

**A NEW ENDEMIC CAVE SPRINGTAIL FROM THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA (FYROM) – *HETEROMURUS (HETEROMURUS) CONSTANTINELLUS* N. SP. (COLLEMBOLA, ENTOMOBRYIDAE).** L. R. Lučić, B. P. M. Ćurčić, and B. M. Mitić. *Institute of Zoology, Faculty of Biology, University of Belgrade, 11000 Belgrade, Serbia.*

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The biodiversity of springtails in the Former Yugoslav Republic of Macedonia (FYROM) is negligible; only 10 species have been reported from the country. The family Entomobryidae is represented by only three species: *Heteromurus nitidus* (Templeton), *Entomobrya nivalis* (Linnaeus), and *Orchesella multifasciata* (Stscherbakow) (M a r i M u t t, 1980; Ćurčić and Lučić, 2001).

During a short field trip to the western part of the country, a male specimen of the genus *Heteromurus* Wankel, 1860 was collected from a cave on Mt. Dautica. A thorough study of this example showed that it represents a taxon new to science: *Heteromurus (Heteromurus) constantinellus* n. sp. What follows is a brief analysis of its systematic, ecological, and zoogeographical features.

ENTOMOBRYIDAE BÖRNER, 1901

*HETEROMURUS (HETEROMURUS)*  
*CONSTANTINELLUS* ĆURČIĆ & LUČIĆ,  
NEW SPECIES (Figs. 1-4)

*Etymology.* – The specific name is derived from the name of the Roman Emperor Constantine the Great (Flavius Valerius Constantinus), who was born in the central part of the Balkan Peninsula and ruled over the Roman lands from 306 to 337 A. D.

*Material examined.* – Holotype male, from the Peštera Momiček Cave, village of Belica, Mt. Dautica, FYROM; 21 June 2002, collected by S. B. Ćurčić, S. E. Makarov, V. T. Tomić, and B. M. Mitić. The type specimen is deposited in the collection of the Center of Biospeleology, Institute of Zoology, Faculty of Biology,



**Figs. 1-4.** – *Heteromurus (Heteromurus) constantinellus* n. sp. Holotype male, from FYROM. 1 – habitus, 2 – antennomere I, 3 – tarsal claws, 4 – mucro.

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*Description.* – Body length = 5.06 mm. Body color: yellowish. Eyes absent (Fig. 1). Antennal length to head diagonal length ratio: 2.415 (antennal length: 2.56 mm, cephalic diagonal: 1.06 mm). Antennal length to body length ratio: 1: 1.97 (or 2.56 mm to 5.06 mm). Antennae three-segmented. The first two articles clearly distinguishable. Antennomere III probably represents fused antennomeres III and IV (Figs. 1 and 2). Antennae I-III lengths: 0.11 mm, 0.53 mm, and 1.92 mm, respectively (Figs. 1 and 2). Head macrochaetotaxy as in Fig. 1.

Body macrochaetotaxy as in Fig. 1. Abdominal segments I-IV: 0.33, 0.49, 0.66, and 0.87 mm long (1 : 1.48 : 2.00 : 2.63).

Foot complex: claw with a single tooth, empodium with lamella and toothless (Fig. 3). Claw 2.16, and empodium 1.19 mm long. Furcal length: 2.44 mm (manubrium 1.04, dens 1.36, and mucro 0.04 mm long; Fig. 4). Dens with two rows of heavy, elongate setae, its last eighth without setae (Fig. 4). Mucro with two distinct teeth and a thin basal spine; both manubrium and dens with setae (Fig. 4).

*Differential diagnosis.* – From its phenetically close subgener, *Heteromurus* (*Heteromurus*) *nitidus* (Templeton), *H. (H.) con-*

*stantinellus* n. sp. differs in many important respects: body length (1.50-3.00 mm vs. 5.06 mm), five- vs. three-segmented antennae, the presence/absence of tenent hair on the foot complex (present vs. absent), the apical part of dens setation (setae approaching top of dens vs. apical part of dens hairless), and zoogeographical traits (widely distributed vs. endemic to FYROM only).

*Remarks.* – This endemic species is a true cave-dweller; it is endemic and restricted to underground milieu in the western part of the Former Yugoslav Republic of Macedonia. Its differentiation there was probably conditioned by the Alpine Orogeny and evolution of the process of karstification in southern areas of the Balkan Peninsula (Ćurčić and Lučić, 1997).

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*References* – Ćurčić, B. P. M., and L. R. Lučić (1997). *Arch. Biol. Sci. Belgrade*, **49** (3-4), 35P-36P. – Ćurčić, B. P. M., and L. R. Lučić (2001). *75 Yrs. Maced. Mus. Nat. Hist.* **1**, 163-167, Skopje. – Mari Mutt, J. A. (1980). *Trans. Ill. State Acad. Sci.* **72** (3), 29-50.