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Two new species of *Chinecallicerus* (Coleoptera: Staphylinidae: Aleocharinae: Geostibini)

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A b s t r a c t : *Chinecallicerus subater* nov.sp. (China: Northeast Yunnan) and *C. reticulatus* nov.sp. (China: Southeast Yunnan) are described, illustrated, and distinguished from their congeners. An updated key to the species of *Chinecallicerus* ASSING, 2004, a genus currently known only from Yunnan, China, and including six species, is provided. The distributions of the genus and the individual species are mapped.

K e y w o r d s : Coleoptera, Staphylinidae, Aleocharinae, Geostibini, *Chinecallicerus*, China, taxonomy, new species, key to species, distribution map.

Introduction

The genus *Chinecallicerus* ASSING, 2004 of the aleocharine tribe Geostibini was previously represented by four species, all of them recorded from Yunnan, China (ASSING 2004, 2006, 2009). All the species are known only from their respective type localities, indicating a cryptic, probably subterranean reproduction habitat. Three of the four species are represented solely by their holotypes. The species are best distinguished based on external characters and on the morphology of the aedeagus.

Among material of Staphylinidae collected during a field trip to East Yunnan conducted by Michael Schülke (Berlin) and the author in summer 2014, two specimens of *Chinecallicerus* were discovered, each of them representing an undescribed species.

Material and methods

The holotypes of the newly described species are deposited in the author's collection.

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). The images of external characters, except for the close-ups of the head and the pronotum, were created using a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software. A digital camera (Nikon Coolpix 995) was used for the remaining photographs. The map was created using MapCreator 2.0 (primap) software.

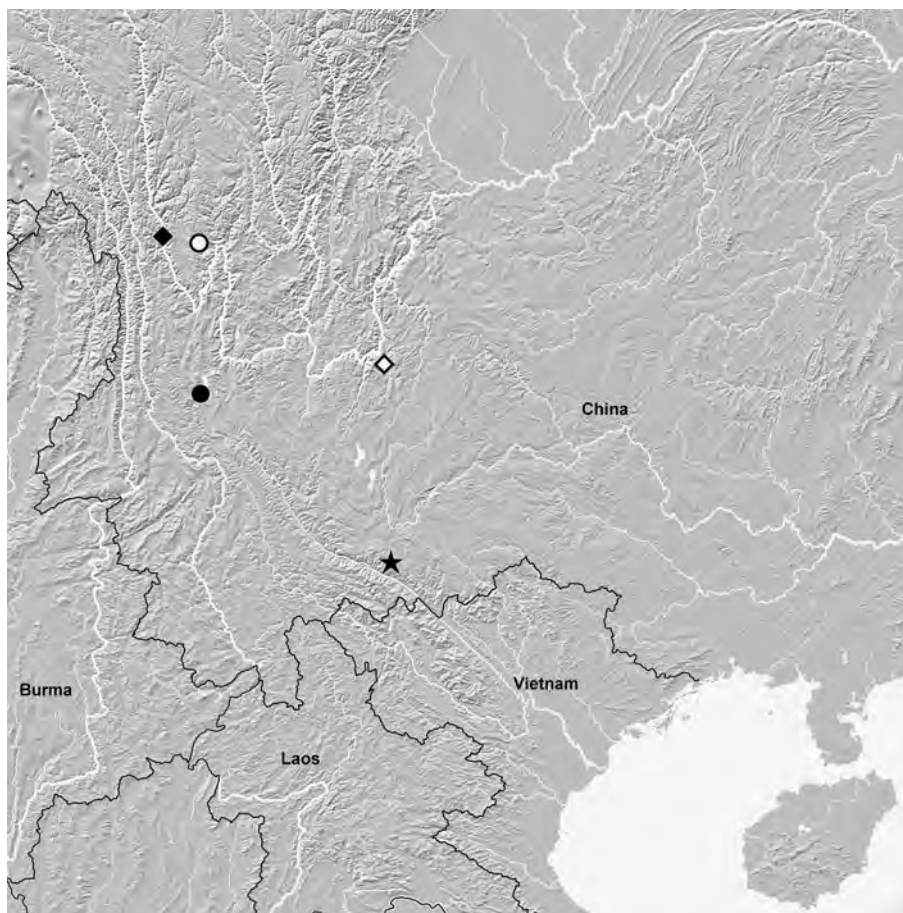
Body length was measured from the anterior margin of the labrum to the abdominal

apex, 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 (without ante-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.

