pairs of basolateral foveae, lacking lateral carinae; midlength of sternites 2–5 (IV–VII) gradually shorter, 3 with two pairs of small basolateral foveae and short carinae, 4 and 5 each with one pair of small

basolateral foveae, sternite 6 (VIII) transverse, impressed at middle, posterior margin broadly emarginate, sternite 7 (IX) with paired membranous structure.

Aedeagus (Fig. 5F–G). 0.53 mm long, asymmetric, elongate; median lobe with moderately large basal capsule and rounded foramen, ventral stalk dorsoventrally broadened, with transverse protuberance at base, apically greatly twisted to form large, broad apical plate with pointed apex; dorsal lobe elongate, plate-like, embracing endophallus armature, which comprising elongate sclerite split into two parts at apex, parameres broad, weakly sclerotized in lateral portions, membranous at middle.

Female

Unknown.

Remarks

This species may represent a derived form among those characterized by a plate-like dorsal lobe of the aedeagus that embraces the endophallus armature. The absence of marginal spines on the pronotum is also a rare, though not unprecedented, feature within the genus. The new species can be readily identified by its small eyes, the lack of distinct male sexual characters, and the unique structure of the aedeagus.

Distribution

Southwest China: Yunnan.

Tribasodites pectoralis sp. nov.
Chinese common name: 扩胸脊胸蚁甲
urn:lsid:zoobank.org:act:019B1E4E-9F7C-4630-A177-5DF0483D5ECC
Fig. 6

Diagnosis

Male

Body elongate, length approximately 2.2 mm. Head transversely suboval, subtruncate at base, slightly narrower than pronotum, tempora distinctly longer than eyes, rounded at posterolateral angles, vertex lacking sulcus, with small, asetose foveae, with distinct mediobasal carina extending from head base anteriorly to level of anterior margins of eyes, with distinct lateral carinae from head base to posterior margins of antennal tubercles; antenna elongate, with greatly modified antennomeres 10 and 11, 10 with large cavity on ventral surface, 11 with broad inner basal projection extended posteriorly. Pronotum with laterally carinate median and lateral longitudinal sulci, with pair of longitudinal discal carinae, with two pairs of antebasal tubercles and acute marginal spines. Discal striae extending posteriorly to approximately $^{6.6}/_{10}$ of elytral length. Mesotrochanter with tiny ventral tubercle, mesotibia with distinct apical spine. Aedeagus stout, asymmetric; ventral stalk broad at base and split at apical part, dorsal lobe plate-like, embracing ventral stalk, endophallus armature composed of mainly membranous structures.

Female

Body length approximately 2.2–2.3 mm. Antenna lacking modifications. Legs simple. Genital complex as in Fig. 6J.

Etymology

The specific epithet is derived from the Latin adjective '*pectoralis*', meaning 'of or pertaining to the chest', referring to the protruding pronotal lateral margins of this species. The name is an adjective in the nominative singular.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Miaoshan, Xiaocaoba; 27°29′33″ N, 104°10′19″ E; 1709–1800 m a.s.l.; 20 Jul. 2022; Wei leg.; 云南昭通市乌蒙山小草坝, 魏国豪采; SNUC.

Paratypes

CHINA • 2 ♂♂, 1 ♀; same data as for holotype; SNUC • 1 ♀; Xiaoyanfang station; 28°6′00″ N, 103°21′54″ E; 1878–2062 m a.s.l.; 13 Jul. 2022; SNUC.

Description

Male

Body (Fig. 6A). Length 2.20–2.22 mm; colour reddish-brown, tarsi and mouthparts lighter. Dorsal surface of body covered with relatively dense pubescence.

Head (Fig. 6B). Subrounded at base, distinctly wider than long, length 0.45–0.46 mm, width 0.58 mm; vertex lacking sulcus, with small, asetose foveae (dorsal tentorial pits), mediobasal carina relatively long, extending from head subbase anteriorly to level of anterior margins of eyes, lateral carinae thick, extending from base to posterior margins of antennal tubercles; posterolateral margin roundly angulate; frons anteriorly demarcated from clypeus by oblique frontal-clypeal ridge, which merged at middle and extended anteriorly for short distance on clypeus, area between moderately raised antennal tubercles weakly impressed; clypeus with smooth surface, its entire anterior margin strongly carinate and moderately raised; ocular-mandibular carinae complete. Venter with smooth surface; small gular foveae (posterior tentorial pits) originating from shared transverse opening, with thin median carina extending from above opening to mouthparts. Compound eyes moderately small, each composed of approximately 30 small ommatidia. Antenna elongate, length 1.20–1.21 mm, distinct club (Fig. 6C) formed by enlarged apical three antennomeres; antennomere 1 thick, subcylindrical, 2–7 each slightly elongate to as long as wide, 8 shortest, 9 obliquely expanded at apex, 10 (Fig. 6D) much broader and longer than 9, with large cavity on ventral surface, 11 largest, longer than 9 and 10 combined (33:23), with broad, posteriorly extended basal projection on mesal margin.

