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New species and additional records of Homalotini, Athetini, Pygostenini, and Lomechusini from Yunnan, China (Coleoptera: Staphylinidae: Aleocharinae)

V. ASSING

A b s t r a c t : Eight species are described and illustrated, based on type material from Yunnan: *Chinecallicerus serratus* nov.sp., *Tropimenelytron schuelkei* nov.sp., *Atheta (Microdota) bicoloricornis* nov.sp., *A. (M.) altincisa* nov.sp., *A. (M.) excaecata* nov.sp., *A. (M.) amischoides* nov.sp., *Doryloxenus yunnanus* nov.sp., and *Zyras (Termidonia) sexcuspidatus* nov.sp. Additional records of Aleocharinae from Yunnan are reported. A key to the known species of *Chinecallicerus* ASSING is provided.

Key words : Coleoptera, Staphylinidae, Aleocharinae, Homalotini, Athetini, Pygostenini, Lomechusini, Palaearctic region, China, Yunnan, taxonomy, new species, key to species, new records.

Introduction

Until recently, the Staphylinidae of China had received relatively little attention. This is particularly true of the Aleocharinae, the most speciose of all staphylinid subfamilies. However, particularly owing to increased collecting activity, numerous species have been described in the past two decades (e.g., ASSING 2006a, 2006b; PACE 1998a-c, 1999b, 2004a-b). Except for some genera such as *Leptusa* KRAATZ 1856, which have been treated comprehensively (see ASSING 2008 and references therein), most of the recent descriptions have been published in an additive manner and are contained in works treating a great diversity of taxa. In addition, numerous species have been described exclusively from females, even in genera where a reliable interpretation of names and species is possible only based on the male sexual characters. As a consequence, an identification of aleocharines from China has become somewhat problematic particularly with speciose genera, and often an examination of types and direct comparison are indispensable.

The present paper is primarily based on material collected in Yunnan in summer 2007 by Michael Schülke (Berlin) and Andreas Pütz (Eisenhüttenstadt). In order to avoid descriptions making identification efforts even more difficult, the focus is on species that are either very likely to have restricted distributions, which refer to genera comprising only few species, and/or which are identified by highly distinctive external and sexual characters.

Material and methods

The material referred to in this study is deposited in the following public and private collections:

MHNG Muséum d'histoire naturelle Genève (G. Cuccodoro)
 cAss..... author's private collection
 cPüt private collection Andreas Pütz, Eisenhüttenstadt
 cSch..... private collection Michael Schülke, Berlin

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena) with a drawing tube. For the photographs a digital camera (Nikon Coolpix 995) was used.

Head length was measured from the anterior margin of the clypeus to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and aedeagus length from the base of the capsule to the apex of the ventral process.

New species and additional records

Linoglossa chinensis PACE 1998

Type material examined: Holotype ♀: China, Sichuan, Gongga Shan, above Camp 2, 2800 m, 25.VII.1994, A. Smetana [C21] / *Linoglossa chinensis* m., det. R. Pace 1996 / *Linoglossa chinensis* sp.n., det. R. Pace 1996 (MHNG).

Additional material examined: China, Yunnan: 6 exs. [partly teneral], Dali Bai Auton. Pref., Diancang Shan W Dali, 25°41'N, 100°07'E, 3000-3200 m, creek valley in mixed forest, slope with moss, 27.V.2007, leg. Pütz, Wrase (cSch, cAss); 1 ex., Nujiang Lisu Auton. Pref., Gaoligong Shan, valley 18 km W Gongshan, 27°48'N, 98°30'E, 3020 m, mixed forest, litter, wood, and moss sifted, 7.VI.2007, leg. Schülke (cAss).

Comment: The original description of this species is based on a single female from Gongga Shan, Sichuan (PACE 1998a). PACE (2004a) later recorded a male from the same locality. The recently collected specimens listed above represent the first records from Yunnan.

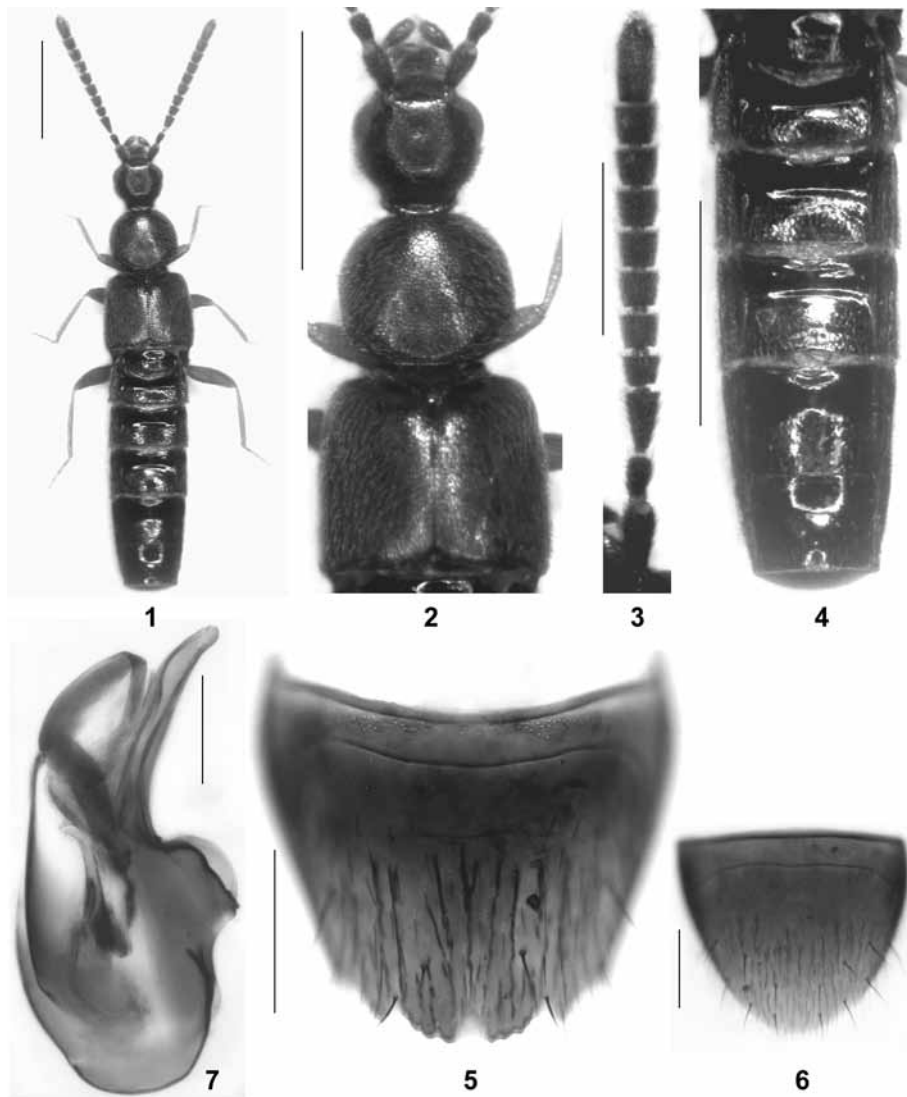
Chinecallicerus serratus nov.sp. (Figs 1-7)

Holotype ♂: China: Yunnan prov., Dali env., Cang Shan Mts., 13.VI.2007, E slope of Zhonghe Shan Mt., 25°41.2'N, 100°07.9'E, 2650 m, J. Hájek & J. Růžicka leg. [Ch23] / individually collected on soil surface and on plants and shrubs, mixed forest (with *Pinus* and *Rhododendron*) / Holotypus ♂ *Chinecallicerus serratus* sp.n. det. V. Assing 2008 (cAss).

Description: 4.9 mm. Habitus as in Fig. 1. Coloration: head (including antennae), pronotum, and abdomen blackish-brown to blackish; elytra dark-brown; legs brown.

Head approximately 1.05 times as wide as long; integument with distinct microreticulation and with dense, but extremely fine, barely noticeable punctation. Eyes large and bulging, approximately as long as postocular region in dorsal view (Fig. 2). Antennae massive, approximately 1.7 mm long; antennomere III of conical shape and much larger

and longer than II; IV weakly transverse; V-X of subequal width, slightly wider than IV, and approximately as long as wide; XI approximately as long as the combined length of IX and X (Fig. 3).



Figs 1-7: *Chinecallicerus serratus* nov.sp.: (1) habitus; (2) forebody; (3) antenna; (4) male abdominal segments III-VII; (5) male tergite VIII; (6) male sternite VIII; (7) median lobe of aedeagus in lateral view. Scale bars: 1-2, 4: 1.0 mm; 3: 0.5 mm; 5-6: 0.2 mm; 7: 0.1 mm.

Pronotum approximately 1.15 times as wide as long and 1.3 times as wide as head;

maximal width in anterior half; posterior angles moderately marked; punctation dense and fine, but somewhat more distinct than that of head (Fig. 2); pubescence of midline directed caudad; microreticulation present everywhere, but less pronounced than that of head.

