

## A NEW *ODIELLUS* SPECIES FROM SERBIA (OPILIONES, PHALANGIIDAE)

Ivo M. Karaman

*Department of Biology, Faculty of Science, University of Novi Sad, 21000 Novi Sad, Serbia*

*Abstract* — *Odiellus serbicus* n. sp. from Western Serbia is described and figured. The new species is closely related to *Odiellus granulatus* (Canestrini, 1871) from the southwest Alps and Apennine Peninsula and *Odiellus zecariensis* Mkheidze, 1952 from the Caucasus.

*Key words*: Opilions, Phangiidae, *Odiellus serbicus*, evolution, Serbia

### INTRODUCTION

The genus *Odiellus* currently includes about 13 valid species. It has a primarily Laurasian distribution, with six species known from Southwest Europe (three of them also occurring in North Africa), one species with wider distribution in Eastern Europe, one from the Caucasus, three from North America, and one each from Japan and the easternmost part of China (Martens, 1978; Cokendolpher and Lee, 1993; Tsurusaki and Song, 2000).

On the Balkan Peninsula, this genus is represented by two known species so far. *Odiellus spinosus* (Bosc, 1792), widely distributed in Western Europe, spreads eastward to the westernmost Balkans (Martens, 1978; Novak, 2004). *Odiellus lendli* (Soerensen, 1894), with a wide range in Eastern Europe, is present in eastern regions of the Balkan Peninsula (Bulgaria and Greece) (Martens, 1978; Starega, 1976). It seems that it is present fragmentarily in some parts of the central and western Balkans as well. Novak (2004) reported the finding of a juvenile specimen of this species from Southern Dalmatia. The author of the present paper found several juveniles of *O. lendli* on Bistra Mountain in Western Macedonia.

With peripheral presence in the Balkans, the two mentioned species are in fact expansive elements that spread into this region in the relatively recent geological past. Apart from them, the genus *Odiellus* had no representatives to date in the species rich and highly endemic Balkan opilionid fauna. The finding of a new species of this genus, especially in the central part of the Balkan Peninsula (in Western Serbia), was therefore unexpected.

The new species has so far been found at only one locality and is very rare.

***Odiellus serbicus*, n. sp (Figs. 1-7)**

Material examined: Šargan, Mt. Zlatibor (Serbia), 4.07.2001, leg. I. Karaman, 1 ♂ holotype, 2 ♀♀, 1 juv.; *ibid.* 24. 08. 1982, leg. I. Karaman, 2 ♂♂, 1 ♀; *ibid.* 20. 07. 1994, leg. I. Karaman, 1 ♀.

Holotype male (Inv. No. 1424), five paratypes (3 ♂♂ and 2 ♀♀), and one juvenile are deposited in the author's collection at the Department of Biology and Ecology, Novi Sad (Serbia); one ♂ paratype is in the collection of Professor Jochen Martens in Mainz.

**Description**

*Diagnosis:* This is a small species having a low ocular tubercle armed with small spines. Truncus penis elongated with widened base. Glans penis wide, with convex lower margin. Femur of pedipalps ventrally armed with tubercles.

Holotype male: body length 3.35 mm (paratypes 3.2-3.5 mm). Body color yellowish brown, marbled, with dorsal dark-brown almost black saddle-like marking (Fig. 1). A group of nine dorsally oriented spines present in front of ocular tubercle, the three biggest on the anterior edge of the prodorsum.

Ocular tubercle low, medially guttered; provided with five or six small spines on each side (Fig. 7).

Penis (Figs. 2 and 3). Truncus elongated, dorsoventrally slightly flattened; from the widened base continually narrowing to the end of the second third of its whole length, then slightly but steadily widening. Upper side of glans remarkably wide and slightly concave; lower margin broadly convex (Fig. 3). Stylus long.

Chelicerae (Fig. 5). Yellowish with sparse short hairs and spines. Ventral spur on basal segment strongly developed.

Pedipalps (Fig. 6). Yellowish brown, marbled, with stout articles, trochanter ventrally with a few low tubercles bearing setae; femur ventrally with numerous tubercles bearing setae; tarsus ventrally granulated.

Legs yellowish brown, slightly marbled. Femur, patella, and tibia polygonal in cross section with rows of small spines; five rows of strong spines on femurs III and IV. Femur IV noticeably longer than femurs I-III.

