Three new species of the genus Scaphicoma Motschulsky, 1863 (Coleoptera, Staphylinidae, Scaphidiinae) from Northern Sulawesi, Indonesia

Ryo Ogawa¹,†, Ivan Löbl²‡, Kaoru Maeto¹§

¹ Laboratory of Insect Biodiversity and Ecosystem Science, Graduate School of Agricultural Science, Kobe University, 1-1 Rokkodai, Nada-ku, Kobe, 657-8501 Japan ² Muséum d’histoire naturelle, Route de Malagnou 1, CH-1208 Geneva, Switzerland

† http://zoobank.org/80A4671A-D58C-4903-9A22-F700FAD0F1C3
‡ http://zoobank.org/E348BD58-6B15-4917-A000-06E38926BF54
§ http://zoobank.org/BEBD5A8E-EC49-42CF-8E1E-C375287A0B36

Corresponding author: Ryo Ogawa (ailmasbl0854@yahoo.co.jp)

Academic editor: V. Assing | Received 6 February 2014 | Accepted 2 April 2014 | Published 17 April 2014

Citation: Ogawa R, Löbl I, Maeto K (2014) Three new species of the genus Scaphicoma Motschulsky, 1863 (Coleoptera, Staphylinidae, Scaphidiinae) from Northern Sulawesi, Indonesia. ZooKeys 403: 1–13. doi: 10.3897/zookeys.403.7200

Abstract

Three new species of the genus Scaphicoma Motschulsky, 1863 from Sulawesi, Indonesia are illustrated and described: Scaphicoma subflava Ogawa & Löbl, sp. n., S. bidentia Ogawa & Löbl, sp. n., and S. quadриfasciata Ogawa & Löbl, sp. n. Lepteroscapha pallens Achard, 1921 is designated as the type species of the genus Lepteroscapha Achard, 1921.

Keywords

Scaphidiinae, Scaphicoma, new species, male and female genitalia, Sulawesi, Indonesia, Sundaland

Introduction

The genus Scaphicoma Motschulsky, 1863 currently includes 16 species (Achard 1920; Löbl 1971, 1973, 1984, 1990, 1992, 2003; Löbl and Leschen 2010; Ogawa and Hoshina 2012; Pic 1915, 1923), which are mainly distributed in Southeast Asia, with the exception of S. biranoin (Hoshina, 2008) from Japan, S. antennalis (Achard, 1922) and S. yapo Löbl
& Leschen, 2010 from tropical Africa, and S. gracilis Löbl, 1971 and S. montheisi Löbl & Leschen, 2010 from New Ireland and Australia, respectively. This genus may be easily distinguished from other scaphidiines by body elongate, strongly convex in dorsal view, hind tarsus longer than hind tibia, mesepimera fused, and strongly elongate antennae.

In this paper, we describe three new species of the genus *Scaphicoma* from the northern and central parts of Sulawesi, Indonesia, and discuss the relationships among these new species and their relatives with respect to the geohistory of Sulawesi. In addition, we designate a type species of the genus *Lepteroscapha*.

**Material and methods**

The specimens examined were collected by the first author or had been deposited at MHNG (see below). We refer to Ogawa and Löbl (2013) and the references quoted therein for methods and terminological conventions.

The abbreviations used herein are as follows:

- **EL**: length of elytra from base of pronotum to apex of elytra
- **EW**: maximum width of elytra
- **HW**: maximum width of head including eye
- **ID**: interocular distance
- **PL**: maximum length of pronotum
- **PW**: maximum width of pronotum
- **EUMJ**: Ehime University Museum, Matsuyama, Japan
- **HUOI**: Hasanuddin University, R. Ogawa collection, Makassar, Indonesia
- **MZBI**: Museum Zoologicum Bogorience, Bogor, Indonesia
- **MHNG**: Muséum d’histoire naturelle, Genève, Switzerland
- **RISTEK**: Ministry of State for Research and Technology, Indonesia

**Systematics**

*Scaphicoma* Motschulsky, 1863 [gender: feminine]
http://species-id.net/wiki/Scaphicoma

*Scaphicoma* Motschulsky, 1863: 435; type species: *Scaphicoma flavovittata* Motschulsky, 1863; by monotypy.

