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First notes on *Hebrus* (Insecta: Heteroptera: Hebridae) in Vietnam

H. Zettel* & Tran A.D.**

Abstract

This paper provides the first reports on the genus *Hebrus* CURTIS, 1833 in Vietnam. *Hebrus vietnamensis* sp.n. is new to science and *Hebrus nipponicus* HORVÁTH, 1929 is reported from Vietnam for the first time.

Key words: Heteroptera, Hebridae, *Hebrus*, new species, new record, Vietnam.

Zusammenfassung

Diese Arbeit berichtet über die ersten Nachweise der Gattung *Hebrus* CURTIS, 1833 in Vietnam. *Hebrus vietnamensis* sp.n. ist neu für die Wissenschaft und *Hebrus nipponicus* HORVÁTH, 1929 wird erstmals aus Vietnam nachgewiesen.

Introduction

Hebridae, commonly known as velvet water bugs, are a family of the semi-aquatic bugs, but they are primarily terrestrial by inhabiting banks of freshwater, and therefore represent the ancestral type of living in Gerromorpha (see, e.g., ANDERSEN 1982, CHEN & al. 2005). However, there are several exceptions: *Merragata* BUCHANAN-WHITE, 1877 lives on the water surface or on water plants, sometimes entering the water body, *Hyrcaus* LUNDBLAD, 1933 lives hygropetric or in accumulated plant material in streams, frequently entering the water body, and *Nieserius* ZETTEL, 1999 lives submerged in streams (DRAKE 1917, ANDERSEN 1982, ZETTEL 1998, 1999).

The genus *Hebrus* CURTIS, 1833 is the most widely distributed and also the most speciose genus of the Hebridae. The numerous species inhabit a large variety of habitats including terrestrial, riparian, semi-aquatic, or even marine environments (e.g., ANDERSEN 1982, POLHEMUS & POLHEMUS 1989, CHEN & al. 2005). Due to their “cryptic” habitats and their small body size (less than 3.0 mm long), they are still poorly studied. In Southeast Asia, even though some taxonomic work has been done, e.g., descriptions of taxa by LUNDBLAD (1933), POLHEMUS & POLHEMUS (1989), ZETTEL (2004b, 2006, 2011), the knowledge on *Hebrus* fauna is still very limited.

In Vietnam, apart from reports of only two species of other hebrid genera, *Hyrcaus varicolor* (see ZETTEL 1998) and *Timasius anderseni* (see ZETTEL 2004a), no taxonomic work on *Hebrus* from this country has been published until now. The present paper

* Dr. Herbert Zettel, 2nd Zoological Department (Entomology), Natural History Museum Vienna, Burgring 7, 1010 Vienna, Austria. – herbert.zettel@nhm-wien.ac.at

** Dr. Tran Anh Duc, Department of Invertebrate Zoology, Faculty of Biology, Hanoi University of Science (Vietnam National University, Hanoi), 334 Nguyen Trai, Thanh Xuan, Hanoi, Vietnam. – tran.anhduc@hus.edu.vn

provides the first report of the genus *Hebrus* in Vietnam, including a new species and a first country record.

Material and methods

The specimens listed in the material examined section are either preserved in ethanol or dry pinned in the Zoological Collection of Biological Museum, Hanoi University of Science (ZMHU), the Natural History Museum, Vienna, Austria (NHMW), and the Zoological Reference Collection (ZRC) of Lee Kong Chian Natural History Museum (formerly Raffles Museum of Biodiversity Research), National University of Singapore. Specimens were studied with stereo-microscopes and compound microscopes. Line drawings were done with the help of a camera lucida attached to these microscopes. All measurements in the description are in millimetres.

Taxonomy

Genus *Hebrus* CURTIS, 1833

Hebrus vietnamensis sp.n. (Figs. 1–5)

Material examined: **Holotype** (macropterous ♂), Vietnam, Hanoi, lotus pond near West Lake Water Park, coll. Pham T.M., 17.III.2010 (ZMHU). **Paratypes:** 12 ♂♂, 10 ♀♀ (all macropterous), same locality data as holotype (NHMW, ZMHU, ZRC).

