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Revision of the genus *Neelus* Folsom, 1896 (Collembola, Neelida) with the description of two new troglobiotic species from Europe

ĽUBOMÍR KOVÁČ[1,3] & VLADIMÍR PAPÁČ[2]

[1]*Institute of Biology and Ecology, Faculty of Sciences, University of P. J. Šafárik, Moyzesova 11, 040 01 Košice, Slovak Republic. E-mail: lubomir.kovac@upjs.sk*

[2]*State Nature Conservancy, Slovak Caves Administration, Železničná 31, 979 01 Rimavská Sobota, Slovak Republic. E-mail: papac@ssj.sk*

[3]*Corresponding author*

Abstract

The paper deals with taxonomic revision of the genus *Neelus* Folsom, 1896. Two new species of the genus are described: *N. koseli* **sp. nov.** from caves of the eastern Slovakia and *N. klisurensis* **sp. nov.** from the Velika Klisura Cave in Serbia (Kosovo). Both species represent first known troglobiotic forms of the genus with distribution restricted to caves. They exhibit clear troglomorphic features not shared by other species of the genus: elongated unguis, larger body, elongated sensilla of Ant. IV segment, and others. Comparative table and dichotomous identification key for species of the genus are provided, remarks on distribution and ecology of species of the genus are added.

Key words: *N. koseli* **sp. nov.**, *N. klisurensis* **sp. nov.**, revision, description, cave fauna, identification key, geographic distribution, Slovakia, Serbia

Introduction

Family Neelidae was established by Folsom (1896) based on description of *Neelus murinus* Folsom, 1896. Massoud (1971) involved the genus in the suborder Neelipleona next to the suborders Arthropleona and Symphypleona. Recently, Bretfeld (1986, 1999) erected taxon Neelida which is positioned within Symphypleona and considered taxa Neelidae and Neelipleona as its synonyms. The genus *Neelus* may be easily recognized within the family Neelidae by obvious morphological features, e.g. antennal segments III and IV apparently separated by suture, segment IV being longer than III. Bonet (1947) made the revision of the family Neelidae with a redescription of the genus *Neelus* and species *N. murinus*. Stach (1957) considered *N. murinus* as very easy to distinguish and its distribution to be very wide (North and Central America, Europe and Australia). Later, Massoud & Vannier (1967) provided a new redescription of *N. murinus* and described new species from Solomon Islands, *N. labralisetosus*. The authors applied the additional morphological characters, i.e. arrangement of labrum and setal pattern of antennal segment III and IV. Dallai (1979) specified granulation of the cuticle, presence of swollen sensilla on dorsal part of abdomen and structure of unguis and unguiculus in *N. murinus* based on SEM photographs. Up to present only two other species appeared, *N. desantisi* from Argentina (Najt, 1971) and *N. fimbriatus* from Ecuador (Bretfeld & Trinklein, 2000). Authors of the latter species involved another important characters, namely chaetotaxy of ventral side of head. Fjellberg (2007) added morphology of mouthparts for *Neelus murinus* from southern Norway.

During systematic speleobiological investigations in Slovakia a new species of the genus *Neelus* was discovered in three different caves of the karst areas situated in the eastern part of the country. The second species was discovered during an intensive exploration of the Velika Klisura cave system in Serbia, western

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