*Lepteroscapha* Achard, 1921: 88; type species: *Lepteroscapha pallens* Achard, 1921; by present designation. Synonymy: Löbl 1971.

**Note.** Achard (1921) established *Lepteroscapha* for three new species, *L. pallens*, *L. nigrovittata*, and *L. filiformis*. A type species was not designated. Therefore, we designate here *L. pallens* Achard, 1921 as the type species.
Key to Sulawesian species of *Scaphicoma*

1. Body unicolorous (Fig. 1a, b) ................................................................. 2

   – Body bicolorous (Fig. 1c). Ventral surface with iridescent luster due to microsculptures. Parameres enlarged subapically and tapering to apex, weakly pointed around subapical portion in dorsal view. **S. quadrifasciata** sp. n.

2. Body yellowish-brown to reddish-brown. Ventral surface not iridescent. Body 2.55–2.75 mm long. Antennomere XI about 1.6 times as long as VIII; IV and V shorter than VI. Mesotarsomere I about 1.2 times as long as II and about 2.2 times as long as IV; V about 1.5 times as long as IV. Metatarsomeres I about 1.5 times as long as II; IV almost as V length. Male sternite VII with strongly concave middle of apical margin. Parameres asymmetrical. Bursa copulatrix sclerotized (Fig. 2c) .......................... **S. subflava** sp. n.

   – Body dark reddish-brown. Body 2.25–2.44 mm long. Antennomere XI about two times as long as VIII; IV and V almost same as VI. Mesotarsomere I about 1.5 times as long as II; V about 2 times as long as IV. Metatarsomere I about 2.0 times as long as II and about 2.5 times as long as IV; V about 0.7 times as long as IV. Male and female sternite VII with moderately concave middle of apical margin. Paramere symmetrical, weakly enlarged subapically. Bursa copulatrix not sclerotized (Fig. 3c) ......................... **S. bidentia** sp. n.

*Scaphicoma subflava* Ogawa & Löbl, sp. n.

http://zoobank.org/5EF0186B-9ECA-4998-805B-BC38A0450214
http://species-id.net/wiki/Scaphicoma_subflava

Figs 1a, 2, 5

**Diagnosis.** Most of body yellowish-brown. Body size relatively moderate. Antennomere XI about 1.6 times as long as VIII; IV and V each shorter than VI. Protarsomeres I–III and V each about two times as long as IV. Mesotarsomeres I about 1.2 times as long as II and III; V about 1.5 times as long as IV. Metatarsosomeres I about 1.5 times as long as II and III; II and III each about 1.5 times as long as IV and V. Male sternite VII with middle of apical margin strongly concave. Parameres asymmetrical. Internal sac on basal portion covered with scale-like sclerites, and with pair of sclerites on apical portion. Bursa copulatrix sclerotized.

**Description.** Body, shining. Most of body including head, pronotum and elytra yellowish-brown, except for darkened mesoventrite (Fig. 1a). Antennae yellowish-brown, except of antennomeres VII–XI dark yellowish-brown. Head, pronotum and elytra sparsely and finely pubescent.

   Head with interocular distance almost as eye width. Punctuation sparse and fine. Antennomeres I–VI with a few macrosetae, VII–XI covered with some microsetae; VI about two times as long as III; IV and V each shorter than VI; VII almost as VIII; XI about 1.6 times as long as VIII (Fig. 2c).
Pronotum almost as wide as long, lateral keel invisible in dorsal view. Punctuation sparse and fine, as on head. Scutellum concealed.

Elytra longer than wide, widest at basal 1/6, gradually narrowed to apex, with minute serration at inner part of posterior margin. Punctuation coarser than on pronotum (Fig. 5e, f). Sutural striae extending outwards along basal margin to form basal striae, reaching humeral area and not joined with lateral striae.

Propygidium densely and finely punctuate. Pygidium sparsely and finely punctuate, slightly emarginated at apex.

Hypomeron finely punctuate. Lateral portion of mesoventrite coarsely and sparsely punctuate; medial portion finely and sparsely punctuate, with fine pubescence. Lateral portion of metaventrite from base to basal 1/3 sparsely and coarsely punctuate, with apical portion moderately concave. Mesocoxa almost six times as wide as space between them; mesocoxal area moderately broadened. Metepimeron almost as long as wide, with microsculpture. Metacoxa about eight times as wide as metacoxal process. Metanepisternum about six times as long as wide. Lateral portion of ventrite I from base to basal 1/3 densely and coarsely punctuate. Ventrite VI strongly pointed at apicomedian portion.