Pronotum (Fig. 6B). Much wider than long, length 0.48–0.49 mm, width 0.60–0.61 mm, widest anterior to middle; lateral margins rounded and extended, convergent apically and subparallel at approximately basal ¼; disc slightly convex, finely punctate, relatively broad median longitudinal sulcus with slightly carinate margins, posteriorly confluent with oval antebasal impression and short mediobasal carina, with pair of curved discal longitudinal carinae and lateral longitudinal sulci; with two pairs of short antebasal and acute marginal spines; lateral antebasal foveae small and asetose; with small outer and inner pair of basolateral foveae. Prosternum with basisternal (precoxal) portion slightly longer than procoxal rests, with small lateral procoxal foveae; distinct hypomeral grooves extending from base to middle of anterior parts, with pit-like lateral antebasal hypomeral impressions, hypomeral ridges close to margins of coxal cavities.

Elytra. Much wider than long, length 0.57–0.59 mm, width 0.76 mm; each elytron with three moderately large, asetose basal foveae; discal striae thin, extending posteriorly from outer basal foveae to approximately 7/10 of elytral length; humeri slightly angulate, subhumeral foveae small, carinate marginal striae extending from foveae to posterior margins of elytra. Metathoracic wings fully developed.

Mesoventrite. Short, demarcated from metaventrite by oblique carinae lateral to mesocoxal cavities; median mesoventral foveae moderately separated, originating from shared suboval opening, large lateral mesoventral foveae forked internally, prepectus massive, collar-shaped; mesoventral intercoxal process

short, apically blunt, marginal striae complete. Metaventrite slightly projected admesally, inclined towards middle, with large, setose lateral mesocoxal foveae, with two lateral metaventral foveae, metaventral intercoxal process with narrow split at middle.

Fig. 6. *Tribasodites pectoralis* sp. nov. **A–I**. Holotype, ♂ (SNUC). **J**. Paratype, ♀ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Antennal club. **D**. Antennomere 10, ventral view. **E**. Mesotrochanter. **F**. Mesotibia. **G**. Sternite 7 (IX). **H**. Aedeagus, lateral view. **I**. Aedeagus, ventral view. **J**. Genitalia, ventral view. Scale bars: A = 0.5 mm; B = 0.3 mm; C, E–F = 0.2 mm; D, G–J = 0.1 mm.

Legs. Moderately elongate; mesotrochanter (Fig. 6E) with tiny ventral tubercle, mesotibia (Fig. 6F) with distinct apical spine; mesal margin of metatibia with row of dense golden setae along apical ⅓.

Abdomen. Widest at lateral margins of tergite 1 (IV), length 0.73–0.74 mm, width 0.76–0.77 mm. Tergite 1 (IV) more than twice as long as 2 (V), thin basal sulcus interrupted by one pair of mediobasal and one pair of basolateral foveae, with pair of short, thick subtriangular discal carinae, oblique inner marginal carinae thin and complete, outer carinae present for basal ½; tergite 2 slightly longer than 3 but shorter than 4 (VII), 2–4 each with one pair of small basolateral foveae; tergite 5 (VIII) semicircular, transverse, posterior margin roundly emarginate at middle. Sternite 2 (IV) with one pair of mediobasal and two pairs of basolateral foveae, lacking lateral carinae; midlength of sternites 2–5 (IV–VII) gradually shorter, 3 and 4 each with three pairs, and 5 with one pair of small basolateral foveae, sternite 6 (VIII) transverse, posterior margin broadly emarginate, sternite 7 (IX) (Fig. 6G) membranous, composed of pair of lateral membranes and suboval median plate.

Aedeagus (Fig. 6H–I). 0.48 mm long, dorso-ventrally strongly asymmetric; median lobe with large basal capsule, roundly triangular foramen and long and broad basoventral projection, ventral stalk broad at base, divided into two parts in apical portion, dorsal lobe plate-like, embracing ventral stalk; endophallus armature with mostly membranous structures; parameres fused, broad and flattened, membranous.

Female

Similar to male in external appearance; antenna slightly shorter, simple; legs lacking tubercles, spines or projections; each compound eye composed of approximately 15 ommatidia; humeri of elytra weakly raised; metathoracic wings reduced. Measurements (as for male): body length 2.23–2.29 mm; length/width of head 0.46/0.59 mm, pronotum 0.45–0.48/0.56–0.58 mm, elytra 0.52–0.60/0.75–0.76 mm; abdomen 0.75–0.78/0.76–0.78 mm; length of antenna 1.06–1.14 mm; maximum width of genital complex (Fig. 6J) 0.30 mm.

