

Taxonomy of the Genus *Hydrochus* (Coleoptera: Hydrophilidae: Hydrochinae) in Korea

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ABSTRACT

A taxonomic study of the Korean *Hydrochus* Leach is presented. They inhabit in the margins of shallow lentic water with plentiful vegetation. The genus *Hydrochus* Leach contains about 28 species in the Palearctic region and only *H. japonicus* Sharp is recently listed in Korea. Here, two species are recognized, one of which is reported for the first time in Korea (*H. chubu* Balfour-Browne & Satô). This species are distinguished from *H. aequalis* Sharp by impressed pronotum and from *H. japonicus* by dark brown elytra. Habitus photographs, descriptions, and diagnostic characters with illustrations of the species are provided.

Keywords: taxonomy, *Hydrochus*, Hydrophilidae, Coleoptera, Korea

INTRODUCTION

While surveying the Korean aquatic beetle fauna, we collected two unusual small hydrophilid species. After detailed studies of their comparative morphology, we identified them as *Hydrochus chubu* Balfour-Browne & Satô and *H. japonicus* Sharp.

The genus *Hydrochus* Leach contains about 28 species in the Palearctic region (Hansen, 2004); 3 species in China, 3 species in Japan, 1 species in Taiwan, 2 species in Far East of Russia and only *H. japonicus* Sharp is recently listed in Korea by Jung et al. (2011) without any taxonomic comments. Members of the genus live in the margins of shallow lentic water with plentiful vegetation. They can be distinguished by the combination of following characters: eyes strongly protruding; maxillary palpomere 4 asymmetrical, longer than palpomere 3; antenna with 7 antennomeres; pronotum narrowed toward base; elytron with 10 rows of punctures; tibia without fringe of long swimming hairs on dorsal part; ventral surface of thorax and sternites with pit-like large punctures; sternite VII with semitransparent plate on apical part.

In this paper, we report *H. chubu* Balfour-Browne & Satô for the first time in Korea and provide habitus photographs,

descriptions, and diagnostic characters with illustrations of two Korean *Hydrochus* species. The specimens used in this study are deposited in Chungnam National University Insect Collection (CNUIC), Daejeon, Korea.

SYSTEMATIC ACCOUNTS

Order Coleoptera Linné, 1758
Family Hydrophilidae Latreille, 1802
Subfamily Hydrochinae Thomson, 1859

¹*Genus *Hydrochus* Leach, 1817

Hydrochus Leach, 1817: 90; Balfour-Browne & Satô, 1962: 1; Smetana, 1988: 9; Shatrovskiy, 1989: 275; Hansen, 1991: 98; 2004: 42.

²**Hydrochus chubu* Balfour-Browne & Satô, 1962
(Figs. 1A, 2)

Hydrochus chubu Balfour-Browne & Satô, 1962: 3; Satô, 1984: 205; Hansen, 2004: 43.

Material examined. Korea: 1 ♀, Jeju Prov., Bukjeju-gun, Jocheon-eub, Seonheul-ri, 26 Jul 2005, Lee SH, *ex* pond (on

Korean name: ¹*곰보물뚱뚱이속, ²*갈색곰보물뚱뚱이 (신칭)

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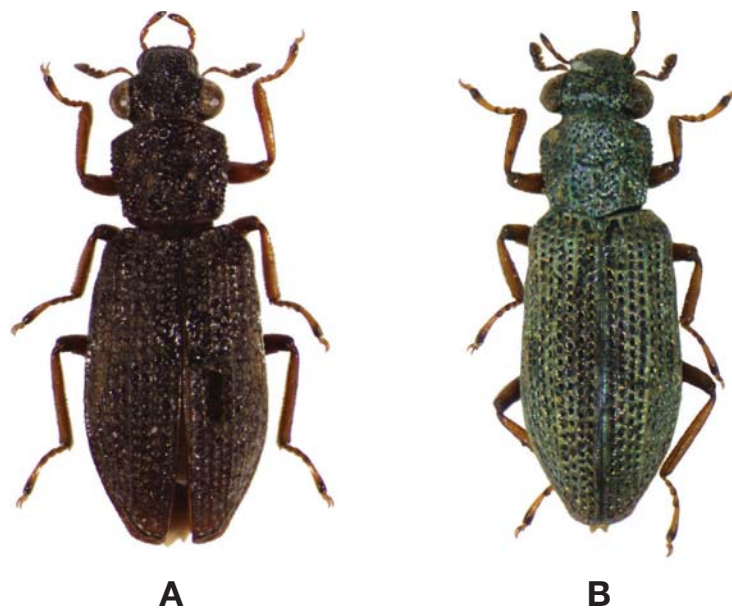


Fig. 1. A, *Hydrochus chubu*, 3.2 mm; B, *H. japonicus*, 3.4 mm.

