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New genus of the Cephenniini from Borneo with description of
Hlavaciellus vampirus n. sp.
(Coleoptera: Scydmaenidae)

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ABSTRACT. A new genus of the Cephenniini (Coleoptera: Scydmaenidae: Scydmaeninae) is described under the name *Hlavaciellus* n. gen. It differs from all other genera of the tribe in the following combination of characters: very long, symmetrical aedeagus with massive parameres; very short basisternal part of prosternum; very low, short prosternal process not separating procoxae; pair of ante-basal foveae on pronotum; and massive, very long and gradually thickening antennae. A single species of the new genus is described: *Hlavaciellus vampirus* n. sp. from Borneo; important morphological characters (including the aedeagus) are illustrated.

Key words: entomology, taxonomy, Coleoptera, Scydmaenidae, Cephenniini, *Hlavaciellus*, new genus, new species, Orient, Borneo.

INTRODUCTION

The tribe Cephenniini of the subfamily Scydmaeninae comprises small and very small ant-like stone beetles, differing from other tribes in stout body with usually indistinct division between pronotum and elytra; head up to hind margin of eyes retracted into the pronotum; the pronotum in dorsal view is often subquadrate or semicircular, with sharp lateral edges; and the elytra are entire. A possible synapomorphy of the tribe is a pair of suction discs on the labium, which are used for immobilizing acari, on which the Cephenniini feed (SCHMID 1988). However, in some genera this character has not been studied yet. The tribe shares some characters with the Eutheini; especially the similar morphology of *Neseuthia* FRANZ (Cephenniini) and *Paraneseuthia* FRANZ (Eutheini) seems to provide some

evidence for treating those tribes as sister groups. Finding in *Veraphis* CASEY (Eutheini) enlarged, strongly thickened pair of bristles on anterior margin of the labium (JAŁOSZYŃSKI & HOSHINA 2005) suggests a possible evolutionary way from setae to suction discs. Both tribes show characters different from other Scydmaeninae, and they seem to represent rather a separate subfamily. A comprehensive phylogenetic analysis is necessary to clarify the status of those tribes within the family.

The tribe Cephenniini comprises presently 10 genera: *Cephennium* MÜLLER & KUNZE, *Cephennodes* REITTER, *Cephennomicrus* REITTER, *Chelonoidum* STRAND, *Coatesia* LEA, *Elacatophora* SCHAUFUSS, *Nanophthalmus* MOTSCHULSKY, *Neseuthia* SCOTT, *Paracephennium* O'KEEFE, *Pseudocephennium* REITTER, and very recently resurrected *Etelea* CSIKI (NEWTON & FRANZ 1998; O'KEEFE 1999; BESUCHET & VIT 2004). *Paraneseuthia* FRANZ has been recently transferred from the Cephenniini to the Eutheini (JAŁOSZYŃSKI & HOSHINA 2004). Some of the genera in the tribe are unclearly defined. For instance, some authors raised the possibility that the Australian *Coatesia* was a „possible synonym of *Cephennomicrus* according to FRANZ (1975); probable synonym of *Cephennodes*, teste C. BESUCHET” (after NEWTON & FRANZ 1998). Also *Neseuthia* and *Cephennomicrus* show some common characters and they may appear to be synonyms (JAŁOSZYŃSKI, unpublished observations). *Elacatophora* described from Java on the basis of a single species, *E. robusta* (SCHAUFUSS, 1884) also remains a mysterious genus; although possible similarities to *Cephennodes* and *Chelonoidum* can be deduced from the original description. Additionally, some Oriental species described as belonging to *Cephennium* in fact belong to other genera (JAŁOSZYŃSKI, unpublished observations).

Thanks to Peter HLAVÁČ I had an opportunity to study an interesting specimen collected by him in Borneo. The specimen shows a unique combination of external characters traditionally used for defining genera within the tribe; and, first of all, an unusual shape of the aedeagus, not known in any other Cephenniini. The new genus is described herein under the name *Hlavaciellus*, and a description of a new species, *H. vampirus* n. sp. is given.

Abbreviations used in the text are as follows: SNMB – Slovak National Museum, Bratislava, Slovakia; PCPH – private collection of Peter HLAVÁČ, Košice, Slovakia; EI – elytral index (length / combined width).

TAXONOMY

Genus *Hlavaciellus* n. gen.

TYPE SPECIES

Hlavaciellus vampirus JAŁOSZYŃSKI. Gender: masculine.

NAME DERIVATION

The new genus is dedicated to Peter HLAVÁČ, a specialist in the Scydmaenidae from Slovakia, who collected the type species.

DIAGNOSIS

Hlavaciellus can be distinguished from all other Cephenniini by the very long, symmetrical aedeagus with long, massive parameres; extremely short basisternal part of prosternum; pro- and metacoxae nearly contiguous; very long, gradually thickened antennae; pair of ante-basal foveae on pronotum; single basal fovea on each elytron; and six visible abdominal sternites.

