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New Heteroceridae from Asia
(Insecta: Coleoptera)

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Abstract: Three new species of mud-loving beetles (family Heteroceridae): *Heterocerus balkei* **n. sp.** from New Guinea (Irian Jaya, Indonesia), *H. schodli* **n. sp.** from Philippines and *Augyles umphangensis* **n. sp.** from Thailand are described, illustrated and compared with similar species.

Key words: Taxonomy, Coleoptera, Heteroceridae, new species, Indonesia, Irian Jaya, Philippines, Thailand

Introduction

On studying Heteroceridae in the collections of the Natural History Museum in Erfurt and Vienna I found three new species from the New Guinea (Irian Jaja, Indonesia), the Philippines and Thailand, which are described in the present paper. The heterocerid fauna of these countries is poorly known. By now, only two species are known from the New Guinea, namely *Heterocerus flindersi* Blackburn, 1888 occurring also in Australia, New Caledonia and Celebes (CHARPENTIER 1968) and *H. balkei* **n. sp.** Four species are known from the Philippines: *H. charpentieri* Mascagni, 1998, *H. fenestratus* Thunberg, 1784, *H. philippensis philippensis*, Grouvelle, 1896 and *H. schodli* **n. sp.** The comparatively better known fauna of Thailand comprises by now ten species: *Heterocerus fenestratus* Thunberg, 1784, *H. lorenzevae* Mascagni, 1993, *H. nepalensis* Mascagni, 1993, *H. philippensis thieleni* Mascagni, 1993, *Augyles anulatus* (Mascagni, 1991), *A. conjungens* (Grouvelle, 1904), *A. gabriellae* (Mascagni, 1993), *A. luciae* (Mascagni), 1993, *A. rejseki* Skalický, 1999 (cfr. MASCAGNI 1995, SKALICKÝ 1999) and *A. umphangensis* **n. sp.**

The following acronyms are used in the text to indicate the deposit of material examined:

NME	Natural History Museum, Erfurt, Germany.
NMW	Natural History Museum, Vienna, Austria.
CSU	Coll. Stanislav Skalický, Ústí nad Orlicí, Czech Republic.

Taxonomy

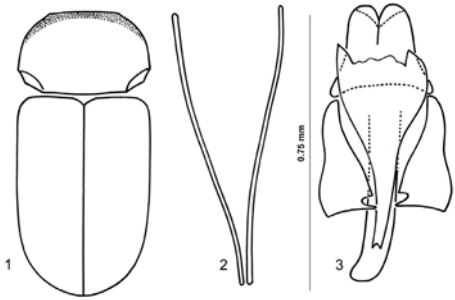
Heterocerus balkei n. sp.

(Figs 1–3)

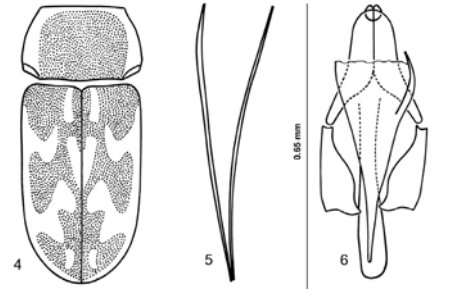
Type material: Holotype ♂: "INDONESIA, Irian Jaya, Jayapura district Geniem 50m NN, IV.–V.1999, leg. M. BALKE". Paratype (Allotype) ♀: the same data as holotype. Holotype and paratype are deposited in NME.

Description: Holotype ♂: Total length 3.85 mm (to apex of labrum); elytra 2.25 mm long, 1.45 mm wide across shoulders. Ground colour dark brown; pronotum with rusty red anterior margin and developed anterior angle, elytra without pattern (Fig. 1); mandibles, antennae and legs pale brown; tibiae with darker lateral margins. Ventral surface brown. Labrum oblong, anterior angles rounded, with dense short setae. Mandibles strong, with acute apex. Antennae 11-segmented, with 7-segmented club, antennomeres 1 and 2 with sparse, long, erect setae. Clypeus with a pair of anterior horns, anterior margin emarginate, finely granular, with dense, short, pale setae intermixed with long erect ones. Head finely granular, setae sparse, short, intermixed with long erect setae above eyes. Pronotum (Fig. 1) slightly wider than base of elytra, oblong, finely granular, setae sparse, erect, brownish. Pronotal base completely rimmed. Scutellum pointed, triangular. Elytra with shallow longitudinal striae and with shallow humeral and scutellar depressions, surface finely granulate with intermixed punctures approximately as large as eye facets. Epipleural ridges absent. Setae on elytra whitish, short, adjacent, intermixed with long erect ones. Ventral surface sparsely setose. Metasternum with post-mesocoxal ridge. Mesosternum neither spinose nor tuberculate in front of each mesocoxa. Post-metacoxal line absent. Stridulatory arch marked, without striae. Tibiae with sparse long setae. Protibia with 10 stout spines, mesotibia with 8 weak spines. Spines of metatibia weak, concealed by setae. Spiculum gastrale (Fig. 2) 0.75 mm long, V-shaped, well sclerotized. Arms connected by membrane apically. Aedeagus (Fig. 3) 0.75 mm long, tegmen well sclerotized, basal part connected by membrane with parameres that are partly fused and rounded in apex. Supporting sheath

bordered posteriorly. Penis with internal sac, without processus accessorius.



