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Setylaides assamensis sp.n., a new species of Eupariini from India (Coleoptera: Scarabaeidae: Aphodiinae)

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Abstract

A new species of *Setylaides* STEBNICKA, 1994 (Scarabaeidae: Aphodiinae: Eupariini) from Assam (India), *S. assamensis*, is described. An updated key to all known species of *Setylaides* is provided together with a discussion of their ecology and biogeography.

Key words: Coleoptera, Scarabaeidae, Aphodiinae, *Setylaides*, Eupariini, India, Oriental Region, new species.

Introduction

The aphodiine genus *Setylaides* STEBNICKA, 1994 was created to accommodate the Oriental species formerly classified within the genus *Dyalites* HAROLD, 1869. The genus covers a small group of rare tropical species, restricted to South East Asia, and known from a handful of specimens. Up to now only five species have been known, which were recently reviewed and keyed by STEBNICKA (2008). A small series of *Setylaides* “discovered” in the Natural History Museum, London, UK (BMNH) clearly belongs to a new species. The material originates from the Indian state of Assam, from where no *Setylaides* had been collected previously.

Setylaides assamensis sp.n.

TYPE MATERIAL: **Holotype** ♂ (BMNH): “NE INDIA, ASSAM, Bhalukpong, 27°02'N 92°35'E, 150m, L. Dembický leg., 26.v.-3.vi.2006, BMNH 2006-48” [printed]; “At light” [printed]; “HOLOTYPE *Setylaides assamensis* J.F.Maté 2016” [handwritten, red, #3]. **Paratypes:** 3 ♀♀ (BMNH): labels #1 and #2 as in holotype; label #3: “PARATYPE: *Setylaides assamensis* J.F.Maté 2016” [handwritten, yellow].

DIAGNOSIS: total length of 5.25 mm (HT), ranging from 5.25–5.85 mm (PT). Body (Fig. 1a) short, stout and suboval laterally, strongly convex dorsally but not globose (Fig. 2a). Body apparently bicoloured, anterior part (head and thorax) piceous and shiny, elytra grey and dull due to a fine alutaceous finish. Legs, antennae, palpi and epipleura blackish. Wings well developed.

Head wide, strongly and evenly convex with only a small impression above the well developed clypeal emargination. Genae obtusely angulate, clearly and strongly produced beyond eyes. Surface shiny, regularly and strongly punctured, the diameter of the punctures gradually increasing posteriorly. Smallest punctures, $\frac{1}{3}$ – $\frac{1}{4}$ the diameter of the larger basal ones, spacing of punctures 1.0–1.5 times their diameter; basal band of punctures lacking (i.e. not clearly differentiated from general puncturation). Punctures annulate, with a flattened bottom and projecting central projection. Often coated in a light coloured, waxy material.

Pronotum moderately and evenly convex throughout, wider than long (ratio 1.37–1.39) with a small but clear impression on each side of posterior half. Posterolateral angles widely truncate, only very slightly emarginate. Anterolateral angles quadrate, downward projecting and visible only in dorsal view. Surface with strong and dense puncturation throughout. Punctures very fine anteriorly, gradually enlarged postero-laterally where they are four times wider than at front.

Basal edge only bordered up to posterolateral corners, the rest with a row of strong but poorly defined punctures which are smaller than those just below the disc.

Elytra suboval and strongly convex, more dilated in apical half of the elytra, 2.1–2.2 times longer than pronotum. Humeral tooth large, acute and strongly developed. Elytral striae clear but fine, punctures strong. Interstriae convex throughout with very small serial punctures that have short yellow setae on the elytral apex. Scutellum small, narrow and acute, depressed in relation to elytra.

Metaventrite (Fig. 5) short, shiny and slightly concave (male) posteriorly, with a strong medial longitudinal sulcus. Surface shiny, moderately punctured on disc with crisp, regular sized and widely spaced punctures. Anterior and lateral edges with large, flat-bottomed punctures.

Only four medially visible ventrites; these are coarsely fluted on anterior $\frac{1}{2}$ to anterior $\frac{1}{3}$, moderately shining and strongly punctured laterally in ventrites 4–6, whereas ventrite 7 is finely punctured throughout. Pygidium divided by one transverse carina, with distal half fluted along carinal edge and neither punctured nor eroded.

