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A new interstitial species of the *Hydroporus ferrugineus* group from north-western Turkey, with a molecular phylogeny of the *H. memnonius* and related groups (Coleoptera: Dytiscidae: Hydroporinae)

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Abstract

We describe *Hydroporus bithynicus* **sp. n.** (Coleoptera, Dytiscidae, Hydroporinae) from the Bolu province in north-western Turkey. The species belongs to the newly defined *H. ferrugineus* group, and can be separated from the other two members (*H. ferrugineus* Stephens, 1829 and *H. sanfilippoi* Ghidini, 1958) by its more flattened shape, less developed eyes and shape of male genitalia. Its external morphology and the habitat in which all specimens were found (a small pool with upwelling spring water next to a stream) suggest an interstitial habitat, similar to that reported for other species of the group. We present a molecular phylogeny of the species of the *H. memnonius* and *H. longulus* groups, including some representatives of the main lineages within the genus, based on ca. 2 kb of four mitochondrial genes. We redefine the *H. memnonius* group and recognise the *H. ferrugineus*, *H. obsoletus* and *H. morio* groups of species as separate entities. *Hydroporus neglectus* Schaum, 1845 was found to be related to the species of the *H. angustatus*, but not the *H. memnonius* group.

Key words: Coleoptera. Dytiscidae, Hydroporinae, phylogeny, taxonomy, new species, interstitial, Turkey

Introduction

The genus *Hydroporus* Clairville, 1806, with 181 described species including the one described here (35 of them known from Turkey) (Nilsson 2001; Fery & Hendrich 2011), is one of the largest among diving beetles (Dytiscidae). The traditional subgenera are no longer considered valid (Nilsson 2001), and it is currently divided in "species groups" based on characters of external morphology. Recent molecular phylogenies of the genus have shown that some of these groups largely correspond with monophyletic lineages (Ribera *et al*. 2003), although the incomplete sampling of this study did not allow to obtain general conclusions.

The finding of a new species of *Hydroporus* apparently related to *H. ferrugineus* Stephens, 1829 in north-western Turkey in 2006 prompted us to re-evaluate the composition and the phylogenetic relationships of the species of the *H. memnonius* group, to which *H. ferrugineus* was assumed to belong (Fery 1999; Nilsson 2001), as well as that of closer species groups, such as the *H. longulus* group (former *Sternoporus* Falkenström, 1930), found to be sister to *H. memnonius* Nicolai, 1822 plus *H. melanarius* Sturm, 1835 in Ribera *et al*. (2003).

Material and methods

Taxon sampling. We use a wide representation of species of *Hydroporus*, including *Suphrodytes dorsalis* (Fabricius, 1787), shown to be nested within *Hydroporus* in Ribera *et al*. (2003) (Table 1). As outgroup we use three spe-

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