DESCRIPTION

Body stout, elongate, strongly convex, covered with setae. Head large, with coarsely faceted, strongly convex eyes; vertex in male with pair of tubercles; mandibles very long, strongly curved ventrally, each mandible with broad base and separated, large and broad internal subtriangular part forming tooth with sharp cutting edge, and external slender part forming long piercing device, with sensory setae on dorsal surface; palpus labialis long, with short, barely visible palpomere I, very long and slender palpomere II, enlarged, thickened palpomere III and very short and broad, but well visible palpomere IV; antennae very long and massive, gradually thickening toward apex.



1. *Hlavaciellus vampirus* JALOSZYŃSKI, habitus of holotype male (actual length 1.94 mm)

Pronotum with rounded anterior margin, concave lateral margins and biemarginate basal margin, with pair of lateral ante-basal pits, with sharp lateral edges, without lateral carinae.

Elytra broadly oval, entire, each elytron with distinct humeral denticle, short humeral fold and single basal fovea filled with short setae. Scutellum large, subtriangular. Hind wings well developed, about twice as long as elytra.

Prosternum with extremely short basisternum, with short and low prosternal process not separating procoxae; mesosternum about as long as prosternum, with relatively narrow and high (i.e. strongly expanded ventrally) mesosternal carina separating mesocoxae; metasternum very long, longer than pro- and mesosternum together, with very convex median part surrounded at each side by large oval excavation adjacent anteriorly to mesocoxal cavity and occupying more than half of length of sternum, each cavity is surrounded by long, curved setae directed to its middle.

Six abdominal sternites visible (numbered here I-VI), sternite I barely visible only on sides, median part covered by median expansion of metasternum.

Legs very long and slender; pro- and metacoxae nearly contiguous, mesocoxae relatively narrowly separated by mesosternal process; coxae and trochanters with no particular characters, femora slightly clavate, tibiae straight, tarsi slender.

Aedeagus very long, slender, symmetrical, with simple internal armature and very long, massive parameres with subapical setae.

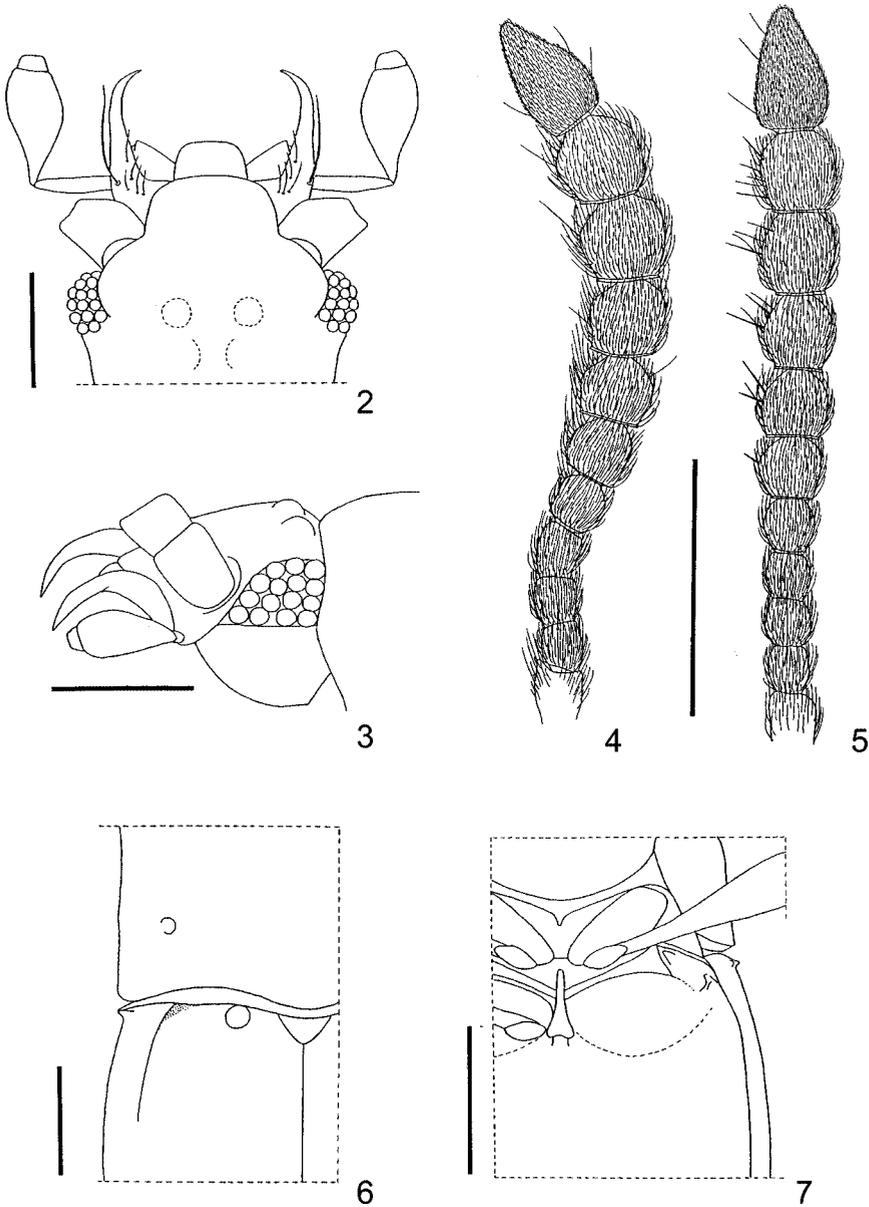
Female characters unknown.