Remarks

The greatly modified antennomeres 10 and 11, along with an aedeagus that bears a plate-like dorsal lobe, are common character states found within the genus. This species belongs to the Antennalis group as defined by Zhang & Yin (2024). A closely related species, *T. bari* Yin, 2022, which exhibits a similar large projection at the base of male antennomere 11, is found in Xizang (Yin 2022). However, *T. pectoralis* sp. nov. can be distinguished by its protruding lateral margins of the pronotum, which are equipped with acute marginal spines, as well as the unique structure of the aedeagus.

Distribution

Southwest China: Yunnan.

Tribe Iniocyphini Park, 1951
Genus *Nipponobythus* Jeannel, 1958

Nipponobythus flamma sp. nov.
Chinese common name: 焰奇首蚁甲
urn:lsid:zoobank.org:act:24B0200D-389D-4FDC-A5FC-7F39E7068EA8
Fig. 7

Diagnosis

Male

Body length approximately 1.6 mm. Head truncate at base, approximately as wide as pronotum, vertex lacking foveae, with relatively short mediobasal carina; apical part of vertex projected to form ‘shield-

like' structure, anterior margin of projection with tufts of long, flame-like setae, with relatively short mediobasal carina; frons with broad cavity at middle, anteriorly with complex tubercle at middle; antenna simple, antennomeres more or less transverse, with indistinct club. Pronotum lacking foveae, area posterior to antebasal sulcus roughened, with distinct impressions; posterior corners angularly tuberculate. Legs simple, unmodified. Tergite 1 (IV) with short, broadly separated discal carinae, each carina extending posteriorly to less than ⅓ of tergal length. Aedeagus moderately elongate, each paramere each with five macrosetae at apex and mesal margin, respectively, endophallus armature composed of two elongate sclerites at middle and spine-like structures at apical half.

Female

Body length approximately 1.7 mm. Vertex lacking modifications. Compound eyes much smaller.

Etymology

The species epithet is a Latin noun meaning 'flame' or 'fire', indicating the unique cephalic structure of this species. The name is a noun in apposition.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Conservation Area, Miaoshan, Xiaocaoba; 27°29′33″ N, 104°10′19″ E; 1709–1800 m a.s.l.; 20 Jul. 2022; Wei leg.; 云南昭通市乌蒙山小草坝, 魏国豪采; SNUC.

Paratypes

CHINA • 1 ♂, 1 ♀; same data as for holotype; SNUC.

Description

Male

Body (Fig. 7A). Length 1.56–1.65 mm; colour reddish-brown, tarsi and mouthparts lighter. Dorsal surface of body covered with relatively dense pubescence.

Head (Fig. 7B). Roundly rectangular, broadly truncate at base, much wider than long, length 0.32–0.34 mm, width 0.43 mm; apical portion of vertex raised to form broad 'shield-like' projection, anterior margin of projection with tufts of long, curved setae, flame-like, lacking foveae (dorsal tentorial pits) due to modification, vertex laterally roundly expanded and coarsely punctate on expansions, mediobasal carina relatively short, extending from head base anteriorly to projection, postocular carinae complete; tempora slightly longer than eyes; frons greatly and broadly excavated, anteriorly with complex tubercle at middle; clypeus smooth, short, sharply descending, with anterior margin carinate and moderately raised; ocular-mandibular carinae thin, complete. Venter with coarse surface; small gular foveae (posterior tentorial pits) narrowly separated, in shared impression, lacking median carina. Compound eyes weakly protruding from outline of head, each composed of approximately 40 ommatidia. Antenna relatively elongate, length 0.66–0.68 mm, unmodified, with indistinct club; antennomere 1 thick, subcylindrical, enlarged, 2 subquadrate, 3 much smaller than 2, 4–9 each submoniliform, 10 distinctly transverse, subconical, 11 largest, longer than 9 and 10 combined (17:10), conical.

Pronotum (Fig. 7B). Wider than long, length 0.34–0.35 mm, width 0.39–0.41 mm, widest anterior to middle, posterior corners angularly protruding; lateral margins rounded, convergent anteriorly and posteriorly; both anterior and posterior margins smoothly curved; disc weakly convex, finely punctate, lacking foveae, with distinct transverse antebasal sulcus demarcating disc from basal collar, basal collar roughened and with two pairs of oval impressions. Prosternum with basisternal (precoxal)

portion approximately as long as procoxal rests, with small, narrowly separated lateral procoxal foveae; hypomeral grooves complete; hypomeral ridges adjacent to margins of coxal cavities.

Elytra. Much wider than long, length 0.46–0.53 mm, width 0.71–0.72 mm; each elytron with two moderately large, asetose basal foveae; disc lacking striae; humeral denticles absent, humeri weakly prominent, lacking subhumeral foveae or marginal stria; posterolateral margin with narrow cleft. Metathoracic wings fully developed.