Elytra approximately 1.3 times as wide and at suture about as long as pronotum; punctation dense and more pronounced than that of pronotum; microsculpture indistinct (Fig. 2). Hind wings present. Legs long and slender; metatarsomere I slightly longer than II.

Abdomen at base almost 0.9 times as wide as elytra, weakly tapering posteriad; punctation of tergites III-IV moderately dense, that of tergites V-VI sparse; tergite VII only in posterior half with some fine scattered punctures; tergal surfaces without microsculpture and with pronounced shine; tergites VII and VIII with sexual dimorphism, posterior margin of tergite VII with pronounced palisade fringe (Fig. 4).

♂: tergite VII in posterior half (at some distance from posterior margin) with smooth median tubercle (Fig. 4); tergite VIII posteriorly of distinctive shape (Fig. 5); sternite VIII with strongly convex posterior margin (Fig. 6); median lobe of aedeagus as in Fig. 7.

♀: unknown.

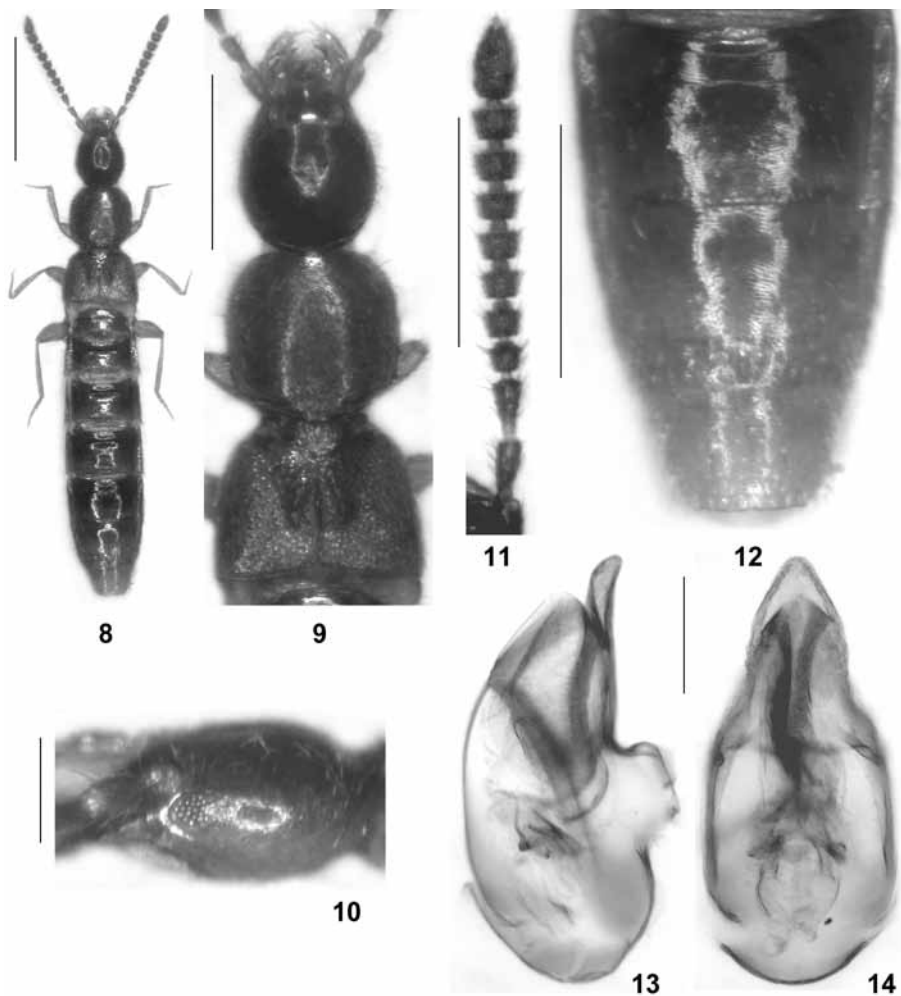
E t y m o l o g y : The name (Latin, adjective) refers to the distinctive shape of the male tergite VIII.

C o m p a r a t i v e n o t e s : Previously, three species of *Chinecallicerus* ASSING were known, all of them from northern Yunnan, too. In the following key to the known species of the genus, references to illustrations in previously published articles are abbreviated as follows: A04b = Assing (2004b); A06b = ASSING 2006b.

- 1 Large species, length of body 6.5-7.0 mm. Antennae gradually incrassate, antennomere V distinctly narrower than X (Fig. A06b: 15). Punctuation of abdomen conspicuously sparse (Fig. A06b: 19). ♂: tergites III and IV with distinct tubercle (Figs A06b: 18-19); tergite VII with U-shaped elevation (Fig. A06b: 20); median lobe of aedeagus approximately 0.7 mm long (Figs A06b: 23-24). ♀: spermatheca as in Fig. A06b: 27 *C. wrasei* ASSING
- Smaller species, length of body < 5.5 mm. Antennomeres V-X of subequal width, V not distinctly narrower than X. Punctuation of anterior abdominal tergites moderately dense. ♂: tergites III and IV unmodified; tergite VII with tubercle of different shape; median lobe of aedeagus much smaller, < 0.6 mm (but note that the ♂ of *C. schuelkei* is unknown) 2
- 2 Coloration paler: anterior abdominal segments, abdominal apex, and antennae yellowish brown to reddish brown. Eyes weakly bulging and smaller, distinctly shorter than postocular region in dorsal view. Elytra with granulose punctation and weak longitudinal elevation on either side of suture (Fig. A04b: 8). ♀: spermatheca as in Fig. A04b: 13 *C. schuelkei* ASSING
- Coloration darker: abdomen and antennae blackish brown to blackish. Eyes bulging and larger, approximately as long as postocular region in dorsal view. Elytra with fine, not distinctly granulose punctation 3
- 3 Antennae longer, antennomere IV approximately as long as wide, V-X oblong (Fig. A06b: 3). Elytra at suture distinctly longer than pronotum. Coloration of legs dark yellowish. Abdominal tergite VII with sparse punctation also in anterior half. ♂: posterior margin of tergite VIII produced in the middle and somewhat truncate, but not distinctly serrate (Fig. A06b: 8); median lobe of aedeagus 0.53 mm long, shaped as in Figs A06b: 10-11 *C. laevigatus* ASSING

- Antennae shorter, antennomere IV wider than long, V-X approximately as long as wide (Fig. 3). Elytra at suture approximately as long as pronotum (Fig. 2). Coloration of legs brown. Abdominal tergite VII virtually impunctate in anterior half (Fig. 4). ♂: posterior margin of tergite VIII serrate (Fig. 5); median lobe of aedeagus smaller, 0.44 mm long, and shaped as in Fig. 7 *C. serratus* nov.sp.

Distribution and bionomics: Like the other species of *Chinecallicerus*, *C. serratus* is known only from its type locality, which is situated in the Cang Shan near Dali, northern Yunnan. The holotype was discovered by hand collecting in a mixed forest at an altitude of 2650 m.



Figs 8-14: *Tropimenelytron schuelkei* nov.sp.: (8) habitus; (9) forebody; (10) head in lateral view; (11) antenna; (12) male abdominal segments VI-VIII; (13-14) median lobe of aedeagus in lateral and in ventral view. Scale bars: 8: 1.0 mm; 9, 11-12: 0.5 mm; 10: 0.2 mm; 13-14: 0.1 mm.

***Tropimenelytron schuelkei* nov.sp. (Figs 8-14)**

Holotype ♂: China: Yunnan [CH07-08], Dali Bai Auton. Pref., Diancang Shan 43 km NW Dali, 3078 m, 25°59'35"N, 99°52'06"E, W pass, Rhodod., oaks [sic], bamboo, sifted, 29.V.2007, M. Schülke / Holotypus ♂ *Tropimenelytron schuelkei* sp.n. det. V. Assing 2007 (cAss).

Description: 3.9 mm. Habitus as in Fig. 8. Coloration: head dark-brown; pronotum reddish-brown; elytra yellowish-brown; abdomen reddish-brown, with the anterior 3/4 of segment VI slightly darker; legs yellowish; antennae dark-brown, with the basal 3 antennomeres yellowish brown.

Head oblong and of ovoid shape, 1.15 times as long as wide; punctation extremely fine, barely noticeable; surface with distinct microreticulation and subdued shine. Eyes small, not projecting from lateral contours of head, approximately 1/3 the length of postocular region in dorsal view (Figs 9-10). Antennae gradually incrassate apically, antennomere X approximately 1.5 times as wide as long (Fig. 11).

Pronotum approximately as wide as long and 1.3 times as wide as head; maximal width in anterior half; posterior angles weakly marked (Fig. 9); punctation fine; microreticulation similar to that of head.

