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New species, synonymies, combinations, and records of micropterous Athetini from China (Coleoptera: Staphylinidae: Aleocharinae)

With 60 figures and 1 map

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Abstract

Two micropterous and locally endemic species of *Bellatheta* Roubal, 1928 and four of *Atheta* Thomson, 1858, subgenus *Microdota* Mulsant & Rey, 1873, from China are described and illustrated: *Bellatheta qiliana* spec. nov. (Qinghai, Gansu); *B. aucticeps* spec. nov. (Yunnan: Gaoligong Shan); *Atheta* (*Microdota*) *clarata* spec. nov. (Yunnan: Gaoligong Shan); *A.* (*M.*) *minica* spec. nov. (Sichuan: Songpan env.); *A.* (*M.*) *qinlingica* spec. nov. (Shaanxi: Qinling Shan); *A.* (*M.*) *biformis* spec. nov. (Gaoligong Shan). New illustrations are provided for two previously described *Microdota* species. One genus-group and one species-group synonymy are proposed: *Bellatheta* Roubal, 1928 = *Oroekklina* Pace, 1999, syn. nov.; *Atheta* (*Microdota*) *amischoides* Assing, 2006 = *A.* (*M.*) *wuliangensis* Pace, 2017, syn. nov. Five new combinations are proposed: *Bellatheta daxuensis* (Pace, 1999), comb. nov., *B. excaecata* (Assing, 2009), comb. nov., *B. proiecta* (Assing, 2002), comb. nov., *B. smetanai* (Pace, 2004), comb. nov. (all of them previously in *Oroekklina*), and *Franzidota geostiboides* (Assing, 2011), comb. nov. (ex *Platyola* Mulsant & Rey, 1875). Additional records of two species of *Bellatheta* and of five species of *Microdota* are reported from China. Catalogues of the *Bellatheta* species and the micropterous *Microdota* species recorded from China are provided. Including the new species and synonymies, 15 species of *Bellatheta*, seven of them micropterous, and 85 of *Microdota*, 19 of them micropterous, have been reported from China. The *Microdota* fauna of Taiwan is composed of 13 species, four of them micropterous. The distributions of the micropterous *Bellatheta* species of China are mapped.

Taxonomic acts

Bellatheta qiliana spec. nov. – urn:lsid:zoobank.org:act:F391FF78-2A4B-4BEA-BB85-85AC8E30FE70
Bellatheta aucticeps spec. nov. – urn:lsid:zoobank.org:act:1A3E6AAA-2C3C-44B8-A911-4F1246774075
Atheta clarata spec. nov. – urn:lsid:zoobank.org:act:EE3C4E47-FEAB-413A-81C7-A063529A5235
Atheta minica spec. nov. – urn:lsid:zoobank.org:act:E325AF25-C1DD-441C-B7D5-AB2ACF109581
Atheta qinlingica spec. nov. – urn:lsid:zoobank.org:act:1590B986-DE95-458C-AFE3-71CC51AB4106
Atheta biformis spec. nov. – urn:lsid:zoobank.org:act:30A8940E-5B8A-4E27-997F-777E8FFF3E80

Key words

Coleoptera, Staphylinidae, Aleocharinae, Athetini, *Bellatheta*, *Atheta*, *Microdota*, *Franzidota*, taxonomy, new species, description, new synonymies, new combinations, endemism, wing reduction, China, Taiwan, new records, catalogue, distribution map

Zusammenfassung

Zwei ungeflügelte und lokalendemische Arten der Gattung *Bellatheta* Roubal, 1928 sowie vier der Gattung *Atheta* Thomson, 1858, Untergattung *Microdota* Mulsant & Rey, 1873, werden aus China beschrieben und abgebildet: *Bellatheta qiliana* spec. nov. (Qinghai, Gansu); *B. aucticeps* spec. nov. (Yunnan: Gaoligong Shan); *Atheta* (*Microdota*) *clarata* spec. nov. (Yunnan: Gaoligong Shan); *A.* (*M.*) *minica* spec. nov. (Sichuan: Songpan); *A.* (*M.*) *qinlingica* spec. nov. (Shaanxi: Qinling Shan); *A.* (*M.*) *biformis* spec. nov. (Gaoligong Shan). Für zwei bereits beschriebene Arten werden neue Abbildungen erstellt. Zwei Namen, einer der Gattungs- und einer der Artgruppe, werden synonymisiert: *Bellatheta* Roubal, 1928 = *Oroekklina* Pace, 1999, syn. nov.; *Atheta* (*Microdota*) *amischoides* Assing, 2006 = *A.* (*M.*) *wuliangensis* Pace, 2017, syn. nov. Fünf Namen werden neu kombiniert: *Bellatheta daxuensis* (Pace, 1999), comb. nov., *B. excaecata* (Assing, 2009), comb. nov., *B. proiecta* (Assing, 2002), comb. nov., *B. smetanai* (Pace, 2004), comb. nov. (alle bisher in *Oroekklina*) und *Franzidota geostiboides* (Assing, 2011), comb. nov. (ex *Platyola* Mulsant & Rey, 1875). Weitere Nachweise von zwei *Bellatheta*- und fünf *Microdota*-Arten werden aus China gemeldet. Kataloge der aus China bekannten *Bellatheta*- und ungeflügelten *Microdota*-Arten werden erstellt. Einschließlich der neu beschriebenen Arten und Synonymien wurden bislang 15 *Bellatheta*- (davon sieben ungeflügelt) und 85 *Microdota*-Arten (19 davon ungeflügelt) aus China nachgewiesen. Die *Microdota*-Fauna Taiwans umfasst 13 Arten, vier davon ungeflügelt. Die Verbreitungsgebiete der brachypteren *Bellatheta*-Arten Chinas werden anhand einer Karte illustriert.

Schlüsselwörter

Coleoptera, Staphylinidae, Aleocharinae, Athetini, *Bellatheta*, *Atheta*, *Microdota*, *Franzidota*, Taxonomie, neue Arten, Beschreibung, neue Synonymien, neue Kombinationen, Endemismus, Flügelreduktion, China, Taiwan, neue Nachweise, Katalog, Verbreitungskarte

Introduction

China is known to host a huge number of micropterous Staphylinidae. Some megadiverse genera such as *Nazeris* Fauvel, 1873 and *Lathrobium* Gravenhorst, 1802 of the Paederinae and *Othius* Stephens, 1829 of the Staphylininae are exclusively (*Nazeris*), nearly exclusively (*Lathrobium*), or predominantly (*Othius*) represented in this region by wingless species, all of them epigeic inhabitants of the litter layer of montane forests, subalpine, and alpine habitats and regionally or locally endemic to individual mountains or mountain ranges. Among the Chinese provinces, Yunnan and Sichuan generally host the greatest diversity of micropterous species. Genera with predominantly flighless species are also found in various taxa of the Aleocharinae, e.g., *Leptusa* Kraatz, 1856 (Homalotini), *Autalia* Leach, 1819 (Autaliini), and the subgenus *Oncosomechusa* Pace, 1982 of the genus *Masuria* Cameron, 1939 (Masuriini).

The aleocharine tribe Athetini, by contrast, is primarily represented by r-selected, macropterous taxa and, in China, includes only relatively few genera with a larger number of micropterous species, among them *Bellatheta* Roubal, 1928, *Oroekklina* Pace, 1999, and the subgenus *Microdota* Mulsant & Rey, 1873 of the genus *Atheta* Thomson, 1858. According to Schülke & Smetana (2015) and an unpublished manuscript of this catalogue updated until the end of 2019 (Schülke unpubl.), *Bellatheta* is represented in the Palaearctic region by a total of 39 species, nine of them recorded from China. *Oroekklina* includes four species, all of them micropterous and endemic in Yunnan or Sichuan. The diverse subgenus *Microdota* is represented in the Palaearctic region by 285 species, 82 of them recorded from China and 13 from Taiwan.

The present study is mainly based on material of *Bellatheta* and *Microdota* made available to me by Aleš Smetana (Ottawa) and Michael Schülke (Berlin). Additional specimens were collected during a joint field trip to China conducted by Michael Schülke, David Wrase, and the author in 2012.

Material and methods

The material examined in the course of the present study is deposited in the following public and private collections:

CAS	Chinese Academy of Sciences, Beijing
CNC	Canadian National Collection of Insects, Arachnids and Nematodes (A. Brunke, A. Smetana)
MNB	Museum für Naturkunde, Berlin (coll. Schülke)
cAss	author´s private collection

The morphological studies were conducted using Stemi SV 11 (Zeiss) and Discovery V12 (Zeiss) microscopes, and a Jenalab compound microscope (Carl Zeiss Jena). The images were taken and processed using digital cameras (Axiocam ERc 5s, Nikon Coolpix 995), as well as Labscope and Picolay stacking software. The map was created using MapCreator 2.0 software.

