New species and records of *Lasioserica* and *Gynaecoserica* from China
(Coleoptera, Scarabaeidae, Sericini)

Wan-Gang Liu¹, Ming Bai¹, Xingke Yang² & Dirk Ahrens³

¹ Institute of Earth and Environment, Chinese Academy of Sciences, Yanxiang Road 97#, Yanta District, Xi’an 710061 P.R. China; E-mail: liuwangang@ieecas.cn
² Key Laboratory of Zoological Systematics and Evolution, Institute of Zoology, Chinese Academy of Sciences, Box 92, No. 1, Beichen West Road, Chaoyang District, Beijing, 100101, P.R. China
³ Centre of Taxonomy and Evolutionary Research, Zoologisches Forschungsmuseum A. Koenig, Adenauerallee 160, D-53113 Bonn, Germany; Email: ahrens.dirk_col@gmx.de, d.ahrens@leibniz-zfmk.de


Key words: Beetles, chafers, *Lasioserica*, *Gynaecoserica*, China, new species, new records.

INTRODUCTION

In the course of the revision of the material of Sericini from China a recent series of paper was published on the genera *Gastroserica* Brenke, 1897, *Neoserica* Brenke, 1894, and *Tetraserica* Ahrens, 2004 (Ahrens et al. 2014a–c, Liu et al. 2011, 2014a–e, 2015). In continuation of this work, we present here the results on the genera *Lasioserica* and *Gynaecoserica*, which have been revised previously by Ahrens (1996) and Ahrens & Fabrizi (2009), and to which a number of supplemental notes have been released (Ahrens 1999a,b, 2000, 2004, 2005, Ahrens & Fabrizi 2011, 2016, Liu et al. 2014b). This study comprises in major part the revision of the unidentified material housed in Chinese natural history collections. Apart from a number of new and interesting records this material contains also two new species described herein.

MATERIAL & METHODS

The terminology and methods used for measurements, specimen dissection and genital preparation follow Ahrens (2004). Data from specimens examined are cited in the text with original label contents given in quotation marks, multiple labels are separated by a “/”. Descriptions and illustrations of new taxa are based on the holotype specimen if not otherwise stated, while the variation of specimens is given separately under “variation”. Male genitalia were glued to a small pointed card and photographed in both lateral and dorsal view using a Zeiss AxioCam HRc mounted on a Zeiss Stereo Discovery.V20 stereo-microscope. In the Automontage software a number of single focussed images were combined in order to obtain an entirely focussed image. The resulting images were subsequently digitally edited.

The authors of the new names are Wan-Gang Liu and Dirk Ahrens (art. 50.1 of ICZN).

Abbreviations used in the text for collection depositories are as follows:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Collection</th>
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<tbody>
<tr>
<td>BPBM</td>
<td>Bernice P. Bishop Museum, Honolulu, USA;</td>
</tr>
<tr>
<td>CP</td>
<td>collection Petr Pacholátko, Brno, Czech Republic;</td>
</tr>
<tr>
<td>CASH</td>
<td>collection André Skale, Hof/Saale, Germany;</td>
</tr>
<tr>
<td>HBUM</td>
<td>Museum of Hebei University, Baoding (Hebei Province) China;</td>
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<tr>
<td>ISNB</td>
<td>Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium;</td>
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<td>IZAS</td>
<td>Institute of Zoology, Chinese Academy of Sciences, Beijing, China;</td>
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<tr>
<td>MZUF</td>
<td>Museo Zoologico “La Specola”, Università di Firenze, Italy;</td>
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<tr>
<td>NPC</td>
<td>National Museum (Natural History), Prague, Czech Republic;</td>
</tr>
<tr>
<td>SYU</td>
<td>Sun Yat-Sen University, Guangzhou, China;</td>
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<tr>
<td>ZFMK</td>
<td>Zoologisches Forschungsmuseum A. Koenig, Bonn, Germany.</td>
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NEW SPECIES

Gynaecoserica motuoensis Liu & Ahrens sp. n.

Type material examined. Holotype: ♂ “[China] Xizang, Motuo, 80k, 2100m, 2011-VIII-19/ LW-1134” (IZAS).

Description. Length 5.5 mm, length of elytra 4.1 mm, width 2.9 mm. Body oblong, dorsal surface dark brown to dark green, antennae yellowish brown, dorsal surface dull, densely setose.