Elytra short and distinctly dilated posteriad, approximately 1.2 times as wide and at suture 0.60 times as long as pronotum; humeral angles weakly marked (Fig. 9); punctation dense and very fine; microreticulation more pronounced than that of head and pronotum. Hind wings reduced. Metatarsomere I slightly longer than II.

Abdomen approximately as wide as elytra, widest at segments V/VI; tergites III-V anteriorly with shallow impression; punctation very fine, sparse on tergites III-V and VIII, extremely sparse on tergites VI-VII; posterior margin of tergite VII without palisade fringe.

♂: elytra with pair of posteriorly diverging oblong elevations (Fig. 9); abdominal tergites III-VI without tubercles; tergite VII at posterior margin with small median tubercle and with several small granula on either side of tubercle; posterior margin of tergite VIII truncate and weakly serrate (Fig. 12); posterior margin of sternite VIII convex; median lobe of aedeagus as in Figs 13-14.

♀: unknown.

Etymology: The species is dedicated to my friend and colleague Michael Schülke, who collected the holotype.

Comparative notes and systematics: The genus *Tropimenelytron* was described by PACE (1983), who attributed it to Scheerpeltz, although the latter had not provided a valid description. Several years later, PACE (1991) regarded *Tropimenelytron* as a subgenus of *Pelioptera* KRAATZ 1857, based on the similar morphology of the ligula and of the ventral aspect of the thorax. GUSAROV (2002) examined the type species and additional representatives of both *Pelioptera* and *Tropimenelytron*, and reinstated the latter as a distinct genus, a concept tentatively proposed already by ASSING (2000).

According to SMETANA (2004), five species of *Tropimenelytron* were previously known from China (*T. eremita* (PACE 1998), *T. kowloonense* (PACE 1998), *T. lii* (PACE 1998), *T. viaticum* (PACE 1998)) and Taiwan (*T. pacei* (SMETANA 2004)). From the four species recorded from mainland China, *T. schuelkei* is readily separated by external characters alone (much shorter elytra, reduced hind wings, smaller eyes, a more slender head, and

paler coloration). From the brachypterous, microphthalmous, and pale-coloured *T. pacei* from Taiwan, the new species is distinguished by larger size (*T. pacei*: 2.7 mm), larger eyes (in *T. pacei* composed of approximately 15 ommatidia), the much larger and differently shaped elevations on the male elytra, the different modifications of the male tergite VII, and by the slightly different shape of the median lobe of the aedeagus. For illustrations of the four species from the Chinese mainland see PACE (1998c). *Tropimenelytron pacei* is figured (as *Geostibida smetanai*) by PACE (1998b).

Distribution and bionomics: The type locality is situated in the Gaoligong Shan, to the west of Gongshan in western Yunnan province. The adaptive reductions of the eyes, wings, and pigmentation, as well as the altitude of the type locality suggest that the distribution of the species is probably restricted. The holotype was sifted in a mixed forest at an altitude of 3020 m.

***Atheta (Microdota) detruncata* ASSING 2006**

Material examined: China: 1♀, Yunnan, Nujiang Lisu Aut. Pref., Gaoligong Shan, valley 18 km W Gongshan, 27°48'N, 98°30'E, 3020 m, mixed forest, litter, wood, and moss sifted, 7.VI.2007, leg. Wrase (cSch).

Comment: The original description of this recently described species is based on three females (ASSING 2006a). The above locality is not far from the type locality.

***Atheta (Microdota) dimorpha* ASSING 2006**

Remarks: While comparing the new species described in the following sections with the descriptions of *Microdota* species in ASSING (2006a), I became aware of the fact that a significant part of the description of *A. dimorpha* in the original manuscript had mysteriously disappeared during the publishing process; this omission evidently escaped my attention when correcting the proofs. Therefore, a full redescription is here provided; the figure references refer to illustrations in ASSING (2006a).

Redescription: 2.1-2.6 mm. Habitus as in figure 27. Coloration: head and pronotum brown to blackish-brown, with the head usually slightly darker than pronotum; elytra brown; abdomen blackish-brown, with the apex (posterior margin of segment VII, segments VIII-X) distinctly paler, yellowish; legs yellowish-brown; antennae dark-brown, with the basal 3-4 antennomeres yellowish to yellowish-brown.

Head with sexual dimorphism, of suborbicular shape (figures 28-29); eyes very small, composed only of approximately 10 ommatidia (figure 30), not protruding from lateral outline of head, less than 1/4 the length of postocular region in dorsal view; integument with distinct microreticulation; punctation sparse, fine, and very shallow, barely noticeable. Antenna distinctly incrassate apically (figure 31); antennomere III distinctly shorter than II; IV moderately transverse; V-X of increasing width and increasingly transverse; X approximately twice as wide as long.

Pronotum, with conspicuous sexual dimorphism, small, approximately 1.1 times as wide as long and 1.05-1.10 times as wide as head (figures 28-29); maximal width in anterior half; pubescence of midline directed cephalad; microsculpture distinct.

Elytra slightly wider than and at suture approximately 0.6 times as long as pronotum (figures 28-29); microreticulation less distinct than that of head and pronotum; punctation very fine and relatively sparse. Hind wings reduced.

Abdomen approximately 1.2 times as wide as elytra, maximal width at segment V (figure 27); punctuation fine and relatively sparse; microreticulation distinct; posterior margin of tergite VII without palisade fringe.

♂: head more or less depressed dorsally; pronotum with very pronounced microsculpture, matt, and with conspicuously granulose punctuation (figure 28); tergite VII broadly concave posteriorly; posterior margin of tergite VIII weakly concave in the middle (figure 45); sternite VIII much longer than tergite VIII, its posterior margin strongly convex (figure 46); median lobe of aedeagus of very distinctive shape (figures 32-34); apical lobe of paramere shaped as in figure 35, with three relatively short setae.

♀: head not depressed; pronotum with weaker microsculpture and with very fine punctuation (figure 29); posterior margin of tergite VII more weakly concave; tergite VIII with almost truncate posterior margin (figure 47); sternite VIII slightly longer than tergite VIII, its posterior margin in the middle weakly concave and with long modified marginal setae (figure 48); spermatheca as in figure 36.

***Atheta (Microdota) bicoloricornis* nov.sp. (Figs 15-23)**

Holotype ♂: China: Yunnan [CH07-27], Nujiang Lisu Aut. Pref., Gaoligong Shan, creek valley 20 km NW Liuku, 25°58'49"N, 98°41'48"E, 3000 m, bamboo, shrubs, litter sifted, 9.VI.2007, M. Schülke / Holotypus ♂ *Atheta bicoloricornis* sp.n. det. V. Assing 2007 (cAss).

Description: 2.2 mm. Habitus as in Fig. 15. Coloration: body pale reddish, with the head slightly darker; legs yellowish; antennae bicoloured, with the basal 3 antennomeres yellowish, sharply contrasting with the dark brown apical portion (antennomeres IV-XI).

Head of subcircular shape, 1.05 times as long as wide (Fig. 16); punctuation extremely fine, barely noticeable; surface with distinct microreticulation and almost matt. Eyes small (Fig. 17), not projecting from lateral contours of head, approximately 1/4 the length of postocular region in dorsal view. Antennae gradually and distinctly incrassate apically, antennomere X more than twice as wide as long (Fig. 18).

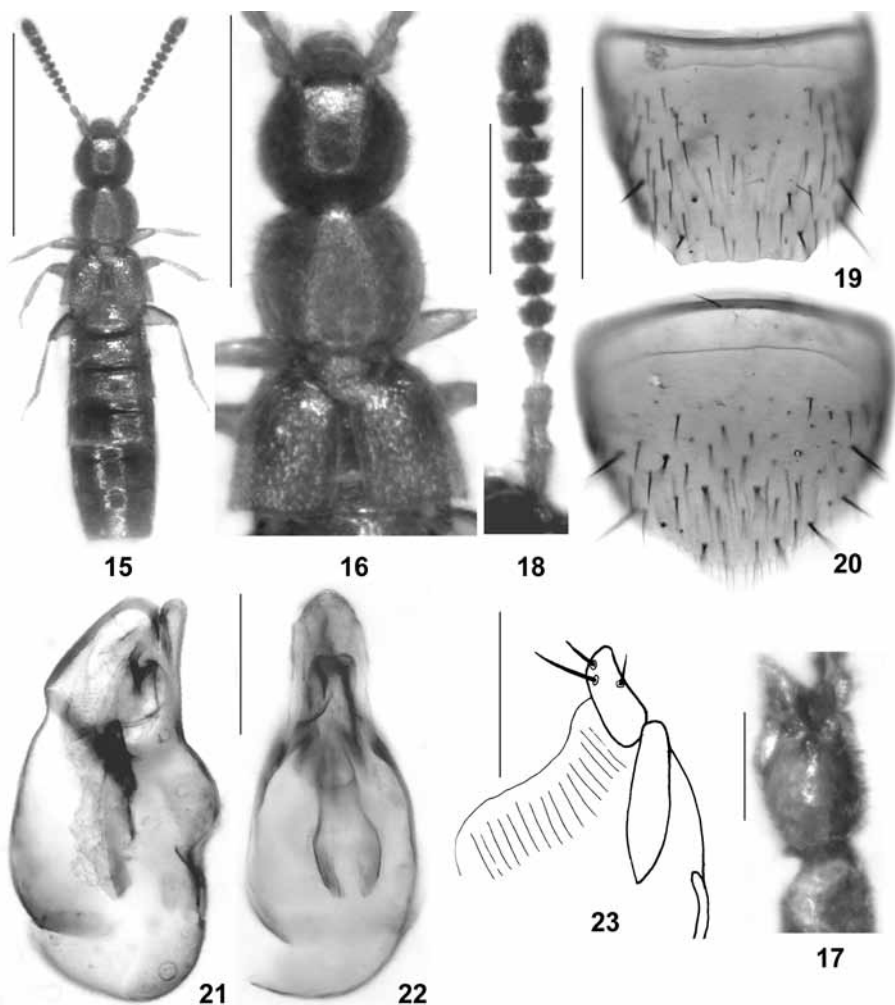
Pronotum approximately 1.15 times as wide as long and 1.15 times as wide as head; maximal width in anterior half; posterior angles weakly marked, rounded (Fig. 16); punctuation and microreticulation similar to those of head; pubescence of midline unclear (somewhat disturbed in the holotype).