DISTRIBUTION

Borneo.

REMARKS

The new genus differs from *Nanophthalmus*, *Paracephennium*, *Neseuthia* and *Cephennomicrus* in the gradually thickened antennae, without any traces of the club, which is present in all those four genera. Moreover, the species belonging to the exclusively Palearctic *Nanophthalmus* are eyeless and without pits on pronotum, Neotropical *Paracephennium* has three visible abdominal sternites, *Neseuthia* and *Cephennomicrus* have more than two ante-basal pits on the pronotum. From *Cephennodes* and *Chelonoidum* (and *Coatesia*, if it is indeed a synonym of *Cephennodes*) the new genus differs in the procoxae, which are not separated by the prosternal process; from Neotropical *Pseudocephennium* by six visible abdominal sternites (three in the latter genus); *Cephennium* in turn, lacks pits on the pronotum, which are present in *Hlavaciellus*. *Etelea* has a very long basisternal part of the prosternum (extremely short in *Hlavaciellus*) and broadly separated metacoxae (nearly contiguous in the new genus). *Elacatophora*, according to the original description, has an ante-basal impression connecting lateral pits; this character is missing in the new genus. *Hlavaciellus* is externally most similar to *Cephennodes* and *Chelonoidum*, but differs in the shape of the prosternal process.



2-7. *Hlavaciellus vampirus* JALOSZYŃSKI. 2-3 – schematic outline of head in dorsal (2) and lateral (3) views; 4-5 – left antenna in dorsal (4) and lateral (5) view; 6 – schematic outline of postero-lateral part of pronotum and antero-lateral part of elytra in dorsal view; 7 – schematic outline of prosternum and mesosternum in ventral view (scale bar: 2, 3, 6, 7 – 0.2 mm, 4, 5 – 0.5 mm)

The shape of the aedeagus in *Hlavaciellus* is unique and distinctly different from that of copulatory organs found in any hitherto known genus of the Cephenniini.

***Hlavaciellus vampirus* n. sp.**

(Figs. 1-10)

NAME DERIVATION

The name reflects the shape of mandibles, which are slender and strongly curved ventrally.

DIAGNOSIS

This is the only species in the genus; the characters given in the generic diagnosis can be used for identification.

DESCRIPTION

Male. Body (Fig. 1) relatively large, stout, very convex, reddish-brown, legs and mouthparts minimally lighter, setation light brown, body length 1.94 mm. Head (Figs. 2, 3) large, length 0.30 mm, width 0.50 mm, up to posterior margins of eyes retracted into pronotum, so that tempora (which are slightly convergent posteriorly) are not visible; hidden posterior part of vertex is impressed at each side so that median part is raised; anterior, visible part of vertex bears pair of moderately large, rounded tubercles; eyes large, strongly convex, coarsely faceted, each composed of about 15 ommatidia; frons relatively long, subtrapezoidal; supraantennal tubercles weakly raised, not delimited from frons and vertex; clypeus not delimited from frons; labrum large, subrectangular; mandibles and palpi maxillare as in generic description. Punctuation of frons and vertex very fine, sparse; setation moderately long, rather dense, suberect. Antenna as in Figs. 4-5, 1.42 mm in length, as long as about 0.7 length of body, thick, gradually thickening toward apex, covered with dense, moderately long, suberect setae, antennomeres VI-XI additionally with several long and thick bristles on ventral surface.