Diagnosis: Comparatively large species (body length 1.85–2.21) of stout body shape (Fig. 1), distinguished by combination of stout truncate buccula process (Fig. 2), truncate metanotal elevation without any incision of hind margin (Fig. 3), and in male, curved metafemur, strongly sclerotized and densely pilose paramere (Fig. 4), and elongate proctiger basally beset with long and stout setae (Fig. 5).

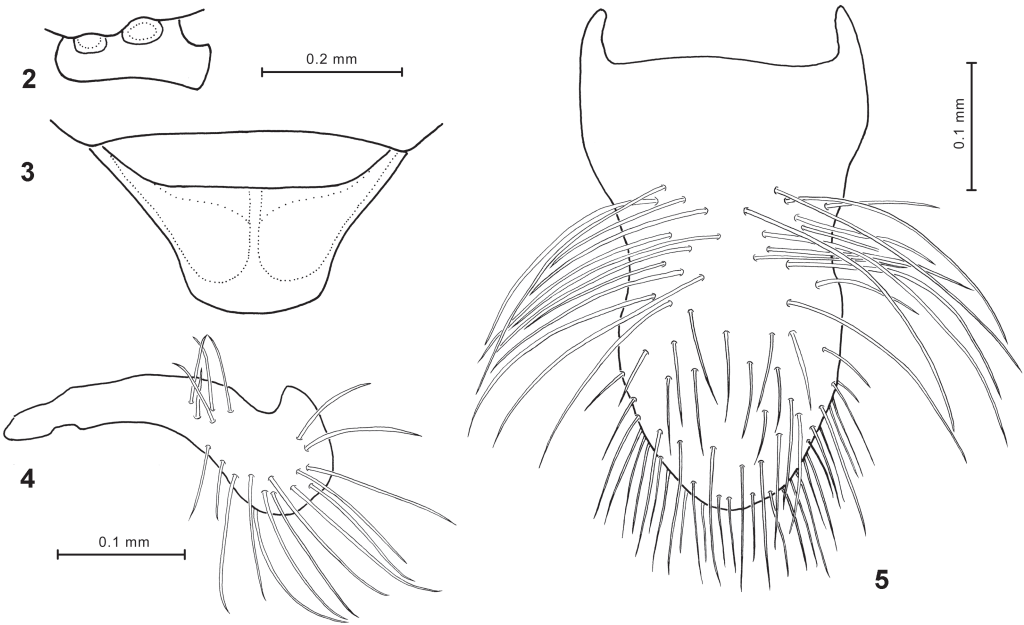
Description of holotype: Colour: Head orange brown, slightly darker at dorsal midline; bucculae yellow. Pronotum and mesoscutellum chestnut-brown. Metanotal elevation, sides and venter of body blackish. Forewing pale brown; veins dark brown; endocorium with distinct, large, white patch which is slightly longer laterally; membrane with three elongate whitish patches. Antennomeres 1–2 yellow, 3–4 infuscated. Rostrum and legs yellow.

Pilosity: Head, pronotum, mesoscutellum, and metanotal elevation with small, scattered, bluish-green to golden scales. Head and pronotum with rather short, erect, blackish setae; mesoscutellum and metanotal elevation with numerous slightly longer, posterodorsally directed blackish setae. Corium of forewing with numerous setae, some appressed and golden, others semierect and dark. Venter of abdomen with dense layer of fine, appressed whitish hairs; some short, semierect white hairs intermixed.

Structural characteristics: Measurements: Body length 1.85, width (at pronotum) 0.85. Head length 0.49, width 0.44, width at antennal tubercles 0.33. Eye width (dorsal aspect) 0.12. Interocular width 0.20. Pronotum length 0.47. Combined length of mesoscutellum and metanotal elevation 0.24. Length of abdomen (behind apex of metanotal elevation) 0.91, width (widest at base) 0.71. Lengths of antennomeres 1–4, 0.21, 0.17, 0.27, 0.35. Lengths of legs parts, profemur 0.45, protibia 0.47, protarsus 0.18, mesofemur 0.48, mesotibia 0.45, mesotarsus 0.18, metafemur 0.61, metatibia 0.67, metatarsus 0.18.