Elytra short, at suture approximately 0.6 times as long as pronotum (Fig. 16); punctuation dense and fine, much more distinct than that of head and pronotum; microsculpture indistinct, interstices shiny. Hind wings completely reduced. Metatarsomere I short, very slightly longer than II.

Abdomen slightly wider than elytra, widest at segment V; tergites III-V anteriorly with shallow impression; punctuation very fine, moderately dense on tergite III, decreasing in density from tergites IV-VI, and very sparse on tergite VII; microsculpture very shallow on anterior tergites, distinct on posterior tergites; posterior margin of tergite VII with very narrow, barely noticeable rudiment of a palisade fringe.

♂: posterior margin of tergite VIII distinctly truncate in the middle (Fig. 19); sternite VIII somewhat longer than tergite VIII, its posterior margin strongly convex (Fig. 20); median lobe of aedeagus relatively small, 0.29 mm long (Figs 21-22); apical lobe of paramere as in Fig. 23.

♀: unknown.



Figs 15-23: *Atheta bicoloricornis* nov.sp.: (15) habitus; (16) forebody; (17) head in lateral view; (18) antenna; (19) male tergite VIII; (20) male sternite VIII; (21-22) median lobe of aedeagus in lateral and in ventral view; (23) apical portion of paramere. Scale bars: 15: 1.0 mm; 16: 0.5 mm; 17-20: 0.2 mm; 21-22: 0.1 mm; 23: 0.05 mm.

E t y m o l o g y : The name refers to the conspicuous coloration of the antennae, the dark coloration of the apical part distinctly contrasting with that of the remainder of the body.

C o m p a r a t i v e n o t e s : Previously, only eight micropterous *Microdota* species were known from China, six from northern Yunnan and two from Shaanxi (ASSING 2002, 2004a, 2006; PACE 1999a); only one of them is of similarly pale coloration: *A. geostiboides* ASSING from northern Yunnan. From this species, *A. bicoloricornis* is distinguished by the distinctly bicolored and more strongly incrassate antennae with much more transverse preapical antennomeres, the paler abdomen (in *A. geostiboides* distinctly darker than the pronotum and the elytra), the less transverse pronotum, the absence of distinct microsculpture on the elytra, the different shape of the male sternite VIII (in *A. geostiboides* strongly elongated), the different morphology of the median lobe of the aedeagus, and by the completely different shape of the apical lobe of the paramere. For figures illustrating the external and sexual characters of *A. geostiboides* see ASSING (2004a); for illustrations of the other micropterous *Microdota* species known from China see ASSING (2002, 2006a) and PACE (1999a).

D i s t r i b u t i o n a n d b i o n o m i c s : The type locality is situated in the Gaoligong Shan, to the northwest of Liuku in western Yunnan province. As can be inferred from the adaptive reductions of pigmentation, eye size, and wings, as well as from the altitude (3000 m) of the type locality, the distribution of the species is probably restricted. The holotype was sifted from litter beneath bamboo and shrubs.

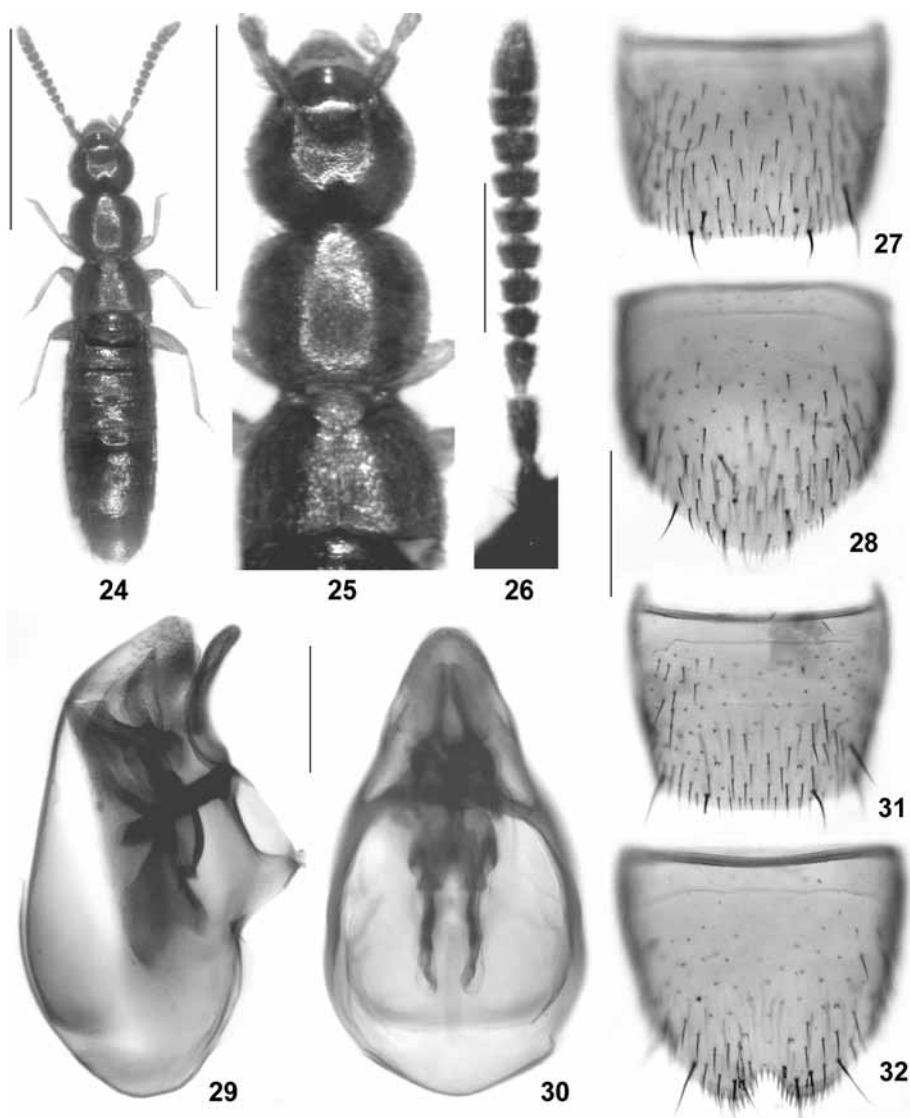
***Atheta (Microdota) altincisa* nov.sp. (Figs 24-36)**

Holotype ♂: China: Yunnan [CH07-28], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley 19 km NW Liuku, 25°59'02"N, 98°42'23"E, 2730 m, devast. prim. for., litter sifted, 10.VI.2007, M. Schülke / Holotypus ♂ *Atheta altincisa* sp.n. det. V. Assing 2007 (cAss). Paratypes: 5 exs.: same data as holotype, but "[CH07-28A]... 10.VI.2007" (cSch, cAss); 2 exs.: same data as holotype, but "9./10.VI.2007... D.W. Wrase" (cSch, cAss); 2 exs.: same data as holotype, but leg. A. Pütz (cPüt, cAss).

