



## ***Hydrochus farsicus* sp.n. from Iran and notes on other Palearctic species of the genus (Coleoptera: Hydrophiloidea: Hydrochidae)**

AMPARO HIDALGO-GALIANA<sup>1,2</sup>, MANFRED A. JÄCH<sup>3</sup> & IGNACIO RIBERA<sup>1,2</sup>

<sup>1</sup>Museo Nacional de Ciencias Naturales (CSIC), José Gutiérrez Abascal 2, Madrid, 28006, Spain

<sup>2</sup>Institut de Biologia Evolutiva (CSIC-UPF), Passeig Maritim de la Barceloneta, Barcelona 08003, Spain.

E-mail: amparo.hidalgo@ibe.upf-csic.es, ignacio.ribera@ibe.upf-csic.es

<sup>3</sup>Naturhistorisches Museum Wien, Burgring 7, A – 1010 Wien, Austria. E-mail: manfred.jaech@nhm-wien.ac.at

The family Hydrochidae (or subfamily Hydrochinae for some authors) includes one recognised genus (*Hydrochus* Leach) with more than 200 species and a worldwide distribution (Hansen, 1999; Short & Hebauer, 2006). The West Mediterranean is among the most diverse areas for the genus in the Palearctic Region, with 12 species known from Spain and Morocco, including several endemic species described recently (Hansen, 2004). On the contrary, in the East Mediterranean and the Middle East few species are known so far, although some undescribed species from Turkey are deposited in the Naturhistorisches Museum Wien (NMW). No species of *Hydrochus* has ever been recorded from Iran (Hansen, 2004). Other groups of aquatic Coleoptera (e.g. Dytiscidae, Nilsson, 2004 or Hydraenidae, Jäch, 2004) display a more balanced distribution of species, and include a high number of Turkish or Iranian endemics. The situation in *Hydrochus* may be due to lack of knowledge, as the undescribed specimens in the NMW and some recent works (Incekara *et al.*, 2004; Mart *et al.*, 2009) may suggest, but it may be that in Turkey and the Middle East the genus *Hydrochus* is generally less speciose than in the West Mediterranean.

In this paper two species of *Hydrochus* are recorded from Iran, one of which is described as new. In addition, some taxonomic notes on other Palearctic species are provided.

### ***Hydrochus farsicus*, new species**

Figs 1–2

**Type locality.** Sepidan, Province of Fars, Iran.

**Type material.** *Holotype* (NMW): “2 - IRAN Fars, 13.8.1998 / 6km W Sepidan / rd. Sepidan-Yasuj / brook (Cheshmeh Saran) / leg. Elmi & Fery (# 2098)” and holotype label. Aedeagus glued on the same card. Base of aedeagus slightly damaged. *Paratypes* (NMW): Two females with the same data as holotype, plus paratype labels.

**Diagnosis.** The only reliable characters to identify this new species are those of the male genitalia (Fig. 2). Other putative morphological characters may be shared with still undescribed, closely related species and are thus not reliable for an unambiguous identification.

**Description.** Habitus as in Fig. 1. Elytra and body appendages brown, except apex of maxillary palpi and base of mandibles darker; head black; pronotum brown with central area darker; surface with light bluish or greenish metallic reflections. Ventral side evenly dark brown, except for head black. Head with deep, coarse evenly distributed punctures, intermixed with smaller punctures with short whitish setae; four small tubercles between eyes. Pronotum elongate, subcylindrical, wider anteriorly; with seven depressions, three anterior, rounder and four posterior, more elongate; lateral posterior depressions smaller, reaching posterior margin of pronotum. Punctuation and pubescence as on head. Elytra subparallel-sided, slightly wider posteriorly; with 10 longitudinal striae formed by deep, regularly aligned punctures. Humeral region of elytra prominent. Tibiae with a regular dense row of setae in upper apical part; femora with evenly distributed small setae. Ventral surface covered with short, thick and dense pubescence, surface strongly microreticulate, cells small and with a shagreen-like aspect. Medial line of ventrites, medial area of metaventrite, and two lateral areas in the metaventrite glabrous or with less dense pubescence. Ventrites with a strong transverse medial ridge, almost forming a carina.