Mesoventrite. Short, laterally fused with metaventrite; median mesoventral foveae moderately separated, originating from shared oval impression, lateral mesoventral foveae forked internally, prepectus massive, collar-shaped; with short, apically blunt mesoventral process; with complete marginal striae. Metaventrite moderately raised admesally, with small, asetose lateral mesocoxal and two tiny lateral metaventral foveae, metaventral intercoxal process with broad emargination at middle.

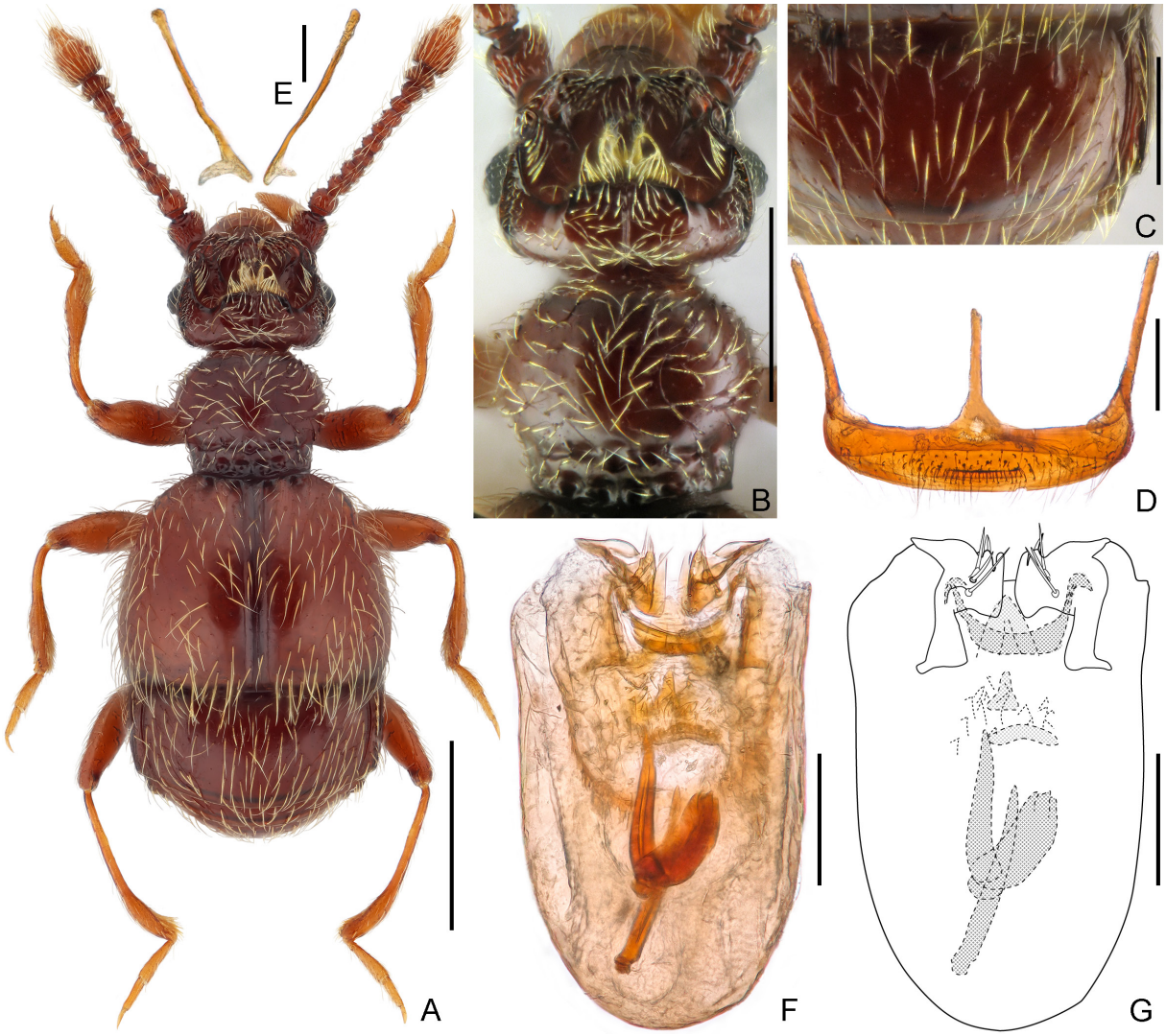

Fig. 7. *Nipponobythus flamma* sp. nov., holotype, ♂ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Tergite 1 (IV). **D**. Sternite 6 (VIII). **E**. Sternite 7 (IX). **F–G**. Aedeagus, ventral views. Scale bars: A = 0.5 mm; B = 0.3 mm; C = 0.2 mm; D–G = 0.1 mm.

