



Contribution to the knowledge of *Siphonoperla* in Europe (Plecoptera: Chloroperlidae): *Siphonoperla korab* sp. n.

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Abstract

A new species of stonefly of the genus *Siphonoperla* from the Dinaric Mountains of Macedonia is described. The description of *S. korab* sp. n. is based on morphological and genetic characters. We also provide notes on habitat and distribution of this new taxon. Further notes on the biogeography of the genus are added.

Key words: Plecoptera, *Siphonoperla*, new species, penial structures, mtDNA, Macedonia

Introduction

Species of the genus *Siphonoperla* Zwick, 1967 are relatively small chloroperline stoneflies usually associated with cold spring habitats, but some species have been reported from lowlands. The systematics of the genus is much disputed (Weiss *et al.* 2011), and species are distinguished on morphological criteria. The genus *Siphonoperla* is distributed throughout Europe and occurs both in North Africa and in Central Asia. The genus currently includes thirteen described species (DeWalt *et al.* 2011): *S. hajastanica* (Zhiltzova), *S. libanica* Alouf, *S. lepineyi* (Navás), *S. baetica* (Aubert), *S. burmeisteri* (Pictet), *S. montana* (Pictet), *S. neglecta* (Rostock), *S. graeca* (Aubert), *S. taurica* (Pictet), *S. ottomoogi* Graf, *S. torrentium* (Pictet), *S. transsylvanica* (Kis) and *S. italica* (Aubert). In this study, we focus on a morphologically similar species group comprising *S. neglecta*, *S. graeca* and the new species *S. korab* sp. n.

Material and methods

Two specimens were collected using an aerial insect net and all material was stored originally in 70% ethanol but transferred to 95% ethanol for genetic analysis. The holotype and paratype are deposited in the collection of the Biologiezentrum Linz (LI-PLEC-2011/01), Austria. General distributions were compiled from data extracted from the following publications: Aubert (1953, 1956), Alouf (1992), Braasch & Joost (1976), Despax (1951), Fiałkowski & Kittel (2002), Fochetti (1995), Graf *et al.* (2008), Kimmins (1935), Kis (1963, 1974), Lillehammer (1988), Loskutova (2003), Murányi (2007), Sivec (1980), Soldán *et al.* (1998), Weiss *et al.* (2011), and Zwick (1971, 1981).

DNA extraction and Data analysis. Genomic DNA was extracted from three *Siphonoperla* species (*S. neglecta*, *S. graeca* and *S. korab* sp. n.) using DNeasy blood and tissue kits (Qiagen GmbH, Hilden, Germany). A PCR reaction was carried out to amplify a 650 bp region of the mitochondrial cytochrome oxidase I (*cox1*) gene