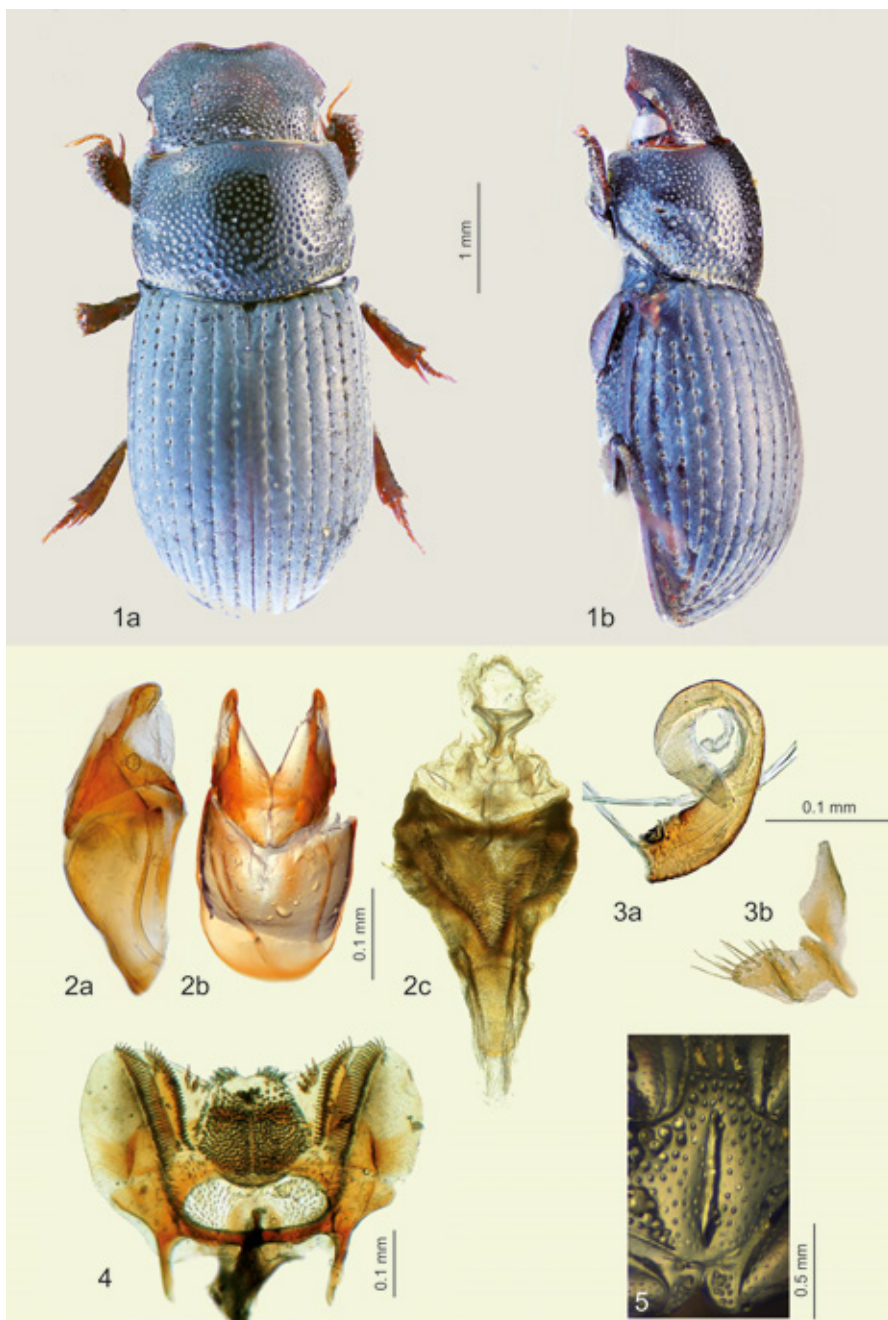
Legs short, metatibia barely one sixth of the total length. Protibia (Fig. 1a) characteristic of the genus. Profemora bordered, coarsely and densely punctured as on vertex. Meso- and metafemora finely punctured. First metatarsomere less than $\frac{3}{4}$ the length of upper spine and equal to next two tarsomeres together.

Male, aedeagus characteristic of other Eupariini (Fig. 2a–b). Endophallus with basal $\frac{3}{4}$ densely covered with strong scale-like regularly-sized setae, otherwise without sclerites or patterns produced by aggregated setae, as is common in *Ataenius* HAROLD, 1867. Female genitalia composed of a globose, almost spherical bursa copulatrix with dorsal chitinized annulus serving as muscle attachment (not shown). Shapes of genital palpus (Fig. 3b) and spermatheca (Fig. 3a) distinct.

Etymology: This species is named after Assam, where it was collected. The epithet is a Latin adjective in the nominative singular.