Body length was measured from the anterior margin of the labrum to the apex of the abdomen, the length of the

forebody from the anterior margin of the labrum to the posterior margin of the elytra, head length from the anterior margin of the clypeus to the posterior constriction of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

Results

Genus *Bellatheta* Roubal, 1928

Oroekklina Pace, 1999: 378; syn. nov.

When describing *Oroekklina*, Pace (1999) originally included only the micropterous type species *O. daxuensis* Pace, 1999, which was described in the same article, based on a unique female from Daxue Shan in Sichuan. He indicated the tarsal formula as 4, 4, 5, but observed that the mouthparts, the spermatheca, and "altri numerosi caratteri" suggested that the genus was close to *Atheta* of the Athetini. Nevertheless, *Oroekklina* was subsequently placed in the subtribe Bolitocharina of the tribe Homalotini (Schülke & Smetana 2015). Three additional species were described in, or transferred to, *Oroekklina* by Assing (2002, 2009) and Pace (2004), all of them micropterous and from China (Sichuan and Yunnan provinces). A revision of all the species previously included in *Oroekklina*, including the type species, revealed that the tarsal formula is not 4, 4, 5 as indicated in the original description, but 4, 5, 5. Thus, no principal difference remains distinguishing *Oroekklina* from *Bellatheta*, whose monophyly is constituted particularly by the synapomorpic structure of the median lobe of the aedeagus (ventral process deeply bifid), a condition also shared by the species previously in *Oroekklina*. As a consequence, *Oroekklina* is placed in synonymy with the senior name *Bellatheta*, resulting in four new combinations (see checklist below).

Including the new species described below, 15 species of *Bellatheta*, seven of them micropterous, are currently known from China. The micropterous representatives of the genus are distributed in West China, from Qinghai and Gansu in the north to Yunnan in the south (Map 1), with four of the species locally endemic in Yunnan, two in Sichuan, and one in Qilian Shan (Qinghai, Gansu).

Checklist of *Bellatheta* species recorded from China

The species are listed alphabetically. Species recorded from Taiwan are not included.
The literature references are abbreviated as follows: A02 = Assing (2002); A05 = Assing (2009); A09 = Assing (2009); A11 = Assing (2011); App = Assing (present paper); P93 = Pace (1993); P98a = Pace (1998a); P99 = Pace (1999); P04 = Pace (2004); P11a = Pace (2011a).
Micropterous species are marked with a "+". Species of doubtful generic assignment are marked with an asterisk ("*").

Species	Distribution	References
+*aucticeps* **spec. nov.**	China: Yunnan: Gaoligong Shan	App
bellicosa (Pace, 2004)	China: Sichuan	P04
**chinensis* (Pace, 1993) = *xinjiangensis* (Pace, 2004)	China: Xinjiang	P93, P04
+*daxuensis* (Pace, 1999), **comb. nov.**	China: Sichuan: Daxue Shan, Gongga Shan	A02, P99, App
+*diacangica* Assing, 2011	China: Yunnan: Diancang Shan	A11
+*excaecata* (Assing, 2009), **comb. nov.**	China: Yunnan: Gaoligong Shan	A09, A11
gansuica (Assing, 2005) = *chinensis* (Pace, 1998)	China: Gansu	A05, P98a
granulosa (Pace, 2004)	China: Sichuan, Shaanxi, Gansu	App, P04
huamontis Pace, 2011	China: Shaanxi	P11a
+*proiecta* (Assing, 2002), **comb. nov.**	China: Sichuan: Shalui Shan	A02
+*qiliana* **spec. nov.**	China: Qinghai, Gansu	App
ruficollis Pace, 2011	China: Yunnan	P11a
+*smetanai* (Pace, 2004), **comb. nov.**	China: Yunnan: Xue Shan	A11, P04
tibetana Pace, 2011	China: Sichuan	P11a
**yunnanensis* Pace, 2011	China: Yunnan	P11a

Bellatheta daxuensis (Pace, 1999), comb. nov.
(Map 1)

Material examined: China: Sichuan: 4 ♀♀, Gongga Shan, NE-slope, 29°55'N, 102°01'E, 4140 m, 13.VI.2011, leg. Grebennikov (CNC, cAss); 1 ♀, Gongga Shan, NE-slope, 29°56'N, 101°59'E, 3550 m, 17.VI.2011, leg. Grebennikov (CNC).

The original description is based on a unique female from Daxue Shan (Pace 1999). The species was subsequently recorded again and the male sexual characters were illustrated by Assing (2002). The above specimens represent the first records from Gongga Shan. The currently known distribution is illustrated in Map 1.

Bellatheta qiliana spec. nov.
urn:lsid:zoobank.org:act:F391FF78-2A4B-4BEA-BB85-85AC8E30FE70
(Figs 1–3, 15–23, Map 1)

Type material: Holotype ♂: "CHINA: Qinghai Prov. [CH11-11a], Lang Shi Dang Jing Qu (Park) 75 km NW Honggu, 2925 m, 36°54'05.2"N, 102°21'07.1"E, creek valley on overgrown scree, Populus and Betula forest with Rhododendron, litter sifted between rocks, 28.VI.2011, leg. M. Schülke / Holotypus ♂ *Bellatheta qiliana* sp. n., det. V. Assing 2020" (MNB). Paratypes: 8 exs.: same data as holotype (MNB, cAss); 6 exs.: same data, but leg. Wrase (MNB); 50 exs.: "CHINA: Qinghai Prov. [CH11-11], Lang Shi Dang Jing Qu (Park) 75 km NW Honggu, 2896 m, 36°54'08.8"N, 102°21'16.9"E, creek valley on overgrown scree, Populus and Betula forest, litter sifted between rocks, 28.VI.2011, leg. M. Schülke" (MNB, cAss); 28 exs.: "CHINA: Qinghai Prov. [CH11-19], road 301 km 180, 43 km ESE Men Yuan, 37°09'32.6"N, 102°02'06.0"E, 2704 m, creek valley with Picea, Salix, Populus, Betula, litter and moss sifted, 5.VII.2011, leg. M. Schülke" (MNB, cAss); 67 exs.: same data, but leg. Wrase (MNB, cAss); 9 exs: "CHINA: Qinghai Prov. [CH11-18], Daban Shan, Pass 19 km WSW Men Yuan, southern ramp, shrubbery overhead, 37°22'23.8"N, 101°24'22"E, 3522–3550 m, litter & moss sifted, 4.VII.2011, leg. M. Schülke" (MNB, cAss); 1 ♀: "CHINA: Qinghai Prov. [CH11-17], Daban Shan, Pass 19 km WSW Men Yuan, 3750–3800 m, 37°21'11.8"N, 101°24'24.7"E, alpine cirque, stony pasture with slope springs, under stones, 4.VII.2011, leg. M. Schülke" (MNB); 1 ♀: "CHINA: Qinghai Prov. [CH11-08a], Daban Shan, 60 km NW Honggu, 36°49'10.7"N, 102°31'22.8"E, 2366–2400 m, mixed forest (Betula, Populus, Picea), dead wood, litter sifted, 11.VII.2011, leg. M. Schülke" (cAss); 11 exs: "CHINA: Gansu Prov. [CH11-13d], Lenglong Ling Mts., 80 km NNW Honggu, 37°03'50.3"N, 102°39'57.2"E, 3392 m, alpine pasture with Rhododendron, litter, grass roots sifted, 1.VII.2011, leg. M. Schülke" (MNB, cAss); 1 ex.: same data, but "[CH11-13], ..., 30.VI.2011" (cAss); 7 exs: "CHINA: Gansu Prov. [CH11-13b], Lenglong Ling Mts., 80 km NNW Honggu, 37°03'47.0"N, 102°39'32.6"E, 3439 m, alpine pasture with Rhododendron and Azalea, litter sifted, 1.VII.2011, leg. M. Schülke" (MNB, cAss); 7 exs: "CHINA: Gansu Prov. [CH11-14], Lenglong Ling Mts., Wutai ridge (pass) 70 km N Honggu, 36°58'16.6"N, 102°48'03.6"E, 3530 m, stony alpine past with Rhodod. and Azalea, litter & moss sifted, 2.VII.2011, leg. M. Schülke" (MNB, cAss); 7 exs: "CHINA: Gansu Prov. [CH11-27a], Lenglong Ling Mts., 60 km NNW Honggu, Jin Sha Gorge, mixed forest (Picea, Populus, Betula), 36°51'56.9"N, 102°38'55.3"E, litter, moss, mushrooms sifted, 14./15.VII.2011, leg. M. Schülke" (MNB).

