ACTA ENTOMOLOGICA
MUSEI NATIONALIS PRAGAE
ISSN 1804-6487 (online) – 0374-1036 (print)

2023
63(2): 293–295
doi: 10.37520/aemnp.2023.017
www.aemnp.eu

SHORT NOTE

Scaphobaeocera setosa sp. nov., an unusual Scaphidiinae (Coleoptera: Staphylinidae) with elongate tarsal setae from China

Ivan LÖBL & Vivien COSANDEY

Muséum d'histoire naturelle, C.P. 6434, CH-1211 Geneva 6, Switzerland; e-mails: ivan.lobl@bluewin.ch, vivien.cosandey@ville-ge.chp

Accepted:
23th October 2023

Published online:
5th November 2023

Abstract. A new species of *Scaphobaeocera* Csiki, 1909 from Yunnan, China, *S. setosa* sp. nov., is described. It is unique in having strongly enlarged male protarsomeres with long oblique setae, forming a fan-like structure. The new species may be also readily distinguished from its congeners by its large body size.

Key words. Coleoptera, Staphylinidae, Scaphidiinae, new species, shining fungus beetles, taxonomy, Yunnan, China

Zoobank: http://zoobank.org/urn:lsid:zoobank.org:pub:3B86A2E5-B042-44BA-8A93-5FB2EF730711

Introduction

Males of many hexapods (Beutel & Gorb 2001), and beetles of the superfamily Staphylinoidea in particular (Gnaspini et al. 2017), usually have widened first to third protarsomeres and bear tenent setae. The Scaphisomatini genus *Scaphobaeocera* Csiki, 1909 is no exception. It belongs to the *Baeocera* clade currently comprising ten genera (Leschen & Löbl 2005). This genus may be easily distinguished from allied by the body strongly compressed laterally, in combination with elongate third antennomere. Besides, many species have iridescent pronotum and elytra, and elytra with parasutural striae, features unknown in other members of the clade. To date, 124 species of *Scaphobaeocera* are recognized as valid, 24 of them are known from mainland China (Löbl 2018c, 2020a,b, 2021, 2022). The life history of *Scaphobaeocera*, as that of most other scaphidiines, is as good as unknown. They are likely associated with slime molds, as suggested by the host records given by Newton & Stephenson (1990). The adults are usually found in subtropical and tropical forests, and may be collected by sieving moist forest floor litter (I. Löbl, pers. observ.). The larvae are unknown, though the description of scaphidiine larvae in Newton (1991) is based also on *Scaphobaeocera*. The described *Scaphobaeocera* species usually lack conspicuous external morphological characters. Thus, reliable species identification requests the use of male genital features. A striking exception is presented in this study: a specimen collected in Yunnan, received recently for study from the Naturkundemuseum Erfurt (Germany), happened to be a new species with extraordinary morphological features. It has the first and second male protarsomere notably widened and bearing very long, obliquely expanded setae, unlike those of other Scaphisomatini.

Material and methods

The label data are reproduced verbatim. The body length is measured from the anterior pronotal margin to the posterior inner angles of elytra. The widths are measured at the widest points of the respective body parts. The length/width ratios of antennomeres are measured on slide-mounted antennae. The length/width of the mesepimera refer to their exposed part. Statements about metaventral punctation do not refer to punctures margining submesocoxal lines and statements about abdominal microsculpture do not refer to intersegmental membranes. The sides of the aedeagus refer to its morphological sides with the ostium situated dorsally, while it is in resting position rotated 90°. The dissected body parts are embedded in Euparal and fixed on a separate card on the same pin as the specimen.