Key to the species of *Chinecallicerus*

- 1 Large species, length of body 6.5-7.0 mm. Antennae gradually incrassate, antennomere V distinctly narrower than X (ASSING 2006: figure 15). Punctuation of abdomen conspicuously sparse (ASSING 2006: figure 19). Male tergites III and IV with distinct tubercle (ASSING 2006: figures 18-19); tergite VII with U-shaped elevation (ASSING 2006: figure 20); median lobe of aedeagus approximately 0.7 mm long (ASSING 2006: figures 23-24). Spermatheca as in ASSING (2006: figure 27). Northwest Yunnan (Map 1)..... *wrasei* ASSING
- Smaller species, length of body < 5.8 mm. Antennomeres V-X of subequal width, V not distinctly narrower than X. Punctuation of anterior abdominal tergites moderately dense. Male tergites III and IV unmodified; tergite VII with tubercle of different shape; median lobe of aedeagus much smaller, < 0.6 mm (note that the males of *C. schuelkei* and *C. reticulatus* are unknown).2
- 2 Whole forebody with pronounced microsculpture, practically matt (Figs 1-2, 4, 10-11, 13). Head and pronotum with barely noticeable punctuation. East Yunnan.3
- Forebody with some shine; at least head or elytra with superficial microsculpture. Head and/or pronotum mostly with more distinct punctuation. West Yunnan.4
- 3 Maxillary palpi blackish-brown, except for the needle-shaped palpomere IV. Body smaller; length of forebody 2.0 mm. Head approximately as long as broad (Fig. 1). Eyes smaller, approximately as long as distance from posterior margin of eye to posterior constriction of head (Fig. 1). Antenna much shorter, approximately 1.75 mm long; antennomeres V-X approximately as broad as long and IV weakly transverse (Fig. 3). Pronotum more transverse, 1.1 times as broad as long (Fig. 1). Posterior margin of male tergite VIII truncate in the middle (Fig. 6). Median lobe of aedeagus as in Figs 8-9. Northeast Yunnan (Map 1)..... *subater* nov.sp.
- Maxillary palpi yellowish. Body larger; length of forebody 2.4 mm. Head 1.15 times as broad as long (Fig. 10). Eyes larger, longer than distance from posterior margin of eye to posterior constriction of head (Fig. 10). Antennae longer, approximately 2.4 mm long; all antennomeres distinctly oblong (Fig. 12). Pronotum 1.06 times as broad as long (Fig. 10). Spermatheca as in Fig. 15. Southeast Yunnan (Map 1)..... *reticulatus* nov.sp.
- 4 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 punctuation and weak longitudinal elevation on either side of suture (ASSING 2004: figure 8). Spermatheca as in ASSING (2004: figure 13). Northwest Yunnan (Map 1)..... *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 punctuation5

- 5 Antennae longer, antennomere IV approximately as long as wide, V-X oblong (ASSING 2006: figure 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 male tergite VIII produced in the middle and somewhat truncate, but not distinctly serrate (ASSING 2006: figure 8). Median lobe of aedeagus 0.53 mm long, shaped as in ASSING (2006: figures 10-11). West Yunnan (Map 1). *laevigatus* ASSING
- Antennae shorter, antennomere IV wider than long, V-X approximately as long as wide (ASSING 2009: figure 3). Elytra approximately as long as pronotum (ASSING 2009: figure 2). Coloration of legs brown. Abdominal tergite VII virtually impunctate in anterior half (ASSING 2009: figure 4). Posterior margin of tergite VIII serrate (ASSING 2009: figure 5); median lobe of aedeagus smaller, 0.44 mm long, and shaped as in ASSING (2006: figure 7). West Yunnan (Map 1). *serratus* ASSING



Map 1: Distribution of *Chinecallicerus* in Yunnan: *C. wrasei* (filled diamond); *C. schuelkei* (open circle); *C. laevigatus* and *C. serratus* (both filled circle); *C. subater* (open diamond); *C. reticulatus* (star).

Descriptions

Chinecallicerus subater nov.sp. (Figs 1-9, Map 1)

Type material: Holotype ♂: "CHINA: Yunnan, mts NW Dongchuan, 26°10'00"N, 103°03'32"E, 2350 m, trail margin, litter and soil between herbs sifted, 8.VIII.2014, leg. M. Schülke [CH14-01a] / Holotypus ♂ *Chinecallicerus subater* sp.n., det. V. Assing 2015" (coll. Assing).