Labroclypeus subrectangular, widest at base, lateral margins weakly convergent, anterior angles strongly rounded, lateral border and ocular canthus producing a distinct blunt angle, margins weakly reflexed; anterior margin shallowly sinuate medially; surface weakly convex medially and shiny, finely and densely punctate, distance between punctures equal or less than their diameter, with dense and long, erect setae; frontoclypeal suture feebly incised, medially moderately curved; smooth area in front of eye approximately 1.5 times as wide as long; ocular canthus short and moderately slender, finely and densely punctate, with a short terminal seta. Frons shiny, posterior half dull, with fine, dense punctures, densely setose. Eyes moderately large, ratio of diameter/interocular width 0.64. Antenna yellow, with ten antennomeres; club yellow, with five antennomeres, as long as remaining antennomeres combined. Mentum weakly elevated and flattened anteriorly.

Pronotum moderately wide, widest shortly before base, lateral margins evenly convex and weakly convergent anteriorly, anterior angles strongly produced and sharp, posterior angles strongly rounded; anterior margin nearly straight, with a fine marginal line; basal margin without marginal line; surface with irregularly dense fine punctures, with dense and long, erect setae; anterior and lateral borders setose; hypomeron distinctly margined at base but not ventrally produced. Scutellum moderately long and wide, triangular, with fine dense punctures, medially narrowly smooth, with short adjacent setae in punctures.

Elytra elongate, widest in apical third, striae distinctly impressed, finely and densely punctate, intervals weakly convex, with fine, sparse punctures concentrated along striae, punctures with dense fine erect setae, interior apical angle of elytra with robust seta; epipleural edge fine ending at strongly curved external apical angle of elytra; epipleura sparsely setose, apical border without short microtrichomes.

Ventral surface dull, with fine and moderately dense punctures, densely setose; metacoxa glabrous, with a few strong adjacent setae laterally only; each abdominal sternite with indistinct transverse row of coarse punctures bearing short setae between fine, dense punctation, penultimate sternite apically with a very short shiny smooth sclerotized border, last sternite medially 1.3 times as long as penultimate one. Mesosternum between meso-

coxae as wide as mesofemur, with irregularly scattered very strong setae. Ratio of length of metepisternum/metacoxa: 1/1.45. Pygidium strongly convex at apex, finely and densely punctate, with moderately broad smooth midline, surface dull, with numerous long setae.

Legs slender and long; femora dull, with two longitudinal rows of setae, finely and sparsely punctate; metatibia slender and long; eveny widened toward apex, ratio width/length: 1/3.2, dorsal margin sharply carinate; with two groups of spines, basal group shortly before half, apical group at three-quarters of metatibial length; basally with a few single, fine setae; external face longitudinally convex, with sparse, fine punctures, glabrous; ventral margin carinate and serrate, with three strong spines, the distal two more distant; medial face very finely and sparsely punctate and smooth, apex interiorly near tarsal articulation sharply and deeply truncate. Tarsomeres dorsally glabrous and impunctate, ventrally with sparse, short setae; metatarsomeres ventrally with a strongly serrate ridge, beside it with a subparallel, fine longitudinal carina; first metatarsomere little longer than following two tarsomeres combined and nearly twice as long as dorsal tibial spur. Protibia moderately long, bidentate, protarsal claws symmetrical, basal tooth of interior claw normally developed.

Aedeagus: Fig. 1A–C. Habitus Fig. 1D. Female unknown.

Diagnosis. Gynaecoserica motuoensis Liu & Ahrens sp. n. differs from all other Gynaecoserica species by the para-

meres being strongly bent dorsally behind the middle and widened on the left side having a baseward directed and sharply pointed process (Fig. 1B).

Etymology. Latin adjective in the nominative singular. The species is named according to its type locality, Motuo.

Lasioserica guangxiana Liu & Ahrens sp. n.


Description. Length: 6.0 mm, length of elytra: 4.7 mm, width: 3.5 mm. Body oblong, dorsal surface dark brown, antenna brown, dorsal surface dull, pronotum and head with greenish shine, densely setose, with fine long and white, robust setae on elytra.

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Labroclypeus subtrapezoidal, widest at base, lateral margins in basal half strongly convex and strongly convergent to moderately rounded anterior angles, lateral border and ocular canthus producing a distinct angle; anterior margin concavely sinuate, margins weakly reflexed; surface flat and shiny, finely and densely punctate, with dense and long erect setae; frontoclypeal suture weakly impressed and moderately curved; smooth area anterior to eye 3 times as wide as long; ocular canthus moderately long and narrow, finely and densely punctate, with a short terminal seta. Frons in posterior half dull, finely and densely punctate. Eyes large, ratio of diameter/interocular width: 0.8. Antenna with ten antennomeres, club in male with four antennomeres, twice as long as remaining antennomeres combined, all joints of same length. Mentum elevated and flattened anteriorly.