Legs. Moderately elongate, lacking modification; tibiae each with row of dense setae on mesal margin at apex.

Abdomen. Widest at lateral margins of tergite 1 (IV), length 0.48–0.51 mm, width 0.66–0.68 mm; paratergites well-developed. Tergite 1 (IV) at middle longer than 2 (V) to 4 (VII) combined and approximately 3.8 × as long as 2, basal sulcus broad and moderately deep, with pair of small mediobasal foveae, discal carinae (Fig. 7C) moderately broadly separated, short, extending posteriorly to less than ⅓ of tergal length; tergites 2 and 3 subequal in midlength, 4 slightly longer, 2–4 each with thin basal sulcus and lacking fovea; tergite 5 (VIII) greatly transverse, posterior margin evenly rounded. Sternite 2 (IV) at middle longer than 3–5 (V–VII) combined, with markedly short mediobasal carina, with one pair of basolateral foveae and one pair of basolateral sockets; sternites 3–5 at middle gradually shorter, lacking foveae, sternite 6 (VIII) (Fig. 7D) transverse, with pair of lateral and one median projection, median projection much shorter than lateral ones, sternite 7 (IX) (Fig. 7E) composed of pair of weakly sclerotized, elongate sclerites.

Aedeagus (Fig. 7F–G) 0.38 mm long, moderately elongate, dorso-ventrally symmetric; median lobe moderately sclerotized; endophallus armature composed of complex of sclerites at middle, and with spine-like structures at apical half; each paramere each with five macrosetae at apex and along mesal margin.

Female

Similar to male in external appearance. Vertex lacking modifications. Antenna approximately as long as that of male. Each compound eye composed of 10 ommatidia. Base of elytra slightly constricted. Metathoracic wings absent. Measurements (as for male): body length 1.74 mm; length/width of head 0.35/0.44 mm, pronotum 0.34/0.40 mm, elytra 0.48/0.71 mm; abdomen 0.65/0.70 mm; length of antenna 0.64 mm.

Remarks

The diversity of *Nipponobythus* in China remains largely underexplored, with numerous species awaiting formal description (ZWY's personal observation). Many of these species, including the new species described here, exhibit distinct cephalic modifications. One recently described species, *N. alienoceps* Yin, 2020, from a cave in Guizhou, possesses a significantly modified head in males (Yin 2020). However, all species known to the authors can be readily identified by their unique male sexual characters, and through careful examination of the aedeagal structure, which is species-characteristic.

Distribution

Southwest China: Yunnan.

Tribe Brachyglutini Raffray, 1904
Genus *Triomicrus* Sharp, 1883

Triomicrus wumengmontis sp. nov.
Chinese common name: 乌蒙山鞭须蚁甲
urn:lsid:zoobank.org:act:75EE1DDE-941D-489B-8EDD-555C30A94C7F
Fig. 8

Diagnosis

Male

Body length approximately 1.8–1.9 mm. Head and pronotum coarsely punctate. Eyes much shorter than tempora. Antennomere 11 simple, lacking modifications. Pronotum distinctly transverse. Elytra with short humeral striae extending for short distance. Protibia protuberant at apex; mesotibia with spine at apex. Posterior margin of sternite VII with hook-like expansion on left side. Aedeagus with left paramere (orientation according to figure) larger than right one, endophallus armature composed of three to four short, blunt sclerotized spines at middle of posterior half of capsule.

Female

Unknown.

Etymology

The specific epithet is derived from the Wumengshan Natural Reserve, the type locality for this species. The name is a noun in the genitive case.

Type material

Holotype

CHINA • ♂; Yunnan, Zhaotong City, Wumengshan Natural Reserve, Haiziping, Dalingou; 27.8799° N, 104.720011° E; 1180 m a.s.l.; 23 Jul. 2022; Wei leg.; 云南昭通乌蒙山海子坪大林沟魏国豪采; SNUC.

Paratypes

CHINA • 1 ♂; same data as for holotype; SNUC.

Description

Male

Body (Fig. 8A). Length 1.78–1.86 mm; colour reddish-brown, tarsi and mouthparts paler. Head and pronotum coarsely punctate, elytra and abdomen finely punctate; vestiture covered with moderately long setae.