Diagnosis: This species can be easily distinguished from the other species in the genus by the combination of characters given in the key and by the shape of the genitalia. The species is most similar to *S. monstrosus* (HAROLD, 1877), both in size and general habitus. However, if identified using the key provided by STEBNICKA (2008), *S. assamensis* would key out with *S. chiangmai* STEBNICKA, 2008. It is distinguishable from the latter by the denser puncturation, the shorter body shape, as well as the metatarsal ratio and the shape of the pronotum. The key by STEBNICKA (2008) can be modified by adding a couplet to the last one as follows:

- 4 Pronotum moderately convex at middle; humeral denticle straight-angled; elytra arcuate, 2.5 times as long as pronotum; abdominal sternites coarsely fluted in anterior half..... *chiangmai*
- Elytra parallel-sided, 2.3 times as long as pronotum; humeral denticle acute..... 5
- 5 Pronotum strongly convex at middle; first metatarsal subequal to upper spine and to next three tarsomeres together; abdominal ventrites with moderately coarse fluting in anterior third; sides of ventrites with moderate punctures, similar to those on disk *monstrosus*
- Pronotum moderately and evenly convex; first metatarsal $\frac{1}{4}$ – $\frac{1}{3}$ shorter than upper spine and subequal to next two tarsomeres; ventrites with very coarse fluting in anterior half to third; sides of ventrites with much larger, coarser punctures than disk *assamensis*



Figs. 1–5: *Setylaides assamensis*, a) habitus of holotype, dorsal view, b) same, lateral view, 2) aedeagus, a) lateral view, b) same, dorsal view, c) endophallus, ventral view, 3) female, a) spermatheca, b) genital palp, 4) epipharynx of holotype, 5) metaventral plate of holotype.

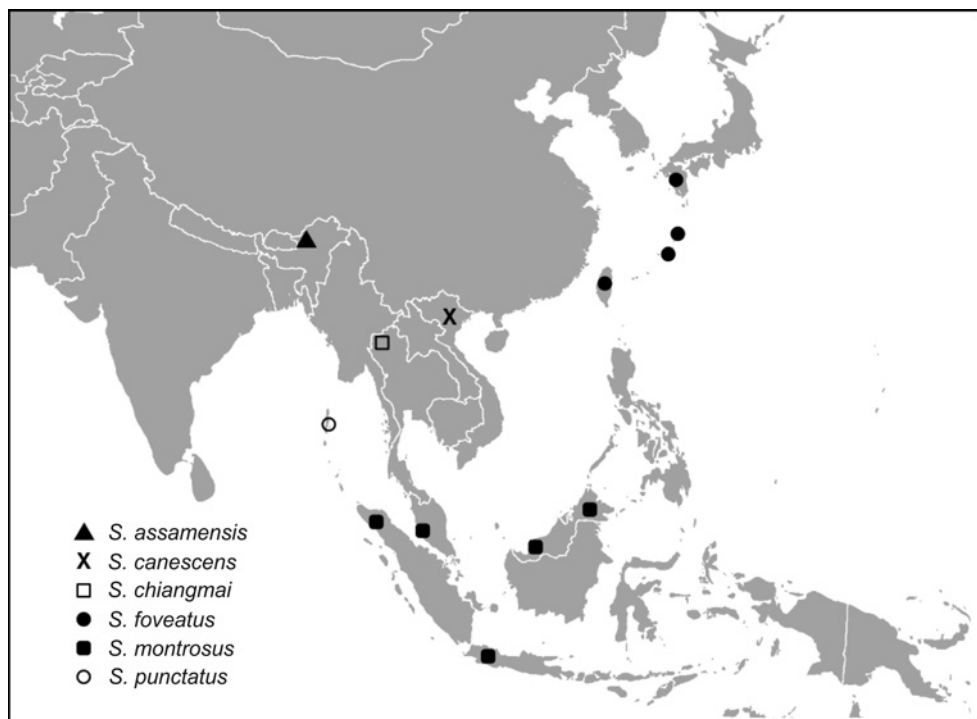


Fig. 6: Distribution map of all known species of *Setylaiides*, based on STEBNICKA (1994, 2008) and new data presented herein.

Discussion

The new species considerably expands the range of the genus, which was previously circumscribed to the SE Asian region and Japan (Fig. 6). Furthermore, the new locality underlines the remarkable distribution of the genus, which seems to encircle the Indochinese Peninsula, with no records from much of it. This is surprising considering the circumstances. Not only is the area particularly well sampled, but collection of material can be achieved by generalist methods as species of *Setylaiides* are readily attracted to light. Furthermore, their ecological requirements do not appear to be too restrictive, as they span over coastal localities (*S. foveatus* (SCHMIDT, 1909), *S. canescens* (BALTHASAR, 1933), *S. punctatus* (SCHMIDT, 1911) and montane forests (*S. assamensis*, *S. chiangmai*). In particular the lack of records along the Annamite Range is remarkable considering the range of potential suitable habitat along its extension. The scarcity of material in general suggests that these taxa have either low populations densities or a niche habitat that difficulties collection, such as myrmecophily.