E t y m o l o g y : The specific epithet (Latin, adjective: nearly matt) alludes to the pronounced microsculpture of the forebody.

D e s c r i p t i o n : Body length 4.6 mm; length of forebody 2.0 mm. Coloration: body blackish, with the elytra blackish-brown; legs yellowish; antennae blackish-brown; maxillary palpi blackish-brown, with the terminal needle-shaped palpomere yellowish.

Head (Fig. 1) approximately as long as broad, narrowed towards posterior constriction immediately behind eyes; postero-lateral contours between posterior margin of eye and posterior constriction nearly straight in dorsal view; punctation extremely fine and moderately dense, barely visible; interstices with pronounced microreticulation and practically matt (Fig. 2). Eyes moderately large and moderately convex, slightly shorter than distance from posterior margin of eye to posterior constriction of head in dorsal view. Antenna 1.75 mm long and shaped as in Fig. 3.

Pronotum (Fig. 1) slender, 1.1 times as broad as long and 1.25 times as broad as head, broadest slightly before middle; punctation and microsculpture similar to those of head (Fig. 4); pubescence of midline directed caudad.

Elytra (Fig. 1) approximately as long as pronotum; punctation very fine and rather dense; microreticulation even more pronounced than that of head and pronotum. Hind wings fully developed.

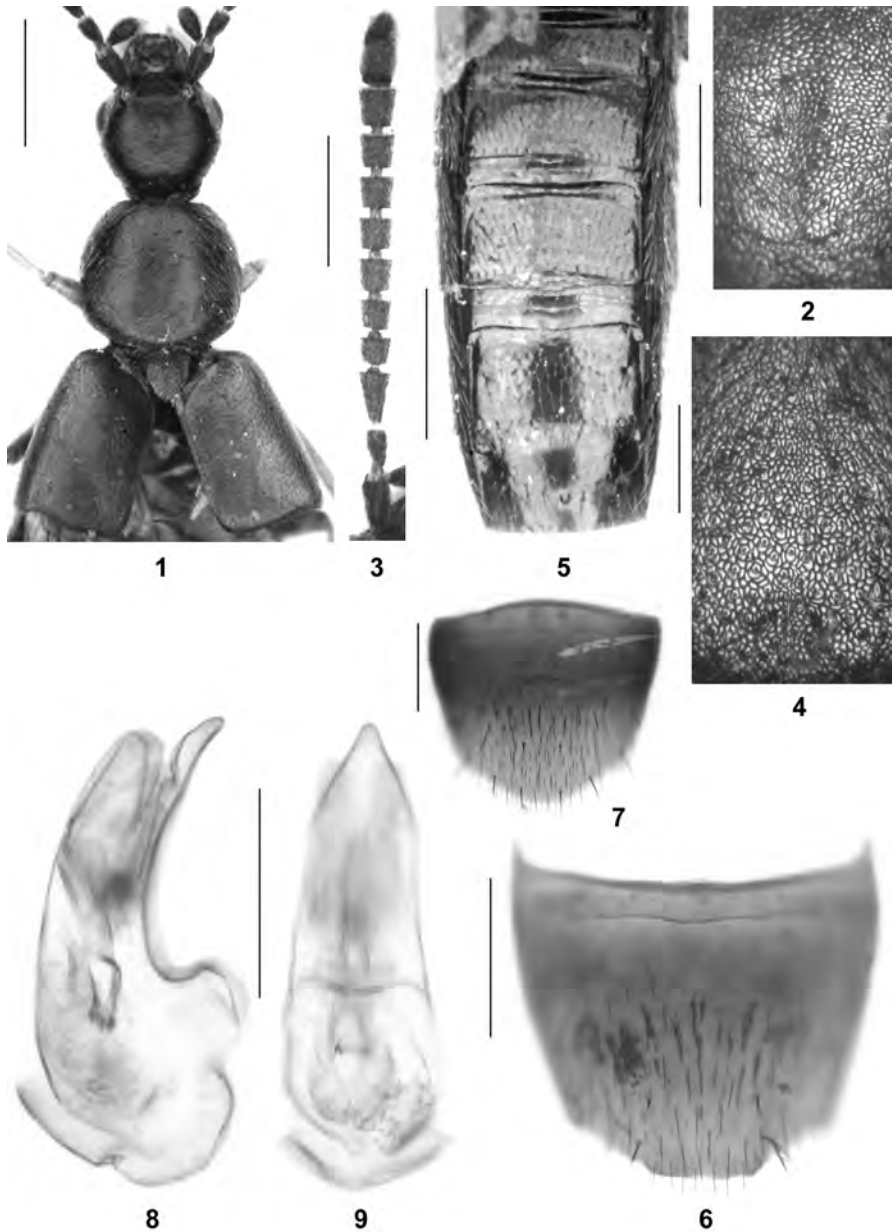
Abdomen (Fig. 5) narrower than elytra; punctation moderately dense and distinct on tergites III-VI, sparse on tergite VII; microsculpture very shallow on tergites III-VI, more distinct on tergite VII; tergites III and IV without sexual dimorphism; posterior margin of tergite VII with palisade fringe.