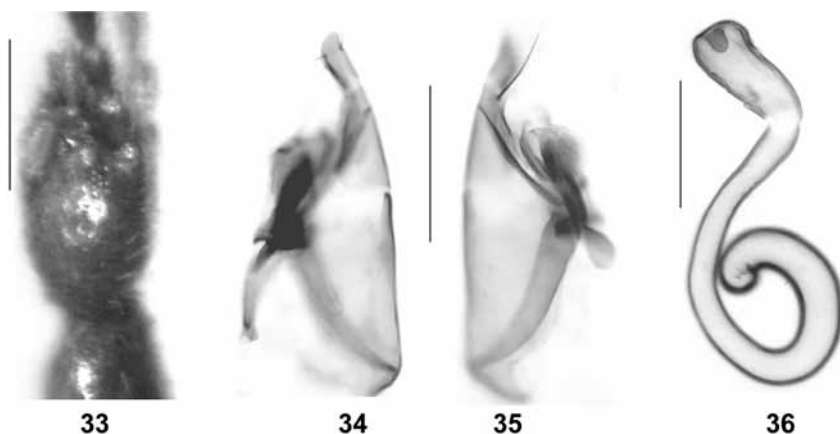
D e s c r i p t i o n : 2.2-2.5 mm. Habitus as in Fig. 24. Coloration: body yellowish-brown to reddish-brown, occasionally with abdominal segment VI and adjacent parts of segments V and VII slightly darker; legs yellowish; antennae brown, with the basal 2-3 antennomeres yellowish to yellowish-brown.

Head slightly wedge-shaped, approximately as wide as long or weakly transverse (Fig. 25); punctation rather sparse and extremely fine, barely noticeable; surface with distinct microreticulation and with weak shine. Eyes small (Fig. 33), not projecting from lateral contours of head, approximately 1/5-1/4 the length of postocular region in dorsal view. Antennae gradually and distinctly incrassate apically, antennomere X approximately twice as wide as long (Fig. 26).

Pronotum approximately 1.20-1.25 times as wide as long and 1.15-1.20 times as wide as head (Fig. 25); maximal width in anterior half; posterior angles weakly marked, rounded; punctation and microreticulation similar to those of head; pubescence of midline directed cephalad.



Figs 24-32: *Atheta altincisa* nov.sp.: (24) habitus; (25) forebody; (26) antenna; (27) male tergite VIII; (28) male sternite VIII; (29-30) median lobe of aedeagus in lateral and in ventral view; (31) female tergite VIII; (32) female sternite VIII. Scale bars: 24: 1.0 mm; 25: 0.5 mm; 26-28, 31-32: 0.2 mm; 29-30: 0.1 mm.



Figs 33-36: *Atheta altincisa* nov.sp.: (33) head in lateral view; (34-35) paramere; (36) spermatheca. Scale bars: 33-35: 0.2 mm; 36: 0.1 mm.

Elytra 1.05-1.10 times as wide and at suture approximately 0.55 times as long as pronotum (Fig. 25); punctation dense and fine, but more distinct than that of head and pronotum; microsculpture shallow, interstices somewhat shiny. Hind wings completely reduced. Metatarsomere I short, approximately as long as II.

Abdomen approximately 1.15 times as wide as elytra, widest at segment V; tergites III-V anteriorly with shallow impression; punctation very fine, moderately dense on tergite III, decreasing in density from tergites IV-VI, and very sparse on tergite VII; microsculpture very shallow on anterior tergites, distinct on posterior tergites; posterior margin of tergite VII with very narrow, barely noticeable rudiment of a palisade fringe; tergite VIII without apparent sexual dimorphism (Figs 27, 31).

♂: head in dorsal median area depressed or very weakly impressed (Fig. 25); sternite VIII distinctly longer than tergite VIII, posteriorly distinctly projecting (Fig. 28); median lobe of aedeagus shaped as in Figs 29-30, internal sac with rather large and distinctly sclerotised internal structures; paramere as in Figs 34-35.

♀: median dorsal area of head not depressed or impressed; sternite VIII somewhat longer than tergite VIII, middle of posterior margin deeply incised and densely furnished with yellowish stout modified setae (Fig. 32); spermatheca as in Fig. 36.

E t y m o l o g y : The name (Latin, adjective) is composed of the adjectives *alta* (deep) and *incisa*, and refers to the conspicuous posterior incision of the female sternite VIII.

C o m p a r a t i v e n o t e s : Among its consubgenera known from China, *A. altincisa* is similar in external characters (pale coloration, small eyes, reduced elytra and hind wings) only to *A. geostiboides* and *A. bicoloricornis*. From the former it is distinguished by the apically more distinctly incrassate antennae with more transverse preapical antennomeres, the completely different shape of the male sternite VIII, by the different shape of the aedeagus, the much more strongly sclerotised and differently shaped internal structures of the aedeagus, the different shape of the paramere, especially of the apical lobe, as well as the different shape and chaetotaxy of the female sternite VIII.

(posterior margin in *A. geostiboides* only shallowly concave in the middle and with less dense and less stout modified setae), and the different shape of the spermatheca. From *A. bicoloricornis*, it is separated by a broader body, the distinctly paler coloration of the antennomeres IV-XI, by the depressed or impressed median dorsal area of the male head, by the unmodified male tergite VIII, and by the completely different male primary sexual characters. For illustrations of *A. geostiboides* and *A. bicoloricornis* see ASSING (2004a) and Figs 15-23, respectively.

Distribution and bionomics: The type locality is situated in the Gaoligong Shan, to the northwest of Liuku in western Yunnan province. As can be inferred from the adaptive reductions of pigmentation, eye size, and wings, as well as from the altitude (2730 m) of the type locality, the distribution of the species is probably restricted. The type specimens were sifted from litter in a degraded primary forest.

***Atheta (Microdota) excaecata* nov.sp. (Figs 37-41)**

Holotype ♀: China: Yunnan [CH07-26], Nujiang Lisu Aut. Pref., Gaoligong Shan, pass 21 km NW Liuku, 3150 m, 25°58'22"N, 98°41'00"E, bamboo with shrubs, litter sifted, 9.VI.2007, M. Schülke / Holotypus ♀ *Atheta excaecata* sp.n. det. V. Assing 2007 (cAss).

Description: 2.6 mm. Habitus as in Fig. 37. Coloration of whole body uniformly yellowish to yellowish-brown.

Head slightly wedge-shaped, approximately as wide as long (Fig. 38); punctation rather sparse and extremely fine, barely noticeable; surface with distinct microreticulation and with moderate shine. Eyes strongly reduced (Fig. 39), composed of only approximately 4 ommatidia, not projecting from lateral contours of head, approximately 1/6 the length of postocular region in dorsal view. Antennae gradually and distinctly incrassate apically, antennomere X approximately twice as wide as long (Fig. 40).

Pronotum slender, approximately 1.10 times as wide as long and 1.15 times as wide as head; maximal width in anterior half; posterior angles weakly marked, rounded (Fig. 38); punctation and microsculpture slightly more distinct than those of head; pubescence of midline unclear (somewhat disturbed in holotype).

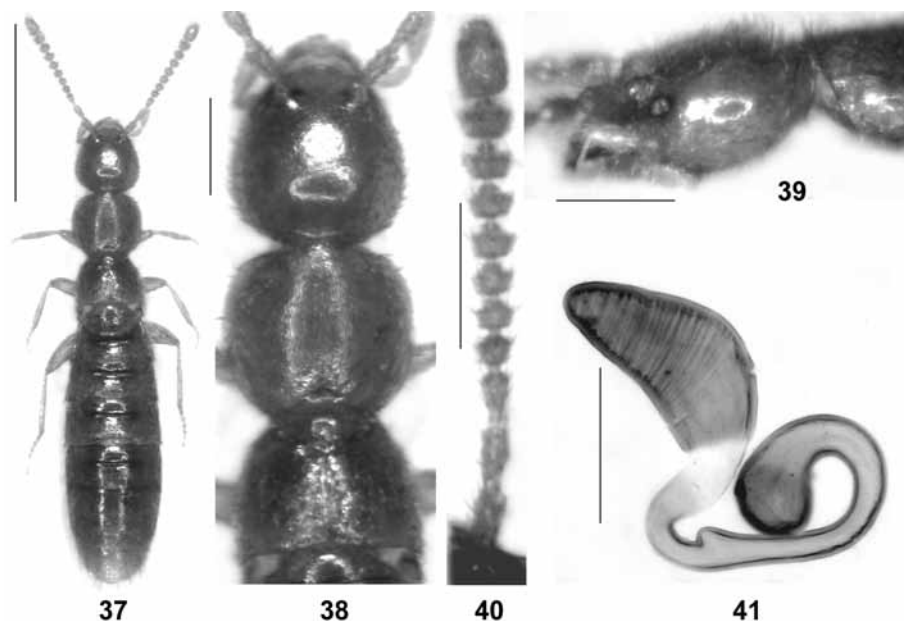
Elytra reduced, slightly narrower than and at suture approximately 0.5 times as long as pronotum (Fig. 38); punctation sparse and very fine, slightly more distinct than that of pronotum; microsculpture absent, interstices shiny. Hind wings completely reduced. Metatarsomere I short, approximately as long as II.

Abdomen conspicuously large in relation to forebody (Fig. 37), approximately 1.4 times as wide as elytra, widest at segment V; tergites III-V anteriorly with shallow impression; punctation very fine, moderately sparse on tergite III, decreasing in density from tergites IV-VI, and extremely sparse on tergites VI-VIII; microsculpture very shallow on anterior tergites, distinct on posterior tergites; posterior margin of tergite VII without palisade fringe; tergite VIII apparently with sexual dimorphism.