Meso- and metafemora with microsculpture, sparsely and coarsely punctuate. Protarsomeres I–III and V each about two times as long as IV. Mesotarsomeres I about 1.2 times as long as II and III; V about 1.5 times as long as IV. Metatarsomeres I about 1.5 times as long as II and III; II and III each about 1.5 times as long as IV and V.

Male. Ventrite V strongly emarginated at apex. Protarsomeres I–III with tenent setae (Fig. 5b), enlarged. Aedeagus about 0.91 mm long; parameres asymmetrical; internal sac on basal portion covered with scale-like sclerites, and with a pair of sclerites (Fig. 2a).
Three new species of the genus *Scaphicoma* Motschulsky, 1863...

Female. Ventrite V slightly emarginate or truncate. Protarsomeres I–III without tenent setae, not enlarged. Gonostylus elongate. Distal gonocoxite normal and elongate; vagina membranous, without robust sclerites; bursa copulatrix strongly sclerotized (Fig. 2c, d). Spermatheca as Fig. 2c.

**Measurements** (n = 6). Length (PL+EL): 2.55–2.75 mm; width (PW, EW): 1.04–1.13 mm, 1.09–1.21 mm. HW: 0.55–0.58 mm. ID: 0.16–0.19 mm. PL/PW: 0.95–1.07. EL/EW: 1.30–1.43. Approximate ratio of each antennal length (width) from base to apex as follows (n = 1): 1.7 (0.7) : 0.9 (0.6) : 1.0 (0.2) : 1.6 (0.2) : 1.5 (0.2) : 1.9 (0.2) : 1.5 (0.3) : 1.5 (0.2) : 1.7 (0.3) : 1.9 (0.3) : 2.5 (0.2).

**Specimens examined.** Holotype, 1♂, Mt. Tilongkabila (Gunung Tilongkabila), N. Sulawesi, alt. ca. 800 m, 0°34’28.52N, 123°11’30.61E, 8. VI. 2012, R. Ogawa leg. (MZBI); Paratypes, 2♂2♀, Same data above (EUMJ); 1♂, Mt. Tilongkabila (Gunung Tilongkabila), N. Sulawesi, alt. ca. 800–1300 m, 0°34’28.52N–0°35’18.14N, 123°11’30.61E–123°13’22.71E, 9. VI. 2012, R. Ogawa leg. (HUOI); 1♂, Palu, Palopo, C. Sulawesi, 25–27. VIII. 1990, A. Riedel leg. (MHNG).

![Figure 2. Genitalia and antenna of *Scaphicoma subflava* sp. n.](image-url)
Distribution. Indonesia: northern and central Sulawesi.

Etymology. This specific name is the Latin *subflava* adjective meaning somewhat yellowish.

Remarks. This species was illustrated in Leschen and Löbl (2005), thought unidentified. It is very similar to the Javanese *Scaphicoma pallens* (Achard, 1921) by the body color and the shapes of male genitalia, but it is easily distinguished by the distinctive male genitalia with internal sac bearing sclerites.

*Scaphicoma bidentia* Ogawa & Löbl, sp. n.

http://zoobank.org/03705635-A4E6-4878-91A6-804E5EF413C8
http://species-id.net/wiki/Scaphicoma_bidentia

Figs 1b, 3

Diagnosis. Body dark reddish-brown. Body size relatively small. Antennomere XI about two times as long as VIII; IV and V each almost as VI. Protarsomeres I–III each about 1.2 times as long as IV; V about 1.7 times as long as IV. Mesotarsomeres I and V each about two times as long as II; III about 1.5 times as long as IV. Metatarsomeres I about 2.0 times as long as II; II and III each about 1.5 times as long as IV; V about 1.7 times as long as IV. Male and female sternite VII with middle of apical margin moderately concave. Paramere symmetrical, weakly enlarged at subapical portion. Internal sac with two-pronged spear shaped sclerite.