Head (Fig. 8B). Roundly rectangle, subtruncate at base, approximate as long as wide, length 0.47–0.49 mm, width 0.43–0.44 mm; vertex weakly convex, with broadly separated, setose foveae (dorsal tentorial pits); antennal tubercles barely raised; frons with distinct setose fovea, forming short rostrum; clypeus fused with frons at middle, evenly descending, with coarse surface, anterior margin arcuate and markedly carinate; ocular-mandibular carinae complete. Venter with two small, well-separated gular foveae (posterior tentorial pits), median longitudinal ridge broad and greatly convex. Maxillary palpus elongate; palpomere 1 minute; 2 extremely slender and long, pedunculate basally and broadened at basal ⅓ and at apex; 3 roundly trapezoidal, with short stem at base; 4 fusiform, with distinct stem at base, broadest at basal 2/5, with long palpal cone. Compound eye relatively small, reniform in lateral view, each composed of approximately 25 ommatidia. Antenna moderately elongate, length 0.95–0.98 mm, lacking modifications, club formed by apical two antennomeres; antennomere 1 large, subcylindrical, 2 slightly narrower and shorter than 1, 3–8 each submoniliform, gradually shorter, 9 distinctly larger than 8, transverse, 10 much larger than 9, 11 (Fig. 8C) largest, much longer than 8 and 9 combined (27:16), subconical, obliquely narrowed at apex.

Pronotum (Fig. 8B). Much wider than long, length 0.43–0.45 mm, width 0.54 mm, widest at middle; sides rounded, narrowing from widest point anteriorly and posteriorly, both anterior and posterior margin almost straight; disc weakly convex, lacking carina or sulcus; with moderately distinct, setose median and lateral antebasal foveae; basal portion roughened. Prosternum with basisternal (precoxal) portion

approximately as long as procoxal rests; with large, widely separated and setose lateral procoxal foveae; hypomera fully demarcated from pronotum by complete hypomeral grooves, hypomeral carinae close to coxal cavities.

Elytra. Roundly trapezoidal, wider than long, length 0.71–0.73 mm, width 0.82–0.84 mm, truncate at bases; each elytron with two asetose basal foveae; sutural striae complete, discal striae extending from outer fovea to approximately apical ¾ of elytral length; humeri roundly prominent, with small subhumeral foveae and thin marginal striae extending for less than half of elytral length; posterior margin slightly notched laterally. Metathoracic wings present but reduced for some extent.

