

Additions to the fauna of *Tetraserica* AHRENS, 2004 of China and India (Coleoptera: Scarabaeidae: Sericini)

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Abstract

Three new species of *Tetraserica* AHRENS, 2004 (Coleoptera: Scarabaeidae: Sericini) from Asia are described: *Tetraserica pellingana* sp.n. (from India) as well as *T. hongheensis* sp.n. and *T. qifengshanensis* sp.n. (from China). The male genitalia of the new species are illustrated, and modifications to the existing diagnostic keys are given.

Key words: Coleoptera, Scarabaeidae, Scarab beetles, chafers, China, India, new species.

Introduction

The genus *Tetraserica* AHRENS, 2004 differs from the closely related genera *Microserica* BRENSKE, 1894 and *Trioserica* MOSER, 1922 in lacking a ventral hypomeral carina. From *Microserica* it also differs in the pygidium, which is not sexually dimorphic (in both sexes dull and weakly convex), and from *Trioserica* in the bidentate protibia. In contrast to *Microserica*, species of *Tetraserica* are active at night and are attracted by light.

The species of the genus *Tetraserica* AHRENS, 2004 of the Southeast Asian mainland were revised extensively by LIU et al. (2014), AHRENS & FABRIZI (2016), KOBAYASHI (2017, 2018) and FABRIZI et al. (2019). In these works, a significant number of species was newly described, and the distribution of the already known species was investigated in detail. Previous molecular phylogenetic analyses have confirmed the monophyly of *Tetraserica* (AHRENS & VOGLER 2008 LIU et al. 2015, EBERLE et al. 2017), but an assessment of DNA-informed species boundaries (DALSTEIN et al. 2019) has shown a poor fit between morphospecies and species entities delineated based on COI barcodes.

During my taxonomic revisions of the Southeast Asian Sericini and the work with unidentified specimens I came across a number of new species, three of which are described herein.

Material and methods

The terminology and methods used for measurements, specimen dissection, and genital preparation follow AHRENS (2004). Label data of the specimens examined are cited verbatim between quotation marks, multiple labels are separated by a “\”. Male genitalia were glued to a small pointed card attached to the specimen. Descriptions and illustrations of new taxa are based on the holotype, while the variation of other specimens is given separately. Male genitalia were photographed in lateral and dorsal views using a stereomicroscope Leica M125 with a Leica DC420C digital camera. The images were combined with Automontage software in order to obtain an entirely focused image, which was subsequently digitally edited.

The species of *Tetraserica* are extremely homogeneous in external morphology, all important diagnostic characters are confined to the aedeagus. Therefore, I present here only short diagnostic descriptions referring to the genus diagnosis for the other characters given by FABRIZI et al. (2019).

The type specimens are deposited in the following institutions or collections:

NME Naturkundemuseum Erfurt, Germany
 NMPC National Museum, Prague (Natural History), Czechia
 ZFMK Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany

***Tetraserica hongheensis* sp.n.**

(Fig. 1A–E)

TYPE MATERIAL: **Holotype** ♂: “China, Yunnan: Hongue Gulinquin [Honghe Gulinquin], 520m, LFF 22°43'30.7"N, 103°59'56.9"E, 11.VI.2018 primary forest leg. A. Weigel \ Asia Sericini spec. 1084” (NME).

DESCRIPTION: Length of body: 7.3 mm; length of elytra: 5.6 mm; maximum width: 4.6 mm. Surface of labroclypeus and disc of frons glabrous. Smooth area anterior to eye twice as wide as long. Eyes moderately large, ratio of diameter/interocular width: 0.57. Ratio of length of metepisternum/metacoxa: 1/1.6. Metatibia moderately long and wide, ratio width/length: 1/3.5; basal group of dorsal spines of metatibia at anterior third of metatibial length. Aedeagus: Fig. 1A–D. Habitus: Fig. 1E. Female unknown.

DIAGNOSIS: *Tetraserica hongheensis* differs from *T. microspinosa* FABRIZI et al., 2019 from northern Vietnam by the much shorter parameres being only half as long as the phallobase (in *T. microspinosa* they are subequal to phallobase length). Among the Chinese taxa, the new species differs distinctly from *T. damaidiensis* LIU et al., 2014 in both parameres being strongly bent at base (lateral view), and the short ventral process of the phallobase being subequal to ca. 1/5 of phallobase length.

