

Two new species of the genus *Scaphidium* from China (Coleoptera: Staphylinidae: Scaphidiinae)

Liang TANG & Li-Zhen LI

Department of Biology, Shanghai Normal University, 100# Guilin Road, Shanghai, 200234 P. R. China;
e-mail: monkey_zzz1980@163.com

Abstract. Two new species of the genus *Scaphidium* Olivier, 1790 are described from China: *S. yinziweii* sp. nov. from Yunnan Province and *S. bituberculatum* sp. nov. from Hainan Province, and their diagnostic characters are illustrated.

Key words. Staphylinidae, Scaphidiinae, *Scaphidium*, taxonomy, new species, China, Oriental Region

Introduction

Scaphidium Olivier, 1790 is a large genus within the subfamily Scaphidiinae having 333 species described worldwide, with 46 species in China including Taiwan. In China, the highest diversity of *Scaphidium* is known from Yunnan (13 species; LÖBL 1999, TANG & LI 2010a), Taiwan (11 species; MIWA & MITONO 1943, KIMURA 1987), Sichuan (7 species; LÖBL 1999), Fujian (7 species; LÖBL 1999, HE et al. 2008a, TANG & LI 2010a) and Zhejiang (5 species; HE et al. 2008a,b). As a whole, the number of species distinctly increases from northern to southern China, which implies that *Scaphidium* is mainly an Oriental element. Presently, there are several provinces in southern China with only a few *Scaphidium* species recorded, e.g. Guangxi with a single species (TANG & LI 2010a) and Hainan with 2 known species (TANG & LI 2010a), which is believed to be caused by the lack of collecting activities in these provinces. We have collected a large amount of specimens from the above two provinces and many new species and new records will be reported in the following works. In this paper, two new *Scaphidium* species collected in Yunnan and Hainan provinces respectively are described.

Material and methods

For examination of male genitalia, the last three abdominal segments were detached from the body after softening the specimens in hot water. The aedeagi were separated and mounted in Euparal (Chroma Gesellschaft Schmidt, Koengen, Germany) on plastic slides. Photos of aedeagi were taken with a Canon G7 camera attached to an Olympus SZX 16 stereoscope;

photos of habitus, antennae and legs were taken with a Canon macro photo lens MP-E 65 mm attached to a Canon EOS50D camera.

The following abbreviations are used for measurements:

BL	body length, measured from the anterior margin of clypeus to the apex of abdomen;
ED	distance between eyes at narrowest point;
PL	median length of pronotum;
PW	width of pronotum;
EW	width of elytra.

Specimens treated in this study are deposited in the following public collections:

HBUM	Museum of Hebei University, P. R. China (G.-D. Ren);
SHNU	Department of Biology, Shanghai Normal University, P. R. China (L. Tang).

Taxonomy

Scaphidium yinziweii sp. nov.

(Figs. 1, 2, 9–12)

Type locality. China, Yunnan Province, Nabanhe National Reserve, Benggang Hani, 22°08.383'N, 100°34.126'E, 1700 m a.s.l.

Type material. HOLOTYPE: ♂, China, Yunnan Prov., Nabanhe N. R., Benggang Hani, alt. 1700m, 29.IV.2009, J.-Y. HU & Z.-W. YIN leg. (SHNU).

Description. Body black; elytra yellow, yellow area narrowly surrounded by black band, latter broadened and spot-like on humeral area. Elytral disc with two oval black spots: large spot joint to black band along the suture, small spot joint to black band along the lateral margin; antennal segments I–VI reddish brown, segments VII–XI black with last segment yellowish brown on apical third (Fig. 12).

Body measurements: BL: 6.1 mm, ED: 0.29 mm, PL: 1.98 mm, PW: 2.85 mm, EW: 3.18 mm.

