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Contribution to the knowledge of Himalayan and North Indian species of *Scaphidium* (Coleoptera, Staphylinidae)

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Abstract. *Scaphidium solukhumbu* sp. nov. and *S. yeti* sp. nov. are described from Eastern Nepal. *Scaphidium* sp. possibly representing an undescribed species is reported from Chitwan National Park, Nepal. Published records of *Scaphidium quadrimaculatum* Olivier from India are considered to be based on misidentifications.

Keywords: Coleoptera - Staphylinidae - Scaphidiinae - taxonomy - Himalaya - India.

INTRODUCTION

The genus *Scaphidium* Olivier, 1790 with its 340 species is known from almost all major biogeographic regions and exhibits its highest diversity in the subtropics and tropics (Löbl, 1997 and subsequent papers). The number of species decreases in areas with temperate or cool climate, and consequently at higher elevations. Currently, only the following Himalayan species have been reported from altitudes above 2000 m (Löbl, 1992; 2005): *S. arrowi* Achard, 1920, *S. melanogaster* Löbl, 1992, *S. harmandi* Achard, 1920, *S. rubritarse* Pic, 1915, *S. biundulatum* Champion, 1927, *S. gurung* Löbl, 1992, *S. nepalense* Löbl, 1992, and *S. thakali* Löbl, 1992, the last four have been reported only from altitudes above 2000 m. Two additional species of *Scaphidium* from comparatively high altitudes in Nepal Himalaya were found within newly examined collections and they are described in the present paper. A further Nepalese species of *Scaphidium* is also recorded here but left unnamed. It is represented by a single female specimen that possibly belongs to a new species but which at this stage cannot be adequately defined. Finally, the records of *Scaphidium quadrimaculatum* Olivier, 1790 (Chandra & Shivaramakrishnan, 1986) from northern India are discussed.

MATERIAL AND METHODS

The material examined is housed in the Staatliches Museum für Naturkunde, Stuttgart, Germany (SMNS), Naturkundemuseum, Erfurt, Germany (NMEC) and

Muséum d'histoire naturelle, Geneva, Switzerland (MHNG).

The specimen data are reproduced verbatim as on the respective labels. The body length is measured from anterior pronotal margin to inner apical angle of elytra unless stated differently. The habitus images were taken by a single-lens reflex camera (CANON® EOS Kiss X7) with a macro photo lens (CANON® MP-E 65 mm Macro lens) attached to the stand (LPL® CSC-10), and then focus-stack images were created with Combine ZM.

TAXONOMY

Scaphidium solukhumbu sp. n.

Figs 1, 3, 4

Holotype: SMNS; ♂; 514 NEPAL: Solukhumbu Distr., Junbesi 2700 m, 11.V.1997 leg. M. Hauser.

Paratypes: SMNS, MHNG; 2 ♀; 521 NEPAL: Solukhumbu Distr., below Pangun 2500 m, 14.-15.V.1997 leg. W. Schawaller. – MHNG; 1 ♀; 525 NEPAL: Solukhumbu Distr., Hinku Drangka Khola bridge 2000, 18-19.V.1997, leg. W. Schawaller.

Etymology: The species epithet is the name of the district in Eastern Nepal in which the species was collected.

Description: Length 4.0-4.4 mm (with head and abdomen about 5.1 mm); width 2.8-2.95 mm. Body black, elytra each with subbasal and subapical transverse reddish fasciae, both narrowed in middle, reaching to lateral margin striae. Subbasal fascia almost



Figs 1-2. *Scaphidium solukhumbu* sp. n., female paratype, in dorsal and lateral views (1), *Scaphidium yeti* sp. n., holotype (2), in dorsal and lateral views. Scale bar = 1 mm, valid for both species.

