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Notes on the genus *Hydraenida* GERMAIN, with description of a new species from Chile (Coleoptera: Hydraenidae)

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Abstract

A new species of *Hydraenida* GERMAIN, *H. guerreroi* sp.n., is described from Chile. It is well characterised by the structure of the aedeagus. The sexual dimorphism of the pronotum of the species of *Hydraenida* is discussed, and some ecological data of *H. guerreroi* and *H. sanctijacobi* JÄCH are provided. The aedeagus of the unknown species figured by BALFOUR-BROWNE (1975) is confirmed to be *H. robusta* PERKINS, as suggested by PERKINS (1980).

Key words: Coleoptera, Hydraenidae, *Hydraenida guerreroi*, taxonomy, sexual dimorphism, new species, Chile.

Introduction

The genus *Hydraenida* GERMAIN has four recognised species, all of them from Chile (*H. ocellata* GERMAIN, *H. robusta* PERKINS, *H. franzi* JÄCH and *H. sanctijacobi* JÄCH) (GERMAIN 1901, BALFOUR-BROWNE 1975, PERKINS 1980, JÄCH 1998).

In an entomological trip to Chile in January-February 1999 several specimens of *Hydraenida* were found in two streams: the first one is close (if not the same) to the type locality of *H. sanctijacobi* and *H. franzi* - one male of the first species and two unidentified females were collected there; the second stream is located in the Natural Park Altos del Lircay, where a new species was found.

Here I describe this new species, comment on the sexual dimorphism present in the pronotum of the species of the genus (first noted by JÄCH 1998), and give some details on the habitat of the species collected, as there was virtually no published information on the ecology of the species of the genus available. In addition, I have reexamined the aedeagus of *H. robusta*, which was illustrated by BALFOUR-BROWNE (1975: Fig. 2e).

Acknowledgements and acronyms

I thank Marcelo Guerrero for his help during my trip to Chile. I also thank Manfred A. Jäch for comments on the manuscript, Carles Hernando for drawing the aedeagus, and British Airways for providing financial support.

NHM: The Natural History Museum, London; NMW: Naturhistorisches Museum, Wien; [hw]: Hand written label

Hydraenida guerreroi sp.n.

TYPE LOCALITY: Altos de Vilches, Natural Park of Altos del Lircay, VII Región, Chile (see Fig. 2).

TYPE MATERIAL: **Holotype** ♂ (NHM): "6 CHILE VII Reg. \ Altos de Vilches \ Quebrada de los Patos 1 \ I. Ribera leg. 23.I.1999". **Paratypes**: 1 ♂ (NMW), 1 ♀ (NHM), same data as holotype.

DIAGNOSIS: Total length 1.97 - 2.12 mm, maximum width 0.87 - 0.92 mm. Black, body appendages, epipleura and elytral apices brownish; upper surface with faint metallic reflections. Dorsal surface of head microreticulate; labrum deeply emarginate, anterior margin slightly upturned; interocular fovea short, distinctly impressed; ocelli brown. Pronotum microreticulate except a small, prominent area in the disc; punctation dense and regularly spaced; four impressions, two central, transverse, and two lateral, longitudinal ones. Elytra slightly impressed transversely; striae very regular, punctures of variable diameter, deeply impressed; explanate margin wider at the middle; apex regularly curved. Abdomen with hydrofuge pubescence on first four ventrites and on anterior margin of fifth ventrite.

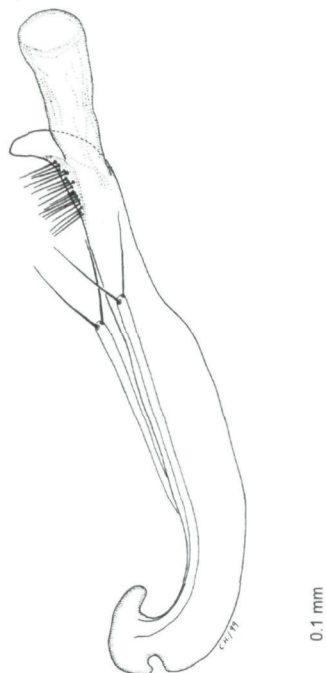


Fig. 1: Aedeagus of *Hydraenida guerreroi* sp.n., lateral view.

Aedeagus as in Fig. 1. Median lobe elongate, ventral margin straight, dorsal margin sinuated; apex hook-like, well sclerotized; distal lobe less sclerotized, tubular, widened at apex. Parameres poorly developed, almost transparent, very close to median lobe.