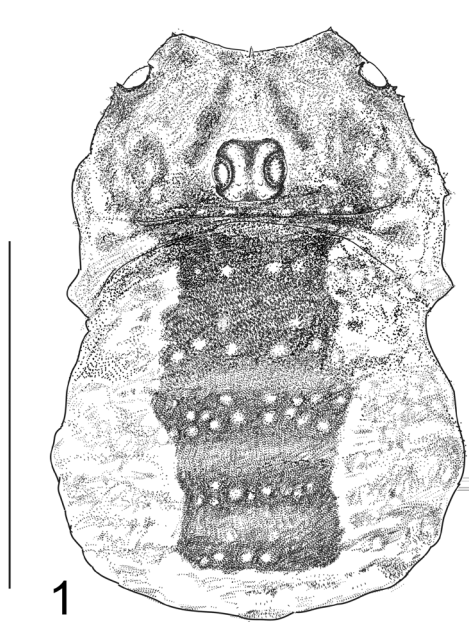
Leg II: Fe 3.15 (3.21); Pt 1.26 (1.38); Ti 3.27 (3.13); Mt 2.7 (2.64); Ta 7.5 (5.3). Dimensions of leg articles of the female (4.15 mm) are given in parentheses.

Females: Similar to males, somewhat larger. Body length 4.15- 4.9 mm. Legs slightly shorter than in males. Femur IV not elongated as in males. Receptaculum seminis (Fig. 4) in 4-5 segments.

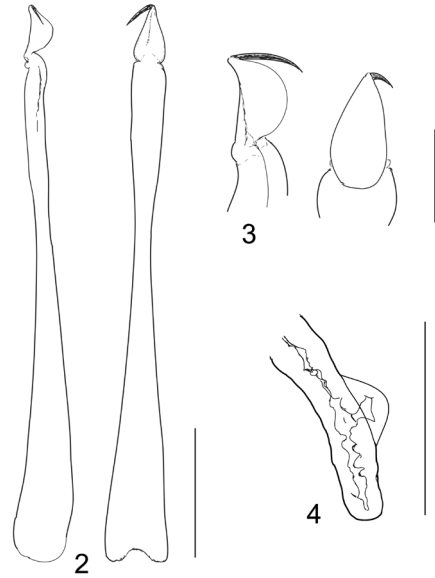
**GENERAL REMARKS AND AFFINITIES**

The new species is closely related to *Odiellus zecariensis* Mkhaidze, 1952 from the Caucasus and *Odiellus granulatus* (Canestrini, 1871)<sup>1</sup> from the southwest Alps and Apennine Peninsula, and it occurs geographically between these two species. The

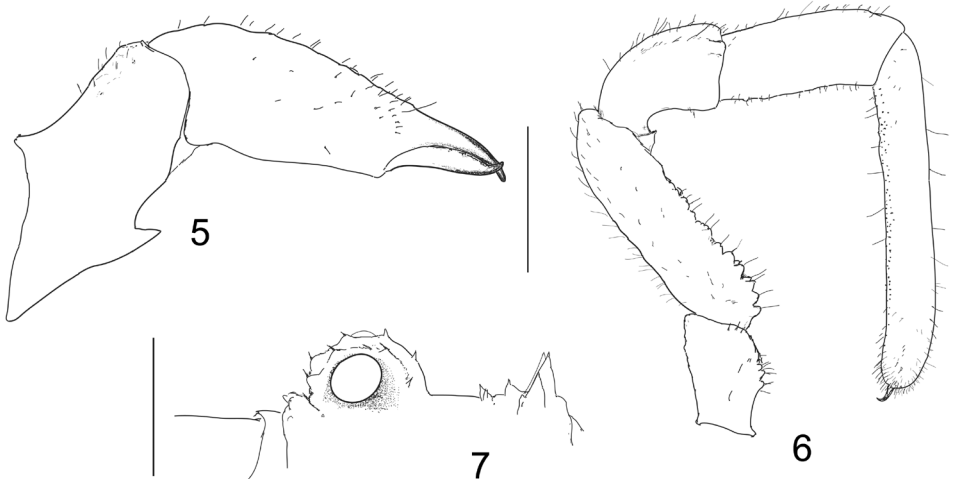
<sup>1</sup> Chemini in 1986 established that *O.granulatus* is a senior synonym of *O. coronatus*.



**Fig. 1.** *Odiellus serbicus* n. sp., Šargan, Serbia, dorsal body view (male paratype 3.5 mm). Scale line = 2 mm.



**Figs. 2-4.** *Odiellus serbicus* n. sp., Šargan, Serbia: 2 - penis, lateral and dorsal projection (a paratype male, 3.5 mm), 3 - glans penis, lateral and ventral projection (holotype male), 4 - receptaculum seminis (female, 4.15 mm). Scale lines: 0.5 mm (Fig. 2); 0.2 mm (Fig. 3); 0.1 mm (Fig. 4).