♂: tergite VII with small median tubercle in posterior half; tergite VIII (Fig. 6) weakly transverse, posterior margin truncate in the middle; sternite VIII (Fig. 7) transverse and with convex posterior margin; median lobe of aedeagus 0.45 mm long and shaped as in Figs 8-9.

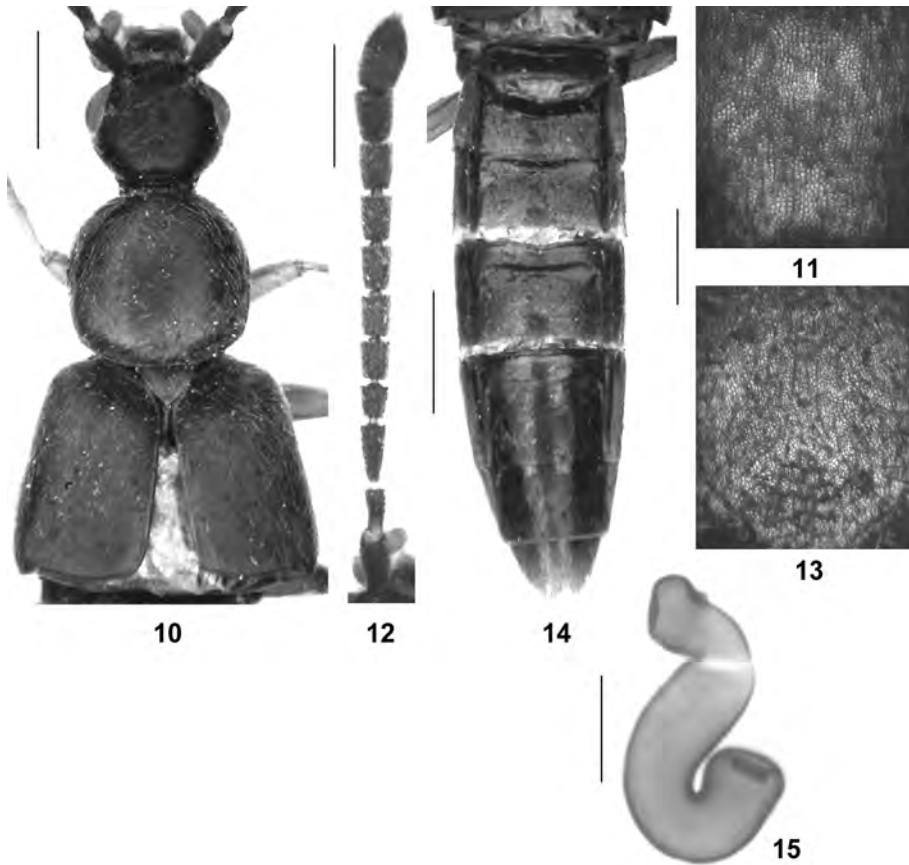
♀: unknown.

C o m p a r a t i v e n o t e s : The new species is distinguished from all the previously described *Chinecallicerus* species by the pronounced microsculpture and the extremely fine punctation of the whole forebody, by the shape of the male tergite VIII, and by the shape of the median lobe of the aedeagus. It additionally differs from most species by its small size and the relatively slender pronotum. For characters separating it from the similarly microsculptured *C. reticulatus* see the comparative notes in the following section.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : The type locality is situated in a mountain to the northwest of Dongchuan in northeastern Yunnan (Map 1). The slightly teneral holotype was sifted from litter and roots in herbaceous vegetation at a trail margin at an altitude of 2350 m.