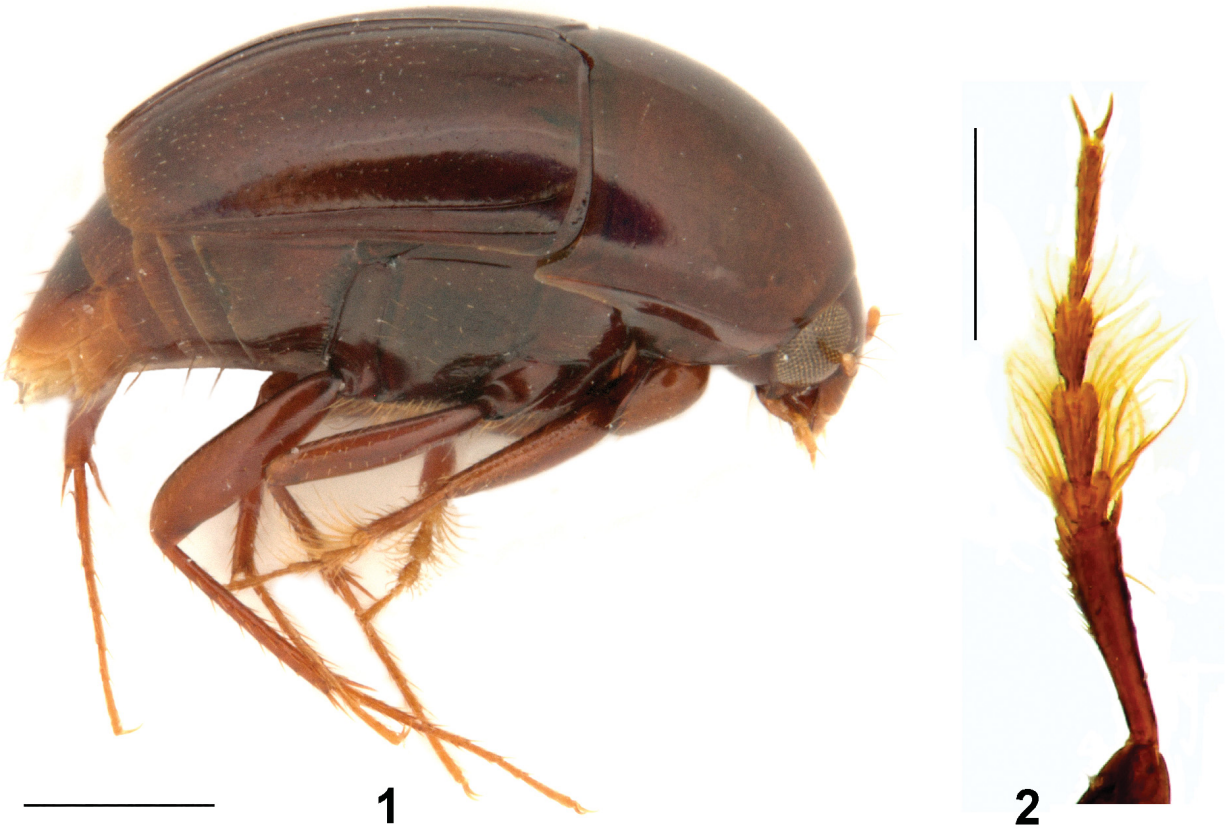
Taxonomy

Scaphobaeocera setosa Löbl, sp. nov.

(Figs 1–5)

Type locality. China, Yunnan, Xichuangbanna, 28 km NW Jinghong, vic. An Ma Xi Zhan, N22°12 E 100°38, 700 m.

Type material. Holotype: ♂, CHINA: S. YUNNAN (Xichuangbanna) 28 km NW Jinghong, vic. An Ma Xi Zhan / N22°12 E 100°38 (NNNR), 700 m, prim. forest, 18.VII.2008, leg. A.Weigel, MF (coll. Naturkundemuseum Erfurt, Germany).

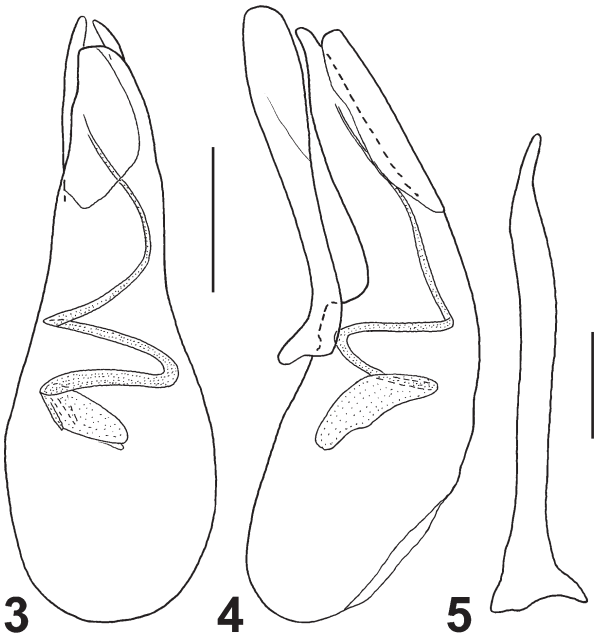


Figs 1–2. *Scaphobaeocera setosa* Löbl, sp. nov. 1 – body in lateral view; 2 – protibia and protarsus. Scale bars: 0.5 mm (Fig. 1); 0.25 mm (Fig. 2).