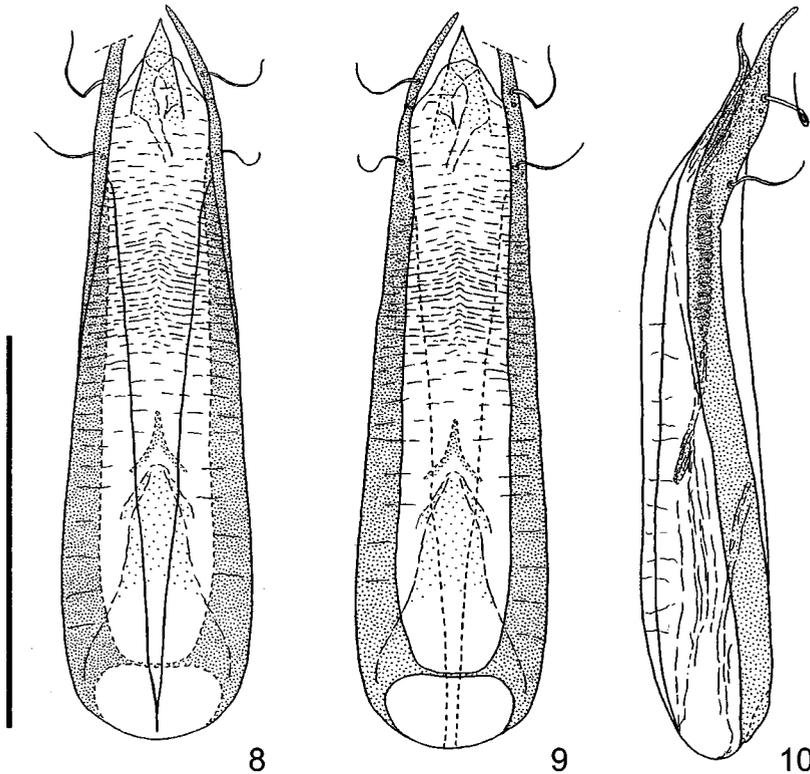
Pronotum (Figs. 1, 6) subtrapezoidal with rounded anterior margin, slightly concave lateral margins and biemarginate basal margin, broadest at base, length 0.57 mm, width 0.70 mm; disc moderately convex; sides with sharp edge, without lateral carinae, hind angles nearly straight, with slant, tapered tip; pronotum with pair of small and shallow lateral ante-basal pits. Punctuation fine and sparse; setation moderately sparse and long, suberect to erect.

Elytra (Figs. 1, 6) broadly oval, very convex, broadest near middle, length 1.07 mm, width 0.85 mm, EI 1.26. Each elytron with distinct humeral denticle and humeral fold (i.e. sharp border between more convex lateral part of elytron and less convex and located lower internal part, without groove or carina) as long as about 1/5 of length of elytra, with single basal fovea filled with short setae and located closer to scutellum than to humerus. Punctuation relatively fine and sparse, but more distinct than that on pronotum; setation moderately long, relatively

dense, suberect to erect. Scutellum relatively large, subtriangular, glossy, without punctures and setae. Hind wings well developed, about twice as long as elytra.

Prosternum (Fig. 7) with very short basisternum and short and low prosternal process; mesosternum (Fig. 7) about as long as prosternum, with relatively narrow and strongly expanded ventrally mesosternal process; metasternum longer than pro- and mesosternum together, with very convex median part surrounded at each side by large oval excavation adjacent anteriorly to mesocoxal cavity and occupying more than half of length of sternum, each cavity is surrounded by long, curved setae directed to its middle, posterior margin of sternum biemarginate, convex median part with very fine, diffused punctation, barely noticeable at magnification 40x.

Abdomen very short, with six visible sternites; sternite I visible partly, only on sides, median part covered by median expansion of metasternum; sternites I-V short, subequal in length; sternite VI slightly longer, subtriangular. Abdomen with sparse and fine punctation poorly visible under dense, short suberect setation.



8-10. *Hlavaciellus vampirus* JALOSZYŃSKI. Aedeagus in dorsal (8), ventral (9) and lateral (10) views (scale bar: 0.2 mm)

Legs very long and slender; coxae and trochanters without any peculiar characters, femora gradually thickened toward distal 1/5, then narrowing toward apex, tibiae straight, tarsi slender, with tarsomeres I-IV reducing in length, tarsomere V as long as I. Legs covered with short, dense suberect setae.

Aedeagus (Figs. 8-10) 0.37 mm in length, slender, broadest near base and gradually narrowing toward apical part, which is irregularly rounded, with subtriangular structure protruding from apex of median lobe; parameres massive, slightly darker than median lobe, very broad in lateral view, each with two long and thick setae near apex.

Female. Unknown.

TYPE MATERIAL

Holotype (male): white printed label „BORNEO – Sabah, Gunung Emas Resort, 52 km K.K. [i.e. Kota Kinabalu] – Tambunan, 23-29.5.98., Hlaváč lgt.”, and red printed label „*HLAVACIELLUS vampirus* m., det. P. Jałoszyński, 2005, HOLOTYPUS” (temporarily in PCPH, final depository SNMB). The holotype lacks left middle leg and apex of one paramere.

DISTRIBUTION

Borneo.

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