Description. Body shining. Head and mouthparts reddish-brown. Antenna yellowish-brown, except for antennomeres VI–XI dark yellowish-brown. Pronotum, elytra and ventral surface dark reddish-brown (Fig. 1b). Legs, propygidium and pygidium yellowish-brown. Head, pronotum and elytra sparsely and finely pubescent.

Head with interocular distance almost as eye width. Punctuation sparse and fine. Antennomeres I–VI with a few macrosetae, VII–XI covered with some microsetae; VI about 1.5 times as long as III; IV and V each almost as VI or shorter; VII almost as VIII or shorter; XI about two times as long as VIII (Fig. 3e).

Pronotum almost as wide as long, lateral keel invisible in dorsal view. Punctuation sparse and fine, as on head. Scutellum concealed.

Elytra longer than wide, widest at basal 1/6, gradually narrowed to apex, with minute serration at inner part of posterior margin. Punctuation coarser than on pronotum. Sutural striae extending outwards along basal margin to form basal striae, reaching humeral area and not joined with lateral striae.

Propygidium and pygidium sparsely and finely punctuate.

Hypomeron finely punctuate. Lateral portion of mesoventrite coarsely and sparsely punctuate; medial portion finely and sparsely punctuate, with fine pubescence. Lateral portion of metaventrite from base to basal 1/3 sparsely and coarsely punctuate, with apical portion moderately concave. Mesocoxa almost six times as wide as space between them; mesocoxal area moderately broadened. Metepimeron almost as long as wide, with microsculpture. Metacoxa about eight times as wide as metacoxal process.
Three new species of the genus Scaphicoma Motschulsky, 1863...

Metanepisternum about six times as long as wide. Lateral portion of ventrite I from base to basal 1/3 densely and coarsely punctuate. Ventrite V emarginated at apex. Ventrite VI strongly pointed at apicomedian portion.

Meso- and metafemora with microsculpture, sparsely and coarsely punctuate. Protarsomeres I–III each about 1.2 times as long as IV; V about 1.7 times as long as IV. Mesotarsomeres I and V each about two times as long as II; III about 1.5 times as long as IV. Metatarsomeres I about 2.0 times as long as II; II and III each about 1.5 times as long as IV; V about 1.7 times as long as IV.

Male. Protarsomeres I–III with tenent setae, enlarged. Aedeagus about 0.62 mm long; parameres symmetrical; internal sac with two-pronged spear shaped sclerite (Fig. 3a).

Female. Protarsomeres I–III without tenent setae, not enlarged. Gonostylus robust. Distal gonocoxite normal, robust in lateral view; vagina membranous, without robust sclerites; bursa copulatrix not sclerotized (Fig. 3c, d). Spermatheca as Fig. 3c.

**Measurements** (n = 3). Length (PL+EL): 2.25–2.44 mm; width (PW, EW): 0.89–0.94 mm, 0.93–0.98 mm. HW: 0.46–0.53 mm. ID: 0.16–0.19 mm. PL/PW:
1.00–1.20. EL/EW: 1.42–1.45. Approximate ratio of each antennal length (width) from base to apex as follows (n = 1): 1.4 (0.5) : 0.9 (0.5) : 1.0 (0.2) : 1.4 (0.2) : 1.6 (0.2) : 1.3 (0.3) : 1.2 (0.2) : 1.5 (0.3) : 1.6 (0.2) : 2.4 (0.2).

**Specimens examined.** Holotype, 1♂, Mt. Tilongkabila (Gunung Tilongkabila), N. Sulawesi, alt. ca. 500–800 m, 0°34'04.62N–0°34'28.52N, 123°11'15.42E–123°11'30.61E, 26–27.I.2011, R. Ogawa leg. (MZBI); Paratypes, 1♀, same data above (EUMJ); 1♀, Mt. Tilongkabila (Gunung Tilongkabila), N. Sulawesi, alt. ca. 800–1300 m, 0°34'28.52N–0°35'18.14N, 123°11'30.61E–123°13'22.71E, 9.VI.2012, R. Ogawa leg. (HUOI).

**Distribution.** Indonesia: northern Sulawesi.

**Etymology.** This specific name is derived from the Latin *bidentia* (two-pronged), referring to the shape of sclerites of the internal sac.