Fig. 1: Habitus of *Hebrus vietnamensis* sp.n.



Figs. 2–5: Structural characteristics of *Hebrus vietnamensis* sp.n., male: (2) buccula process; (3) metanotal elevation; (4) pygophore; (5) paramere (2 and 3 same scale).

Body stout, with abdomen widest at base. Head short, 1.1 times longer than wide; with moderately large eyes, normal-sized ocelli, and small, roundish ocular tubercles. Head sides straightly diverging from ocular tubercles to small, laterally rounded antennal tubercles. Buccula (Fig. 2) high, with two large, round impressions, posterior process short, wide, and truncate. Pronotum large, wide, sides with shallow concavity in front of strongly developed humeri; surface with numerous round impressions and with deeply impressed anterior section of midline. Metanotal elevation (Fig. 3) large, trapezoidal, its hind margin slightly convex, without any incision. Macropterous; forewings reaching end of abdomen. Abdomen widest at base, from there its sides almost evenly converging in dorsal aspect. Metafemur of male slightly curved and at flexor side with row of setae increasing in length towards apex. Metatibia almost straight.

Genitalia of male moderately large. Pygophore short and relatively wide, slightly widened posteriorly, with dense pilosity, but without special modification. Paramere (Fig. 4) heavily sclerotized, black, subapically widened, with evenly recurved apical hook, setae numerous and of moderate length. Proctiger (Fig. 5) elongate, with dorsomedial elevation bearing numerous long and thick setae; distal pilosity finer and shorter.

Description of paratypes: Colour: Light orange-brown part on head of variable extent. Pronotum and mesoscutellum variably coloured, medium to dark brown. Venter of thorax in some specimens light brown in middle.

Measurements: Body length of males 1.85–1.97, of females 1.96–2.21. Body width (at pronotum) of males 0.84–0.91, of females 0.90–0.99.

In females, abdomen slightly wider than that of males, but still widest at base and converging posteriorly. Metafemur and metatibia not curved. Gonocoxa simple.

Etymology: Named after the country of origin.

Comparative notes: *Hebrus vietnamensis* sp.n. is externally almost identical with *Hebrus ullrichi* ZETTEL, 2004. The buccula process tends to be rounded in *H. ullrichi* and truncate in *H. vietnamensis* sp.n., but there is some variability of this character in both species, and females cannot be separated with certainty. Comparing males, the curvature of the hind femur and hind tibia is more developed in *H. ullrichi*. Male genitalia are similar, but distinct. The apical tooth of both parameres is stout in *H. vietnamensis* sp.n. and small and acute in *H. ullrichi*. The proctiger of *Hebrus vietnamensis* sp.n. has a strong basomedial swelling bearing long and stout setae; both swelling and setae are inconspicuous in *H. ullrichi*. *Hebrus bengalensis* DISTANT, 1909 from India is similar to both species in general shape of the paramere, but differs from them by appressed pilosity on mesoscutellum, metanotal elevation, and proximal part of forewings (see ZETTEL 2006).

Hebrus nipponicus HORVÁTH, 1929

Material examined: Vietnam: 2 ♂♂, 1 ♀ (macropterous), Song Be Province [now Dong Nai Province], Nam Cat Tien National Park, 1–15.V.1994, leg. P. Pacholátka & E. Dembicky (NHMW).

Notes: *Hebrus nipponicus* was described from Japan (HORVÁTH 1929) and recorded from Indonesia (LUNDBLAD 1933). The species is common and widespread in Southeast Asia (Zettel, in prep.). First record from Vietnam.

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Autor(en)/Author(s): Zettel Herbert, Tran Anh Duc

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