reaching sutural stria and basal puncture row, larger than subapical fascia and strongly narrowed in middle (Fig. 1). Mouthparts brown to reddish. Antennomeres I to VII dark brown to reddish, VIII to X black, XI black in basal half to two thirds, brown in apical half to third. Femora and tibiae black, tarsi dark brown. Frons wide, at narrowest point 0.22-0.27 mm, with punctures smaller than puncture intervals, becoming dense posterior level of eyes. Pronotum not elevated above level of elytra, gradually, moderately inflexed anteriorly; lateral margins slightly sinuate, anterior section of lateral margin striae not exposed in dorsal view. Prevailing pronotal punctation fine, most puncture intervals about as twice as large as diameters in middle part of disc, punctures very fine at base, antebasal puncture row slightly impressed, not interrupted in middle. Anterior and lateral margin striae impunctate. Scutellum convex. Elytra moderately convex, without impressions or protuberances; adsutural areas flat in basal third, raised in apical two thirds; discal punctation finer and less dense than pronotal punctation; discal puncture rows absent; sutural striae with punctures about as small as discal punctures. Hypomera and mesanepisterna shiny, not microsculptured, very finely punctate. Prosternal margin punctures not elongate. Middle part of metaventre impressed posterior mid-length, with discrimen uninterrupted. Metacoxal process of metaventre truncate, not notched. Legs fairly long. Abdomen finely punctate, with punctulate microsculpture.

Male characters: Metaventre with deep mesal impression. Setal patch dense, covering impressed two thirds of mesal part of metaventre, setae recumbent and moderately long, except for longer lateral setae, latter oblique, weakly curled. Setiferous punctures dense and coarse, puncture diameters about as puncture intervals. Anterior side of profemora with elongate carina. Protibiae slightly sinuate, thickened posterior mid-length, about 0.11 mm at widest point, near base about 0.08 mm. Protarsomeres 1 to 3 moderately widened. Mesotibiae slightly bent, somewhat thickened in apical third, with distinct setal comb on inner side. Metatibiae almost straight, slightly thickened apically. Aedeagus (Figs 3, 4) 1.42 mm long.

Female characters: Tibiae slightly shorter than in male. Protibiae straight, apical third of mesotibiae and metatibiae slightly bent. Metaventre with shallow apicomedian impression; punctation much finer than that on middle of sternite 1. Gonocoxite densely setose along inner margin, with two long and one short subapical setae near our apical angle. Gonostyle short, narrowed apically, with one short, one fairly long and one long apical setae, in addition to few scattered setae.

Type locality: Nepal, Solukhumbu District, Junbesi, 2700 m.

Comments: This species is similar to *S. nepalense* from

which it may be readily distinguished by the narrower frons, the pronotum with barely sinuate lateral margins and finer punctation, the shape of the elytral fasciae, in males by the less curved mesotibiae and metatibiae, the patch on metaventre consisting mostly of straight, recumbent setae, the shape of the median lobe and the internal sac of the aedeagus, in particular by the oblique ventral side of the median lobe (in lateral view) and by the shape of sclerites of the internal sac. As the median lobes of the aedeagi are in these two species more distinctive in lateral than in dorsal view, an illustration of the aedeagus of *S. nepalense* in lateral view is here given (Fig. 5). The internal sac of the aedeagus of *S. solukhumbu* is similar to that in *S. harmandi* (see Löbl, 1992: 593, fig. 72); these two species may be easily distinguished by the head colour and the secondary male characters.