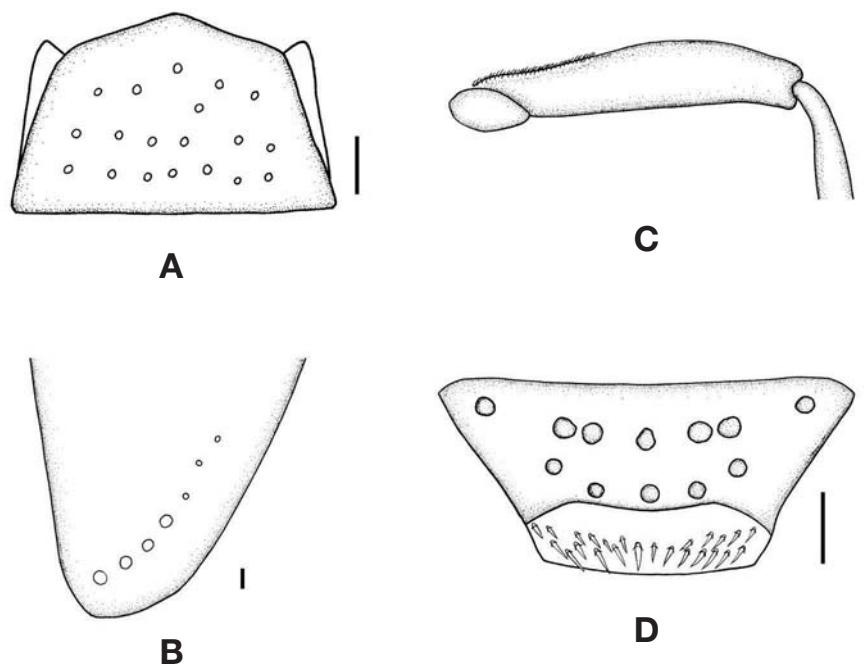


Fig. 2. *Hydrochus chubu*. A, Mentum, ventral aspect; B, Apical part of elytra, dorsal aspect; C, Metafemur, lateral aspect; D, Sternite VII, ventral aspect. Scale bars: A-D=0.1 mm.

slide, CNUIC); 1 ♀, 22 May 2006, Lee DH (CNUIC); 1 ♀, 22 Aug 2007, Lee SH (CNUIC).

Description. Body 3.2–3.7 mm, elongated, with many punctures (Fig. 1A). Head black, pronotum and elytra dark brown. Ventral surface grey with hydrofuse pubescence but leg yel-

lowish brown to brown. Head depressed at middle part, epicranial suture indistinct. Antennae with 7 antennomeres and 5–7 clubbed with pubescence, antennomere 1 as long as 2–4 combined, apical part of 4 dish-shaped. Mentum with large and sparse punctures, anterior margin rounded (Fig. 2A).

