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HETEROMURUS (VERHOEFFIELLA) CONSTANTIUS, N. SP. (COLLEMBOLA, ENTOMOBRYIDAE), FROM A CAVE IN HERZEGOVINA.

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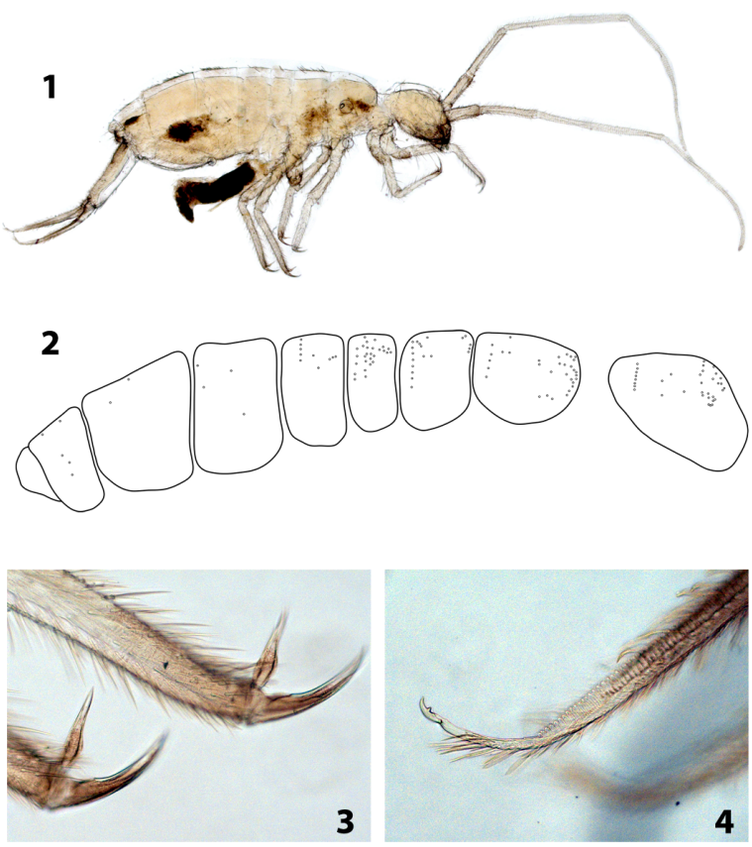
The genus *Heteromurus* Wankel, 1860 (Entomobryidae) includes four subgenera: *Heteromurus* s. str.; *Verhoeffiella* Absolon, 1900; *Alloscopus* Börner, 1903; and *Heteromurtrella* Mari Mutt, 1979. Recently, M a r i M u t t (1980) revised the genus *Heteromurus*, considering *Verhoeffiella* a subgenus of the former taxon. The same opinion had earlier been accepted by G i s i n (1944, 1960) and L o k s a and B o g o j e v i ć (1967). However, the evolutionary status of *Verhoeffiella* and its species is still uncertain, very few specimens are in collections, and some of these are either unavailable or inappropriate for study. All known species of *Verhoeffiella* are troglobitic; a meaningful revision of this taxon must therefore await the discovery of additional specimens for study of important characters not mentioned in the original description (M a r i M u t t, 1980a).

At the present time, only seven species of *Heteromurus* (*Verhoeffiella*) are known: *H.* (*V.*) *absoloni* (Kseneman, 1937) (from the Dinaric karst), *H.* (*V.*) *cavicola* (Absolon, 1900) (from Herzegovina), *H.* (*V.*) *dallaii* Nosek & Paoletti, 1985 (from Italy), *H.* (*V.*) *hispanica* Bonet, 1931 (from Spain), *H.* (*V.*) *longicornis* (Absolon, 1900) (from Herzegovina), *H.* (*V.*) *medius* (Loksa & Bogojević, 1967) (from Croatia), and *H.* (*V.*) *anagas-*



Figs. 1-4. – *Heteromurus* (*Verhoeffiella*) *constantius* Ćurčić & Lučić, 2007, from Herzegovina. Holotype male: 1 – habitus; 2 – dorsal macrochaetotaxy; 3 – tarsal claws; 4 – distal part of furca (with manubrium, dens, and mucro)

tumensis Ćurčić & Lučić, 2007 (from Montenegro) (Ć u r č i ć *et al*., 2007).