**Remarks.** This species is very similar to the Philippines *Scaphicoma pullex* (Heller, 1917) by the body color and size, and it is also very similar to *Scaphicoma cincta* (Pic, 1920) from Sumatra by the shape of internal sac of the aedeagus. However, *S. pullex* is easily distinguished from the new species by the Y-shaped sclerite of internal sac and *S. cincta* is also easily distinguished from the new species by the color of elytra and pronotum with black along the edges.

**Scaphicoma quadrifasciata** Ogawa & Löbl, sp. n.

http://zoobank.org/0450A718-3766-49A6-9D86-BAB2D5A5FC8E
http://species-id.net/wiki/Scaphicoma_quadrifasciata

Figs 1c, 4

**Diagnosis.** Body bicolorous: basic color yellowish-brown, elytra each with black fasciae and black along sutural and lateral margins. Ventral surface with iridescent luster due to microsculptures. Antennomere VI about two times as long as III; IV and V each shorter than VI; XI about 1.6 times as long as VIII. Protarsomeres I–III and V about two times as long as IV. Mesotarsomeres I about 1.8 to 2.0 times as long as II; II , III and V each about 1.2 times as long as IV. Metatarsomeres I about 1.5 to 1.7 times as long as II; II and III each about 1.2 times as long as IV and V; IV almost as long as V. Parameres enlarged at subapical portion and tapering to apex, weakly pointed around subapical portion in dorsal view.

**Description.** Body shining. Head, mouthparts and antenna yellowish-brown, except for antennomeres VII–XI dark yellowish-brown. Basic color of dorsal surface yellowish-brown, pronotum ochraceous or darkened on disc, black along margins. Elytra each with two black fasciae and black along suture and lateral margins (Fig. 1c). Posterior margins of anterior fasciae extended to apex along sutural striae, not reaching to sutural striae. Posterior fasciae extended to apex, reaching to sutural striae. Propygidium and pygidium from in basal half black, pygidium from mid-length to apex brown. Ventral surface almost black and with iridescent luster due to microsculptures. Coxa, ventrite I and II and femora, tibiae and tarsi yellowish-brown. Head, pronotum and elytra sparsely and finely pubescent.
Three new species of the genus Scaphicoma Motschulsky, 1863...

Head with interocular distance almost as eye width. Punctuation sparse and fine. Antennomeres I–VI with a few macrosetae; VII–XI covered with some microsetae; VI about two times as long as III; IV and V each shorter than VI; VII almost as VIII; XI about 1.6 times as long as VIII (Fig. 4e).

Pronotum almost as wide as long, lateral keel invisible in dorsal view. Punctuation sparse and fine, as on head. Scutellum concealed.

Elytra longer than wide, widest at basal 1/6, gradually narrowed to apex, with minute serration at inner part of posterior margin. Punctuation coarser than on pronotum. Sutural striae extending outwards along basal margin to form basal striae, reaching humeral area and not joined with lateral striae.

Propygidium sparsely and coarsely punctuate. Pygidium with sparse, fine and also coarse punctures.

Hypomeron finely punctuate. Lateral portion of mesoventrite coarsely and sparsely punctuate; medial portion finely and sparsely punctuate, with fine pubescence. Lateral portion of metaventrite from base to basal 1/3 sparsely and coarsely punctuate, with apical portion moderately concave. Mesocoxa almost six times as wide as space be-

Figure 4. Genitalia and antenna of Scaphicoma quadrifasciata sp. n. a, b Male genitalia c, d female genitalia e female antenna. a, c Dorsal view; b, d lateral view. Scale: 0.25 mm.
between them, mesocoxal area moderately broadened. Metanepisternum about six times as long as wide. Metepimeron almost as long as wide, with microsculptures. Metacoxa about eight times as wide as metacoxal process. Lateral portion of ventrite I from base to basal 1/3 densely and coarsely punctuate. Ventrite V moderately emarginated at apex. Ventrite VI strongly pointed at apical median portion.

**Figure 5.** SEM photographs of a male of *Scaphicoma subflava* sp. n. **a** Profemur **b** tarsonomere III **c** anterior portion of pronotum **d** disc of pronotum **e** elytra **f** disc of elytra **g** meso- and metaventrite in oblique angle **h** lateral portion of metaventrite. **a, c–f** Dorsal view; **g, h** ventral view.
Three new species of the genus Scaphicoma Motschulsky, 1863...