Description. Lenth 1.98 mm, width 1.02 mm, dorsoventral diameter 1.10 mm. Head, pronotum and elytra dark brown with reddish shine. Exposed tergites blackish with light apices. Venter of thorax and ventrite I and II blackish; following ventrites lighter, apex of abdomen yellowish. Antennae yellowish. Legs rufous. Head with frons lacking microsculpture, very finely punctate, at narrowest point 0.22 mm, nearly as wide as half of head width with eyes. Length/width ratios of antennomeres as: III 20/8: IV 34/7: V 43/7: VI 40/8: VII 40/14: VIII 30/9: IX 40/16: X 45/17: XI 55/18. Antennomere IX to XI with conspicuously long setae. Pronotum and elytra with transversely strigulate microsculpture, iridescent; pronotum as frons very finely punctate. Scutellum completely concealed. Elytron with sutural stria deeply impressed, starting at each side of pronotal lobe, very finely punctate. Parasutural stria extremely fine, hardly visible at 100× magnification; discal punctation near base about as fine as that of pronotum, somewhat more distinct on prevailing surface. Hypomeron with longitudinally strigulate microsculpture, impunctate, lacking distinct line delimiting its upper part. Mesoventrite with low mesal ridge. Mesepimeron four times as long as wide, narrowing to tip, with obliquely strigulate microsculpture. Mesanepimeron impunctate, with obliquely strigulate microsculpture. Lateral parts of metaventrite sparsely, finely but distinctly punctate, with rather long setae and transversally strigulate microsculpture. Mesal part of metaventrite convex between mesocoxae, with most of mesal area flattened, conspicuously areaolate, lacking microsculpture and setiferous punctation, bearing long, erect setae only at lateral margins. Submesocoxal area nearly 0.03 mm long, submesocoxal line parallel, punctate. Metanepisternum flat, 0.06 mm wide, with straight suture and obliquely strigulate microsculpture. Tibiae straight. Abdomen with transversally strigulate microsculpture, punctation and pubescence sparse and fine, similar to that on lateral parts of metaventrite.

Male characters. Protarsomeres I to III strongly widened (Figs 1, 2). Protarsomeres I and II bearing very long ventral setae. Protarsomere I conspicuously short, wider than long and nearly as wide as apex of protibia. Protarsomere II twice as long as protarsomere I, gradually widening apicad, at apex as wide as latter. Protarsomere III slightly shorter and narrowed than protarsomere II, the latter strongly widening apicad, with short ventral setae. Aedeagus (Figs 3–5) 0.40 mm long, with strongly sclerotized process of median lobe.

Differential diagnosis. The key to identification of Chinese *Scaphobaeocera* species was published by Löbl (1999, 2018a,b), this new species may be easily distinguished from all congeners by the shape of the protarsomeres I to III and the long ventral setae of the protarsomeres I and II. The large body size is also diagnostic. The body length of *Scaphobaeocera* ranges usually from about 1.0 to 1.6 mm, only a few of the described species are larger. *Scaphobaeocera setosa* sp. nov. is similar to *S. pecki* Löbl, 1981 from Japan and *S. valida*



Figs 3–5. *Scaphobaeocera setosa* Löbl, sp. nov. 3 – aedeagus in dorsal view; 4 – same in lateral view; 5 – paramere in ventral view. Scale bars: 0.1 mm (Figs 3–4); 0.05 mm (Fig. 5).

Löbl, 1990 from Thailand, and its aedeagal characters suggest relationships to these species. Besides the tarsal features, it may be distinguished from *S. pecki* by the elytra with shallow parasutural striae, the much wider metanepisterna, and the straight tibiae. *Scaphobaeocera valida* is distinguished by the light body colour, the evenly long antennomeres III and VIII, the hypomeron with a longitudinal stria delimiting its upper part, and the elytral punctation becoming coarser and denser apicad. Both, *S. pecki* and *S. valida*, differ from *S. setosa* sp. nov. by the shape of the basal section of the internal sac, the wider flagellum and the shape of the parameral apices.

Etymology. The species epithet is a Latin adjective, meaning setose and referring to the unusually long protarsal setae.

Distribution. South China: Yunnan: Xichuangbanna Dai Autonomous Prefecture.

Discussion

The tenent setae are attachment devices, assuring better adherence of males to females during mating (e.g., Voigt et al. 2017). The female of *Scaphobaeocera setosa* is unknown. Nevertheless, we consider the excessively long protarsal setae as a probable male character. Among the circa 1500 known Scaphisomatini species only one, *Pseudobironium subovatum* Pic, 1920, possesses similar male protarsi (Löbl & Tang 2013), with the difference that the setae of the latter species are in tarsal axis. Besides, unlike *Pseudobironium subovatum*, the new species is unusual in having the three protarsomeres strongly widened but only the first two of them with modified setae. Their function is unknown, just as the biology of the species.

