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Three new monotypic genera of Trichopolydesmidae from Croatia, Balkan Peninsula (Diplopoda, Polydesmida)

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Abstract

Three new monotypic genera are described from underground habitats in Croatia: *Balkanodesmus biokovensis* gen. n., sp. n., *Solentanodesmus insularis* gen. n., sp. n. and *Velebitodesmus cavernicolus* gen. n., sp. n. In all three new genera the prefemoral part of the gonopods is orientated transversely to the main body axis, and all three new genera possess numerous metatergal setae arranged in a few transverse irregular rows, a condition observed in several European trichopolydesmids. These three new genera are very close to the genus *Verhoeffodesmus*. A distribution map and a brief discussion about the relationship with congeners are provided.

Key words: Taxonomy, Trichopolydesmidae, Dinaric Karst, subterranean habitat

Introduction

Cave systems in the Balkan Peninsula are known to be among the richest in the world in terms of underground fauna. This fact is especially striking concerning the Dinaric Karst where Croatia, with its numerous islands, has one of the richest faunas of millipedes in the region, with more than 180 species (Mršić, 1994). Many of them are troglobitic and endemic, furthermore some are only known from their type localities or with only local distribution. Despite the great abundance of millipedes, in the past the fauna has only occasionally been studied, mostly by Strasser (1959, 1962, 1966, 1971) and Mršić (1986, 1987a, 1987b, 1987c, 1988, 1992, 1994), and in the last decade by Makarov and coworkers (2003a, 2003b, 2006, 2007, 2011), who described numerous new taxa, both troglobitic and epigean.

The discovery of three new monotypic trichopolydesmid genera from different underground systems in the Adriatic part of Croatia, together with the previously described *Verhoeffodesmus* Strasser, 1959, clearly represent novel lineages, and indicates that knowledge of this group is still superficially understood, not only in Croatia, but in the whole Balkan Peninsula as well.

After the recent synonymization of the families Fuhrmannodesmidae, Macrosternodesmidae, Nearctodesmidae and Mastigonodesmidae under the family Trichopolydesmidae, this group now contains about 80 genera and *circa* 150 species, mostly from the Northern Hemisphere (Golovatch, 2013; Golovatch *et al*. 2014). On the European continent, the family Trichopolydesmidae is represented by 14 genera and *circa* 30 species ranging from Spain in the west to Ukraine in the east, and from the Norwegian mainland and Sweden in the north to the Greek islands in the Aegean Sea in the south (Golovatch, 2011, 2013; Kime and Enghoff, 2011). Except for the genera *Mastigonodesmus* Silvestri, 1898, *Galliocookia* Ribaut, 1955 and *Bacillidesmus* Attems, 1898 with eight, four and three species respectively, all other European trichopolydesmid genera contain only one or two species with narrow distributions. Only the genera *Macrosternodesmus* Brolemann, 1908 and *Ophiodesmus* Cook, 1896, both monotypic, show a wider distribution in Europe, probably due to anthropochory.

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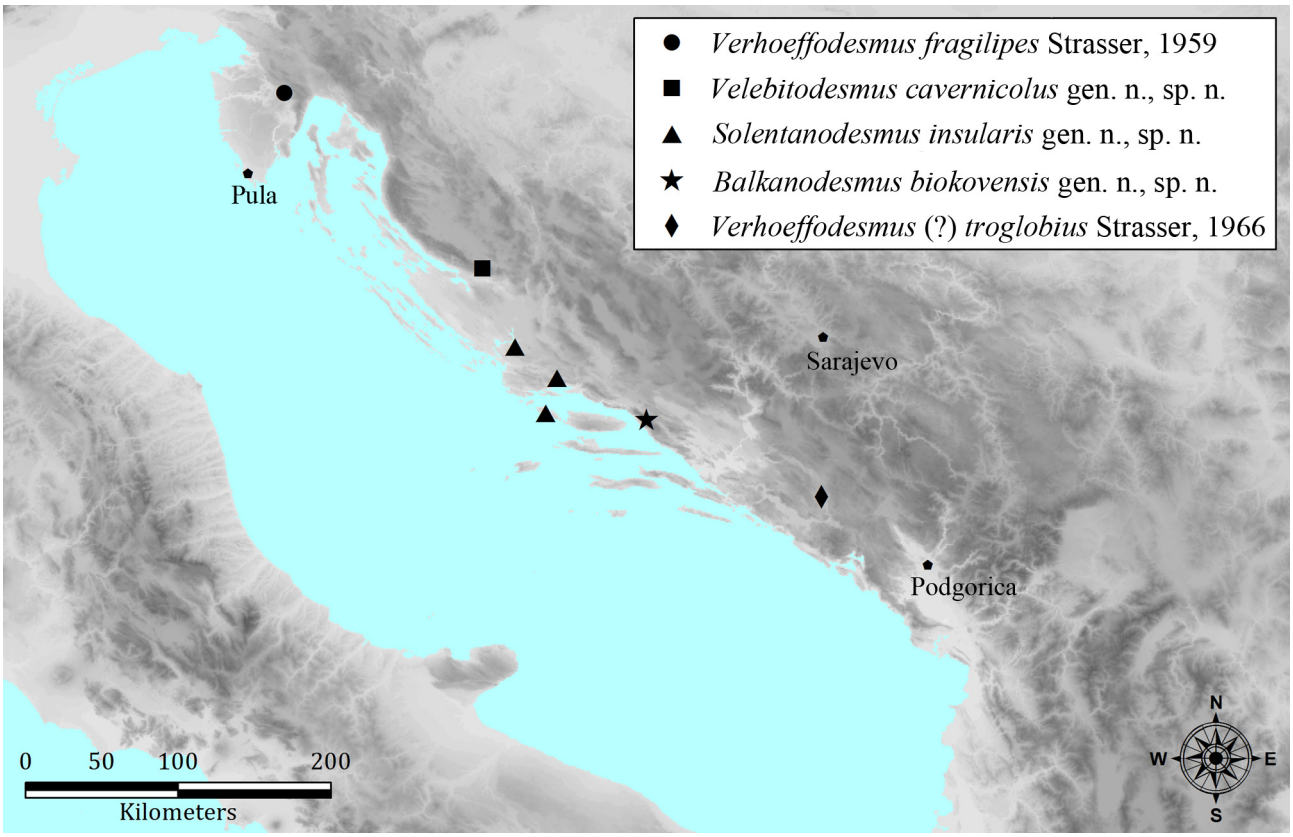
palaeoendemic forms of what remains of an ancient fauna known to have been very rich in this region during the Mesozoic or early Cenozoic, but has survived until today only in underground environments.

Conclusion. The current situation and relationships within European trichopolydesmid genera are problematic and far from well-understood, chiefly because their habitus and gonopod structures are usually highly complex. Their evolution has definitely been related to the origins and development of complex underground environments beginning in the remote past.



MAP. Distribution of the family Trichopolydesmidae in the western Balkans.

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