REMARKS: The new species may be inserted in the key of LIU et al. (2014) at couplet 16:

- 16 Both parameres simple, without two lobes..... 16a
 16a Both parameres in lateral view nearly straight. Ventral process of phallobase ca. 1/3 of phallobase length..... *damaidiensis*
 16a' Both parameres in lateral view strongly bent at base. Ventral process of phallobase ca. 1/5 of phallobase length..... *hongheensis*

ETYMOLOGY: The new species is named after the type locality, Honghe Prefecture (Yunnan, China).

***Tetraserica qifengshanensis* sp.n.**

(Fig. 1F–J)

TYPE MATERIAL: **Holotype** ♂: “China, NE Guangdong prov., Qifeng Shan, 1050m 23°51'N 115°21'E Jatua leg., 19.V.-4.VI.2016” (ZFMK). **Paratypes**: 1 ♂, 3 ♀♀: same label data as holotype (ZFMK).

DESCRIPTION: Length of body: 8.0 mm; length of elytra: 6.1 mm; maximum width: 5.3 mm. Surface of labroclypeus and disc of frons glabrous. Smooth area anterior to eye twice as wide as long. Eyes moderately large, ratio of diameter/interocular width: 0.57. Ratio of length of metepisternum/metacoxa: 1/1.62. Metatibia moderately long and wide, ratio width/length: 1/3.33; basal group of dorsal spines of metatibia at anterior third of metatibial length. Aedeagus: Fig. 1F–I. Habitus: Fig. 1J.

DIAGNOSIS: *Tetraserica qifengshanensis* differs from *T. wangtongensis* LIU et al., 2014 in the left paramere (more slender in *T. qifengshanensis*), weakly bent externally in apical quarter (stout, almost straight in *T. wangtongensis*), and with a blunt dorsal angle at dorsal margin at apical quarter of its length.



Fig. 1: A–E) *Tetraserica hongheensis* (holotype), F–J) *T. qifengshanensis* (holotype), K–O) *T. pellingana* (holotype). A, F, K) aedeagus, lateral view, left side; D, I, N) aedeagus, lateral view, right side; B, G, L) aedeagus, dorsal view; C) parameres, apical view; H, M) aedeagus, ventral view; E, J, O) habitus. Scale bars: 0.5 mm; habitus not to scale.

REMARKS: The new species may be inserted in the key of LIU et al. (2014) at couplet 18:

- 18' Dorsal lobe of right paramere subequal in length to ventral lobe..... 18a
 18a Left paramere more slender, weakly bent externally in apical quarter..... *qifengshanensis*
 18a' Left paramere more stout, almost straight *wangtongensis*

VARIATION: Length of body: 8.0–8.7 mm; length of elytra: 6.1–7.0 mm; maximum width: 5.3–6.0 mm. Female: Eyes slightly smaller, ratio of diameter/interocular width: 0.53; antennal club composed of three antennomeres, slightly shorter than remaining antennomeres combined.

ETYMOLOGY: The new species is named after the type locality, Qifeng Shan (Guangdong, China).

Tetraserica pellingana sp.n.

(Fig. 1K–O)

TYPE MATERIAL: **Holotype** ♂: “India Sikkim Peleng [Pelling] 20.7.[19]97 Schneider leg. \ Asia Sericini spec. 1062 \ coll. general National Museum Prague, Czech Republic” (NMPC).

DESCRIPTION: Length of body: 10.0 mm; length of elytra: 7.3 mm; maximum width: 6.4 mm. Surface of labroclypeus and disc of frons glabrous. Smooth area anterior to eye twice as wide as long. Eyes moderately large, ratio of diameter/interocular width: 0.74. Ratio of length of metepisternum/metacoxa: 1/1.51. Metatibia short and wide, ratio width/length: 1/2.7; basal group of dorsal spines of metatibia at anterior third of metatibial length. Aedeagus: Fig. 1K–N. Habitus: Fig. 1O. Female unknown.

DIAGNOSIS: Among the northern Indian species *T. pellingana* shares the short wide metatibia with *T. impar* AHRENS & FABRIZI, 2016. The new species may be differentiated from the latter by the adjacent and rudimentary dorsal lobe of the right paramere, which is much shorter than the ventral lobe (1/5 of length of ventral lobe).

REMARKS: The new species may be inserted in the key to the *Tetraserica* species of the northern Indian Subcontinent (AHRENS & FABRIZI 2016) at couplet 4:

- 4' Dorsal lobe of right paramere simply pointed, without a narrow comb-like basal lobe..... 4a
 4a Dorsal lobe of right paramere well separated and subequal in length to ventral lobe..... *impar*
 4a' Dorsal lobe of right paramere adjacent, rudimentary, and much shorter (1/5 of its length) than ventral lobe *pellingana*

ETYMOLOGY: The new species is named after the type locality, Pelling (Sikkim, India).

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