

***Enochrus algarum* sp. nov., a new hygropetric water
scavenger beetle from China
(Coleoptera: Hydrophilidae: Enochrinae)**

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Abstract. *Enochrus algarum* sp. nov. is described from Fujian Province in southern China. Its unusual combination of weakly impressed elytral striae, an entire fifth abdominal ventrite, and short maxillary palps make subgeneric placement difficult, and thus we do not assign it to any subgenus and place it as *Enochrus incertae sedis* for the time being. All specimens were collected on wet rock surfaces with dense algae or in decaying plants beside wet rock. It is the first species of the genus from East Asia known to occur in hygropetric habitats.

Key words. Coleoptera, Hydrophilidae, Enochrinae, *Enochrus*, new species, China, Oriental Region

Introduction

The water scavenger beetle genus *Enochrus* Thomson, 1859 is divided into six subgenera that cumulatively contain 222 species (HANSEN 1990, SHORT & HEBAUER 2006, SHORT & FIKÁČEK 2011). To date, four of these subgenera have been recorded from China: *Methydrus* Rey, 1885 (9 spp.), *Holcophilydrus* Kniz, 1911 (4 spp.), *Hydatotrephis* MacLeay, 1871 (1 sp.), and *Lumetus* Zaitzev, 1908 (7 spp.) (HANSEN 1999, JIA & ZHAO 2007). All species of *Enochrus* from mainland China except *E. hybridus* Hebauer, 2005 were recently reviewed by JIA & WANG (2010).

In 2010, the senior author collected two female specimens of an aberrant *Enochrus* on a wet rock seep at Wuyishan Mount, Fujian Province, China. The specimens represented an

apparently new species and did not fit within any defined subgenus. In 2012, a male specimen of the same species was collected in Ningde, Fujian, China (ca. 160 km southeast of Wuyishan Mount). Discovery of the male further confirmed that the specimens represent an undescribed *Enochrus*, which is apparently restricted to hygropetric habitats. It does not easily fit into any existing *Enochrus* subgenus and we refrain from erecting a new one at this time.

Materials and methods

Only the type series of specimens were available for this study. Morphological terminology largely follows HANSEN (1991) and KOMAREK & BEUTEL (2007), classification follows SHORT & FIKÁČEK (2013). The aedeagus photograph was taken using an Axioskop 40 microscope. Remaining morphological photographs were taken using Nikon Coolpix P6000 camera attached to Leica S8AP0 binocular microscope and combined with CombineZP software. All photographs were subsequently edited in Adobe Photoshop CS2.

Specimens are deposited in the Institute of Entomology, Sun Yat-sen University, Guangdong, China (SYSU) and the Snow Entomological Collection at the University of Kansas, USA (SEMC).

Taxonomy

Enochrus algarum sp. nov.

(Figs 1–9)