Etymology: The specific epithet is an adjective derived from Qilian Shan, the name of the vast mountain range where this species was collected.

Description: Body length 2.4–3.3 mm; length of forebody 1.0–1.2 mm. Habitus as in Figs 1–2. Colouration variable: head reddish to black; pronotum reddish to black; elytra reddish to dark-brown; abdomen usually blackish with the apex (segments VIII–X) more or less distinctly paler; legs yellow, rarely slightly darker; antennae reddish.

Head (Fig. 3) approximately as long as broad; punctation very fine and rather sparse; interstices with distinct microreticulation. Eyes small and nearly flat, composed of approximately ten ommatidia. Antennae moderately incrassate; antennomeres IV weakly transverse, V–X of increasing width and increasingly transverse, X nearly twice as broad as long.

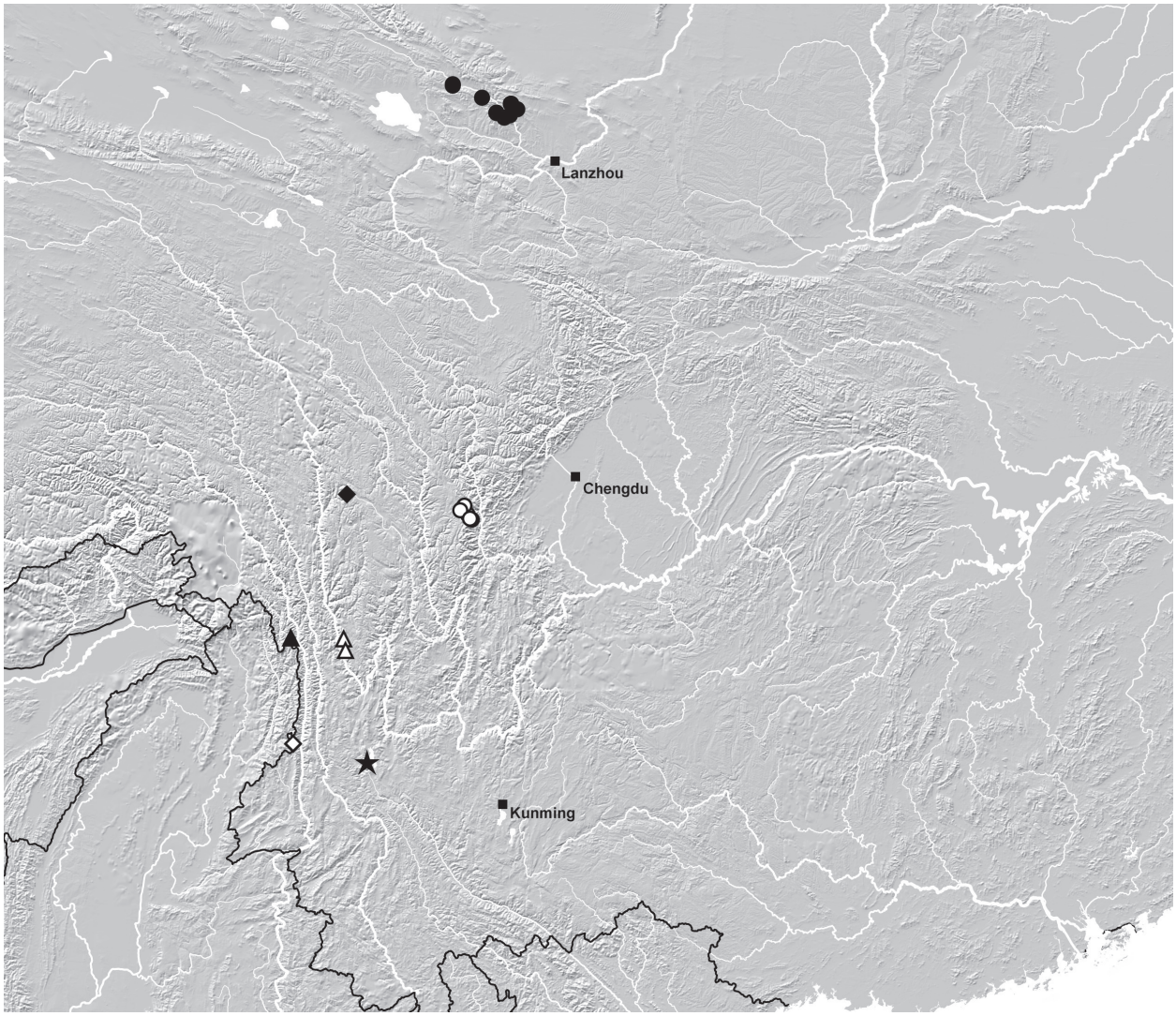
Pronotum (Fig. 3) of variable shape, usually 1.05–1.15 times as broad as long and 1.05–1.15 times as broad as head, broadest in anterior half, and more or less distinctly tapering posteriad; punctation and microsculpture similar to those of head; pubescence directed anteriad along midline.

Elytra (Fig. 3) approximately half as long as pronotum; punctation fine, but more distinct than that of head and pronotum; interstices with microsculpture. Hind wings completely reduced.

Abdomen broader than elytra; punctation fine and rather sparse; interstices with distinct microreticulation composed of predominantly transverse meshes on anterior tergites and of isodiametric meshes on posterior tergites; posterior margin of tergite VII without palisade fringe; tergite VIII (Fig. 18) without distinct sexual dimorphism, posterior margin broadly convex.

♂: sternite VIII (Fig. 17) oblong, much longer than tergite VIII, and with strongly convex posterior margin; median lobe of aedeagus 0.35–0.40 mm long and shaped as in Figs 15–16.

♀: sternite VIII (Fig. 19) transverse, posterior margin broadly convex and with moderately modified marginal setae; spermatheca (Figs 20–23) with proximal portion of somewhat variable length.



Map 1: Distributions of micropterous *Bellatheta* species in China: *B. qiliana* (black circles); *B. proiecta* (black diamond); *B. daxuensis* (white circles); *B. aucticeps* (black triangle); *B. smetanai* (white triangles); *B. excaecata* (white diamond); *B. diacangica* (black star).

Comparative notes: *Bellatheta qiliana* is distinguished from other micropterous representatives of the genus by the primary sexual characters. In external appearance and the shape of the spermatheca, it is most similar to *B. daxuensis*. If differs from this species by larger body size, less dark colouration of the body and of the legs, a more robust habitus, a relatively smaller head, a more oblong and posteriorly more convex male sternite VIII, a less transverse female sternite VIII, and a spermatheca of slightly different shape. For illustrations of other micropterous *Bellatheta* species reported from China see Pace (2004) and Assing (2002, 2009, 2011).

Distribution and natural history: The species was collected in numerous localities in Qilian Shan in the border region between Qilian Shan and Gansu provinces, China (Map 1). The specimens were sifted from litter, moss, and grass roots in mixed forests and alpine pastures at altitudes between approximately 2400 and 3800 m. One specimen was found under a stone.