♂: unknown.

♀: posterior margin of tergite VIII in the middle broadly and shallowly concave; sternite VIII slightly longer than tergite VIII, its posterior margin strongly convex, not concave in the middle; spermatheca of highly distinctive morphology (Fig. 41).

Etymology: The name (Latin, adjective: blinded) refers to the strongly reduced eyes.



Figs 37-41: *Atheta excaecata* nov.sp.: (37) habitus; (38) forebody; (39) head in lateral view; (40) antenna; (41) spermatheca. Scale bars: 37: 1.0 mm; 38-40: 0.2 mm; 41: 0.1 mm.

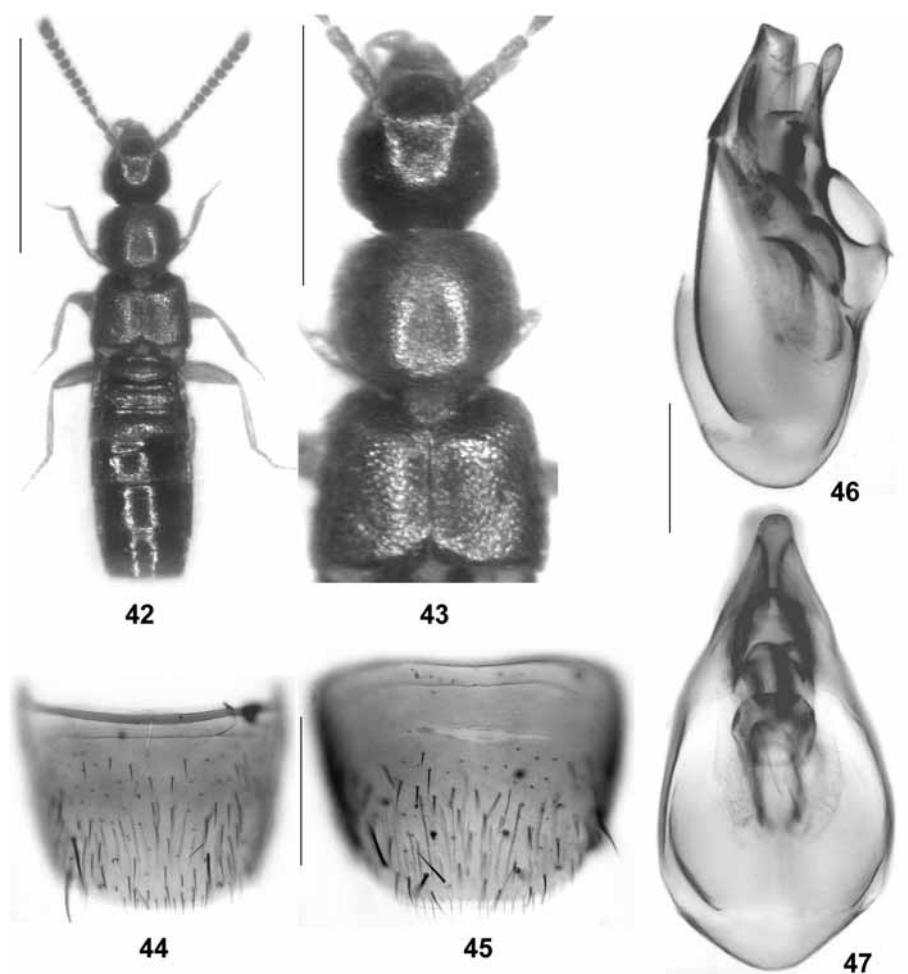
Comparative notes: From all its congeners known from China, this remarkable species is readily distinguished by numerous characters: the uniformly pale coloration, the strongly reduced eyes, the extremely short and narrow elytra, as well as the distinctive female primary and secondary sexual characters.

Distribution and bionomics: The type locality is situated in the Gaoligong Shan, to the northwest of Liuku in western Yunnan province. As can be inferred from the adaptive reductions of pigmentation, eye size, and wings, as well as from the altitude (3150 m) of the type locality, the distribution of the species is probably restricted. The holotype was sifted from litter beneath bamboo and shrubs.

***Atheta (Microdota) amischoides* nov.sp. (Figs 42-47)**

Holotype ♂: China: Yunnan [CH07-35], Dali Bai Aut. Pref., Wuliang Shan, 9 km SW Weishan, 2450-2500 m, 25°10'14"N, 100°14'22"E, W slope, oaks and pines, sifted, 13.VI.2007, leg. A. Pütz / Holotypus ♂ *Atheta amischoides* sp.n. det. V. Assing 2007 (cAss). **Paratypes:** 3 ♂♂: same data as holotype (cPütz, cAss).

Description: 2.0-2.3 mm. Habitus as in Fig. 42. Coloration: head, abdominal segments V-VI, and anterior half of segment VII dark-brown to blackish-brown; pronotum, elytra, abdominal segments III-IV, and posterior half of segment VII paler brown; segment VIII dark-yellowish; legs yellowish; antennae dark-brown, with antennomeres I-II reddish-brown.



Figs 42-47: *Atheta amischoides* nov.sp.: (42) habitus; (43) forebody; (44) male tergite VIII; (45) male sternite VIII; (46-47) median lobe of aedeagus in lateral and in ventral view. Scale bars: 42: 1.0 mm; 43: 0.5 mm; 44-45: 0.2 mm; 46-47: 0.1 mm.

Head somewhat wedge-shaped, i. e., distinctly dilated behind eyes and weakly transverse, approximately 1.1 times as wide as long (Fig. 43); punctation rather sparse and extremely fine, barely noticeable; surface with shallow, but distinct microreticulation and with moderate shine. Eyes composed of numerous ommatidia, weakly projecting from lateral contours of head and slightly shorter than postocular region in dorsal view. Antennae gradually and distinctly incrassate apically; antennomere IV weakly transverse; X almost twice as wide as long.

Pronotum approximately 1.20 times as wide as long and 1.20 times as wide as head; maximal width in anterior half; posterior angles moderately marked (Fig. 43); punctation similar to that of head; microsculpture slightly more distinct than that of head; pubescence of midline directed cephalad.

Elytra approximately 1.2 times as wide and at suture approximately 0.8 times as long as pronotum; punctuation dense and fine, but more distinct than that of pronotum (Fig. 44); microsculpture present. Hind wings apparently present, but possibly of reduced length. Metatarsomere I approximately as long as II.

Abdomen approximately as wide as elytra, widest at segments V-VI; tergites III-V anteriorly with shallow impression; punctuation fine, moderately dense on tergite III, decreasing in density from tergites IV-VI, and very sparse on tergites VI-VIII; microsculpture shallow, but distinct; posterior margin of tergite VII with palisade fringe.

♂: tergite VIII posteriorly broadly convex, not crenulate (Fig. 44); posterior margin of sternite VIII broadly convex and narrowly membranous (Fig. 45); median lobe of aedeagus of distinctive shape and with characteristic internal structures (Figs 46-47).

♀: unknown.

E t y m o l o g y : The name (adjective) refers to the resemblance of this species, especially regarding its head shape, to some species of the genus *Amischa* THOMSON.

C o m p a r a t i v e n o t e s : From all its consubgenera known from China, this species is separated especially by the distinctive morphology of the aedeagus and additionally as follows:

from *A. alternantoides* PACE (Yunnan), whose male sexual characters are unknown, by much shorter and more slender elytra;

from *A. chinamicula* PACE (Zhejiang) by larger size, different head shape, and a posteriorly non-crenulate male tergite VIII;

from *A. elytralis* PACE (Zhejiang) by much shorter elytra;

from *A. formosanorum* PACE (Taiwan, Hongkong) by darker coloration and larger size;

from *A. gibba* PACE (Sichuan) by distinctly shorter and more slender elytra, and by the smoothly convex posterior margin of the male tergite VIII;

from *A. gonggaensis* PACE (Sichuan) by different head shape, as well as by much shorter and more slender elytra;

from *A. hailuogouensis* PACE (Sichuan) by smaller size and darker coloration;

from *A. hongkongiphila* PACE (Hongkong) by different head shape, much smaller eyes, and narrower elytra;

from *A. ipercristata* PACE (Gansu) by much shorter and more slender elytra, and by the completely different shape of the male tergite VIII;

from *A. jiensis* PACE (Beijing) by more slender body and different head shape;

from *A. laminarum* PACE (Yunnan) by different head shape, smaller eyes, and much shorter setae (legs, forebody);

from *A. lanzhouensis* PACE (Gansu) by a less slender body, different head shape, and the smoothly convex posterior margin of the male tergite VIII;

from *A. masculifrons* PACE (Yunnan) by the completely different shape of the male tergite VIII;

from *A. miriapex* PACE (Sichuan) by larger eyes and darker coloration;