**FIGURE 1.** *Hydrochus farsicus*, habitus (Holotype).

Aedeagus as in Fig. 2, 0.98 mm long, 0.3 mm wide; robust, parameres and median lobe asymmetrical: apex of left paramere with an asymmetrical triangular expansion; apex of right paramere sinuated, not expanded. Apex of median lobe expanded, poorly sclerotized, with a small flagellum.

**Variation.** Length 3.2–3.4 mm; maximum width 1.0–1.3 mm. Without apparent secondary sexual dimorphism.

**Distribution.** Only known from the type locality.

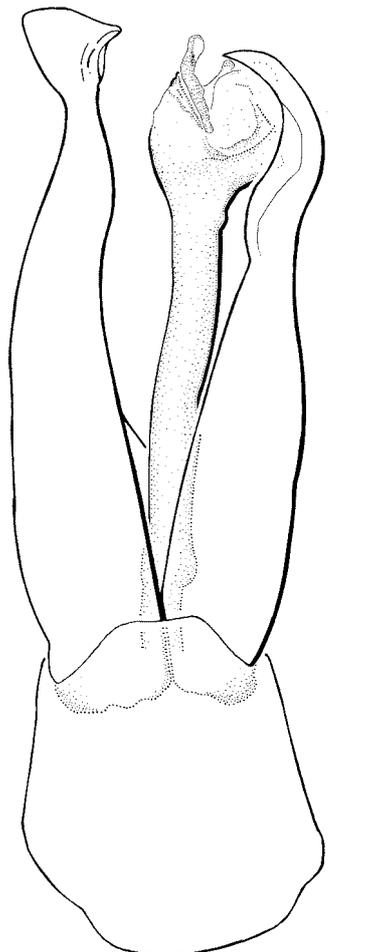
**Remarks.** The morphology of the aedeagus of *H. farsicus* resembles that of some Iberian species (*Hydrochus ibericus* Valladares, Díaz & Delgado and *H. angusi* Valladares), although it may also be related to the group of *H. elongatus* (Schaller), with a more eastern distribution (Hidalgo-Galiana *et al.*, in preparation). Mart *et al.* (2009) recorded *H. ibericus* from Turkey, but unfortunately they did not figure the aedeagus and did not give details of the material used for comparison.

**Etymology.** Named after the Iranian province of Fars, from where this species was collected.

### *Hydrochus nodulifer* Reitter, 1897

**Material studied.** One male (Coll. Pütz, Eisenhüttenstadt, Germany): IRAN: Prov. Gilan, Siahkal County, Elburz Mts., S-Slope, Deylaman-Barresar road, sifted, 1688 m, 36°51'07"N, 49°49'67.3"E, 07.VI.2008, leg. A. Pütz "IR08-25".

**Remarks.** First record for Iran. This species was described from "Elisabethpol" [= Ganja (or Ganca), Azerbaijan] (Reitter, 1897). A lectotype was designated by Shatrovskij (1993), who also figured the aedeagus. *Hydrochus nodulifer* has also been recorded from Eastern Anatolia and the Black Sea Area of Turkey (Mart *et al.*, 2009).



**FIGURE 2.** *Hydrochus farsicus*, aedeagus, dorsal view (scale bar 0.3 mm)

## *Hydrochus smaragdineus* Fairmaire, 1879

*Hydrochus angustatus bicolor* Rey, 1885 **syn.n.**

**Material studied.** Lectotype (of *Hydrochus angustatus bicolor* Rey, 1885), male (Muséum d'Histoire Naturelle, Lyon): "Hydrochus / bicolor Rey [male symbol] / mus. Lyon. [red handwritten label]"; "Museon Den Haag / Hydrochus [male symbol] / bicolor Rey [hdw] / det. A. L. van Berge / Henegouwen 1986"; "lectotype. Van Berge / Henegouwen 1985 [red label, hdw]".