Pronotum widest at middle, lateral margins in basal half straight and subparallel, anteriorly moderately curved and convergent to weakly produced anterior and blunt anterior angles, posterior angles nearly right-angled; anterior margin weakly convex, with a fine marginal line; basal margin without marginal line; surface with dense and fine punctures each bearing either an short, adpressed or a longer, white seta; anterior and lateral borders sparsely setose; hypomeron carinate, basal margin of hypomeron weakly produced ventrally. Scutellum subtriangular, apex moderately rounded, with fine and dense punctures and setae, smooth on basal midline.

Elytra oblong, widest shortly behind middle, striae moderately impressed, with fine and dense punctures; intervals moderately convex, with fine and irregularly dense punctures concentrated along striae, impunctate areas appear darker, with sparse, short setae, on odd intervals with a few fine white setae; epipleural edge moderately strong, ending at strongly rounded external apical angle of elytra, epipleura densely setose, apical border chitinous, without a visible rim of microtrichomes (100x magnification).

Ventral surface dull, with large and dense punctures, sparsely setose, metacoxa only laterally with a few fine, adpressed setae. Abdominal sternite finely and densely punctate and minutely setose, each sternite with a distinct transverse row of coarse punctures each bearing a short, robust seta. Penultimate abdominal sternite with two widely separated tubercles. Mesosternum between mesocoxae as wide as mesofemur. Ratio of length of metepisternum/metacoxa: 1/1.37. Pygidium moderately convex and dull, with fine, dense punctures and fine, short setae, with wide impunctate midline.

Legs moderately slender and long; femora dull on ventral face, with two longitudinal rows of setae, finely and sparsely punctate; anterior edge of metafemur acute, with an adjacent serrate line, ventrally weakly widened ventrally in apical half but not serrate, dorsally serrate. Metatibia moderately slender and short, widest at apex, ratio width/length: 1/3.1, distinctly carinate dorsally, with one group of spines only at 7/8 of metatibial length, beside dorsal margin with a straight and continuously serrate line convergent with dorsal margin behind apical group of spines, between serrated line and dorsal margin finely punctate and with a few short setae; lateral face longitudinally convex, with dense and fine punctures, densely setose; ventral edge serrate, with four fine and long, equidistant spines, medial face finely and sparsely punctate and punctures with minute setae, apex interiorly near tarsal articulation weakly concavely truncate. Tarsomeres dorsally sparsely punctate and finely setose, ventrally with short, sparse setae; metatarsomeres ventrally with a strongly serrate ridge, laterally not carinate, first metatarsomere as long as the following two tarsomeres combined and nearly twice as long as dorsal tibial spur. Protibia short, bidentate, protarsal claws asymmetrical, basal tooth of inner claw somewhat lobiform and truncate at apex.

Aedeagus: Fig. 1E–G. Female unknown.

Diagnosis. The external morphology and the shape of parameres are similar to those of L. brevipilosa Moser, 1919. The new species differs significantly by the more flattened and more widened left paramere, and the straighter and longer right paramere which has externally a robust, lateral, tooth-like extension (Fig. 1E, F).

Variation. Length: 6.0–6.8 mm, length of elytra: 4.7–5.2 mm, width: 3.5–3.9 mm.

Etymology. Latin adjective in the nominative singular. The new species is named after its occurrence in the Guangxi province.

Checklist of Chinese species and new records of Gynaecoserica and Lasioserica

Genus Gymnaecoserica Bremske, 1896

Gynaecoserica Bremske, 1896: 154 (type species Gynaecoserica pelllicta Bremske, 1896 by monotypy).

Chaetoserica Bremske, 1897: 355 (type species Chaetoserica cymosa Bremske, 1896 by monotypy).

Paragynaecoserica Khan & Ghai, 1982: 61 (type species Paragynaecoserica pubescens Khan & Ghai, 1982 by monotypy).