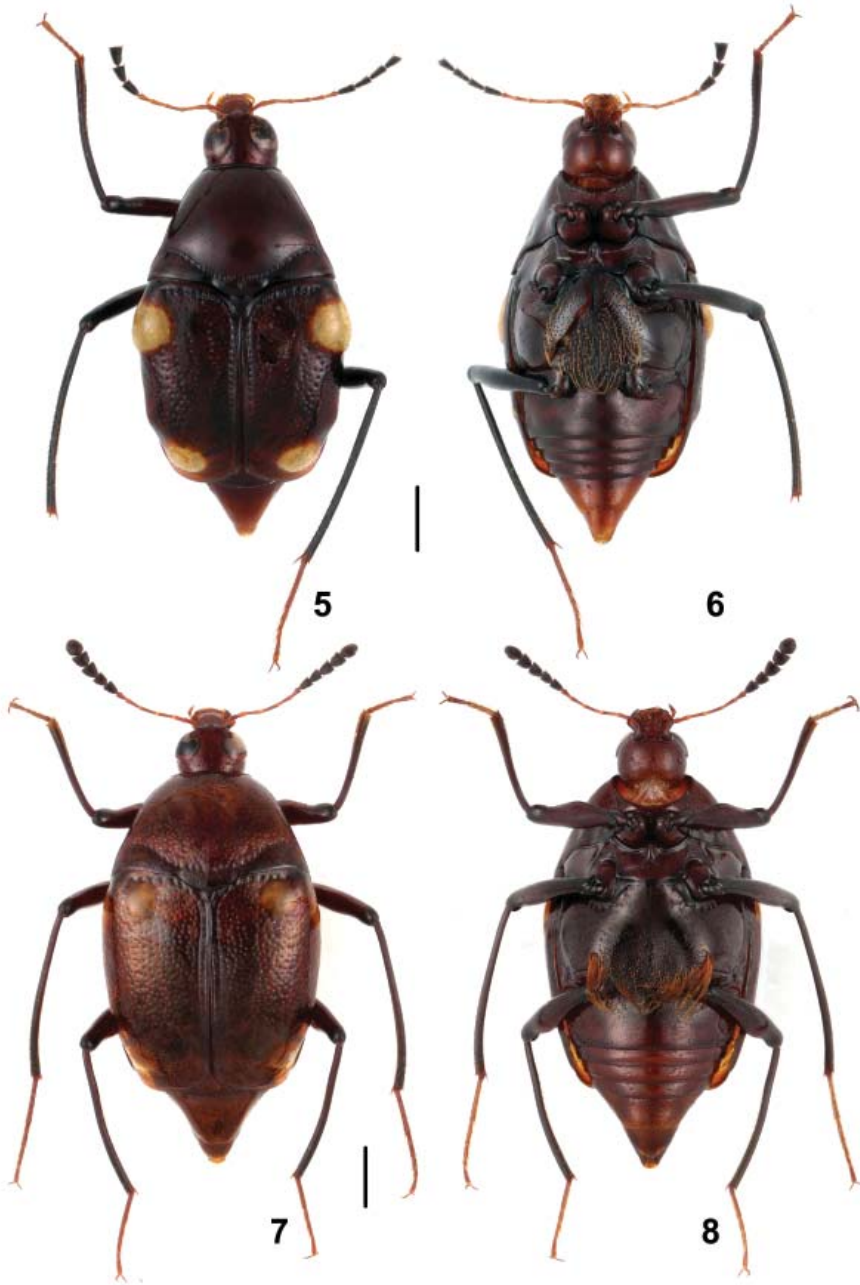
Head with punctation on frons small and moderately dense. Pronotum slightly raised above elytra, antebasal puncture row impressed, disc with punctation slightly larger than that of frons. Elytra with punctation of black portion similar to that of pronotum, punctation of yellow portion faint to obsolete. Prohypomera uneven without punctures and microsculpture. Mesepisterna sparsely punctated. Exposed abdominal tergites with coarse punctures and microsculpture consisting of very fine punctures. Ventrite I with most of centre coarsely and moderately densely punctate and lateral portion sparsely punctate. Entire sternite I with microsculpture consisting of very fine punctures.