Figs 1–3: *Heterocerus balkei* **n. sp.**, holotype: 1: pronotum and elytra, dorsal view; 2: spiculum gastrale, dorsal view; 3: aedeagus, dorsal view.
Figs 1 and 2 not in scale.



Figs 4–6: *Heterocerus schodli* **n. sp.**, holotype: 4: pronotum and elytra, dorsal view; 5: spiculum gastrale, dorsal view; 6: aedeagus, dorsal view.

Allotype ♀: Total length 4.30 mm (to apex of labrum); elytra 2.65 mm long, 1.50 mm wide across shoulders. Pronotum as wide as base of elytra; elytra with indicated longitudinal striae only.

Differential diagnosis: Absence of post-metacoxal ridge assigns this species to the genus *Heterocerus* Fabricius, 1792. Due to the shape of the aedeagus the new species belongs to the *tibesticola* group sensu CHARPENTIER (1965). External similarity and the morphology of aedeagus place *H. balkei* **n. sp.** near *H. largensis* Blackburn, 1903 (belongs to the *elongatus* group) from Australia. Both species differ in the elytral pattern, which is usually distinct in *H. largensis* (cf. Fig. 6 in CHARPENTIER (1967) and Fig. 1 in this paper), also the otherwise black specimens have light scutellar spots), punctures of pronotum (deeply, distinctly and sparsely punctate in *H. largensis*) and morphology in male genitalia (cf. Fig. 47 in CHARPENTIER (1967) and Fig. 3 in this paper).

Distribution: Known only from the type locality.
Etymology: Dedicated to Mr. Michael BALKE (Berlin, Germany), who collected the type specimens.

***Heterocerus schodli* n. sp.**

(Figs 4–6)

Type material: Holotype ♂: "PHILIP. [Philippines]: Luzon, 22.2.1999 Mountain Prov., NE Sagada Banga´an, Bomod-ok Waterf. leg. SCHÖDL (19)". Paratype (Allotype) ♀: same data as holotype. Paratypes 22 spec. (6 ♂♂, 16 ♀♀). 14 spec. same data as holotype, 7 spec. "PHILIP.: Luzon, 27.2.1999 Mountain Prov., Balitian riv. ca. 5km S Bontoc Bagnen leg. SCHÖDL (24)"; 1 ex. (NMW): "PHILIP.: Luzon, 21.2.1999 Mountain Prov., Gonogon Chico River, ca. 900m leg. SCHÖDL (24)". Holotype, Allotype and 19 paratypes deposited in NMW; 3 paratypes (2 ♂♂ 1 ♀, 27.2.1999) in CSU.

Description: Holotype ♂: Total length 3.3 mm (to apex of labrum); elytra 2.1 mm long, 1.3 mm wide across shoulders. Ground colour dark brown; head and labrum brown to black; mandibles, antennae and legs brown. Pronotum and elytra with orange pattern as in Fig. 4, pattern on pronotum vaguely limited; abdomen brown, ventral surface brown to black. Mandibles with thin dorsal subapical tooth moderately developed. Labrum rounded, anterior margin emarginated. Antennae 11-segmented, with 7-segmented apical club; antennomeres 1 and 2 with sparse long setae. Clypeus with a pair of anterior horns, anterior margin emarginated. Pronotum slightly wider than base of elytra, finely granulate; pronotal base completely rimmed. Setae of pronotum yellowish, short and long, at sides erecte. Elytra convex, without longitudinal striae, with humeral depressions, finely granulate with intermixed punctures slightly wider than eye facets. Epipleural ridges absent. Setae on elytra short, semi-erect, yellowish. Scutellum pointed, triangular, rounded anteriorly. Ventral surface sparsely setose. Mesosternum with tubercle in front of each mesocoxa. Metasternum with post-mesocoxal ridges. Tibiae with sparse long setae. Meso- and metatibiae with 7 weak spines, spines in protibia broken (8 spines occurring in male paratypes). Post-metacoxal line present. Stridulatory arch marked, without striae. Spiculum gastrale (Fig. 5) 0.65 mm long, partly sclerotized, V-shaped, arms inter connected by membrane apically. Aedeagus (Fig. 6) 0.65 mm long, its basal portion membraneously connected with parameres.

"Allotype" ♀: Total length 3.6 mm (to apex of labrum); elytra 2.3 mm long, 1.3 mm wide across shoulders. Pronotum as wide as base of elytra. Externally similar to male.

Variability: Length in male 2.9 to 3.3 mm, female 3.2 to 3.6 mm. No substantial morphological variability observed in the type series.