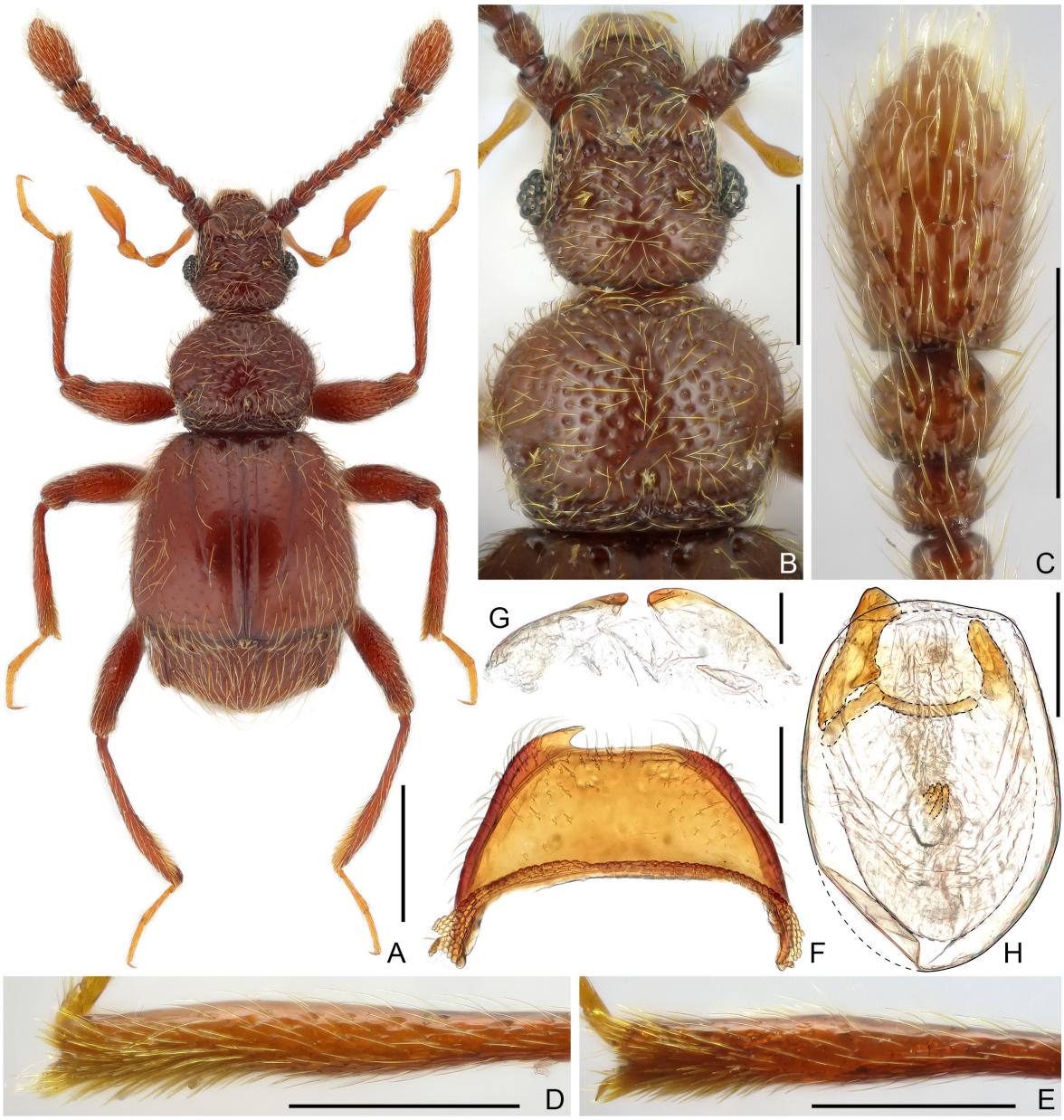

Fig. 8. *Triomicrus wumengmontis* sp. nov., holotype, ♂ (SNUC). **A**. Dorsal habitus. **B**. Head and pronotum. **C**. Antennal club. **D**. Protibia. **E**. Mesotibia. **F**. Sternite 5 (VII). **G**. Sternite 7 (IX). **H**. Aedeagus, ventral view. Scale bars: A = 0.5 mm; B = 0.3 mm; C–E = 0.2 mm; F, H = 0.1 mm; G = 0.05 mm.

Mesoventrite. Laterally fused with metaventrite, with median mesoventral foveae in single setose oval impression, large lateral mesoventral foveae unforked, extended internally and meeting each other at middle; intercoxal process short and narrow, with round apex. Metaventrite moderately prominent admesally; with large lateral metaventral and lateral mesocoxal foveae; posterior margin broadly and roundly emarginate at middle.

Legs. Elongate; protibia (Fig. 8D) with small tubercle at apex; mesotibia (Fig. 8E) with acute apical spine.

Abdomen. Narrower than elytra, widest at base of tergite 1 (IV), length 0.43–0.45 mm, width 0.71–0.73 mm, tergites 1–4 with well-developed accompanying paratergites. Tergite 1 (IV) dorsally much longer than 2 (V) and 3 (VII) combined, lacking basal impression, with one pair of small mediobasal and one pair of larger basolateral foveae; discal carinae moderately long, subparallel posteriorly, extending posteriorly for slightly over half tergal length; 2–4 (VIII) successively shorter and narrower, each with one pair of small basolateral foveae; 5 (VIII) roundly trapezoidal, transverse, posterior margin slightly arcuate. Sternite 2 (IV) longest, with two pairs of basolateral foveae, 3–5 (V–VII) each short at middle, compact, 3 with one pair of small basolateral foveae, 4 (VI) and 5 lacking foveae, posterior margin of sternite 5 (VII) (Fig. 8F) with acute, hook-like expansion on left side (orientation according to figure), 6 (VIII) narrow, ring-like, 7 (IX) (Fig. 8G) composed of paired membranous lamellae, slightly sclerotized at apices.

Aedeagus (Fig. 8H) 0.30 mm long, dorso-ventrally asymmetric; median lobe with large, round and membranous basal capsule; left paramere wider and longer than right one, moderately broadened at apex, right paramere slightly curved, rounded at apex; endophallus armature composed of three to four small, blunt sclerotized spines at middle of posterior half of capsule.

Female

Unknown.

Remarks

The form of the modification of male sternite 5 (VII) and the aedeagus suggest a close relationship between this species and two congeners: *T. punctifrons* Löbl, Kurbatov & Nomura, 1998 distributed in south and southwest China (Chongqing, Shaanxi, Sichuan, Guangxi) (Löbl *et al.* 1998) and *T. tibialis* Shen & Yin, 2015 occurring in eastern China (Zhejiang) (Shen & Yin 2015). However, *T. wumengmontis* sp. nov. can be readily separated from both species by the lack of modifications on antennomere 11. While the simple antennomere 11 is shared with *T. onerosus* Löbl, Kurbatov & Nomura, 1998 found in Taiwan, eastern China, the male of *T. onerosus* has significantly more strongly thickened pro- and mesotibiae (Löbl *et al.* 1998), along with a head and pronotum that are finely punctate, contrasting with the coarsely punctate features of *T. wumengmontis*. Previously, only one species of the genus, *T. nabanhensis* Shen & Yin, 2016, has been known from Yunnan (Shen & Yin 2016). The male of that species has modified antennomeres 11, widened protibiae, and completely different structures of sternite 5 (VII) and aedeagus.

Distribution

Southwest China: Yunnan.