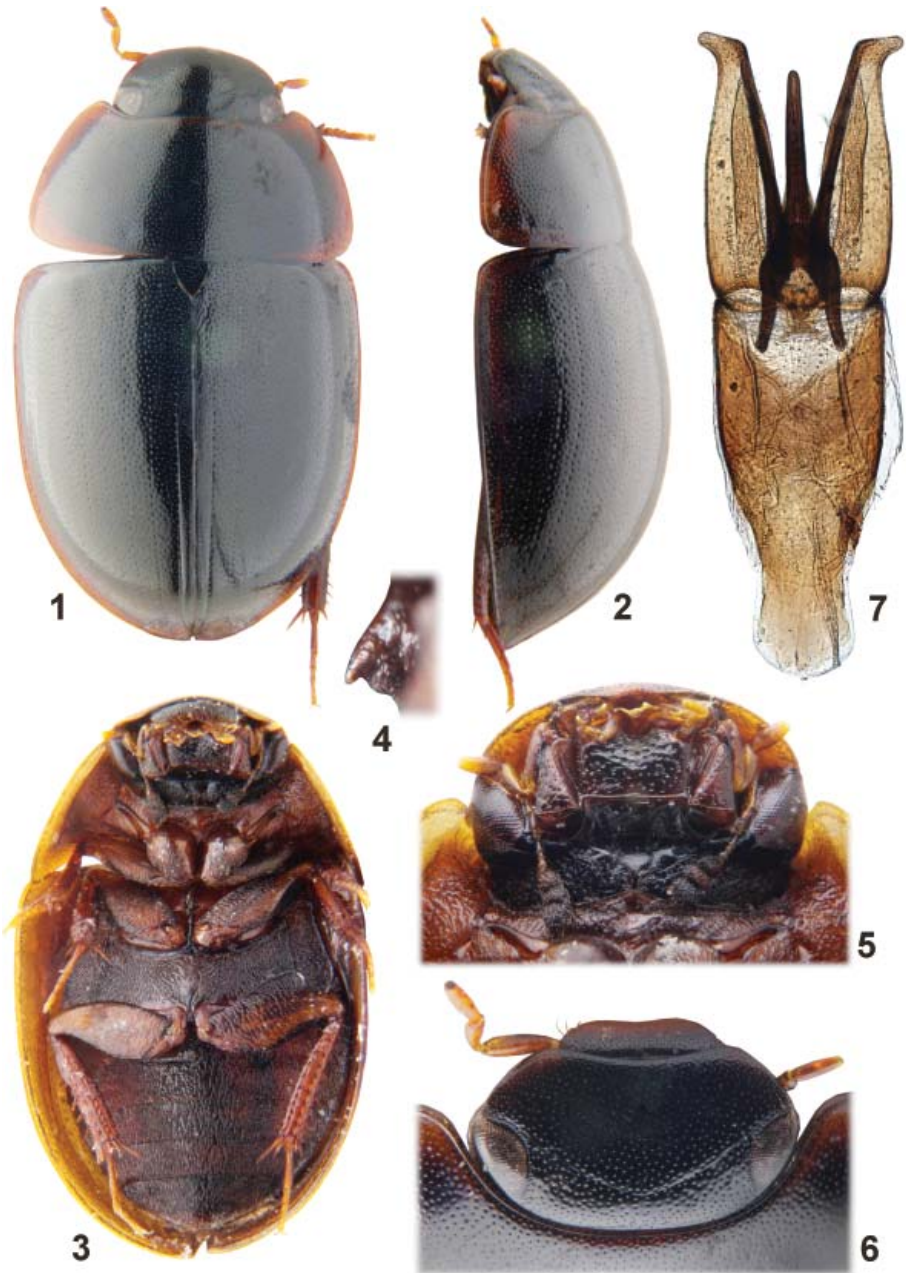
Type material. HOLOTYPE: ♂ (SYSU): China, Fujian, Ningde, Zhitishan Mount, ca. 26°48'48.36"N, 119°22'59.76"E, 750 m, in decaying plant materials beside wet rock, 3.x.2012, Zeyu Wang leg. [translation; labeled in Chinese]. PARATYPES: 2 ♀♀ (SYSU, SEMC): China: Fujian Province, Wuyishan Mount, Da'an, the wet rock near the roadside of upper Chongyang river, 447.5 m, 27°57'32"N 117°51'58"E, 15.vii.2010, Fenglong Jia leg. [translation; labeled in Chinese].

Diagnosis. Maxillary palps very short, half as long as the width of the head. Elytra with ten rows of weakly impressed striae. Fifth abdominal ventrite entire, without any emargination, truncation, or thickened setae. Aedeagus with parameres curved outwards apically.

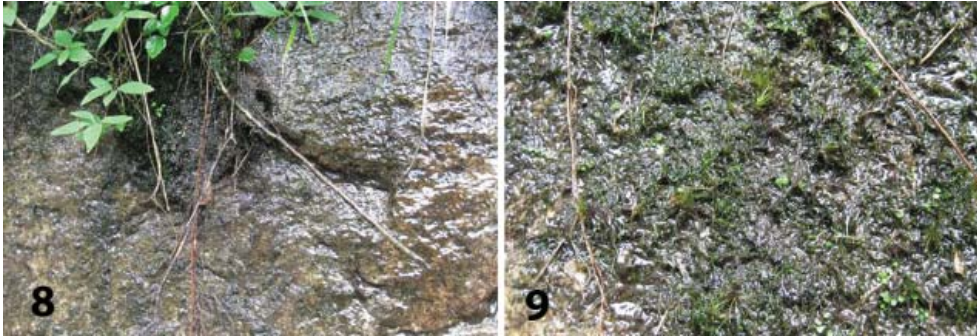
The new species is most similar to *E. (Holcophilydrus) laoticus* Hebauer, 2005, and will loosely key to this species in JIA & WANG (2010). The short maxillary palps, weakly impressed elytral striae and the morphology of the aedeagus distinguish it easily from the latter species.