Bellatheta aucticeps spec. nov.

urn:lsid:zoobank.org:act:1A3E6AAA-2C3C-44B8-A911-4F1246774075

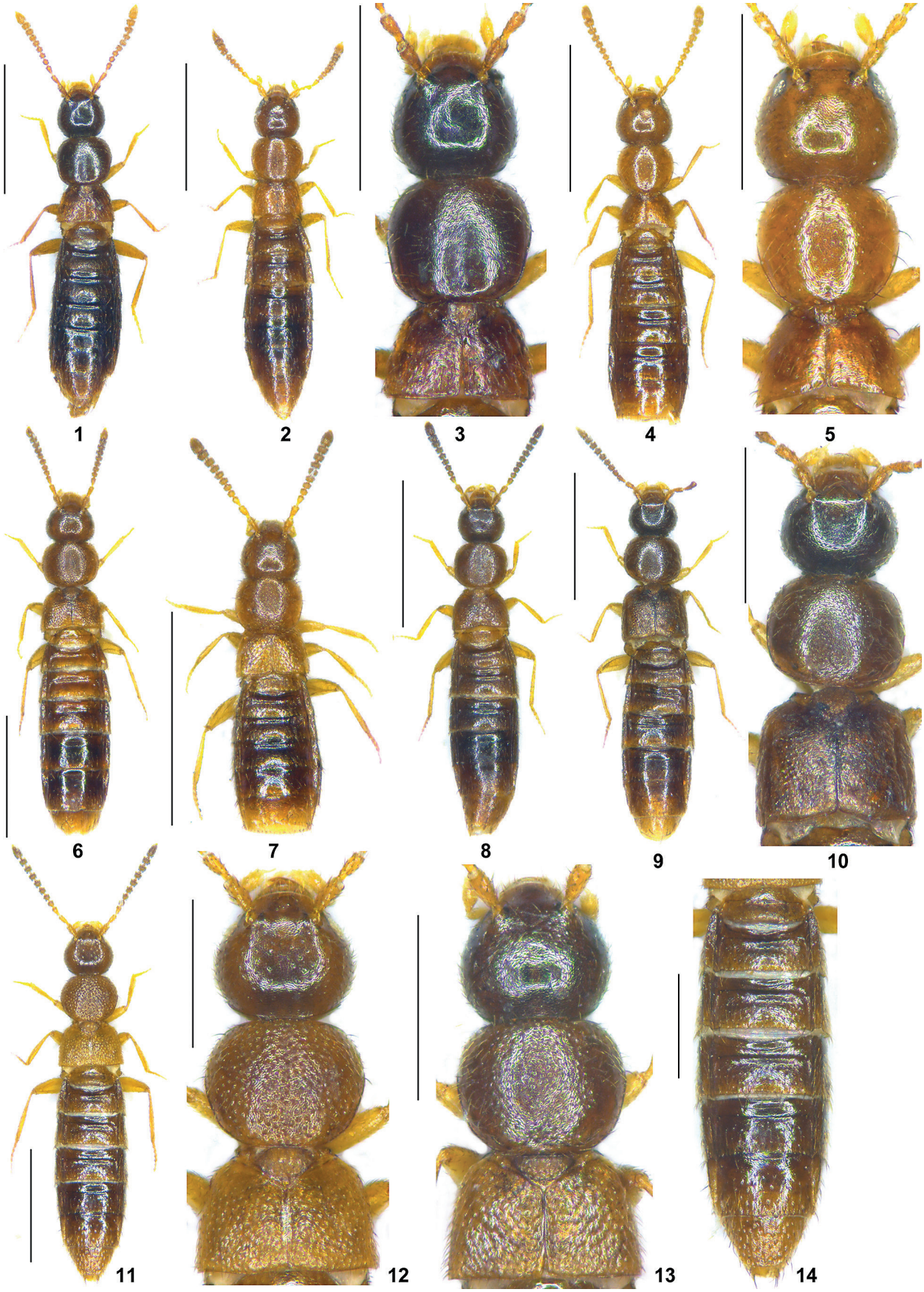
(Figs 4–5, 24, Map 1)

Type material: Holotype ♀: "P.R. CHINA, Yunnan, E slope N Gaoligongshan, N27°47'22.1" E98°32'17.7", 24.v.2010, 3027 m, sifting20, V. Grebennikov / Holotypus ♀ *Bellatheta aucticeps* sp. n., det. V. Assing 2020" (CAS).

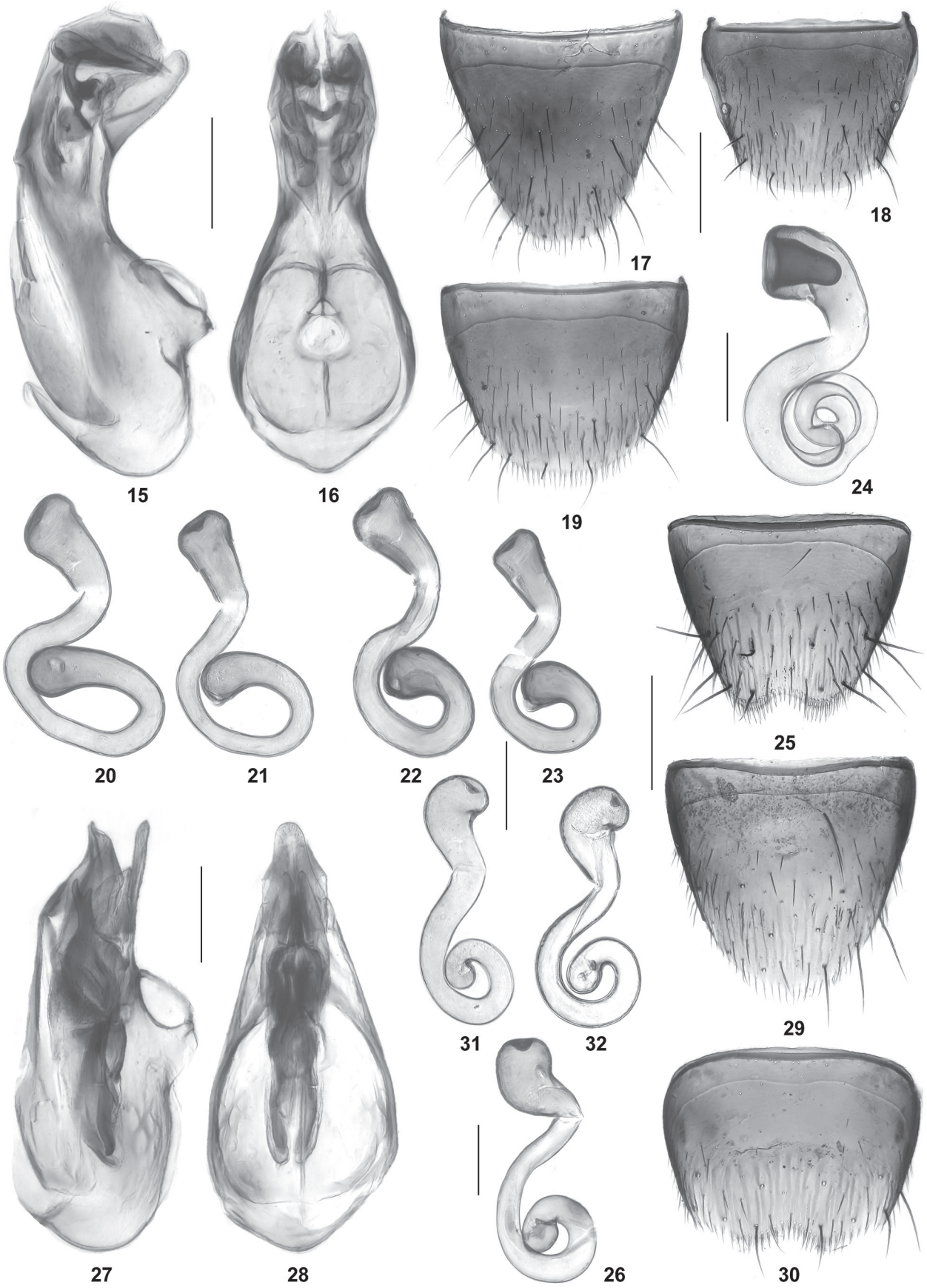
Etymology: The specific epithet is an adjective composed of the Latin adjective auctus (enlarged) and the suffix -ceps (of the head). It alludes to the large head in relation to the pronotum and elytra.

Description: Body length 2.6 mm; length of forebody 1.0 mm. Habitus as in Fig. 4. Colouration: forebody pale-reddish; abdomen brown with yellowish apex; legs yellow; antennae reddish-yellow.