**Remarks.** The study of the lectotype of *H. angustatus bicolor* revealed that its aedeagus is identical to that of *H. smaragdineus* Fairmaire (in the interpretation of Valladares, 1995), and thus it has to be considered a subjective junior synonym and not a subspecies of *Hydrochus angustatus* Germar, 1824.

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## References

- Fairmaire, L. (1879) Descriptions de coléoptères nouveaux du nord de l'Afrique. *Annales de la Société Entomologique de France*, (5) 9, 155–172.
- Germar, E.F. (1824) Insectorum Species novae aut minus cognitae, descriptionibus illustratae. Vol. I. Coleoptera. Halae : J.C. Hendelii & Filii, xxiv + 624 pp., 2 pls.
- Hansen, M. (1999) *World Catalogue of Insects, Vol. 2: Hydrophiloidea (Coleoptera)*. Apollo Books, Stenstrup, 416 pp.
- Hansen, M. (2004) Hydrochidae. In: Löbl, I. & Smetana, A. (Eds): *Catalogue of Palaearctic Coleoptera, Vol. 2*. Apollo Books, Stenstrup, pp. 42–43.
- Incekara, Ü., Mart, A. & Erman, O. (2004) Two new records of Hydrochidae (Coleoptera) species from Turkey, with some ecological notes. *Turkish Journal of Zoology*, 28, 213–216.
- Jäch, M.A. (2004) Hydraenidae. In: Löbl, I. & Smetana, A. (Eds): *Catalogue of Palaearctic Coleoptera, Vol. 2*. Apollo Books, Stenstrup, pp. 102–122.
- Mart, A., Incekara, Ü., Polat, A. & Karaka, H. (2009) *Hydrochus ibericus* and *Hydrochus nodulifer*, two new records for the Hydrochidae (Coleoptera) fauna of Turkey. *Turkish Journal of Zoology*, 33, 249–250.
- Nilsson, A.N. (2004) Dytiscidae. In: Löbl, I. & Smetana, A. (Eds): *Catalogue of Palaearctic Coleoptera, Vol. 1*. Apollo Books, Stenstrup, pp. 35–78.
- Reitter, E. (1897) Dreiig neue Coleopteren aus russisch Asien und der Mongolei. *Deutsche entomologische Zeitschrift*, 1897, 209–228.
- Rey, C. (1885) Descriptions de coléoptères nouveaux ou peu connues de la tribu des Palpicornes. *Annales de la Société Linnéenne de Lyon*, 31, 13–32.
- Schaller, J.G. (1783) Neue Insekten. *Abhandlungen der Hallischen Naturforschenden Gesellschaft*, 1, 217–332.
- Shatrovskij, A.G. (1993) On new and little known hydrophilids of the genus *Hydrochus* Leach (Coleoptera, Hydrophilidae). *Entomologicheskoe Obozrenie*, 72, 827–829.
- Short, A.E.Z. & Hebauer, F. (2006) World Catalogue of Hydrophiloidea – additions and corrections, 1 (1999–2005) (Coleoptera). *Koleopterologische Rundschau*, 76, 315–359.
- Valladares, L.F. (1995) Los Palpicornia acuáticos de la provincia de León. 3. Helophoridae, Hydrochidae e Hydrophilidae (Coleoptera). *Boletín de la Asociación Española de Entomología*, 19, 281–308.
- Valladares, L.F., Díaz, J.A. & Delgado, J.A. (1999) *Hydrochus ibericus* sp. n. (Coleoptera: Hydrochidae) from the Iberian Peninsula. *Aquatic Insects*, 21, 81–87.