Meso- and metafemora with microsculpture, sparsely and coarsely punctuate. Protarsomeres I–III and V each about two times as long as IV. Mesotarsomeres I about 1.8 to 2.0 times as long as II; II, III and V each about 1.2 times as long as IV. Metatarsomeres I about 1.5 to 1.7 times as long as II; II and III each about 1.2 times as long as IV and V; IV almost as long as V.

Male. Protarsomeres I–III with tenent setae, weakly enlarged. Aedeagus about 0.6 mm long; parameres symmetrical, enlarged at subapical portion, tapering to apex, weakly pointed around subapical portion in dorsal view; internal sac with two-pronged spear shaped sclerite, fine scale-like and denticulate structures (Fig. 4a).

Female. Protarsomeres I–III without tenent setae, not enlarged. Ovipositor simple; bursa copulatrix not sclerotized (Fig. 4c, d). Spermatheca as Fig. 4c.

Measurements (n = 5). Length (PL+EL): 2.47–2.59 mm; width (PW, EW): 1.00–1.03 mm, 1.09–1.10 mm. HW: 0.51–0.54 mm. ID: 0.18–0.21 mm. PL/PW: 0.95–0.99. EL/EW: 1.36–1.46. Approximate ratio of each antennal length (width) from base to apex as follows (n = 1): 1.6 (0.6) : 1.0 (0.6) : 1.0 (0.2) : 1.6 (0.2) : 1.7 (0.2) : 1.9 (0.2) : 1.5 (0.3) : 1.6 (0.2) : 1.7 (0.3) : 1.8 (0.3) : 2.6 (0.3).

Specimens examined. Holotype, 1♂, Mt. Tilongkabila (Gunung Tilongkabila), N. Sulawesi, alt. ca. 1300 m, 0°35’18.14N–123°13’22.71E, 10. VI. 2012, R. Ogawa leg. (MZBI); Paratypes, 1♂1♀, Mt. Tilongkabila (Gunung Tilongkabila), N. Sulawesi, alt. ca. 800–1300 m, 0°34’28.52N–0°35’18.14N, 123°11’30.61E–123°13’22.71E, 9. VI. 2012, R. Ogawa leg. (EUMJ); 1♂1♀, same data above (HUOI).

Distribution. Indonesia: northern Sulawesi.

Etymology. This specific name is derived from the Latin quadri (four) and fasciata (band), referring to the four black elytral bands.

Remarks. This species is very similar to Scaphicoma nigrovittata (Achard, 1921) and Scaphicoma flavovittata Motschulsky, 1863 from Sri Lanka by the distinctly bicolourous body. However, both may be distinguished from the new species by the almost black venter of body, the subapically enlarged parameres and by the shape of the sclerites of the internal sac.

Discussion

Sulawesi is considered to have been formed by the collision of three continental plates, from which derive Sundaland (including Borneo, Sumatra and Java), the Philippines and Australia (e.g. Spakman and Hall 2010). Therefore, the fauna of northern Sulawesi is assumed to be associated with that of Sundaland and the Philippines (Michaux 2010, Stelbrink et al. 2012). Indeed, two Sulawesi species of beetle, S. subflava and S. bidentia, have closely related congeners in Java and the Philippines, respectively. In contrast, S. quadrifasciata is probably related to congeners from Sri Lanka. Thus its ancestors may have drifted east-wards on ocean current. As there are still many gaps in our knowledge of Scaphicoma, further research is needed to gain a better understanding of the relationships and origins of the Sulawesi species.
Acknowledgements

The first author thanks Professor Masahiro Sakai and Associate Professor Hiroyuki Yoshitomi of the Entomological Laboratory, Faculty of Agriculture, Ehime University for their guidance and kind advice during the course of this study. Our thanks are also extended to members of the Mountain Climbing Club Tarantula (Mpa. Tarantula) of the Faculty of Agricultural Sciences, Gorontalo State University, for their kind assistance while mountain climbing in northern Sulawesi. We are very grateful to Dr. Aziz Salam of the Faculty of Agricultural Sciences, Gorontalo State University and Dr. Agnes Rampisela of the Faculty of Agricultural Sciences, Hasanuddin University for their kind assistance in enabling us to obtain a research visa. The research was supported by a research visa from RISTEK (No.111/SIP/FRP/SM/IV/2012).

