



The millipede genus *Megaphyllum* Verhoeff, 1894 in the Balkan Peninsula, with description of new species (Myriapoda: Diplopoda: Julida: Julidae)

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Table of contents

Abstract	2
Introduction	2
Material and methods	3
Taxonomic part	4
<i>Megaphyllum anatolicum denticulatum</i> (Strasser, 1969)	5
<i>Megaphyllum argolicum</i> (Verhoeff, 1900)	5
<i>Megaphyllum austriacum</i> (Latzel, 1884)	6
<i>Megaphyllum beroni</i> (Strasser, 1973)	8
<i>Megaphyllum bicolor bicolor</i> (Loksa, 1970)	8
<i>Megaphyllum bicolor crassiflagellum</i> Mauriès & Karamaouna, 1984	8
<i>Megaphyllum bosniense</i> (Verhoeff, 1897)	8
<i>Megaphyllum brachyurum thassensis</i> Mauriès, 1985	9
<i>Megaphyllum byzantinum</i> (Verhoeff, 1901)	10
<i>Megaphyllum carniolense</i> (Verhoeff, 1897)	10
<i>Megaphyllum cephalonicum</i> (Strasser, 1974)	11
<i>Megaphyllum crassum</i> (Attems, 1929)	11
<i>Megaphyllum creticum</i> (Strasser, 1976)	12
<i>Megaphyllum dentatum</i> (Verhoeff, 1898)	12
<i>Megaphyllum euphorbiarum</i> (Verhoeff, 1900)	12
<i>Megaphyllum glossulifer</i> (Schubart, 1934)	13
<i>Megaphyllum hercules</i> (Verhoeff, 1900)	13
<i>Megaphyllum imbecillum</i> (Attems, 1935)	14
<i>Megaphyllum karschi</i> (Verhoeff, 1901)	15
<i>Megaphyllum lamellifer</i> (Strasser, 1974)	15
<i>Megaphyllum leucadium</i> (Attems, 1929)	15
<i>Megaphyllum lictor</i> (Attems, 1904)	15
<i>Megaphyllum loebli</i> (Strasser, 1974)	16
<i>Megaphyllum margaritatum</i> (Fanzago, 1875)	16
<i>Megaphyllum metsovoni</i> (Strasser, 1976)	17
<i>Megaphyllum montivagum</i> (Verhoeff, 1901)	18
<i>Megaphyllum mueggenburgi</i> (Verhoeff, 1901) comb. n.	20
<i>Megaphyllum naxium</i> (Verhoeff, 1901)	21
<i>Megaphyllum projectum projectum</i> Verhoeff, 1894	21
<i>Megaphyllum recticauda recticauda</i> (Attems, 1903)	21
<i>Megaphyllum recticauda discrepans</i> (Strasser, 1976)	22
<i>Megaphyllum rhodopinum</i> (Verhoeff, 1928)	22
<i>Megaphyllum rossicum strandschanum</i> (Verhoeff, 1937)	23
<i>Megaphyllum rubidicolle</i> (Verhoeff, 1901)	23
<i>Megaphyllum sapphicum</i> (Strasser, 1976)	23
<i>Megaphyllum silvaticum</i> (Verhoeff, 1898)	24
<i>Megaphyllum syrense</i> (Verhoeff, 1903)	24

<i>Megaphyllum taygetanum</i> (Attems, 1903)	24
<i>Megaphyllum taygeti</i> (Strasser, 1976)	25
<i>Megaphyllum transsylvanicum</i> (Verhoeff, 1897)	26
<i>Megaphyllum unilineatum</i> (C.L. Koch, 1838)	27
<i>Megaphyllum vicinum</i> (Verhoeff, 1903)	28
Descriptions of new taxa	28
<i>Megaphyllum chiosense</i> Lazányi & Korsós sp. n.	28
<i>Megaphyllum (Megaphyllum) cygniforme</i> Lazányi & Korsós sp. n.	29
<i>Megaphyllum danyii</i> Lazányi & Korsós sp. n.	34
<i>Megaphyllum (Cyphobrachiulus) digitatum</i> Lazányi & Korsós sp. n.	34
<i>Megaphyllum</i> species inquirenda	37
Discussion	40
Acknowledgements	42
References	43