Gynaecoserica alma Ahrens & Fabrizi, 2009


Distribution. Yunnan.
**Gynaecoserica amara** Ahrens & Fabrizi, 2009

**Distribution.** Yunnan.

**Gynaecoserica bocaki** Ahrens & Fabrizi, 2009

**Distribution.** Xizang (Tibet).

**Gynaecoserica motuoensis** Liu & Ahrens sp. n. (holotype).

**Distribution.** Yunnan.

**Gynaecoserica hani** Liu & Ahrens, 2014

**Distribution.** Yunnan.
**Gynaecoserica lohitensis** Ahrens & Fabrizi, 2009

**Gynaecoserica lohitensis** Ahrens & Fabrizi, 2009: 1555.

**Distribution.** Xizang (Tibet), northeastern India.

**Gynaecoserica nahangensis** Ahrens & Fabrizi, 2009

**Gynaecoserica nahangensis** Ahrens & Fabrizi, 2009: 1567.

**Material examined.** 2 ♂♂ "Mengzhe, Xishuangbanna, Yunnan, 3.VII.1958, 891m, 1200m, leg. Meng Xuwu, Wang Shuyong" (IZAS).

**Distribution.** Yunnan, Vietnam.

**Remarks.** This species was originally described from northern Vietnam and is for the first time recorded for China.

**Gynaecoserica namtamaiensis** Ahrens & Fabrizi, 2009

**Gynaecoserica namtamaiensis** Ahrens & Fabrizi, 2009: 1569.


**Distribution.** Yunnan, Myanmar.

**Remarks.** This species was originally described from northern Myanmar (Burma) and is for the first time recorded for China.

**Gynaecoserica obliqua** Ahrens & Fabrizi, 2009

**Gynaecoserica obliqua** Ahrens & Fabrizi, 2009: 1570.


**Distribution.** Yunnan.

**Gynaecoserica yigongensis** Liu & Ahrens, 2014


**Distribution: Xizang (Tibet).**

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**Lasioserica Brenske, 1896**

**Lasioserica Brenske**, 1896: 155 (type species **Serica nobilis** Brenske, 1894 by subsequent designation; Arrow 1946).

**Orchiserica Miyake & Yamaya, 2001: 38 (type species **Lasioserica brevipilosa** Moser, 1919 by subsequent designation; Ahrens 2004).**

**Lasioserica antennalis** Nomura, 1974

**Lasioserica antennalis** Nomura, 1974: 83.

**Distribution.** Taiwan.

**Lasioserica beibengana** Liu & Ahrens, 2014


**Distribution.** Xizang (Tibet).

**Lasioserica bipilosa** Ahrens, 1999

**Lasioserica bipilosa** Ahrens, 1999: 70.


**Distribution.** Vietnam.
Lasioserica brevipilosa Moser, 1919

Lasioserica brevipilosa Moser, 1919: 332.


Distribution. Sichuan, Guizhou, Yunnan.

Lasioserica dragon Miyake & Yamaya, 2001

Lasioserica dragon Miyake & Yamaya, 2001: 36.


Distribution. Sichuan, Yunnan.

Lasioserica kuatunica Ahrens, 1996


Distribution. Zhejiang, Fujian.

Lasioserica kubani Ahrens, 2000


Distribution. Yunnan, Thailand.

Remarks. This species was originally described from Thailand and is for the first time recorded from China.

Wan-Gang Liu et al.
Lasioserica meghalayana Ahrens, 1999


Remarks. This species is for the first time recorded for Vietnam.

Lasioserica oblita Ahrens, 1996


Distribution. Yunnan, Myanmar.

Remarks. The species was already recorded for China by Ahrens (2005).

Lasioserica pacholatkoi Ahrens, 2000


Distribution. Xizang (Tibet), Bhutan.

Lasioserica tricuspis Ahrens, 2000


Material examined. 1 ♂ “Defu, Napo, Guangxi, 18.VI.2000, 1350m, leg. Chen Jun” (IZAS)


Remarks. This species was originally described from northern Thailand and Laos and is for the first time recorded for China.

Lasioserica tuberculiventris Moser, 1915

Lasioserica tuberculiventris Moser, 1915: 118.


Distribution. Shandong, Sichuan, Guizhou, Yunnan.

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REFERENCES


Liu WG, Ahrens D, Bai M, Yang XK (2011) A key to species of the genus Gastroserica Brenske (Coleoptera, Scarabaeidae, Sericini), with the description of two new species and two new records for China. ZooKeys 139: 23–44


Liu WG, Fabrizi S, Bai M, Yang XK, Ahrens D (2014c) A taxonomic revision of the Neoserica (s.l.) pilosula group (Coleoptera, Scarabaeidae, Sericini). ZooKeys 440: 89–113


Moser J (1915) Beitrag zur Kenntnis der Melolonthiden (Col.). IV. Deutsche Entomologische Zeitschrift 1915: 113–151

Moser J (1919) Beitrag zur Kenntnis der Melolonthiden (Col.). X. Stettiner Entomologische Zeitung 80: 330–364