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## **Cavernicolous *Arrhopalites abchasicus* sp. nov. (Collembola: Symphypleona: Arrhopalitidae) from the West Caucasus with a key to the World species of the genus**

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### **Abstract**

A new troglobiont species of Collembola, *Arrhopalites abchasicus* sp. nov., from Psyrtskha Cave in Novy Afon (West Caucasus, Abkhazia) is described. Subdivision of the genus *Arrhopalites* on *diversus*, *caecus* and *harveyi* groups of species is proposed and identification key to the World species is provided.

**Key words:** springtails, Abkhazia, cave, *Arrhopalites* taxonomy, *diversus* group, *caecus* group, *harveyi* group, identification key

### **Introduction**

Genus *Arrhopalites* Börner, 1906 *sensu stricto* is comprised of 32 described species (Vargovitsh 2009b, updated). *A. caecus* (Tullberg, 1871) is widespread (Holarctic, Neotropics, Australia), *A. diversus* Mills, 1934 is distributed in Nearctic and Northern Neotropics, others are known from restricted territories in Europe (9 species), Asia (10), Nearctic (1) and Neotropics (10) (Bretfeld 1999; Zeppelini 2004, 2006; Zeppelini & Christiansen 2003; Vargovitsh 2009a, 2012). 16 species have been registered exclusively from caves; however, only 3 of them possess distinct progressive troglomorphisms such as tangible elongation of antennae and elongation-thinning of claws: *A. gul* Yosii, 1966 (1966b), *A. macronyx* Vargovitsh, 2012 and *A. peculiaris* Vargovitsh, 2009 (2009a).

Two species of the genus were reported from the West Caucasus: *A. caecus* and *A. macronyx*. The first one has been found by R. Djanashvili in two caves: “St. Simon kanonik cave” and “Solkota cave” (Barjadze & Djanashvili 2008). “St. Simon kanonik cave” or St. Simon Kananites Cave is a small and dry few-meters long cave adopted for the religious purposes and unlikely has been sampled by biospeleologists. Meanwhile, very nearby, on the same slope, wet and about 200 m long Psyrtskha Cave is situated. This cave was also mentioned as cave “in Psyrtskha” (Birstein & Lopaschov 1940), “Simona Canonita Cave” (Birstein 1950), “Voskhodyaschaya Cave” or “Staraya Novoafonskaya Cave” (Tintilozov 1976). It is most likely that mentioned above record of *A. caecus* refers to just this cave.

In 2006 and 2011 Psyrtskha Cave was sampled by Russian-Ukrainian research team and a new species of *Arrhopalites* was found. The new species resembles *A. caecus* in several aspects, and possibly the mentioned above record of Barjadze and Djanashvili (2008) refers to this described below species.

### **Material and methods**

Psyrtskha Cave (43°5'46" N; 40°48'48" E) is situated in Abkhazia and belongs to the Novy Afon speleological region in Gumishkha-Psyrtskha Massif of the West Caucasus. The cave represents a discharging channel of the large Novoafonskaya Cave and is detached from it by a siphon (Tintilozov 1976, Dublyansky 1981). The entrance