References

Achard J (1920) Notes sur les Scaphidiidae de la Faune Indo-Malaise. Annales de la Société entomologique de Belgique 60: 123–136.
Achard J (1921) Notes sur les Scaphidiidae du Musée de Leyde. Zoologische mededeelingen 6: 84–91.
Achard J (1922) Descriptions de Scaphidides nouveaux (Col. Scaphidiidae). Fragments entomologiques, Prague, 35–45.
Heller KM (1917) Scaphidiidae von den Philippinen. Wiener entomologische Zeitung 36: 41–50.
Hoshina H (2008) New records of the genus Scaphoxium (Coleoptera: Staphylinidae: Scaphidiinae) from Yaeyama group, the Ryukyus, Japan, with description of a new species. The Entomological Review of Japan 63(1): 57–61.
Leschen RAB, Löbl I (2005) Phylogeny and classification of Scaphisomatini (Staphylinidae: Scaphidiinae) with notes on mycophagy, termitophily and functional morphology. Coleopterists Society Monographs 3: 1–63. doi: 10.1649/0010-065X(2005)059[0001:PACOSS]2.0.CO;2
Löbl I (1971) Scaphidiidae von Ceylon (Coleoptera). Revue Suisse de Zoologie 78 (4): 937–1006.
Löbl I (1973) Über einige orientalische Scaphidiidae (Coleoptera) aus dem Museo Civico di Storia Naturale di Genova und Muséum National d’Histoire Naturelle de Paris. Nouvelle revue d’Entomologie 3: 149–160.
Löbl I (1984) Les Scaphidiidae (Coleoptera) du nord-est de l’Inde et du Bhoutan I. Revue Suisse de Zoologie 91(1): 57–107.
Löbl I (1990) Review of the Scaphidiidae (Coleoptera) of Thailand. Revue Suisse de Zoologie 97: 505–621.
Löbl I (1992) The Scaphidiidae (Coleoptera) of the Nepal Himalaya. Revue Suisse de Zoologie 99: 471–627.
Löbl I (1997) Catalogue of the Scaphidiinae (Coleoptera: Staphylinidae). Muséum d’histoire naturelle, Genève, xii + 190 pp.
Löbl I, Leschen RAB (2010) Notes on the Toxidium group (Coleoptera: Staphylinidae: Scaphidiinae). Folia Heyrovskyana (A), 18(1-3): 71–93.

Michaux B (2010) Biogeology of Wallacea: geotectonic models, areas of endemism, and natural biogeographical units. Biological Journal of the Linnean Society 101(1): 193–212. doi: 10.1111/j.1095-8312.2010.01473.x

Motschulsky VD (1863) Essai d’un catalogue de l’île de Ceylan. Bulletin de la Société impériale des Naturalistes de Moscou 36: 421–532.

Ogawa R, Hoshina H (2012) Notes on the tribe Scaphisomatini (Coleoptera, Staphylinidae, Scaphidiinae) of Japan. Elytra New Series 2(2): 263–266.

Ogawa R, Löbl I (2013) A revision of the genus Baeocera in Japan, with a new genus of the tribe Scaphisomatini (Coleoptera, Staphylinidae, Scaphidiinae). Zootaxa 3652(3): 301-326. doi: 10.11646/zootaxa.3652.3.1

Pic M (1915) Diagnoses de nouveaux genres et nouvelles espèces de Scaphidiides. L’Echange, Revue linnéenne 31: 35–36.

Pic M (1920) Scaphidiides nouveaux de diverses origines. Annali del Museo civico di Storia naturale de Genova 3 (9): 93–97.

Pic M (1923) Scaphidiides exotiques nouveaux (Col.). Bulletin de la Société entomologique de France (1923), 194–196.

Spakman W, Hall R (2010) Surface deformation and slab-mantle interaction during Banda Arc subduction rollback. Nature Geoscience 3: 562–566. doi: 10.1038/ngeo917

Stelbrink B, Albrecht C, Hall R, von Rintelen T (2012) The Biogeography of Sulawesi revisited: Is there evidence for a vicariant origin of taxa on Wallace’s “Anomalous island”? Evolution 66(7): 2252–2271. doi: 10.1111/j.1558-5646.2012.01588.x