from *A. permixta* PACE (Gansu), *A. pseudovagans* PACE (Hongkong), *A. persimplex* PACE (Hongkong), and *A. kadooriaorum* PACE (Hongkong) by much smaller eyes and different head shape;

from *A. liaoningensis* PACE (Liaoning), *A. marcopoli* PACE (Xinjiang), *A. mon* PACE (Honkong), *A. nanior* PACE (Yunnan), *A. philamicula* PACE (Sichuan), *A. ponderata* PACE (Yunnan) (male sexual characters unknown), *A. tang* PACE (Sichuan), *A. tardoides* PACE (Yunnan) (male sexual characters unknown), *A. iperintroflexa* PACE (Beijing) (male sexual characters unknown), and *A. sichuanicola* PACE (Sichuan) by different head shape and much shorter and more slender elytra, from the latter also by much smaller eyes;

from *A. neoamicula* PACE (Sichuan), whose male sexual characters are unknown, by different head shape, more slender body, and more slender elytra;

from *A. ocularis* CAMERON (Hongkong) by much smaller eyes, different head shape, the the posterior not dentate male tergite VIII;

from *A. taichungensis* PACE (Taiwan) by darker coloration of the antennal base and by much shallower microsculpture of the head and pronotum;

from *A. taiwanensis* PACE (Taiwan) by much darker antennae, larger eyes, and distinctly longer elytra;

from *A. tricoloroides* PACE (Zhejiang) by darker coloration, different head shape, and shorter elytra;

from *A. yanensis* PACE (Beijing) by uniformly yellowish legs and different head shape;

from *A. zhongianensis* PACE (Yunnan), whose male sexual characters are unknown, by the absence of impressions on the head and pronotum, as well as by the narrower and uniformly brownish elytra;

from *A. xueica* ASSING (Yunnan), *A. foliacea* ASSING (Yunnan), *A. dimorpha* ASSING (Yunnan), *A. detruncata* ASSING (Yunnan), *A. hastata* ASSING (Yunnan), *A. geostiboides* ASSING (Yunnan), *A. elisa* ASSING (Shaanxi), and *A. puetzi* PACE (Shaanxi) by larger eyes, longer elytra, and (fully?) developed hind wings.

For illustrations of the sexual characters of the above species see PACE (1992a, 1993, 1995, 1998c, 1999b, 2004b) and ASSING (2002, 2004a, 2006a).

Distribution and bionomics: The type locality is situated in the Wuliang Shan, to the southwest of Weishan in Yunnan province. The specimens were sifted from the litter of oak and pine at an altitude of approximately 2500 m.

***Doryloxenus yunnanus* nov.sp. (Figs 48-52)**

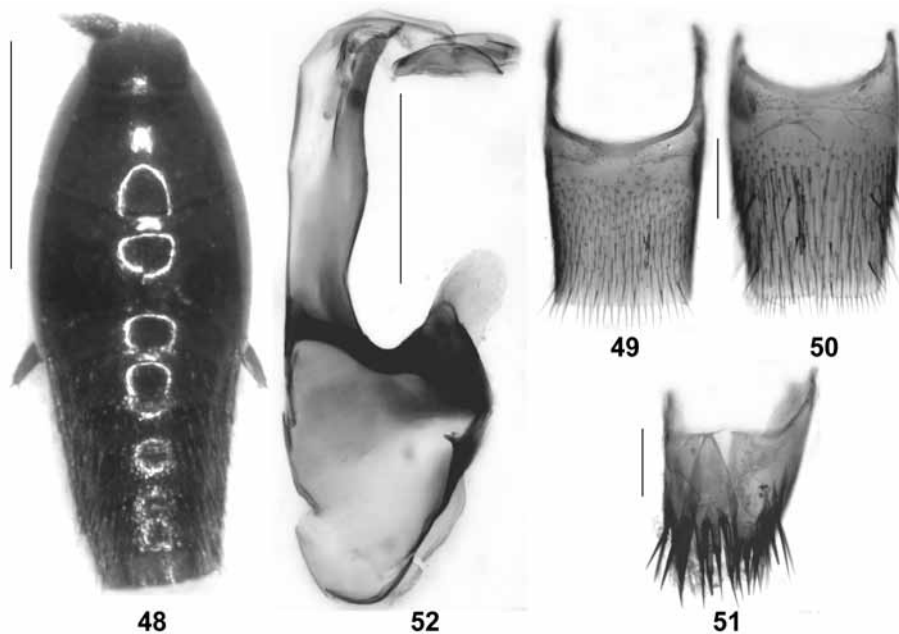
Holotype ♂: China: Yunnan [CH07-11A], Baoshan Pref., Gaoligong Shan nr. Xiaoheishan N. R., 35 SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E, decid. forest, fungi, sifted, 4.VI.2007, leg. A. Pütz / Holotypus ♂ *Doryloxenus yunnanus* sp.n. det. V. Assing 2009 (cPütz).

Description: 2.8 mm. Habitus as in Fig. 48. Coloration of whole body dark-reddish; abdominal apex and apical antennomeres reddish-yellow.

Forebody shaped as in Fig. 48, glabrous, with very sparse and fine punctation; interstices without microsculpture. Pronotum 1.45 times as wide as long and twice as wide as head. Elytra 0.58 times as long as pronotum.

Abdomen wedge-shaped, distinctly tapering posteriad; tergite II only at posterior margin with one row of approximately 15 marginal punctures each bearing a long yellowish seta, otherwise impunctate, except for very fine micropunctuation; tergite III with setiferous punctures only in posterior 1/3, at posterior margin with row of very long marginal setae,

submarginal setae distinctly shorter, anterior 2/3 only with micropunctuation; tergites IV-VI punctate on whole surface, at posterior margin with row of long yellowish marginal setae, on remainder of tergal surface with distinctly shorter setae; posterior margin of tergite VI broadly concave; posterior margin of tergite VII with palisade fringe.



Figs 48-52: *Doryloxenus yunnanus* nov.sp.: (48) habitus; (49) male tergite VIII; (50) male sternite VIII; (51) abdominal segments IX-X; (52) median lobe of aedeagus in lateral view. Scale bars: 48: 1.0 mm; 49-52: 0.2 mm.

♂: tergite VIII, sternite VIII, and segments IX-X shaped as in Figs 49-51; median lobe of aedeagus as in Fig. 52.

♀: unknown.

E t y m o l o g y : The name (adjective) alludes to the fact that this is presently the only described representative of the genus known from Yunnan.

C o m p a r a t i v e n o t e s : Only three species of *Doryloxenus* WASMANN 1898 have become known from the Palaearctic region, one from Nepal (*D. nepalensis* NAOMI 1996) and two from Hong Kong (*D. hongkongensis* PACE 1998 and *D. rougemonti* PACE 1998). The two species from Hong Kong are readily distinguished from *D. yunnanus* by their smaller size alone (1.7 and 2.1 mm, respectively). In addition, *D. hongkongensis* is separated from the new species by the differently shaped median lobe of the aedeagus; the male sexual characters of *D. rougemonti* are unknown. The same is true of *D. nepalensis*, whose description is based on a single female and which is distinguished from *D. yunnanus* by smaller size (1.9 mm) and a less slender body. For illustrations of these species see NAOMI (1996) and PACE (1998c).

D i s t r i b u t i o n a n d b i o n o m i c s : The type locality is situated in the Gaoligong Shan, to the southeast of Tongcheng in western Yunnan province. Species of

Doryloxenus are generally associated with army ants (KISTNER 1975). The holotype was sifted from leaf litter and fungi in a deciduous forest at an altitude of 2110 m.

***Doryloxenus* sp.**

Material examined: China, Yunnan: 1♀, Baoshan Pref., Gaoligong Shan near Xiaoheishan N. R., 35 SE Tengchong, 24°50'N, 98°46'E, 2110 m, deciduous forest, sifted, 4.VI.2007, leg. Pütz (cAss).

Comment: The above specimen was sifted in the same locality as the holotype of *D. yunnanus*. It is distinguished from that species by numerous characters, particularly by much smaller size (1.4 mm), the absence of punctation on the forebody, and the absence of micropunctation on the abdomen. The specimen doubtlessly represents an undescribed species, but since it is a female, a description would not seem appropriate.

***Zyras (Termidonia) sexcuspidatus* nov.sp. (Figs 53-63)**

Holotype ♂: China: Yunnan [CH07-16], Baoshan Pref., mountain range 14 km E Tengchong, 1850 m, 25°00'28"N, 98°38'07"E, second mixed forest, litter sifted, 1.VI.2007, leg. A. Pütz / Holotypus ♂ *Zyras sexcuspidatus* sp.n. det. V. Assing 2007 (cPüt).