Male. Metaventrite with long pubescence covering about 3/4 of median portion. Profemur (Fig. 11) with ventral side slightly expanded. Protibiae (Fig. 11) slightly sinuate, inconspicuously prominent on about apical 1/5 of ventral side and forming indistinct ridge. Aedeagus (Fig. 9) with internal sac (Fig. 10) comprising large triangular apical sclerite and basal sclerites complex which consists of three pairs of small sclerites.

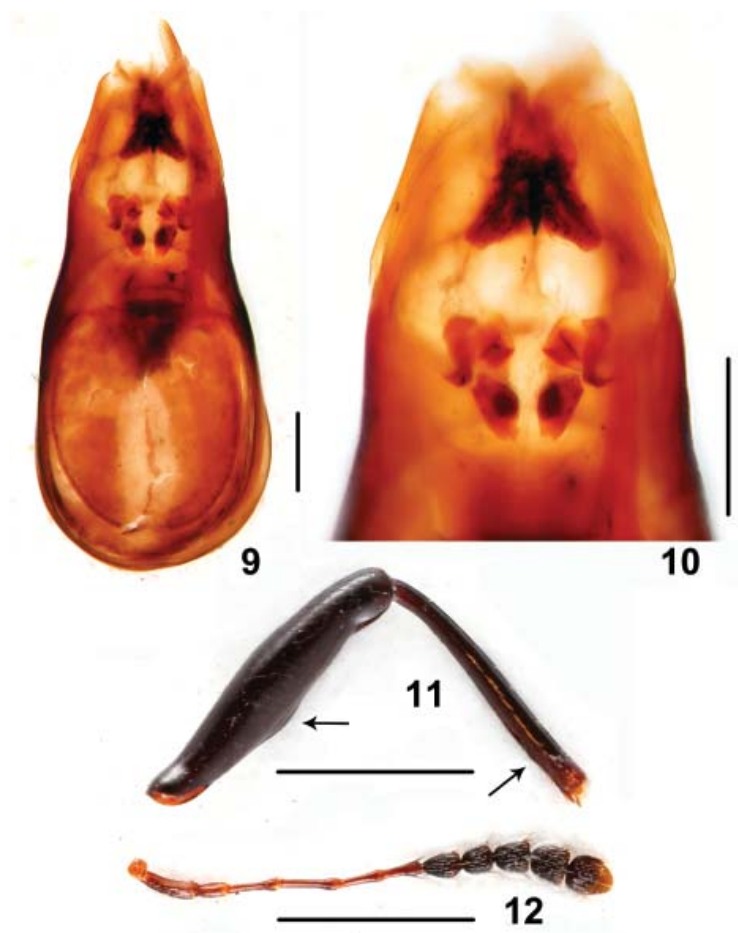
Differential diagnosis. *Scaphidium yinziweii* sp. nov. can be distinguished by its color pattern, in which the new species resembles *S. zhoushuni* He, Tang & Li, 2009 (Figs. 3, 4) from



Figs. 1–4. Male habitus of *Scaphidium* Olivier, 1790. 1–2 – *S. yinziweii* sp. nov., holotype; 3–4 – *S. zhoushuni* He, Tang & Li, 2009, paratype. Scale bars: 1 mm.



Figs. 5–8. Male habitus of *Scaphidium* Olivier, 1790. 5–6 – *S. bituberculatum* sp. nov., holotype; 7–8 – *S. direptum* Tang & Li, 2010, paratype. Scale bars: 1 mm.



Figs. 9–12. *Scaphidium yinziwei* sp. nov. 9 – aedeagus; 10 – internal sac; 11 – male front leg; 12 – antenna. Scale bars: 0.25 mm (9–10); 1 mm (11–12).