Although morphologically similar to the supposedly myrmecophilous (STEBNICKA & GALANTE 2007) *Odontolochini*, very little is known regarding the habits of *Setylaiides*. The morphology of the mouthparts in *Setylaiides*, and in particular the epipharynx (Fig. 4) is consistent with its placement in the *Odontolichini*, being most similar to genera such as *Napoa* STEBNICKA, 1999 and *Odontolochus* SCHMIDT, 1916. The waxy deposits filling the punctures are indicative of profuse secretory activity which, together with the compact shape and fully retractable appendages, is consistent with myrmecophily. However, the dissection of the specimens in this

study, as well as of material of *S. foveatus* and *S. monstrosus*, has not revealed any trichomes or other specialized morphological adaptations associated with this behavior. Furthermore, the examination of the gut contents reveals an assortment of woody detritus, indicative of a diet consisting of soft, decomposing woody, similar to the subcortical habits and diet of the species in *Saprosites* REDTENBACHER, 1858. The ongoing comparative examination of the mouthparts and additional material will yield clues in this regard.

Acknowledgements

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References

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Buchbesprechung

LÖBL, I. & LÖBL, D. (Hrsg.) 2016: Catalogue of Palaearctic Coleoptera, Vol. 3. Scarabaeoidea – Scirtoidea – Dascilloidea – Buprestoidea – Byrrhoidea. Revised and updated edition. – Leiden: Brill, XXVIII + 983 pp.

Am 28. Juni 2016 erschien nun auch die Neuauflage des dritten Bandes der Serie “Catalogue of Palaearctic Coleoptera“. Das ist auch gut so, denn mein Bibliotheksexemplar der ersten Auflage (2006) ist mittlerweile vom häufigen Gebrauch schon ziemlich abgenutzt.

Es scheint sich auch zu bewahrheiten, dass ein Katalog zweimal geschrieben werden muss, damit alle Daten mehr oder weniger korrekt sind. Die neue Auflage ist gegenüber der ersten wesentlich verbessert, abgesehen von den vielen inzwischen neu hinzugekommenen Arten. Auch die Ungenauigkeiten im Kapitel „Distributional Information“ (siehe Buchbesprechung zur Neuauflage des zweiten Bandes – Koleopterologische Rundschau 85, 2015: 349) sind nun ausgeräumt.

Dieser Band enthält insgesamt 22.500 Taxa-Namen, um 2500 mehr als in der ersten Auflage. Dementsprechend ist auch die Seitenzahl (690 gegenüber XXVIII + 983 pp.) deutlich höher.

Überraschenderweise ist jedoch die Anzahl der beitragenden Katalog-Autoren von 41 auf 32 geschrumpft: Dirk Ahrens, Alberto Ballerio, Luca Bartolozzi, Aleš Bezděk, Tristao V. Branco, Giovanni Dellacasa, Marco Dellacasa, Jiří Hájek, Carles [auf dem Buchumschlag leider inkorrekt als „Charles“ verzeichnet] Hernando, Manfred A. Jäch, Olaf Jaeger, Eduard Jendek, Mark J. Kalashian, Bernhard Klausnitzer, Ján Kodada, Masahiro Kon, David Král, Frank-Thorsten Krell, Vítězslav Kubáň, Chi-Feng Lee, Ivan Löbl, Alessandro Mascagni, Milan Nikodým, Georgej V. Nikolajev, Riccardo Pittino, Andreas Pütz, Miloslav Rakovič, Ignacio Ribera, Eva Sprecher-Uebersax, Mark G. Volkovitsh, Stefano Ziani und Carsten Zorn. Offensichtlich ist es nicht leicht, wirklich geeignete Autoren zu finden.

Der Index zu den Namen der Artgruppe findet sich im Internet auf:

https://figshare.com/articles/Catalogue_of_Palaearctic_Coleoptera/3187063.

Leider Gottes besteht zur Zeit ein heilloses Chaos bezüglich der korrekten Erscheinungsjahre der beiden ersten Bände von Latreilles “Genera crustaceorum et insectorum” (siehe Buchbesprechung auf Seite 8). Diese Unsicherheit fand leider auch im hier besprochenen Werk seinen Niederschlag. *Elmis dargelasi* (jüngeres Synonym von *Oulimnius tuberculatus*, Elmidae) wurde im zweiten Band der “Genera crustaceorum et insectorum” beschrieben; im hier besprochenen Katalog (p. 598) ist diese Art mit 1807 eingetragen, wohingegen im Literaturverzeichnis (p. 790) der zweite Band der “Genera crustaceorum et insectorum” mit 1806 zitiert wird.

Die Neuauflage für den Band 1: Archostemata – Myxophaga – Adephaga (2003) ist von Seiten des Verlages für das Jahr 2017 angekündigt.

M.A. JÄCH

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