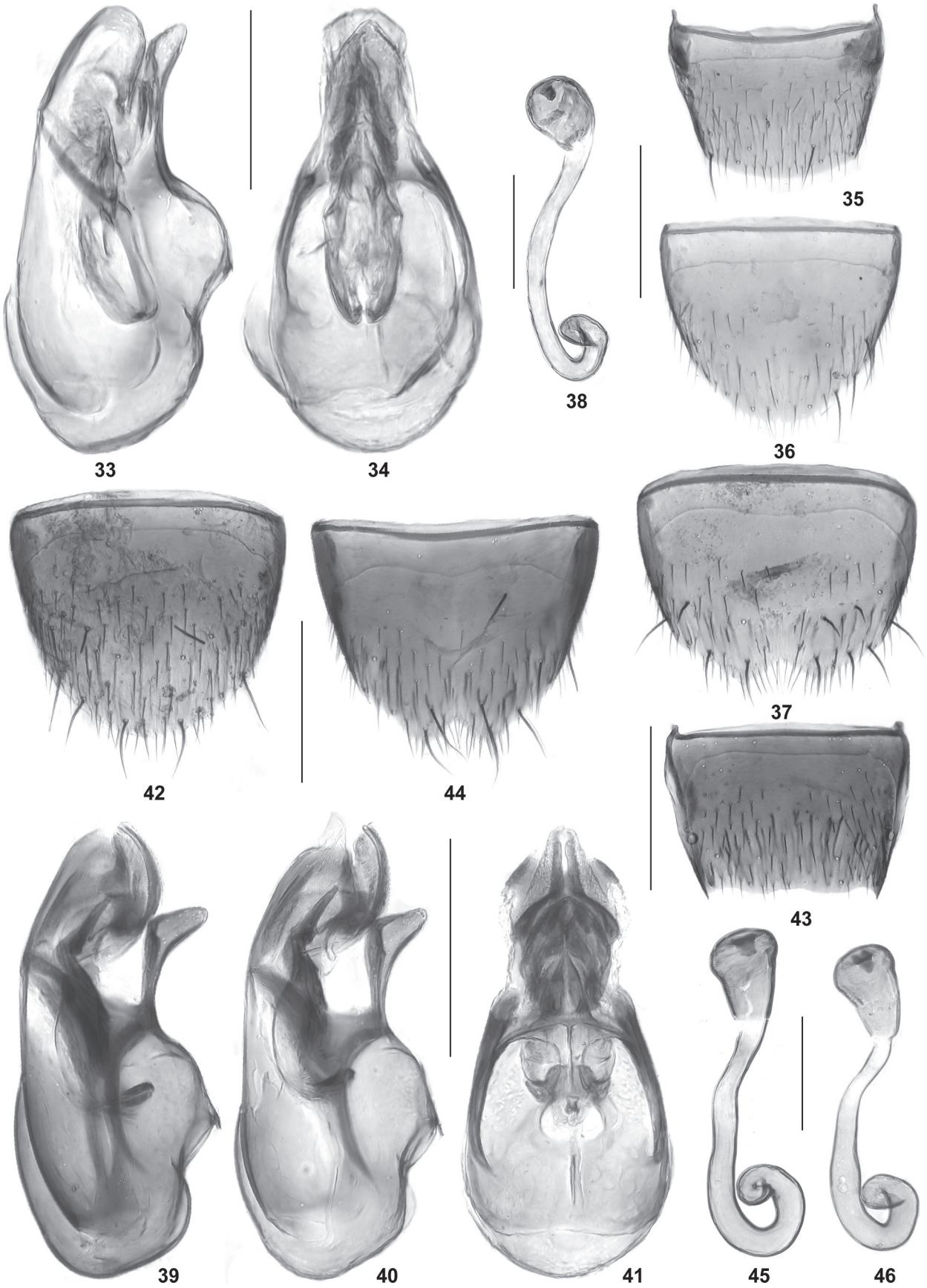
Head (Fig. 5) 1.1 times as broad as long, large in relation to pronotum; median dorsal portion impressed and with



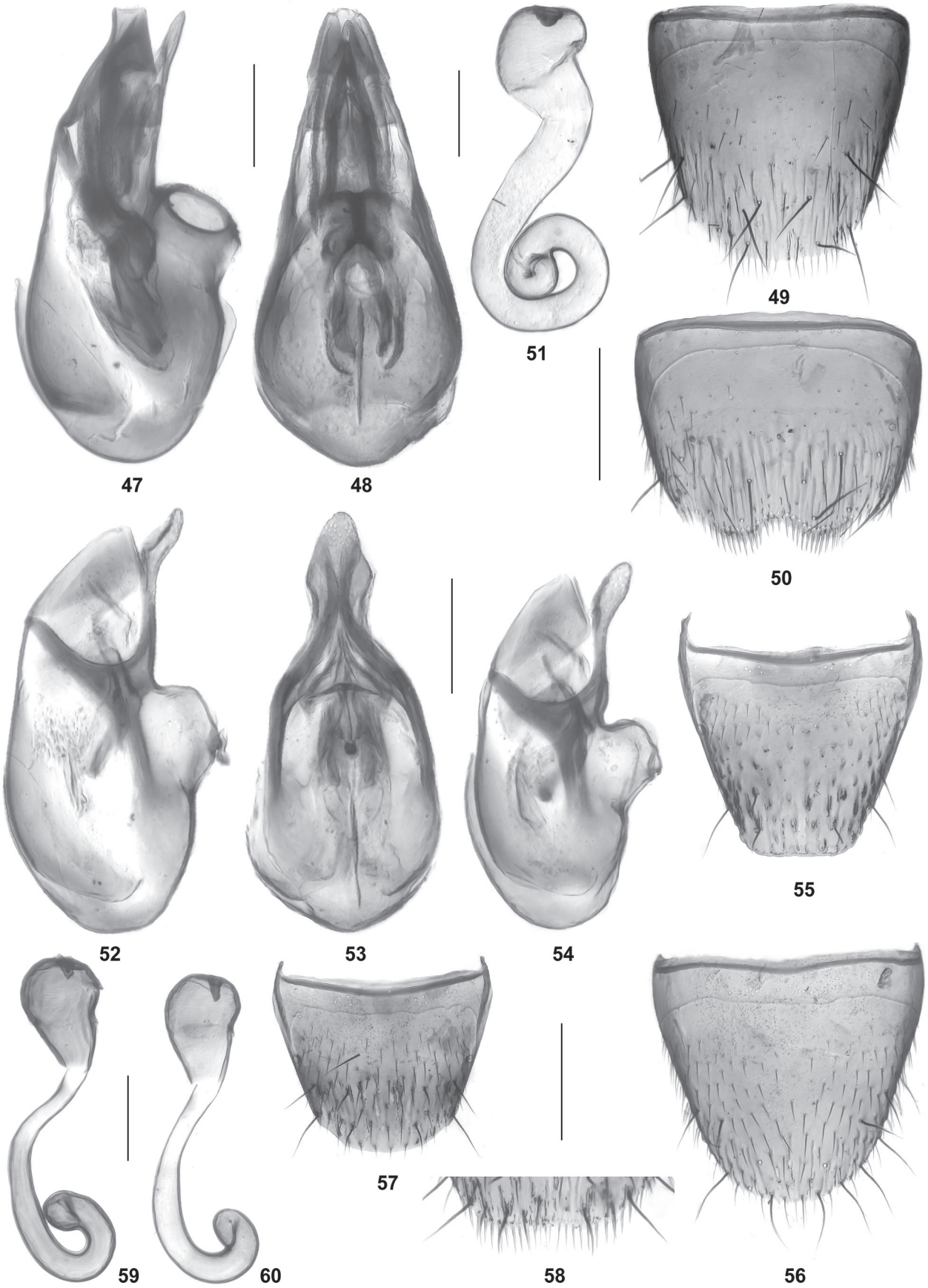
Figs 1–14: *Bellatheta qiliana* (**1–3**), *B. aucticeps* (**4–5**), *Atheta peinantamontis* (**6**), *A. clarata* (7), *A. minica* (**8**), *A. qinlingica* (**9–10**), and *A. biformis* (**11–14**; 11-12, 14: male; 13: female). 1–2, 4, 6–9, 11 – habitus; 3, 5, 10, 12–13 – forebody; 14 – abdomen. Scale bars: 1–2, 4, 6–9, 11: 1.0 mm; 3, 5, 10, 12–14: 0.5 mm.



Figs 15–32: *Bellatheta qiliana* (**15–23**), *B. aucticeps* (**24**), *Atheta miriapex* (**25–26**), and *A. peinantamontis* (**27–32**). 15–16, 27–28 – median lobe of aedeagus in lateral and in ventral view; 17, 29 – male sternite VIII; 18 – female tergite VIII; 19, 25, 30 – female sternite VIII; 20–24, 26, 31–32 – spermatheca. Scale bars: 17–19, 25, 29–30: 0.2 mm; 15–16, 20-24, 26–28, 31–32: 0.1 mm.



Figs 33–46: *Atheta clarata* (**33–38**) and *A. minica* (**39–46**). 33–34, 39–41 – median lobe of aedeagus in lateral and in ventral view; 35 – male tergite VIII; 36, 42 – male sternite VIII; 37, 44 – female sternite VIII; 38, 45–46 – spermatheca; 43 – female tergite VIII. Scale bars: 35–37, 42–44: 0.2 mm; 33–34, 38–41, 45–46: 0.1 mm.