Shaanxi Province and *S. incrassatum* Achard, 1920 (LÖBL 1992: Fig. 12) from Burma and India. It differs from them by the elytron lacking an inner basal black spot near the scutellum and having a large black spot entirely connected to the black band along the suture. In addition, the male protibia is less expanded subapically and the shape of the sclerites of the internal sac are different: in *S. zhoushuni*, the apical sclerite is very short and the basal sclerites complex is very small. The male of *S. incrassatum* is unknown.

Etymology. The species is named in honor of Dr. Zi-Wei Yin (Shanghai), who collected the holotype.

Habitat. Collected in flight in a broadleaved forest.

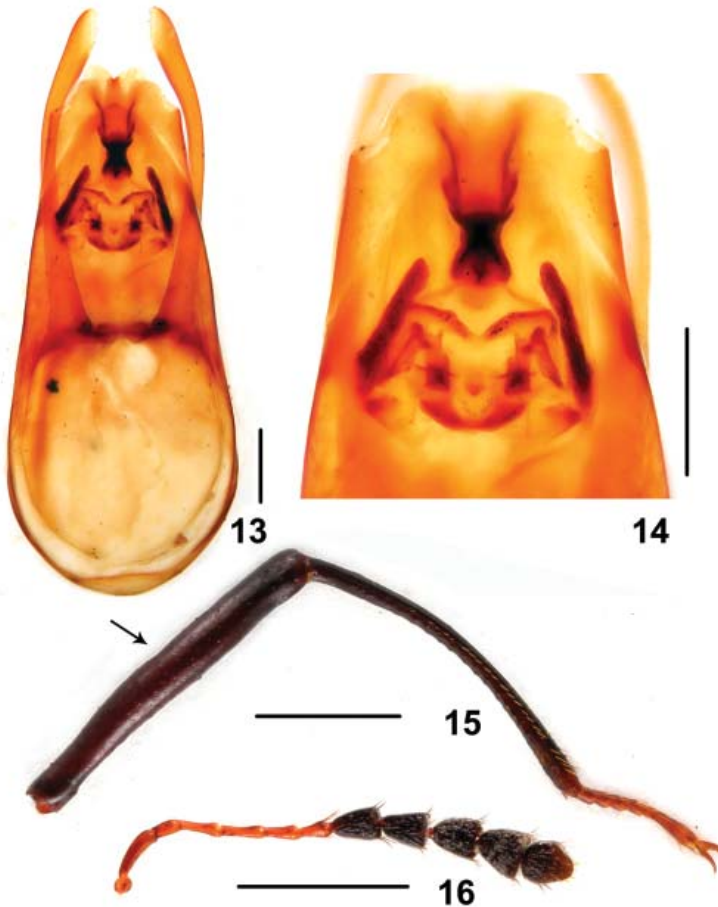
Distribution. China (Yunnan). Known only from the type locality.

***Scaphidium bituberculatum* sp. nov.**

(Figs. 5, 6, 13–16)

Type locality. China, Hainan Prov., Lingshui County, Diaoluoshan National Reserve, 18°43.37'N, 109°52.00'E.**Type material.** HOLOTYPE: ♂, China, Hainan Prov., Lingshui County, Diaoluoshan N. R., 16–17.VII.2006, Z.-L. WANG & C. GAO leg. (HBUM). PARATYPE: ♀, with the same data as the holotype (HBUM).**Description.** Body reddish brown with femora darker and tibiae blackish; antennal club black except last segment brownish on apical half; elytra each with two large yellow spots: one on humeral portion and another one on apicolateral portion. Antennae (Fig. 16) with similar coloration to those in *S. yinziweii* sp. nov.

Body measurements: BL: 7.0–7.1 mm, ED: 0.29 mm, PL: 2.23–2.32 mm, PW: 3.04–3.31 mm, EW: 3.48–3.65 mm.



Figs. 13–16. *Scaphidium bituberculatum* sp. nov. 13 – aedeagus; 14 – internal sac; 15 – male front leg; 16 – antenna. Scale bars: 0.25 mm (13–14); 1 mm (15–16).