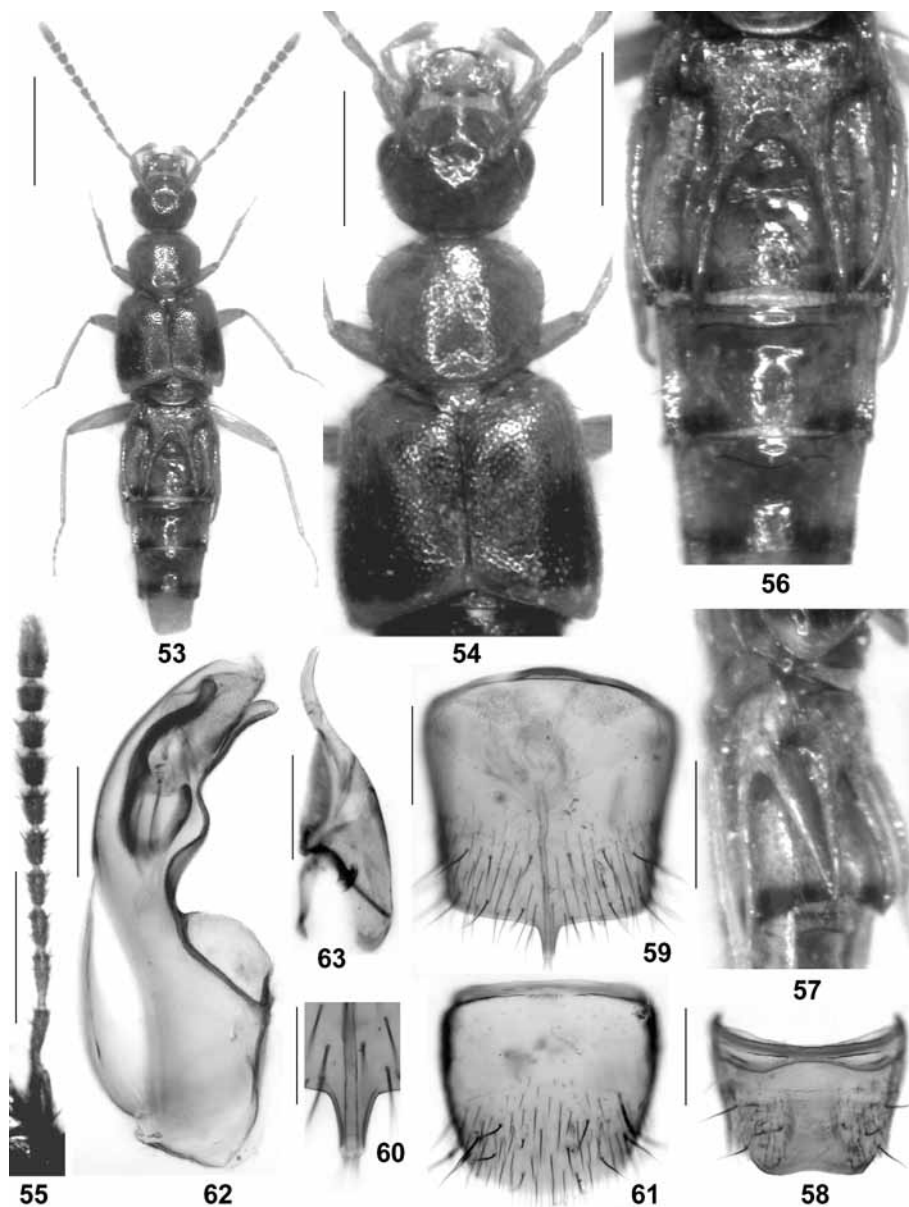
Description: 4.6 mm. Habitus as in Fig. 53. Coloration: body yellowish; elytra broadly and transversely infusate, with the anterior margin, the area near the humeral angles, and the posterior margin yellowish; posterior margins of segments IV-VI, except for the middle 1/3 of the tergites, conspicuously blackish.

Head 1.2 times as wide as long; punctation dense, moderately fine, and shallow; interstices on average narrower than diameter of punctures and glossy, without microsculpture. Eyes bulging, distinctly projecting from lateral contours of head, approximately as long as postocular region in dorsal view (Fig. 54). Antenna long (1.8 mm) and slender (Fig. 55). Maxillary palpi long and slender (Fig. 54).

Pronotum 1.17 times as wide as long, widest in anterior half, posteriorly distinctly tapering; posterior angles obtuse, but marked (Fig. 54); lateral and anterior margins on either side with 6 long black setae; punctation similar to that of head; interstices without microsculpture.

Elytra much broader and distinctly longer (1.15 x) than pronotum (Fig. 54); punctation very dense, denser than that of head and pronotum; interstices without microsculpture. Hind wings fully developed. Legs long and slender; metatibia almost 0.8 mm long; metatarsomere I approximately as long as II.

Abdomen widest at posterior margin of segment IV, posteriorly gradually tapering (Fig. 53); segment IV conspicuously elongated, approximately twice as long as segment V (sexual dimorphism?); punctation fine, moderately dense on tergites III-IV, sparse on tergite V, and very sparse on tergites VI-VII; interstices very glossy and without microsculpture; tergite VII at posterior margin with palisade fringe.



Figs 53-63: *Zyras sexcupidatus* nov.sp.: (53) habitus; (54) forebody; (55) antenna; (56) male abdominal segments III-VI; (57) anterior portion of male abdomen in lateral view; (58) male tergite VIII; (59) male sternite VII; (60) posterior spine of male sternite VII; (61) male sternite VIII; (62) median lobe of aedeagus in lateral view; (63) paramere. Scale bars: 53: 1.0 mm; 54-57: 0.5 mm; 58-59, 61, 63: 0.2 mm; 60, 62: 0.1 mm.

♂: segment III conspicuously modified: tergite III posteriorly with long fork-like projection reaching slightly beyond posterior margin of tergite IV, apices of the two processes bent somewhat ventrad (Fig. 56); sternite III laterally on either side with pronounced fork-like projection, the ventral process somewhat longer than the dorsal one and reaching the middle of segment V (Fig. 57); tergite VII near posterior margin with weakly pronounced median keel; tergite VIII with rather broad median tubercle, posterior margin of tergite VIII broadly produced and in the middle weakly concave (Fig. 58); posterior margin of sternite VI in the middle concave; sternite VII much longer and broader than tergite VII, in the middle of posterior margin with spine-like process (Fig. 59), apex of this process with brush of short thin setae (Fig. 60); posterior margin of sternite VIII distinctly convex (Fig. 61); aedeagus with median lobe relatively small (0.42 mm) and of distinctive shape (Fig. 62); paramere as in Fig. 63.

♀: unknown.

E t y m o l o g y : The name (Latin, adjective) refers to the six conspicuous processes of the male abdominal segment III.

C o m p a r a t i v e n o t e s : The species is tentatively attributed to the subgenus *Termidonia* MOTSCHULSKY, 1860, primarily based on the modifications of the male abdomen. Species of *Termidonia* usually have a distinctly modified male abdomen. However, the species currently attributed to *Termidonia* have processes on segment IV (not III) and at least some species, like *Z. nepalensis* PACE 1992 from Nepal, *Z. longwangmontis* PACE 1998 from China, and *Z. viti* ASSING in press from Taiwan, also have aedeagi with pronounced modifications (see illustrations in PACE (1992b, 1998c) and ASSING (in press)), which are absent in *Z. sexcuspidatus*. The new species is distinguished from all its congeners particularly by the pronounced and distinctive modifications of the male abdomen and by the morphology of the aedeagus. The geographically closest consubgenera are *Z. longwangmontis* PACE 1998 from Hong Kong and Zhejiang, and *Z. bidentatus* BERNHAUER 1914 from Myanmar and Taiwan. Both species are much larger (> 8 mm), have a different coloration, processes on the male abdominal segment IV, and (at least *Z. longwangmontis*) an aedeagus with pronounced processes.

D i s t r i b u t i o n a n d b i o n o m i c s : The type locality is situated to the east of Tengchong in western Yunnan province. The holotype was sifted in a deciduous forest at an altitude of 1850 m.

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My thanks are due to the colleagues indicated in the material section for making their interesting material available for study. In particular, I am grateful to Michael Schülke for the generous gift of the holotypes of five of the species described in this paper, as well as to Andreas Pütz for the gift of the holotype of *Atheta amischoides*. Benedikt Feldmann (Münster) proof-read the manuscript.

Zusammenfassung

Acht Aleocharinenarten werden aus Yunnan, China, beschrieben und abgebildet: *Chinecallicerus serratus* nov.sp., *Tropimenelytron schuelkei* nov.sp., *Atheta (Microdota) bicoloricornis* nov.sp., *A. (M.) altincisa* nov.sp., *A. (M.) excaecata* nov.sp., *A. (M.) amischoides* nov.sp., *Doryloxenus*

yunnanus nov.sp. und *Zyras* (*Termidonia*) *sexcupidatus* nov.sp. Weitere Nachweise von Aleocharinen aus Yunnan werden gemeldet. Für die derzeit bekannten Arten der Gattung *Chinecallicerus* ASSING wird eine Bestimmungstabelle erstellt.

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