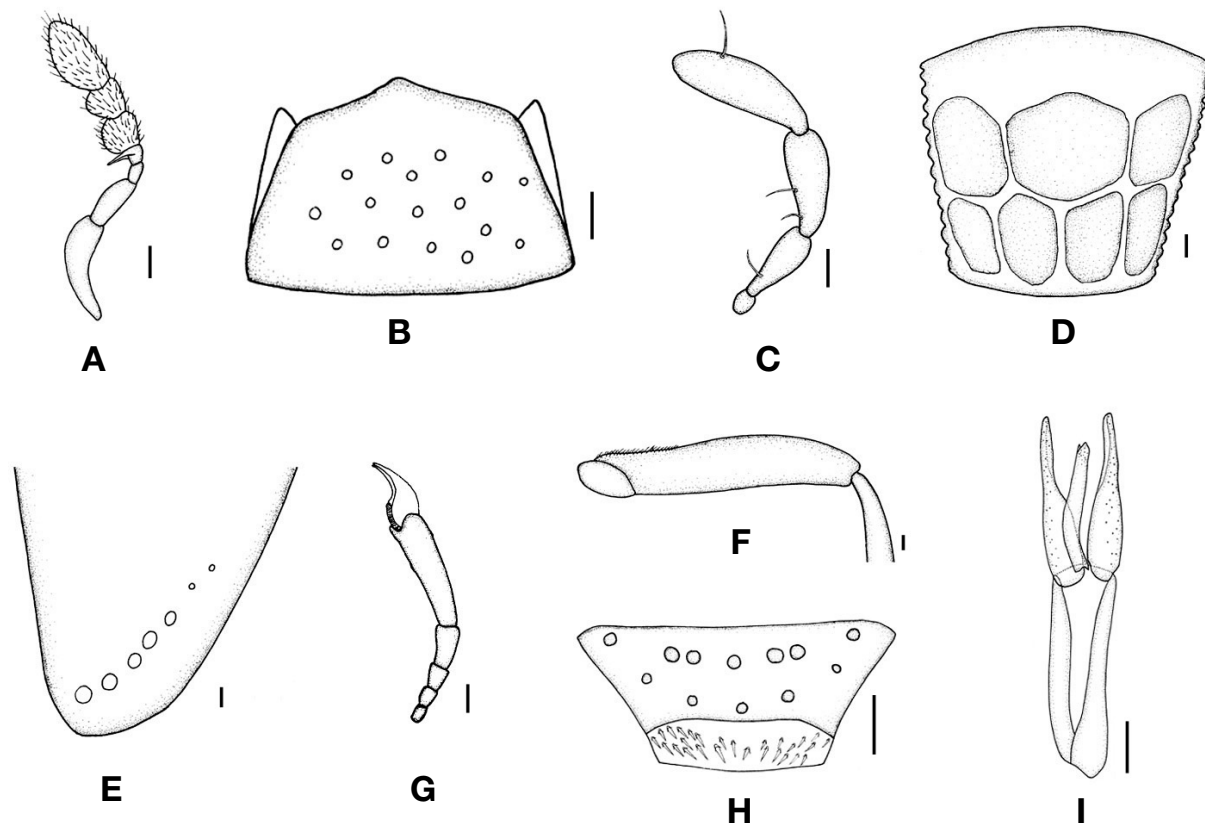


Fig. 3. *Hydrochus japonicus*. A, Antenna, dorsal aspect; B, Mentum, ventral aspect; C, Maxillary palpus, ventral aspect; D, Pronotum, dorsal aspect; E, Apical part of elytra, dorsal aspect; F, Metafemur, lateral aspect; G, Protarsus, lateral aspect; H, Sternite VII, ventral aspect; I, Aedeagus, ventral aspect. Scale bars: A–I=0.1 mm.

Labrum with many long setae on anterior and lateral parts. Mandible with many short setae on apico-lateral part. Maxillary palpomere 1 with one seta on sub-basal part, 2 with two setae on sub-basal part, 4 with one seta on sub-apical part. Labial palpomere 1 longer than 2; 3 with one long seta on apical part. Pronotum more or less reversed pentagonal with large seven impressions; lateral margin crenulated. Elytron with 4 large membranous punctures on apical part, diameter as long as elytral punctures (Fig. 2B). Pro- and mesofemur with hydrofuse pubescence on basal part, metafemur with hydrofuse pubescence on antero-basal third (Fig. 2C). Tarsomere 5 as long as 1–4 combined. Sternite VII with 10 large punctures on middle part (Fig. 2D), semitransparent plate with many spines (Fig. 2D).

Remarks. This species can be distinguished from *H. aequalis* Sharp by pronotum with large impressions and from *H. japonicus* by dark brown elytra.

Distribution. Korea, Japan.

¹*Hydrochus japonicus* Sharp, 1873 (Figs. 1B, 3)

Hydrochus japonicus Sharp, 1873: 64; Balfour-Browne & Satô, 1962: 4; Nakane et al., 1963: 63; Satô, 1984: 205; Jäch, 1995: 182; Hansen, 2004: 43; Jung et al., 2011: 43. *Hydrochus annamita* Régimbart, 1903: 64.

Material examined. Korea: 1♂, Jeju Prov., Bukjeju-gun, Jocheon-eub, Seonheul-ri, 11 Jun 2005, Lee DH, *ex pond* (on slide, CNUIC); 1♂ 1♀, 27 Jul 2005, Lee SH (on slides, CNUIC); 1♀, 28 Jul 2005, Lee SH (CNUIC); 1♂ 1♀, Dongbaek-pond, 25 Sep 2008 (CNUIC).

Description. Body 3.4–3.7 mm, elongated, with many punctures (Fig. 1B). Head, pronotum bluish and elytra yellowish grey. Ventral surface dark grey with hydrofuse pubescence. Head depressed at middle part, epicranial suture indistinct. Antennae with 7 antennomeres and 5–7 clubbed with pubescence (Fig. 3A), antennomere 1 as long as 2–4 combined, apical part of 4 dish-shaped. Mentum pointed at the anterior

Korean name: ¹*곰보물땡땡이

margin and with sparse and large punctures (Fig. 3B). Labrum with many long setae on anterior and lateral parts. Mandible with many short setae on apico-lateral part. Maxillary palpomere 1 with one seta on sub-basal part (Fig. 3C), 2 with two setae on sub-basal part, 4 with one seta on sub-apical part. Labial palpomere 1 longer than 2, 3 with one long seta on apical part. Pronotum more or less reversed pentagonal, large seven impressions present (Fig. 3D), lateral margin of pronotum crenulated. Elytron with 5 large membranous punctures on apical part, diameter as long as elytral punctures (Fig. 3E). Pro- and mesofemur with hydrofuse pubescence on basal part, metafemur with hydrofuse pubescence on antero-basal part (Fig. 3F). Tarsomere 5 as long as 1–4 combined (Fig. 3G). Sternite VII with 10 large punctures on middle part (Fig. 3H), semitransparent plate with many spines. Median lobe of aedeagus shorter than paramere, apical part V-shaped (Fig. 3I). Apical part of paramere sinuate (Fig. 3I).

Remarks. This species can be distinguished from *H. aequalis* and *H. chubu* by the metallic body color and median lobe distinctly shorter than paramere.

Distribution. Korea, China, Japan.

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