Head with punctation clearly present only on posterior portion of frons, which is moderately coarse, dense and shallow. Pronotum distinctly elongate, strongly convex at base, antebasal puncture row deeply impressed, pronotal disc with punctation similar to that of posterior portion of frons. Elytron with two yellow spots: humeral spot strongly convex, subapical spot weakly convex. Lateral margin of elytron with prominent anterior subapical spot. Elytral disc with punctures moderately to very coarse and arranged to form irregular lines. Prohypomera uneven, with several scattered shallow punctures. Mesepisterna very sparsely and very shallowly punctate. Exposed abdominal tergites with coarse punctures and reticulate microsculpture. Ventrite I with coarse punctures restricted onto medio-basal portion, reticulate microsculpture covering its entire surface.

Male. Metaventricle with long pubescence covering nearly entire median portion. Profemora (Fig. 15) distinctly longer than those of female, inconspicuously tortuose on about half, ventral sides with row of small tubercles. Protibiae (Fig. 15) distinctly incurved, with two rows of small ventral tubercles. Aedeagus (Fig. 13) with internal sac (Fig. 14) comprising longitudinal apical sclerite and complicated complex of basal sclerites which consists of several median sclerites and a pair of large and elongate lateral sclerites.

Differential diagnosis. *Scaphidium bituberculatum* sp. nov. is similar to *S. direptum* Tang & Li, 2010 (TANG & LI 2010b) (Figs. 7, 8) from Guangdong Province due to the presence of prominent elytral spots. It may be easily distinguished from the latter species by its elongate pronotum, strongly convex elytral spots and different male sexual characters, in particular by the ventrally tuberculate profemora and protibiae.

Etymology. The specific name is a combination of the Latin prefix *bi-* and the adjective *tuberculatum*, referring to its strongly prominent humeral spots.

Habitat. Unknown

Distribution. China (Hainan). Known only from the type locality.

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References

- ACHARD J. 1920: Description d'espèces nouvelles de Scaphidium (Coléoptères Scaphidiidae) de la région indomalaise. *Bulletin du Muséum d'Histoire Naturelle* **26**: 125–128.
- HE W.-J., TANG L. & LI L.-Z. 2008a: Notes on the genus Scaphidium Olivier of China with description of a new species (Coleoptera, Staphylinidae, Scaphidinae). *Entomological Review of Japan* **62**: 177–182.
- HE W.-J., TANG L. & LI L.-Z. 2008b: A review of the genus Scaphidium Oliver (Coleoptera, Staphylinidae, Scaphidiinae) from Tianmushan, East China. *Zootaxa* **1898**: 55–62.

- HE W.-J., TANG L. & LI L.-Z. 2009: A new species and a new record species of the genus *Scaphidium* Olivier (Coleoptera, Staphylinidae, Scaphidiinae) from China. *Acta Zootaxonomica Sinica* **34**: 481–484.
- KIMURA F. 1987: A new species of Scaphidiidae from Taiwan (Coleoptera). *Entomological Review of Japan* **42** (suppl.): 9–11.
- LÖBL I. 1992: The Scaphidiidae (Coleoptera) of the Nepal Himalaya. *Revue Suisse de Zoologie* **99**: 471–627.
- LÖBL I. 1999: A review of the Scaphidiinae (Coleoptera: Staphylinidae) of the People's Republic of the China, I. *Revue Suisse de Zoologie* **106**: 691–744.
- MIWA Y. and MITONO T. 1943: [Scaphidiidae of Japan and Formosa]. *Transactions of the Natural History Society of Formosa* **33**: 512–555 (in Japanese).
- TANG L. & LI L.-Z. 2010a: On *Scaphidium grande-complex* (Coleoptera, Staphylinidae, Scaphidiinae). *ZooKeys* **43**: 65–78.
- TANG L. & LI L.-Z. 2010b: A new species of the genus *Scaphidium* Olivier from China (Coleoptera: Staphylinidae: Scaphidiinae). *Journal of the Kansas Entomological Society* **83**: 318–321.