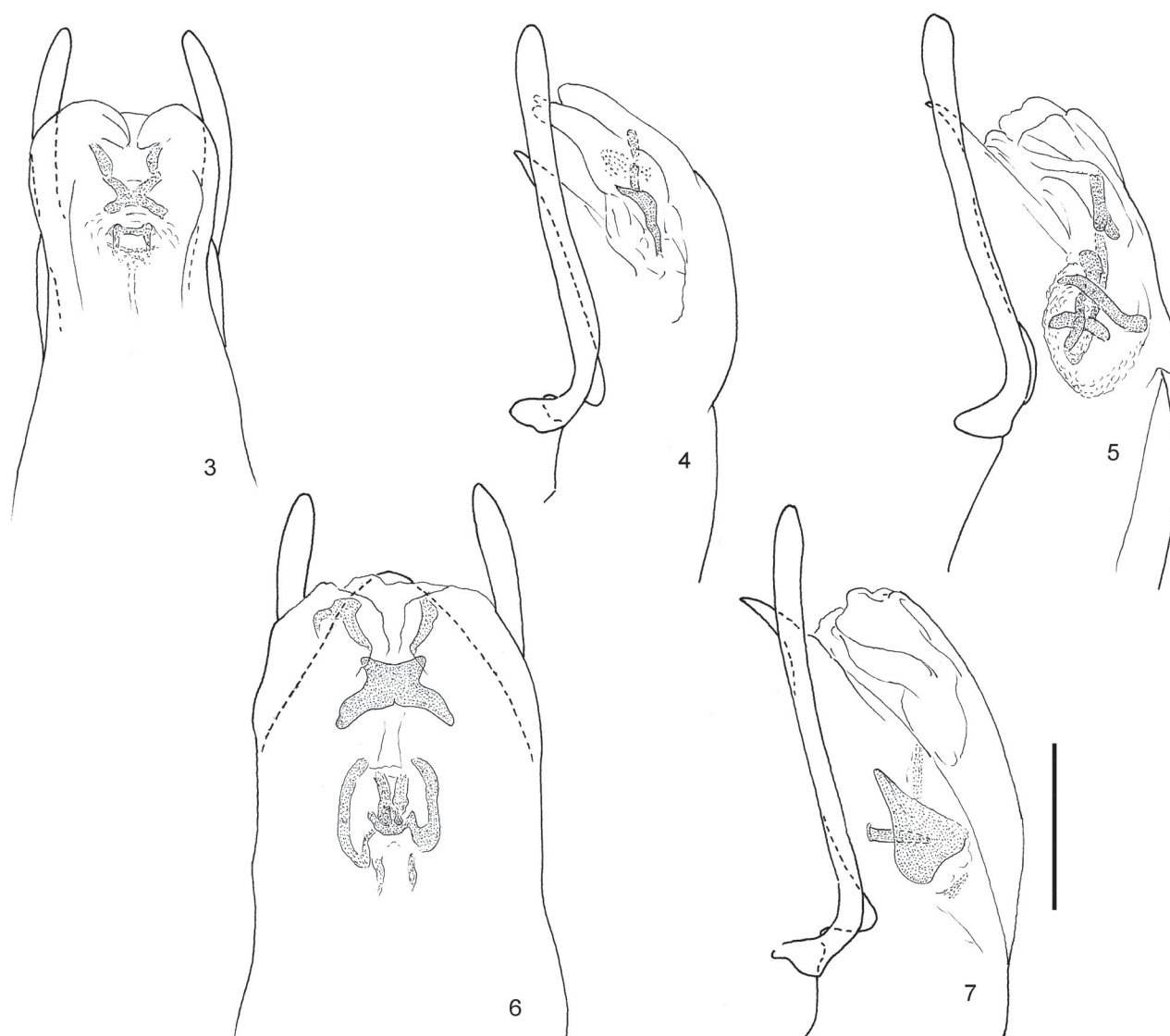
Scaphidium yeti sp. n.

Figs 2, 6, 7

Holotype: NMEC; ♂; NEPAL Rolwaling Himal upp. Simigau vill. 2600 m 2.6.2000 leg. Schmidt.

Etymology: The species epithet is the name of the mysterious Yeti reputed to occur in the Rolwaling Valley.

Description: Length 5.4 mm (with head and abdomen about 6.5 mm), width 3.7 mm. Body black, elytra each with subbasal and subapical transverse, irregular and well delimited reddish fasciae, both not or slightly narrowed in middle and reaching to lateral margin striae. Subbasal fascia barely extended onto inner half of elytra, much larger than subapical fascia (Fig. 2). Mouthparts brown. Antennomeres I to VII dark brown, VIII to XI black. Femora and tibiae black, tarsi dark brown. Frons wide, at narrowest point 0.42 mm, punctures irregular, mostly much smaller than puncture intervals, becoming dense posterior level of eyes. Pronotum not elevated above level of elytra, gradually inflexed anteriorly; lateral margins distinctly sinuate, entirely visible in dorsal view. Prevailing pronotal punctation fine, with most puncture intervals about as large to twice as large as puncture diameters on middle part of disc, punctures very fine at base, antebasal puncture row slightly impressed, not interrupted in middle. Anterior margin stria impunctate, lateral margin striae irregularly punctate. Scutellum almost flat. Elytra moderately convex, adsutural areas flat in basal third, raised in apical two thirds, without impressions or protuberances; discal punctation finer than and about as dense as pronotal punctation; discal puncture rows absent; sutural striae with punctures about as small as discal punctures. Hypomera and mesanepisterna shiny, not microsculptured, very finely punctate. Prosternal margin punctures not elongate.