Figs 47–60: *Atheta qinlingica* (**47–51**) and *A. biformis* (**52–60**). 47–48, 52–54 – median lobe of aedeagus in lateral and in ventral view (54: nanistic morph); 49, 56 – male sternite VIII; 50 – female sternite VIII; 51, 59–60 – spermatheca; 55 – male tergite VIII; 57 – female tergite VIII; 58 – posterior portion of female sternite VIII. Scale bars: 49–50, 55–58: 0.2 mm; 47–48, 51–54, 59–60: 0.1 mm.

pronounced microreticulation; punctation extremely fine; interstices with distinct microreticulation. Eyes small and flat, composed of eight ommatidia, situated dorso-laterally (i.e., both fully visible when viewed from above). Antennae moderately incrassate; antennomeres IV moderately transverse, V–X of increasing width and increasingly transverse, X approximately twice as broad as long.

Pronotum (Fig. 5) 1.15 times as broad as long and as broad as head, broadest in anterior half; punctation very fine, but slightly more distinct than that of head; interstices with microreticulation.

Elytra (Fig. 5) barely half as long as pronotum; punctation fine and rather sparse; interstices with pronounced microsculpture. Hind wings completely reduced.

Abdomen broader than elytra; punctation fine and rather sparse; interstices with shallow microreticulation composed of predominantly transverse meshes on anterior tergites and of isodiametric meshes on posterior tergites; posterior margin of tergite VII without palisade fringe.

♂: unknown.

♀: tergite VIII with convex posterior margin; spermatheca (Fig. 24) with coiled proximal portion and with large and deep apical cuticular invagination.

Comparative notes: *Bellatheta aucticeps* is so distinctive based on external characters alone that a description based on a female appears justified. With no males available, however, the generic assignment should be considered tentative. The new species differs from all other micropterous representatives of the genus by its conspicuously large head, the position of the eyes, pale colouration, and by the shape of the spermatheca. For illustrations of other micropterous *Bellatheta* species reported from China see Pace (2004) and Assing (2002, 2009, 2011).

Distribution and natural history: The type locality is situated in the northern Gaoligong Shan, West Yunnan (Map 1). The holotype was sifted at an altitude of approximately 3030 m.

Bellatheta granulosa (Pace, 2004)

Material examined: **China: Shaanxi**: 2 ♂♂, 3 ♀♀, SW Meixian, Qinling Shan, 34°01'31"N, 107°24'13"E, 1870 m, N-slope, secondary deciduous forest, near stream, litter and grass sifted, 26.VII.2012, leg. Assing (cAss). **Gansu**: 1 ♀, W-Qinling Shan, NW Longnan, Lazikou pass, S-side, Laolong valley, 34°08'14"N, 103°51'57"E, 2300 m, S-slope with pine and spruce forest, litter sifted, 3.VIII.2012, leg. Assing (cAss).

This macropterous species was previously known only from Gongga Shan in Sichuan (Pace 2004). The above material reveals that the species is widepread in China and represents the first records from Shaanxi and Gansu.

Genus *Atheta* Thomson, 1858, subgenus *Microdota* Mulsant & Rey, 1873

Including the four species described below and a new synonymy, 85 species of *Microdota* are currently known from China (exclusive of Hong Kong) and 13 species have been reported from Taiwan. Nineteen of the Chinese and four of the Taiwanese species are micropterous (or most likely so) (see checklist).

Checklist of micropterous *Microdota species recorded* from China and Taiwan

Species are listed alphabetically. References are sorted alphabetically and by publication year.

The literature references are abbreviated as follows: A02 = Assing (2002); A04 = Assing (2004); A06 = Assing (2006); A09 = Assing (2009); A11 = Assing (2011); App = Assing (present paper); P95 = Pace (1995); P99 = Pace (1999); P04 = Pace (2004); P11b = Pace (2011b); P16 = Pace (2016); P17 = Pace (2017).

Doubtfully micropterous species are marked with an asterisk ("*").

Species	Distribution	References
altincisa Assing, 2009	China: Yunnan: Gaoligong Shan	A09, A11
amischoides* Assing, 2009 = *wuliangensis* Pace, 2017, **syn. nov.	China: Yunnan: Wuliang Shan	A09, P16, P17, App
bicoloricornis Assing, 2009	China: Yunnan: Gaoligong Shan	A09, A11
biformis **spec. nov.**	China: Yunnan: Diancang Shan	App
clarata **spec. nov.**	China: Yunnan: Gaoligong Shan	App
detruncata Assing, 2009	China: Yunnan: Gaoligong Shan	A06, A09, App
dimorpha Assing, 2006	China: Yunnan: Baima Shan, Meili Xue Shan	A06, A09, App
elisa Assing, 2002	China: Shaanxi: Daba Shan	A02
foliacea Assing, 2006	China: Yunnan: Xue Shan	A06, A11

Species	Distribution	References
formosanorum Pace, 1995	Taiwan: Hsuehshan	P95
geostiboides Assing, 2004	China: Yunnan: Zhongdian env.	A04
**guanxianensis* Pace, 2011	China: Sichuan: Qionglai Shan, Erlang Shan	P11b
hailuogouensis Pace, 2004	China: Sichuan: Gongga Shan	App, P04
hastata Assing, 2006	China: Yunnan: Meili Xue Shan	A06
**megatheca* Pace, 2011	China: Sichuan: Daxiang Ling	P11b
minica **spec. nov.**	China: Sichuan: Songpan env.	App
miriapex Pace, 2004	China: Sichuan: Emei Shan	App, P04
peinantamontis Pace, 2009	Taiwan: Peinantashan, Alishan	App, P09
puetzi Pace, 1999	China: Shaanxi: Qinling Shan	P99
qinlingica **spec. nov.**	China: Shaanxi: Qinling Shan	App
taichungensis Pace, 1995	Taiwan: Hsuehshan	P95
taiwanensis Pace, 1995	Taiwan: Hsuehshan	P95
xueica Assing, 2006	China: Northwest Yunnan	A06

Atheta (*Microdota*) *miriapex* Pace, 2004

(Figs 25–26)

Material examined: **China: Sichuan**: 1 ♂, 2 ♀♀, 1 ex., Emei Shan, 29°33'N, 103°20'E, 2340 m, 17.VI.2010, leg. Grebennikov (CNC, cAss).

The original description is based on a unique male from Emei Shan (Pace 2004). The previously unknown female sexual characters are illustrated in Figs 25–26.

Atheta (*Microdota*) *hailuogouensis* Pace, 2004

Material examined: **China: Sichuan:** 3 ♀♀, Gongga Shan, NE-slope, 29°51'N, 102°02'E, 3170 m, 18.VI.2011, leg. Grebennikov (CNC, cAss).

This species was described based on a male and a female from Gongga Shan (Pace 2004).

Atheta (*Microdota*) *dimorpha* Assing, 2006

Material examined: **China: Yunnan:** 6 ♂♂, 8 ♀♀, 23 km SE Deqin, road G214, 28°20'N, 99°05'E, 4380 m, 12.VI.2012, leg. Grebennikov (CNC, cAss).

The original description is based on material from three localities in Deqin County, North Yunnan (Assing 2006).

Atheta (*Microdota*) *detruncata* Assing, 2006

Material examined: **China: Yunnan:** 2 ♀♀, North Gaoligong Shan, 27°47'N, 98°32'E, 3030 m, 24.V.2010, leg. Grebennikov (CNC, cAss).

This species was originally described based on three females from a locality in Gongshan County, Gaoligong Shan, North Yunnan (Assing 2006). Subsequently, another female was reported from a close locality (Assing 2009).

Atheta (*Microdota*) *amischoides* Assing, 2006

Atheta (*Microdota*) *wuliangensis* Pace, 2016: 313; unavailable name (nomen nudum).

Atheta (*Microdota*) *wuliangensis* Pace, 2017: 300; **syn. nov.**

The original description of *A. amischoides* is based on four males from Wuliang Shan, Yunnan (Assing 2009). According to the original description of *A. wuliangensis* (Pace 2016, 2017), the type material of *A. wuliangensis* was collected in the same locality, on the same date, and by the same collector. This, as well as the illustrations of the aedeagus and the habitus of *A. wuliangensis* in Pace (2016) leave no doubt that the type material of both names is conspecific. Hence the synonymy proposed above.

Atheta (*Microdota*) *peinantamontis* Pace, 2009

(Figs 6, 27–32)

Material examined: **Taiwan**: 9 ♂♂, 6 ♀♀, Chiayi Co., Alishan, road 18, km 92.5, Nat. Sc. Area, 2100 m, *Cryptomeria* litter, 11.IV.2009, leg. Vít (cAss).