**Figs. 5-7.** *Odiellus serbicus* n. sp., Šargan, Serbia. Holotype male: 5- chelicerae, mesal view; 6- pedipalp, mesal view. Scale lines = 0.5 mm.

new species differs clearly from *O. zecariensis* in having a somewhat bigger ocular tubercle and robust articles of the legs and pedipalps, as well as in penis structure. In *O. serbicus*, the penis truncus has a noticeably wider base and glans than in *O.*

*zecariensis*. The new species differs markedly from *O. granulatus* in structure of the ocular tubercle, which in this species is armed with elongated strong spines. Significant differences between these two species are also present in structure of the pedipalps and penis. Based on penis structure, *O. serbicus* seems more closely related to *O. granulatus* than to *O. zecariensis*. The terminal dorsal groove of the truncus, which is specifically structured in *O. granulatus* and *O. zecariensis*, is not observed in *O. serbicus*. The glans is totally outstretched in all *O. serbicus* specimens, causing slight deformation of the terminal part of the truncus. Any existing slight groove in that way could become undetectable.

The three mentioned species - *O. granulatus*, *O. zecariensis*, and *O. serbicus* - represent a clear monophyletic group with a very interesting and broad geographical distribution from east to west. Based on this geographical distribution, it could be hypothesized that the ancestor of these species had a unified range more or less similar to the combined recent distribution of these three species (but extending farther northward). Disjunction of that hypothetical range probably caused the separation of these species.

As the genus *Odiellus* is an element of the Thyrranian fauna, the Balkans cannot be considered as its native area where intensive speciations occurred. The species *O. serbicus* can be considered as a relict which probably had a wider range at the end of Tertiary, more northern than its present-day range. The only known locality of this species could represent the southern periphery of that wider range. The species may have disappeared from the northern areas due to unfavorable conditions during the Pleistocene and later.

It is very possible that within the combined range of the three species mentioned, some new populations of these species or even a related new species will be found in refugia. It cannot be excluded that this species has been overlooked owing to similarity of appearance with the species *Oligolophus tridens* (C. L. Koch, 1835) and *Lacinius ephippiatus* (C. L. Koch, 1835), with which it has been found in mixed populations.

All specimens of this new species were collected from the same place, in predominantly grass vegetation near a stream. The finding place is a small valley covered by a sparse pine wood on serpentine with a stream near the old road across Šargan, the locus typicus of two other Opiliones species: *Cyphophthalmus ere* Karaman, 2008 and *Rilaena serbica* Karaman, 1992. On area of around 10-15,000 m<sup>2</sup> in this small valley, about 30 different Opiliones species have been recorded to date, which makes this locality unique (with about 50% of all known Opiliones species in the fauna of Serbia).

*Acknowledgment.* This work has been financially supported by the Serbian Science Ministry Grant #143053.

## REFERENCES

- Chemini, C. (1986). La collezione Canestrini di Opilioni (Arachnida) presso il Museo Zoologico dell'Università di Padova: Revisione e designazione di lectotipi. *Lav. Soc. Venez. Sci. Nat.* 11,

121-134.

Cokendolpher, J. C., and V. F. Lee (1993). Catalog of the Cyphopalpatores and Bibliography to the Harvestmen (Arachnida, Opiliones) of Greenland, Canada, the U.S.A., and Mexico, 82 pp. Private Publication.

Karaman, I. M. (1992). A new species of the genus *Rilaena* Šilhavý, 1965 (Opiliones, Phalangiidae) from Serbia. *Glasn. Prirod. Muz. Beograd* **47 B**, 131-137.

Karaman, I. M. (2008). Cyphophthalmi of Serbia (Arachnida, Opiliones). In: *Advances in Studies of the Fauna of the Balkan Peninsula. Papers Dedicated to the Memory of Guido Nonveiller*. (Eds. D. Pavičević and M. Perreau), 564 pp. Nature Protection Institute of Serbia, Belgrade.

Novak, T. (2004). An overview of harvestmen (Arachnida: Opiliones) in Croatia. *Nat. Croat. (Zagreb)* **13 (3)**, 231-296.

Martens, J. (1978). Spinnentiere, Arachnida: Weberknechte, Opiliones. *Die Tierwelt Deutschlands*, Vol. **64**, 464 pp. G. Fischer Verlag, Jena.

Starega, W. (1976). Die Weberknechte (Opiliones, excl. Sironidae) Bulgariens. *Ann. Zool.* **33 (18)**, 287-433.

Tsurusaki, N., and D. X. Song (2000). Order Opiliones, In: *Pictorial Keys to Soil Animals of China* (Eds. Y. Wenying et al.), 155-162, and 523-527. Science Press, Beijing, New York.