Figs 3-7. *Scaphidium solukhumbu* sp. n., holotype, aedeagus in dorsal (3) and lateral (4) views. *Scaphidium nepalense* Löbl, aedeagus in lateral view (5). *Scaphidium yeti* sp. n., holotype, aedeagus in dorsal (6) and lateral (7) views. Aedeagi without proximal part of basal bulb. Scale bar = 0.3 mm, valid for both species.

Middle part of metaventricle impressed posterior mid-length, with discrimen fine, uninterrupted. Metacoxal process of metaventricle truncate, not notched. Legs fairly long. Abdomen finely punctate, with punctulate microsculpture.

Male characters: Metasternum with shallow mesal impression. Setal patch dense, covering posterior half of median part of metaventricle, extending apicolaterally to level of trochanters, setae recumbent and short in middle, long, raised and curled anterior of and inbetween metacoxae, forming mesal comb. Setiferous punctures dense and coarse, puncture diameters mostly larger than puncture intervals. Anterior side of profemora angulate. Protibiae slightly sinuate, thickened posterior basal third, about 0.20 mm at widest point, near base about 0.12 mm

wide. Mesotibiae slightly curved, gradually thickened toward apices, each with distinct setal comb on inner side. Metatibiae slightly curved and thickened apically. Aedeagus 1.57 mm long (Figs 6-7).

Female characters: Unknown.

Type locality: Nepal, Dolakha District, Rolwaling Himal, upper Simigau village, 2600 m.

Comments: This species is very similar to *S. nepalense*. It differs by the colour pattern of the elytra and the male sexual characters. Notable are in the new species the thicker tibiae, the metaventricle with long curled setae forming a ridge-like mesal comb, the apical part of the parameres barely widened in lateral view, and the distinctive shape of the sclerites of the internal sac.

Scaphidium sp.

Material examined: SMNS; 1 ♀, 548 NEPAL: Chitwan Distr. Chitwan N.P.: Sauraha 150 m, 31.V.-1.VI.1997 leg. W. Schawaller.

Comments: This species is likely new but available in a single, damaged female while usually males possess the more important diagnostic characters. It is characterized by: Body 4.0 mm long (with head and abdomen 4.65 mm), 2.24 mm wide, black, without metallic shine, with weakly convex lateral contours. Femora and tibiae almost as dark as body. Antennomeres I to VI, mouthparts, tarsi and apex of abdomen lighter, dark reddish-brown to ochreous. Pronotal punctation dense and fairly coarse, with punctures much smaller than puncture intervals, similar to elytral punctures. Hypomera smooth. Metaventrite with indistinct punctation (80x magnification), with apicomedian part flattened. Discrimen throughout very narrow. Legs short, tibiae slightly bent.

This species is similar to *S. punctaticolle* Pic, 1923 from Vietnam. It may be readily distinguished by the darker legs and the anterior section of the discrimen evenly narrow and shallow. Other similar Asian species are *S. comes* Löbl, 1968, *S. incisum* Lewis, 1893 and *S. obtabile* (Lewis, 1893), all differing by the coarser pronotal punctation, *S. obtabile* also by a rugose upper part of hypomera.

Scaphidium quadrimaculatum Olivier, 1790

Comments: This well known species, with a range extending from Great Britain to Siberia and Altai (Löbl, 1997), is not mentioned from the Indian subcontinent in Löbl (1992, 2005). It was reported and redescribed from the Sub-Himalayan areas of Uttarakhand (former part of Uttar Pradesh) and Assam by Chandra & Shivaramakrishnan (1986). Their redescription lacks useful species specific characters, and the illustrated colour pattern does not fit that mentioned in the text. Thus, the specimens illustrated and used for the description in words were possibly not conspecific, and their identity remains unknown.

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