Description. Form and color. Body length 4.9 mm, body width 2.8 mm. Body oval, moderately convex. Dorsum of pronotum and elytra dark brown, with lateral margins of elytra markedly paler. Head dark brown to black, with margins of clypeus brown to light brown. Maxillary and labial palps reddish yellow, not darkened apically. Venter, including legs, brown to dark brown.

Head. Antennae with scape subequal in length to antennomeres 2–6 combined. Maxillary palps short, ca. half the width of head anterior to eyes; apical and penultimate segments subequal in length (Fig. 6). Clypeo-labral margin evenly arcuate, without median emargination. Labrum with a median row of setiferous systematic punctures, which are subequal in size the



Figs 1–7. Morphology of *Enochrus algarum* sp. nov. 1–3 – habitus (1 – dorsal view, 2 – lateral view, 3 – ventral view); 4 – mesoventral process; 5–6 – head (5 – ventral view, 6 – dorsal view); 7 – aedeagus. 1–2, 6–7 – male, holotype; 3–5 – female, paratype.



Figs 8–9. Habitat of *Enochrus algarum* sp. nov. at Wuyi Shan Mts. (Fujian). Photos by F.-L. Jia.

surrounding ground punctation. Frons and clypeus with ground punctation moderately coarse, distance between punctures $2\text{--}3\times$ the width of one puncture; setiferous systematic punctures present mesally of each eye. Mentum subquadrate, with anterior margin moderately depressed medially (Fig. 5); set with sparsely arranged coarse punctures.

Thorax. Ground punctation on pronotum and elytra moderately coarse, distance between punctures $1\text{--}2\times$ the width of one puncture. Elytra with ten faint rows of serial punctures slightly larger than surrounding ground punctation and most prominent in posterior third (Figs 1–2); punctures lack any setae. Prosternum not tectiform or carinate, with a transverse groove, set with very sparse setae on anterior margin. Mesoventrite with a glabrous, stout, backwardly pointing projection (Fig. 4), rising to a level of mesocoxae. Metaventrite with a very indistinct elongate oval glabrous area posteromedially, slightly longer than wide; glabrous area slightly more than half the total length of the metasternum. Mesofemora densely pubescent on basal two-thirds. Metafemora very sparsely pubescent (Fig. 3), with setae slightly more dense basally. Each elytron with sutural stria on posterior three-fourths (Fig. 1). Anterior claws in male distinctly stronger and more angularly curved than in female, bearing smaller basal tooth; posterior claws only slightly more curved than in female, without basal tooth.

Abdomen. Ventrites uniformly and densely pubescent. Fifth (apical) ventrite entire, without trace of emargination or truncation, and without margin of coarse setae. Aedeagus with phallobase about $1.4\times$ as long as parameres. Parameres broad, longer than median lobe, abruptly truncate and strongly bent outwards apically. Median lobe narrower than parameres, gradually narrowed from base to apex, sharp apically (Fig. 7).

Etymology. The specific name refers to the habitat of this species with abundant algae.

Habitat. Both collecting events for this species were from hygropetric habitats (Fig. 8–9). The paratypes were specifically on wet rock with dense algae while the holotype was found in detritus beside wet rocks. Specimens were collected together with other known hygropetric taxa, including, *Oocyclus fikaceki* Short & Jia, 2011, *Coelostoma stultum* (Walker, 1858), and *Satonius jaechi* Hájek, Yoshitomi, Fikáček, Hayashi & Jia, 2011 (Torridincolidae).

Distribution. China (Fujian).

Discussion

Enochrus algarum sp. nov. shares several features with the subgenus *Holcophilydrus*: the elytra bear punctate series and the apex of the abdomen is entire; however, the serial punctures in most described *Holcophilydrus* are very strongly impressed, appearing more as continuous grooves. The absence of an abdominal emargination is shared with the subgenus *Lumetus*. Furthermore, the very short maxillary palps are unusual in *Enochrus* and not known from either *Holcophilydrus* or *Lumetus*. Because of the unusual combination of characters found in this species, combined with the fact that the monophyly and characters that define the current *Enochrus* subgenera are not well understood, we refrain from placing the species in a subgenus or erecting a new one.

While not common, several species of *Enochrus* are known from hygropetric habitats (SHORT 2005) that also have short maxillary palps, such as *E. toro* Short, 2005 from Costa Rica and *E. curtus* Balfour-Browne, 1958 from Mauritius. This may indicate that short maxillary palps are related with hygropetric habitats.

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