Differential diagnosis: Absence of post-metacoxal ridge assigns this species to the genus *Heterocerus* Fabricius, 1792. Due to the shape of aedeagus, the new species belongs to the *elongatus* group sensu CHARPENTIER (1965). Shape of the aedeagus is partially comparable with that of *H. nepalensis* Mascagni, 1993 (penis without sclerotized projectable processus accessorius in *H. nepalensis*) described from Nepal and recently reported from China (Hong Kong), Vietnam, Thailand, India and Myanmar (MASCAGNI 1995, MASCAGNI & SFORZI 1999). *H. schodli* **n. sp.** differs from *H. nepalensis* in the colour of pronotum and elytra (pale brown in *H. nepalensis*), elytral pattern (cf. Fig. 2 in MASCAGNI (1993) and Fig. 4 in his paper), presence of clypeal horns (absent in *H. nepalensis*) and in the shape of male genitalia (cf. Fig. 1 in MASCAGNI (1993) and Fig. 6 in this paper). Similar species from Nepal, *H. fulvipes* Miller, 1995, also recorded from Myanmar by SKALICKÝ (2000) has clypeal horns like *H. schodli* **n. sp.** The main differences between them exist in the pronotal and elytral pattern and colour (pale with indistinct pattern in *H. fulvipes*) and in the shape of male genitalia (cf. Fig. 15 in MILLER (1995) and Fig. 6 in this paper). Similar structure of male genitalia has also *H. thebajcus* Grouvelle, 1896 from Africa (cf. Fig. 85 in CHARPENTIER 1965 and Fig. 6 in this paper).

Distribution: So far known only from the type locality.

Etymology: Dedicated to Dr. Stefan SCHÖDL (NMW), who collected the type species.

Note. One specimen of *H. fenestratus* (NMW) was collected together with *H. schodli* **n. sp.** at the same locality.

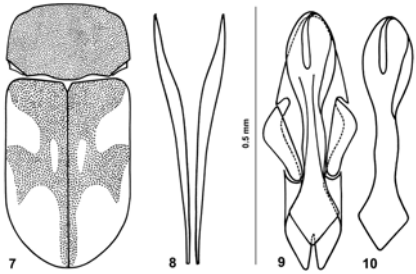
***Augyles umphangensis* n. sp.**

(Figs 7–10)

Type material: Holotype ♂: "Thaild. [Thailand] Um Phang: at Mae Kok River 14 VIII 1997", "N016°01´10.6´´ E098°51´12.1´´ light trap", without collector data. Paratype (Allotype) ♀: same data as holotype. Paratypes 3 specimens (1 ♂, 2 ♀♀) same data as holotype. Holotype, Allotype and 2 paratypes deposited in NMW; 1 (♂) paratype in CSU.

Description: Holotype ♂: Total length 2.7 mm (to apex of labrum); elytra 1.5 mm long, 1 mm wide across shoulders. Ground colour brown, shining. Mandibles, antennae and legs pale brown, labrum paler anteriorly and laterally. Elytra with orange pattern as in Fig. 7. Mandibles without dorsal

subapical tooth, with acute apex. Labrum almost square, rounded anteriorly, finely granulate, setae long, semierect. Antennae 11-segmented, with 7-segmented apical club. Clypeus without a pair of anterior horns, anterior margin emarginate. Pronotum slightly wider than base of elytra; pronotal base completely rimmed, finely granulated. Setae of pronotum yellowish, adjacent, at sides erect. Scutellum pointed, triangular. Elytra convex, without longitudinal striae, with humeral depressions, finely granulate with intermixed punctures slightly smaller than eye facets. Epipleural ridges absent. Setae on elytra short, semi-erect, yellowish. Ventral surface sparsely setose. Mesosternum with pair of prominent spines in front of each mesocoxa. Metasternum with a post-mesocoxal ridge. Protibia with 10 stout spines, meso- and metatibiae each with 7 weak spines. Post-metacoxal line present. Stridulatory arch marked with striae. Spiculum gastrale (Fig. 8) 0.5 mm long, V- shaped. Arms inter connected by membrane apically. Aedeagus (Fig. 9) 0.5 mm long, well sclerotized. Supporting sheath without border posteriorly, deeply emarginate. Penis (Fig. 10) with short processus accessorius.



Figs 7–10: *Augyles umphangensis* **n. sp.** holotype: 7: pronotum and elytra, dorsal view; 8: spiculum gastrale, dorsal view; 9: aedeagus, dorsal view; 10: penis, dorsal view.
Fig. 7 not in scale.

Paratype (Allotype) ♀: Total length 2.90 mm (to apex of labrum); elytra 1.75 mm long, 1.25 mm wide across shoulders. Externally similar to male.

Variability: No substantial morphological variability observed in the type series.

Differential diagnosis: Presence of post-metacoxal ridge assigns this species to the genus *Augyles* Schiödte, 1866. Body shape and morphology of aedeagus place it near *A. myanmarus* Skalický, 2000 from Myanmar (SKALICKÝ 2000). Both species differ in different pronotal and elytral pattern, mesosternum indistinctly tuberculate in front of each mesocoxa in *A. myanmarus*, arms of spiculum gastrale fused together in *A. myanmarus* and in the morphology of male genitalia (cf. Figs 10–12 in SKALICKÝ 2000 and Figs 7–10 in this paper).

Distribution: So far, known only from the type locality.

Etymology: Named after the province Um Phang.

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