The original description is based on five specimens from Kaohsiung Hsien, Peinantashan trail (Pace 2006). The above record reveals that the species is not locally endemic. The external and sexual characters of the material from Alishan is illustrated in Figs 6, 27–32.

Atheta (*Microdota*) *clarata* spec. nov.

urn:lsid:zoobank.org:act:EE3C4E47-FEAB-413A-81C7-A063529A5235

(Figs 7, 33–38)

Type material: Holotype ♂: "P.R. CHINA, Yunnan, E slope N Gaoligongshan, N27°47'22.1" E98°32'17.7", 24.v.2010, 3027 m, sifting20, V. Grebennikov / Holotypus ♂ *Atheta clarata* sp. n., det. V. Assing 2020" (CAS). Paratypes: 1 ♂, 1 ♀: same data as holotype (CNC, cAss).

Etymology: The specific epithet is the past participle of the Latin verb clarare (to tint) and alludes to the pale colouration.

Description: Body length 1.7–2.3 mm; length of forebody 0.7–0.9 mm. Habitus as in Fig. 7. Colouration: head reddish to brown; pronotum and elytra dark-yellowish to reddish; abdomen reddish to reddish-brown with tergite VI usually somewhat darker; legs yellow; antennae brown with the basal three antennomeres yellowish.

Head approximately as broad as long; punctation extremely fine; interstices with distinct microreticulation. Eyes small and flat, composed of approximately eight ommatidia. Antennae incrassate; antennomeres IV transverse, V–X of increasing width and increasingly transverse, X approximately twice as broad as long.

Pronotum 1.15–1.20 times as broad as long and 1.15–1.20 times as broad as head; punctation similar to that of head, but somewhat denser; interstices with pronounced microreticulation.

Elytra little more than half as long as pronotum; punctation extremely fine; interstices with shallow microsculpture. Hind wings completely reduced.

Abdomen broader than elytra; punctation very fine, moderately dense on anterior tergites and sparse on posterior tergites; interstices with microreticulation composed of predominantly transverse meshes on anterior tergites and of isodiametric meshes on posterior tergites; posterior margin of tergite VII without palisade fringe; tergite VIII (Fig. 35) without evident sexual dimorphism, posterior margin weakly convex.

♂: sternite VIII (Fig. 36) moderately transverse, posterior margin strongly convex; median lobe of aedeagus 0.25 mm long and shaped as in Figs 33–34.

♀: posterior margin of sternite VIII with pronounced median incision and with moderately modified setae (Fig. 37); spermatheca (Fig. 38) with long and slender proximal portion.

Comparative notes: *Atheta clarata* is distinguished from the other two pale-coloured micropterous *Microdota* species known from China, *A. geostiboides* and *A. bicoloricornis*, by the primary and secondary sexual characters and additionally as follows:

- from *A. geostiboides* by slightly smaller size, significantly shorter and darker antennae, much finer punctation on the male head, the absence of a median sulcus and less fine punctation on the less transverse pronotum, finer punctation on the elytra, the shape of the male sternite VIII (more oblong and posterior margin truncate in *A. geostiboides*), and by a much smaller aedeagus;
- from *A. bicoloricornis* by a less strongly microsculptured and consequently less matt head and pronotum, less distinctly bicoloured antennae, a less transverse pronotum, a convex posterior margin of the male tergite VIII (truncate in *A. bicoloricornis*), and by a smaller aedeagus of different shape. For illustrations of *A. geostiboides* and *A. bicoloricornis* see Assing (2004, 2009).

Distribution and natural history: The type locality is identical to that of *Bellatheta aucticeps* and situated in the northern Gaoligong Shan, West Yunnan. The type material was sifted at an altitude of approximately 3030 m.

Atheta (*Microdota*) *minica* spec. nov.

urn:lsid:zoobank.org:act:E325AF25-C1DD-441C-B7D5-AB2ACF109581

(Figs 8, 39–46)

Type material: Holotype ♂: "CHINA [22] – N-Sichuan, pass ENE Songpan, 4080 m, 32°44'54"N, 103°43'43"E, sifted, 10.VIII.2012, V. Assing / Holotypus ♂ *Atheta minica* sp. n., det. V. Assing 2020" (cAss). Paratypes: 2 ♂♂, 1 ♀: same data as holotype (cAss); 18 exs: same data, but leg. Schülke (MNB, cAss); 1 ♂: "CHINA: N-Sichuan [CH12-19], 47 km N Songpan, road S 301 km 118, N Gongangling pass, 33°03'15"N, 103°43'36"E, 3390 m, spruce forest with shrubs, litter, moss, & mushrooms sifted, 9.VIII.2012, leg. M. Schülke" (MNB); 1 ♂: "CHINA: N-Sichuan [CH12-24], 35 km NNW Songpan, 32°55'32"N, 103°25'56"E, 3600 m, moist N-slope with Salix and other shrubs, litter, grass roots & moss sifted, 11.VIII.2012, leg. M. Schülke" (MNB).

Etymology: The specific epithet is an adjective derived from Min Shan, the mountain where the type locality is situated.

Description: Body length 1.7–2.4 mm; length of forebody 0.8–1.0 mm. Habitus as in Fig. 8. Colouration: head blackish-brown to black; pronotum and elytra brown to dark-brown; abdomen black with segments III–IV reddish to brown and the apex (segments VIII–X) yellowish; legs yellow; antennae dark-brown to blackish-brown with the basal three antennomeres dark-yellow.

Head weakly transverse; punctation extremely fine, barely noticeable in the pronounced microreticulation. Eyes small and flat, composed of approximately ten ommatidia. Antennae moderately incrassate; antennomeres IV transverse, V–X of increasing width and

increasingly transverse, X approximately twice as broad as long.
Pronotum approximately 1.2 times as broad as long and 1.2 times as broad as head; punctation similar to that of head, but somewhat denser; interstices with pronounced microreticulation; pubescence directed anteriad along midline.
Elytra approximately half as long as pronotum; punctation less fine than that of head; interstices with microsculpture. Hind wings completely reduced.
Abdomen broader than elytra; punctation very fine, moderately dense on anterior tergites and sparser on posterior tergites; interstices with microreticulation composed of predominantly transverse meshes; posterior margin of tergite VII without palisade fringe; tergite VIII (Fig. 43) without evident sexual dimorphism, posterior margin weakly convex.
♂: sternite VIII (Fig. 42) weakly transverse, posterior margin strongly convex; median lobe of aedeagus 0.25–0.27 mm long and shaped as in Figs 39–41.
♀: posterior margin of sternite VIII with pronounced, V-shaped median incision and with moderately modified setae (Fig. 44); spermatheca (Figs 48–49) with long and slender proximal portion.

Comparative notes: *Atheta minica* is distinguished from other *Microdota* species by the primary and secondary sexual characters. For illustrations of micropterous consubgeners reported from China see Assing (2002, 2004, 2006, 2009, 2011) and Pace (1995, 1999, 2004).

Distribution and natural history: The species was found in three localities to the north and northwest of Songpan, Northwest Sichuan. The specimens were sifted from litter, moss, and grass roots in a slope with scree and shrubs, in a moist slope with willow and other shrubs, and in a spruce forest with shrubs at high altitudes (3390–4080 m).

Atheta (*Microdota*) *qinlingica* spec. nov.

urn:lsid:zoobank.org:act:1590B986-DE95-458C-AFE3-71CC51AB4106
(Figs 9–10, 47–51)

Type material: Holotype ♂: "CHINA [2] – S-Shaanxi, SW Meixian, Qinling Shan, 34°01'31"N, 107°24'13"E, 1870 m, 26.VII.2012, V. Assing / Holotypus ♂ *Atheta qinlingica* sp. n., det. V. Assing 2020" (cAss). Paratypes: 1 ♂, 1 ♀: "CHINA [1] – S-Shaanxi, SW Zhouzhi, Qinling Shan, 33°44'02"N, 107°58'06"E, 1900 m, 25.VII.2012, V. Assing" (cAss).

Etymology: The specific epithet is an adjective derived from Qinling Shan, the mountain range where the species was discovered.