Acknowledgements

We thank cordially our colleague Matthias Hartmann of Erfurt (Germany) for continuous loans of the unidentified scaphidiines housed in the Naturkundemuseum of Erfurt, and Rolf Beutel of Jena (Germany) for giving his opinion on setal pattern. Comments of Elisa von Groll of São Leopoldo (Brazil), Jiří Hájek of Prague (Czech Republic) and Richard A. B. Leschen of Auckland (New Zealand) helped to improve the paper.

References

BEUTEL R. G. & GORB S. N. 2001: Ultrastructure of attachment specializations of hexapods (Arthropoda): evolutionary patterns inferring from a revised ordinal phylogeny. *Journal of Zoological Systematics and Evolutionary Research* **39**: 177–207.

GNASPINI P., ANTUNES-CARVALHO C., NEWTON A. F. & LESCHEN R. A. B. 2017: Show me your tenent setae and I tell you who you are – Telling the story of a neglected character complex with phylogenetic signals using Leiodidae (Coleoptera) as a case study. *Arthropod Structure and Development* **46**: 662–685.

LESCHEN R. A. B. & LÖBL I. 2005: Phylogeny and classification of Scaphisomatini Staphylinidae: Scaphidiinae with notes on mycophagy, termitophily, and functional morphology. *Coleopterists Society Monographs* **3**: 1–63.

LÖBL I. 1999: A review of the Scaphidiinae (Coleoptera: Staphylinidae) of the People's Republic of China, I. *Revue Suisse de Zoologie* **106**: 691–744.

LÖBL I. 2018a: On the Chinese species of *Scaphobaeocera* Csiki, 1909, and new records of *Scaphoxium* Löbl, 1979 and *Toxidium* Le Conte, 1860 (Coleoptera: Staphylinidae: Scaphidiinae). *Russian Entomological Journal* **27**: 123–134.

LÖBL I. 2018b: Supplement to the knowledge of the genera *Baeocera* Erichson, 1845 and *Scaphobaeocera* Csiki, 1909 (Coleoptera, Staphylinidae, Scaphidiinae) of the People's Republic of China. *Linzer Biologische Beiträge* **50**: 1295–1303.

LÖBL I. 2018c: *World Catalogue of Insects. Volume 16. Coleoptera: Staphylinidae: Scaphidiinae.* Brill, Leiden/Boston, xvi + 418 pp.

LÖBL I. 2020a: On the Scaphisomatini of Madagascar, and commentary on new trends in museums hampering taxonomic research (Coleoptera: Staphylinidae: Scaphidiinae). *Koleopterologische Rundschau* **90**: 89–126.

LÖBL I. 2020b: Four new Taiwanese species of *Scaphobaeocera* Csiki (Coleoptera, Staphylinidae, Scaphidiinae). *Linzer Biologische Beiträge* **52**: 327–335.

LÖBL I. 2021: Contribution to the knowledge of the Scaphisomatini (Coleoptera: Staphylinidae: Scaphidiinae) of Mindanao, Philippines. Pp. 265–272. In: TELNOV D., BARCLAY M. V. L. & PAUWELS O. S. G. (eds): *Biodiversity, Biogeography and Nature Conservation in Wallacea and New Guinea. Volume IV*. The Entomological Society of Latvia, Riga, 443 pp.

LÖBL I. 2022: Supplement to the knowledge of the Scaphidiinae (Coleoptera: Staphylinidae) of the Moluccas. *Revue Suisse de Zoologie* **129**: 103–118.

LÖBL I. & TANG L. 2013: A review of the genus *Pseudobironium* Pic. (Coleoptera: Staphylinidae: Scaphidiinae). *Revue Suisse de Zoologie* **120**: 665–734.

NEWTON A. F. 1991: Scaphidiidae (Staphylinoidea). Pp. 337–339. In: STEHR F. W. (ed.): *Immature Insects. Volume 2.* Kendall/Hunt Publishing Company, Dubuque, xvi + 975 pp.

NEWTON A. F. & STEPHENSON S. L. 1990: A beetle/slime mold assemblage from northern India (Coleoptera; Myxomycetes). *Oriental Insects* **24**: 197–218.

VOIGT D., TSIPENYUK A. & VARENBERG M. 2017: How tight are beetle hugs? Attachment in mating leaf beetles. *Royal Society Open Science* **4 (9) (171108)**: 1–14.