Key to the species of the subfamily Pselaphinae Latreille, 1802 from the Wumenshan National Nature Reserve (males only)

1. Anterior margin of antennal scape with distinct notch at apex; parameres of aedeagus fused to ventral

membranous plate, or reduced .....(Batrisitae: Batrisini) 2
– Anterior margin of antennal scape straight, lacking distinct notch at apex; parameres of aedeagus present, fully developed .....(Goniaceritae: Iniocyphini and Brachyglutini) 7

2. Each elytron with three basal foveae; pronotal lateral margins spinose, or smooth (representing a rare case) 3
– Each elytron with two or one basal foveae; pronotal lateral margins smooth, lacking spines 4

3. Antennomere 10 and 11 greatly modified, 10 (Fig. 6D) with large cavity on ventral surface, and 11 (Fig. 6C) with broad basal projection; pronotal lateral margins (Fig. 7B) markedly protruding, with acute marginal spines; mesotibia (Fig. 6F) with distinct apical spine; aedeagus (Fig. 6H–I) stout ... . ***Tribasodites pectoralis*** sp. nov.
– Antennomere 10 and 11 (Fig. 5C) simple, unmodified; pronotal lateral margins (Fig. 5B) rounded, smooth, lacking marginal spines; mesotibia lacking apical spine; aedeagus (Fig. 5F–G) elongate ... .***Tribasodites ocellus*** sp. nov.

4. Dorsal lobe of aedeagus (Fig. 3G–I) strongly twisted at base, recumbent .... ***Batrisiella ordinaria*** sp. nov.
– Dorsal lobe of aedeagus erect 5

5. Abdomen modified, with central cavity on posterior half of tergite 1 (IV) (Fig. 4E); aedeagus with relatively small, constricted basal capsule (Fig. 4G–H) .....***Batrisocenus asper*** sp. nov.
– Abdomen modified or unmodified, lacking central cavity on posterior half of tergite 1; aedeagus with relatively large, extended basal capsule 6

6 Dorsal surface of body (Fig. 1A–B) with scattered long, thick setae; head venter and prosternite unmodified; abdomen (Fig. 1A, D) modified, tergite 1 (IV) densely covered with anteriorly pointed setae .....***Arthromelodes punctiventris*** sp. nov.
– Dorsal surface of body normally setose, lacking long, thick setae (Fig. 2A); head venter (Fig. 2C–D) with small lamellar-like protuberance at middle; prosternite (Fig. 2E) with deep, setose transverse sulcus; abdomen simple, lacking anteriorly pointed setae .....***Arthromelodes weii*** sp. nov.

7 Head (Fig. 7A) greatly modified, with broad cavity on vertex; gular region lacking median carina; maxillary palpus short; pronotum (Fig. 7B) with transverse antebasal sulcus ....***Nipponobythus flamma*** sp. nov.
– Head (Fig. 8A) lacking modifications; gular region with broad median ridge; maxillary palpus markedly elongate; pronotum (Fig. 8B) lacking transverse antebasal sulcus ....***Triomicrus wumengmontis*** sp. nov.

Discussion

The discovery of eight new species belonging to the subfamily Pselaphinae from the Wumengshan National Nature Reserve, coupled with two recently published works on the subfamilies Scydmaeninae (Yin & Zhou 2025) and Paederinae Fleming, 1821 (Yang & Hu 2025), considerably expands our knowledge of rove beetle biodiversity and biogeographical complexity in southwestern China's mountainous regions. These findings suggest the Wumeng Mountains as a potential hotspot for coleopteran diversity, particularly within the family Staphylinidae. Notably, the absence of prior records of Pselaphinae from the Wumeng Mountains, despite their proximity to previously sampled areas in Yunnan and Guizhou, marks a pronounced 'Linnean shortfall' in this region.

The restricted distributions and specialized habitats of these newly described species render them potentially vulnerable to environmental changes. The Wumengshan region faces increasing anthropogenic pressures, including deforestation and habitat fragmentation, which threaten its unique biodiversity

(CEPF 2002). Consequently, the protection of these habitats is likely to be of critical importance for the preservation of their ecological integrity.

This study points to the significance of continued taxonomic efforts in documenting pselaphine biodiversity within previously under-sampled areas of southwestern China. Recent studies in other mountainous regions, such as the Qinghai-Xizang Plateau (Yin 2022) and Nanling Mountains (Zhang & Yin 2024), have similarly revealed high levels of undescribed Pselaphinae diversity. These findings collectively suggest that numerous mountainous areas in China may harbour a unique and undiscovered pselaphine fauna. Future works may focus on more comprehensive sampling across various microhabitats within the Wumeng Mountains. Such efforts would provide further insights into the diversity and biogeographic patterns of the region's pselaphine fauna, potentially in discovering additional species and contributing to a more comprehensive understanding of the biodiversity patterns of Pselaphinae in southwestern China's mountainous ecosystems.

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