



## *Arrhopalites potapovi* sp. nov. (Collembola, Symphypleona) from Russia

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### Abstract

A new springtail species of the family Arrhopalitidae, *Arrhopalites potapovi* sp. nov., is described. It belongs to the *caecus* species group characterized by 3,2,1,1,1 anterior setae on dens and separates from *Arrhopalites caecus* (Tullberg) and other congeners by strongly differentiated cuticular spines on sixth abdominal segment, shape of female subanal appendages and foot complex. It was found under the loose bark of trees from two localities along Lake Baikal and it is the second representative of the genus *Arrhopalites* Börner *sensu stricto* in Russia

**Key words:** springtails, taxonomy, *Arrhopalites caecus* group, East Siberia, Lake Baikal

### Introduction

Hitherto among 33 described species of the genus *Arrhopalites* s. str., 19 were reported from Palaearctic region and only cosmopolitan *A. caecus* was recorded at several localities in Russia: from Kursk Oblast in the west to Sakhalin Island in the east (Grinbergs 1960, Buinova *et al.* 1963, Borisov 1967, Stebaeva 1976, Solntseva & Moldova 1979, Solntseva *et al.* 1982, Dobrolyubova & Shveenikova 2004, Babenko 2007, Chernov *et al.* 2010, Shveenikova 2010). Here the second species of the genus from this extensive territory, namely from the region of Lake Baikal in East Siberia, is presented.

### Material and methods:

Material for this study was obtained from Dr. Mikhail Potapov. It was collected in 2008 and 2013 at two localities near the opposite ends of Lake Baikal at a distance over 550 km from each other.

Fifteen specimens were mounted on permanent slides using De Faure–Berlese medium and studied under the light microscope Zeiss Axio Imager M1 (Center of collective use of scientific equipment “Animalia” at Schmalhausen Institute of Zoology). Photographs were obtained by use of differential interference contrast microscopy and subsequently improved with Adobe Photoshop software.

Chaetotaxy nomenclature is used according to Betsch and Waller (1994) for head, Fjellberg (1999) for mouthparts, Bretfeld (1990) and Vargovitsh (2009, 2012) for great abdomen, Bretfeld (1994) for fifth abdominal segment, Betsch (1997) for sixth abdominal segment and Nayrolles (1988, 1990, 1991) for appendages. Measurements of type specimens are given in Table 1.

**Abbreviations.** Ant—antennal segment, Th—thoracic segment, Abd—abdominal segment.

### Taxonomy

#### Family Arrhopalitidae Stach, 1956

#### Genus *Arrhopalites* Börner, 1906

Nearctic *Arrhopalites incertus* Zeppelini & Christiansen, 2003 (Colorado, USA) as well as *A. potapovi* **sp. nov.** has differentiated (but not so strongly) circumanal spines. The new species can be readily separated from *A. incertus* by absence of distinct Ant IV subsegmentation (vs 4 distinctly ringed subsegments), 6 setae on outer surface of dens (vs 7) and shape of appendices anales (spatulate vs rod-like).

Strong differentiation of circumanal spines, similar to that in the new species, was shown in *A. caecus* from the Wind Cave: South Dakota, USA (Moore *et al.* 2005, Fig. 2F). Identification of this species is undoubtedly valid accordingly to existing keys, but possibly its correspondence to typical *A. caecus* should be verified (e.g. thinner setae on dens, longer inner tooth of claws, shape of cuticular spines etc.). Gough (1973) interprets wide differences in the shape of cephalic and dens setae and also Abd VI cuticular spines in different European populations just as variations of the certain character. On the other hand, it is quite possible that widely distributed *A. caecus* is rather a superspecies with several local species or subspecies, especially in the caves and other isolated natural habitats.

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