Figs 1-9: *Chinecallicerus subater* nov.sp.: forebody (1); median portion of head (2); antenna (3); postero-median portion of pronotum (4); abdomen (5); male tergite VIII (6); male sternite VIII (7); median lobe of aedeagus in lateral view (8); median lobe of aedeagus in ventral view (9). Scale bars: 1, 3, 5: 0.5 mm; 6-9: 0.2 mm; 2, 4: 0.1 mm.



Figs 10-15: *Chinecallicerus reticulatus* nov.sp.: forebody (10); median portion of head (11); antenna (12); postero-median portion of pronotum (13); abdomen (14); spermatheca (15). Scale bars: 10, 12, 14: 0.5 mm; 15: 0.2 mm; 11, 13: 0.1 mm.

***Chinecallicerus reticulatus* nov.sp.** (Figs 10-15, Map 1)

Type material: Holotype ♂: "CHINA [13] - Yunnan, mt. SE Gejiu, graveyard with pine, 23°18'27"N, 103°11'41"E, 2400 m, 20.VIII.2014, V. Assing / Holotypus ♂ *Chinecallicerus reticulatus* sp.n., det. V. Assing 2015" (coll. Assing).

Etymology: The specific epithet (Latin, adjective) alludes to the pronounced microreticulation of the forebody.

Description: Body length 5.7 mm; length of forebody 2.4 mm. Coloration: head blackish; pronotum dark-brown; elytra brown; abdomen with segments III-V brown to dark-brown, segments VI-VII and anterior portion of VIII blackish-brown to blackish, and the apex pale-brown; legs yellowish; antennae blackish-brown; maxillary palpi yellowish.

Head (Fig. 10) distinctly transverse, 1.15 times as broad as long, broadest across eyes, narrowed towards posterior constriction immediately behind eyes; postero-lateral con-

tours between posterior margin of eye and posterior constriction nearly straight in dorsal view; punctation rather fine and moderately dense, barely visible in the pronounced microreticulation (Fig. 11); dorsal surface matt. Eyes large and strongly convex, longer than distance from posterior margin of eye to posterior constriction of head in dorsal view. Antenna conspicuously long (2.7 mm); all antennomeres distinctly oblong (Fig. 12).

Pronotum (Fig. 10) very weakly transverse, 1.06 times as broad as long and 1.23 times as broad as head, broadest approximately halfway between anterior angles and middle of lateral margins; punctation and microsculpture similar to those of head (Fig. 13); pubescence of midline directed caudad.

Elytra (Fig. 10) approximately as long as pronotum; punctation very fine and dense; interstices with pronounced microreticulation and matt. Hind wings fully developed.

Abdomen (Fig. 14) narrower than elytra; punctation moderately dense and rather fine on tergites III-VI, sparse and even finer on tergite VII; microsculpture composed of extremely fine and superficial transverse striae visible only at high magnification; posterior margin of tergite VII with palisade fringe.

♂: unknown.

♀: tergite VIII with strongly convex posterior margin; posterior margin of sternite VIII weakly convex in the middle; spermatheca 0.27 mm long and shaped as in Fig. 15.

Comparative notes: The new species is distinguished from all the previously described *Chinecallicerus* species by the pronounced microsculpture of the whole forebody alone. It differs from *C. subater*, which is similar in this respect, by greater body size, the completely yellowish maxillary palpi, the much larger eyes, the distinctly transverse head, the much longer antennae with all the antennomeres distinctly oblong, and by the less transverse pronotum.

Distribution and natural history: The type locality is situated in a mountain to the southeast of Gejiu in southeastern Yunnan (Map 1). The holotype was sifted from litter and roots in herbaceous vegetation in an old graveyard with pine at an altitude of 2400 m.

Acknowledgements

My thanks are extended to Michael Schülke (Berlin) for the permission to retain the holotype of *C. subater*.

Zusammenfassung

Chinecallicerus subater nov.sp. (China: Nordost-Yunnan) und *C. reticulatus* nov.sp. (China: Südost-Yunnan) werden beschrieben, abgebildet und von anderen Arten der Gattung unterschieden. Eine aktualisierte Bestimmungstabelle wird erstellt. Alle Arten der Gattung *Chinecallicerus* ASSING, 2004 wurden bisher ausschließlich aus der chinesischen Provinz Yunnan (China) nachgewiesen. Die Verbreitung der Gattung und der derzeit bekannten Arten wird anhand einer Verbreitungskarte illustriert.

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