Description: Body length 2.5–2.8 mm; length of forebody 1.0–1.2 mm. Habitus as in Fig. 9. Colouration: head blackish-brown; pronotum brown; elytra yellowish-brown; abdomen brown with the posterior margins of tergites III–VI, the posterior portion of tergite VII, and the apex (segments VIII–X) yellowish; legs yellow; antennae brown with the basal three antennomeres paler.
Head (Fig. 10) distinctly transverse; punctation dense and very fine; interstices with microreticulation. Eyes flat and of moderate size, composed of approximately 50 ommatidia. Antennae weakly incrassate; antennomeres IV approximately as long as broad, V–X of increasing width and increasingly transverse, X approximately 1.5 times as broad as long.
Pronotum (Fig. 10) approximately 1.2 times as broad as long and 1.2 times as broad as head; punctation similar to that of head, but somewhat denser; interstices with pronounced microreticulation.
Elytra (Fig. 10) 0.80–0.85 times as long as pronotum; punctation fine, but more distinct than that of head and pronotum; interstices with microsculpture. Hind wings reduced to short stubs of approximately the length of elytra.
Abdomen broader than elytra; punctation very fine, moderately dense on anterior tergites and sparser on posterior tergites; interstices with microreticulation composed of predominantly transverse meshes; posterior margin of tergite VII with narrow palisade fringe; tergite VIII without evident sexual dimorphism, posterior margin weakly convex.
♂: sternite VIII (Fig. 49) weakly transverse, posterior margin strongly convex; median lobe of aedeagus 0.47–0.48 mm long and shaped as in Figs 47–48; internal sac with sclerotized spine-shaped apical internal structures.
♀: posterior margin of sternite VIII with pronounced median incision and with a dense fringe of modified setae (Fig. 50); spermatheca (Fig. 51) rather large.

Comparative notes: Based on the similar structure of the aedeagus, the similar modifications of the female sternite VIII, and the similar general shape of the spermatheca, *Atheta qinlingica* belongs to the same species group as *A. miriapex* and *A. peinantamontis*. It is reliably distinguished from other species of this group by the shapes of the primary sexual characters. For illustrations of micropterous *Microdota* species previously reported from China see Assing (2002, 2004, 2006, 2009, 2011) and Pace (1995, 1999, 2004).

Distribution and natural history: The species was found in two localities in Qinling Shan, South Shaanxi. The specimens were sifted from litter, soil, and grass roots in moist mixed and secondary deciduous forests at altitudes of 1870–1900 m.

Atheta (*Microdota*) *biformis* spec. nov.

urn:lsid:zoobank.org:act:30A8940E-5B8A-4E27-997F-777E8FFF3E80

(Figs 11–14, 52–60)

Type material: Holotype ♂: "P.R. CHINA, Yunnan, E slope Cangshan at Dali, N25°40'14.7" E100°06'12.0", 17.v.2010, 3827 m, sifting16, V. Grebennikov / Holotypus ♂ *Atheta biformis* sp. n., det. V. Assing 2020" (CAS). Paratypes: 7 ♂♂, 26 ♀♀: same data as holotype (CNC, cAss); 9 ♂♂, 21 ♀♀: "P.R. CHINA, Yunnan, E slope Cangshan at Dali, N25°39'54.7" E100°06'04.5", 19.v.2010, 3815 m, sifting19, V. Grebennikov" (CNC, cAss); 2 ♂♂, 6 ♀♀: "P.R. CHINA, Yunnan, E slope Cangshan at Dali, N25°40.07.6" E100°06'12.9", 19.v.2010, 3887 m, sifting18, V. Grebennikov" (CNC, cAss); 3 ♂♂, 15 ♀♀: "P.R. CHINA, Yunnan, E slope Cangshan at Dali, N25°39'54.4" E100°05'53.0", 15.v.2010, 3991 m, sifting14, V. Grebennikov" (CNC, cAss); 2 ♂♂, 13 ♀♀: "P.R. CHINA, Yunnan, E slope Cangshan at Dali, N25°40'24.1" E100°05'57.6", 17.v.2010, 3806 m, sifting15, V. Grebennikov" (CNC, cAss); 8 ♂♂, 12 ♀♀: "P.R. CHINA, Yunnan, E slope Cangshan at Dali, N25°40'01.9" E100°05'45.5", 15.v.2010, 4063 m, sifting13, V. Grebennikov" (CNC, cAss): 2 ♀♀: "CHINA, Yunnan, Cang Shan at Dali, N25°40'12" E100°06'10", 3740 m, 05.vii.2011, 4063 m, sift37, V. Grebennikov" (CNC).

Etymology: The specific epithet (Latin, adjective) alludes to the pronounced sexual dimorphism of the pronotum.

Description: Body length 2.3–3.3 mm; length of forebody 1.0–1.2 mm. Habitus as in Fig. 11. Colouration: head reddish to blackish; pronotum reddish to dark-brown; elytra dark-yellow to brown; abdomen brown to blackish with the apex (segments VIII–X and posterior portion of VII) usually yellowish to reddish and often also the anterior segments somewhat paler; legs yellow; antennae brown with the basal three antennomeres yellowish.

Head (Figs 12–13) distinctly transverse; punctation moderately sparse, subject to sexual dimorphism; interstices with microreticulation. Eyes flat and rather small, composed of approximately 15 ommatidia. Antennae weakly incrassate; antennomeres IV weakly transverse, V–X of increasing width and increasingly transverse, X barely 1.5 times as broad as long.

Pronotum (Figs 12–13) 1.20–1.25 times as broad as long and 1.1–1.2 times as broad as head; punctation subject to pronounced sexual dimorphism; interstices with pronounced microreticulation.

Elytra (Figs 12–13) 0.60–0.65 times as long as pronotum; punctation dense and asperate, partly granulose; interstices with microsculpture. Hind wings completely reduced.

Abdomen (Fig. 14) broader than elytra; punctation fine, but distinct, moderately dense on anterior tergites and sparser on tergite VI; punctation of tergite VII and VIII subject to sexual dimorphism; interstices with microreticulation composed of predominantly transverse meshes; posterior margin of tergite VII with or without indistinct rudiment of a palisade fringe; tergite VIII subject to sexual dimorphism.

♂: head (Fig. 12) flattened or impressed dorsally and with sparse and distinct punctation; pronotum (Fig. 12) with conspicuously dense and coarse punctation and with pronounced microsculpture rendering the disc nearly matt; tergite VII (Fig. 14) with granulose punctation in posterior portion; tergite VIII (Figs 14, 55) with dense and coarsely granulose punctation in posterior half, posterior margin truncate; sternite VIII (Fig. 56) nearly as long as broad, posterior margin strongly convex; median lobe of aedeagus usually 0.38–0.40 mm long (see notes on intraspecific variation) and shaped as in Figs 52–54.

♀: head (Fig. 13) not flattened dorsally, with very fine punctation barely noticeable in the microsculpture; pronotum (Fig. 13) with very fine punctation and with moderately pronounced microsculpture, with subdued shine; tergite VII with fine and sparse punctation; tergite VIII (Fig. 57) with very fine punctation, posterior margin broadly convex; posterior margin of sternite VIII weakly concave and with fringe of long and moderately modified marginal setae (Fig. 58); spermatheca shaped as in Figs 59–60.

Intraspecific variation: One of the dissected males has an aedeagus of significantly smaller size (0.33 mm) (Fig. 54). This phenomenon (occasional occurrence of significantly smaller aedeagi) has been observed also in *Schistoglossa curtipennis* (Sharp, 1869) (J. Vogel, pers. comm.).

Comparative notes: *Atheta biformis* shares the conspicuous sexual dimorphism of the punctation of the head, pronotum, and apical tergites only with *A. dimorpha* (Baima Shan, Meili Xue Shan), evidently a synapomorphy suggesting that both species represent adelphotaxa. The new species is distinguished from *A. dimorpha* by larger body size, a broader habitus (head and pronotum more transverse), coarsely granulose punctation on the male tergites VII and VIII (less distinctly granulose in *A. dimorpha*), the shapes of the male tergite VIII and sternite VIII, a larger aedeagus (*A. dimorpha*: median lobe approximately 0.3 mm long) of different shape, and by the shape of the spermatheca. For illustrations of *A. dimorpha* see Assing (2006).

Distribution and natural history: The species was collected in rather larger numbers in Diancang Shan, North Yunnan, at high elevations (3740–4060 m). The sex ratio is strongly biased: only 25 % of the specimens are males.

Franzidota geostiboides (Assing, 2011), comb. nov.

Platyola geostiboides Assing, 2011: 304 ff.

In the original description of *Platyola geostiboides*, which is based on a holotype and eleven paratypes from

"China: Yunnan, Lincang Pref., Bangma Shan, 20 km NW Lincang", it was noted that the "habitus [was] somewhat unusual for *Platyola*" (Assing 2011). A revision of the type material revealed that the species in fact belongs to *Franzidota* Pace, 1982, a genus recently moved to the subtribe Meoticina of the Oxypodini (Assing 2020).

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