Abstract

A Balkan checklist of the millipede genus *Megaphyllum* Verhoeff, 1894 has been compiled on the basis of literature data, new collections, and reexamination of type and non-type material. Forty-seven species and subspecies are represented in the peninsula, including four species new to science: *M. chiosense* Lazányi & Korsós sp. n. from Chios Island, *M. cygniforme* Lazányi & Korsós sp. n. from East Macedonia, *M. danyii* Lazányi & Korsós sp. n. and *M. digitatum* Lazányi & Korsós sp. n. both from the Peloponnese, Greece. The following new synonymies are established: *M. monticola* (Verhoeff, 1898) **syn. n.** of *M. carniolense* (Verhoeff, 1897); *M. latesquamosum* (Attems, 1903) **syn. n.** and *M. macedonicum* (Strasser, 1976) **syn. n.** of *M. montivagum* (Verhoeff, 1901). *M. species inquirenda* is posed from Andros Island, Greece, on the basis of gonopod slide preparations, labeled by Strasser but never published. *M. mueggenburgi* (Verhoeff, 1901) **comb. nov.** is suggested, from the genus *Cerabrachiulus* Verhoeff, 1901, previously *Chromatoiulus* Verhoeff, 1894. Species new to the fauna are: *M. bosniense* (Verhoeff, 1897) new to the fauna of Greece; *M. imbecillum* (Attems, 1935) and *M. montivagum* new to the Republic of Macedonia; and *M. lictor* (Attems, 1904) new to the fauna of Turkey (European part). The following species have been found and localities are published for the first or second time since their original description: *M. euphorbium* (Verhoeff, 1900), *M. lamellifer* (Strasser, 1974), *M. loebli* (Strasser, 1974), *M. metsovoni* (Strasser, 1976), *M. recticauda* *recticauda* (Attems, 1903), and *M. taygeti* (Strasser, 1976). Thirty-nine species and subspecies are endemic to the Balkan Peninsula, they can be grouped as: (1) species having a wide distribution range; (2) strict endemics of smaller regions; (3) species inhabiting the Peloponnese; and (4) species inhabiting the Greek islands. The Peloponnese and the Rhodopes seem to be remarkably important regions for speciation.

Key words: millipede, *Brachiulus*, *Chromatoiulus*, new taxa, new synonymies, new records, distribution, Balkans

Introduction

The genus *Megaphyllum* Verhoeff, 1894 is one of the most species-rich and diverse millipede genera in south-eastern Europe. From a grand total of 87 *Megaphyllum* species, 50 (57.5%) are distributed in Europe, the rest in Anatolia, the Caucasus and the Middle East. The easternmost record is from Siberia (Altai) (Mikhailjova *et al.* 2007). Forty-five European *Megaphyllum* species have hitherto been recorded from the Balkan Peninsula (Enghoff & Kime 2009). Around 30 species are endemic to the region, some of them restricted only to several mountain ranges or single islands. Several species have not been recollected since their original description. Apart from the species number, the morphological diversity of the species is also considerably high in the peninsula, *i.e.* 11 subgenera are represented which are, in addition, good examples of confusing subgenus concepts within the genus.

Regarding the delimitations of the Balkan Peninsula, there is a consensus that it is bordered by the Adriatic, Ionian, Aegean and Black Seas (through the Bosphorus Strait). However, the northern boundary can be defined in many ways, *e.g.* by political states or by rivers, including whole of Romania, just part of it, or even excluding it totally (for a detailed discussion see Reed *et al.* 2004). With regards to soil organisms, here we define the northern boundary of the Balkan Peninsula as being formed by the rivers Danube, Sava, Kupa, Krka and Soča.

Although several authors have investigated the millipede fauna of the peninsula in detail at the country scale (*e.g.* for a Greek species list—not only *Megaphyllum*—see Strasser 1974; for a Balkan millipede review see Tăbăcaru 1982 and Ceuca 1992; for a checklist of millipedes in Serbia, Montenegro and Republic of Macedonia