SEXUAL DIMORPHISM: JÄCH (1998) noted that two females found in company of males of *H. sanctijacobi* and *H. franzi* had the anterior pronotal margin deeply emarginate behind the eyes. However, due to the low number of specimens of both species (one male of each), and the impossibility of identifying the females according to their external morphology, it was not clear whether this difference in the shape of the pronotum was a sexual dimorphism or whether the two females belonged to a third, undescribed species. The two males of *H. guerreroi* do not have emarginated pronota, while the female has the pronotum deeply emarginated. Similarly, three additional specimens of *Hydraenida* found in the Cajón del Maipó (see below) had the same sexual dimorphism. These new data clearly suggest that the species of *Hydraenida* are sexually dimorphic in what refers to the shape of the pronotum. On the contrary, *H. guerreroi* does not have sexual dimorphism in the labrum, as it happens with all previously known species of the genus (BALFOUR-BROWNE 1975, PERKINS 1980, JÄCH 1998): males have the anterior margin of the labrum similar to that of the females, only slightly upturned and deeply emarginated.

DIFFERENTIAL DIAGNOSIS: The external morphology of the species of *Hydraenida* provides very few reliable characters of diagnostic value (PERKINS 1980, JÄCH 1998). Males of the new species are characterised by the shape of the labrum, with the anterior margin not strongly upturned, and the structure of the aedeagus, in particular by the hook-like structure of the apex of the median lobe.



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Figs. 2 - 3: 2) Type locality of *Hydraenida guerreroi* sp.n.; 3) stream in the Cajón del Maipó, locality of *H. sanctijacobi*.

ECOLOGY: The specimens were found in a small mountain stream with clean water, abundant moss and coarse detritus (Fig. 2). The surrounding forest was dominated by coigüe and roble (*Nothofagus* spp.). The only aquatic Coleoptera present (other than *H. guerreroi*) were four species of Elmidae, one *Austrolimnius* CARTER & ZECK, two *Stethelmis* HINTON and one species of a still unidentified genus.

ETYMOLOGY: The species is named after Marcelo Guerrero, whose broad entomological knowledge was of great value during our Chilean excursion.

Hydraenida sanctijacobi JÄCH

Hydraenida sanctijacobi JÄCH 1998: 168.

TYPE MATERIAL: Holotype ♂ (NMW), "Anden b. Santiago Chile, lg. Franz \ Embalse de Jeso, Anden \ Sa 200".

ADDITIONAL MATERIAL EXAMINED:

CHILE: Región Metropolitana, Cajón del Maipó: tributary of river Yeso, 3 km south of the Embalse del Yeso, 1 ♂, 21.I.1999, I. Ribera leg. (NHM).

REMARKS: This locality is close, if not the same, to the type locality ("Cajon del Maipó, near Embalse del Yeso, ca. 2500 m a.s.l.", see JÄCH 1998). Two females found in the same locality may correspond to this species or to *H. franzi*, described from the same area. According to JÄCH (1998) females of these two species cannot be identified externally.

ECOLOGY: The specimens were found in a small shallow mountain stream with filamentous green algae in volcanic substratum, in a deforested area (Fig. 3). Other aquatic beetles were one species of *Stethelmis* (Elmidae), one species of *Enochrus* THOMSON (Hydrophilidae) and *Lancetes nigriceps* (ERICHSON) (Dytiscidae).

Hydraenida robusta PERKINS

Hydraenida sp. BALFOUR-BROWNE 1975: 45.

Hydraenida robusta PERKINS 1980: 43.

MATERIAL EXAMINED: 1 aedeagus (NHM): blue paralectotype label, "genitalia of slide \ specimen. [hw]", "BM: 1975-224 [hw]", "*Hydraenida* \ sp. nov. [hw] \ J. Balfour-Browne det. \ v. 1975", "*Hydraenida* \ ocellata Germ. [hw] \ J. Balfour-Browne det. \ v. 1975 \ PARALECTOTYPE [hw]".

REMARKS: The aedeagus clearly agrees with that of *H. robusta*, as figured by PERKINS (1980). The general appearance is very robust, well sclerotized, and the treatment with caustic potash does not seem to have affected it in any significant way other than maybe the most membranous structures in the distal lobe. Differences between the figures (BALFOUR-BROWNE 1975: Fig. 2e; PERKINS 1980: Fig. 13a) are likely to be due to inaccuracies in the representation, and to slightly different orientations.

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