In a cave near the Mušnica Gorge (Avtovac Mulje), near Trebinje, Herzegovina, our colleague Ivo M. Karaman (Novi Sad) collected seven type specimens of the subgenus *Verhoeffiella* in 2006 which appeared to represent a species new to science. In the present paper, we describe this new entomobryid collembolan. The type specimens are housed in the collection of the Institute of Zoology, Faculty of Biology, 11000 Belgrade, Serbia.

ENTOMOBRYIDAE BÖRNER, 1901

HETEROMURUS (*VERHOEFFIELLA*) *CONSTANTIUS* ĆURČIĆ & LUČIĆ, NEW SPECIES

(Figs. 1-4)

Etymology. – The specific name is derived from the name of the Roman tetrarch Constantius (Flavius Valerius Constantius), who ruled over the Balkan and Danube countries from 305 to 306 A. D.

Material examined. – Type series: five males (holotype and four paratypes), allotype female and a paratype female, all from a cave near the Mušnica Gorge (Avtovac Mulje), near Trebinje, Herzegovina; collected on 10 September 2006 by I. M. Karaman.

Description. – Body length (holotype male): 3.98 mm. Body color: whitish-yellowish. Eyes absent (Fig. 1). Antennae almost five times (4.70 x) longer than head (antennal length: 4.00 mm; cephalic diagonal: 0.85 mm). Antennal length to body length ratio almost 1: 1 (4 mm: 3.98 mm). Antennae five-segmented. Antennal articles I-V length ratio 1 : 4.25 : 8.00 : 17:00 : 19.75. Antennomere I – 0.08, II – 0.34, III – 0.64, IV – 1.36, and V – 1.58 mm long (Fig. 1). Antennomeres I-V width 0.1, 0.08, 0.06, 0.04, and 0.03 mm. Groove present on antennomere II. Dorsal cephalic macrochaetae present (Fig. 2). Head chaetotaxy as in Fig. 2.

Body macrochaetotaxy as in Figs. 1 and 2. Thoracic segments 0.23, 0.47, and 0.32 mm long. Abdominal segments 0.29, 0.36, 0.46, 0.58, 0.27, 0.15 mm long.

Foot complex: claw with a single tooth, empodium with lamella, but with no teeth (Fig. 3). Claw length = 0.17 mm, empodium length = 0.12 mm. Furcal length = 1.80 mm (manubrium = 0.80 mm, dens = 0.97 mm, and mucro = 0.03 mm; Fig. 4). Manubrium/dens length ratio = 1 : 1.21. Mucro with two distinct teeth and a thin basal spine; both manubrium and dens with setae, which is typical of the subgenus (Fig. 4).

Differential diagnosis. – From its phenetically close subgener, *H*. (*V*.) *anagastumensis* Ćurčić & Lučić (Ć u r č i ć et al., 2007) from Montenegrin caves, the new species differs in many important respects such as: body length (4.35 mm vs. 3.98 mm), the antenna/body length ratio (1.34 : 1 vs. 1 : 1), visibility of antennomere I (not clearly visible vs. clearly visible), presence/absence of a groove on antenna V (absent vs. present), chaetotaxy of the mucro (with two distinct teeth and with no basal spine vs. with two distinct teeth and a single basal spine), and distribution areas (a cave in Montenegro vs. a cave in Herzegovina) (Ć u r č i ć et al., 2007).

Remarks. – This endemic species is probably restricted to caves in the Dinaric region of Herzegovina. It bears a phenetic resemblance to other Dinaric species (from Montenegro) and therefore belongs, together with *H*. (*V*.) *anagastumensis*, to a group of closely-related taxa that originated from a remote epi- or endogean ancestor. Following development of the karstification process, these forms later succeeded in colonizing different forms of the underground karst relief (fissures, channels, caves, pits), where they found their ultimate shelter. Finally, there is no doubt that all these forms originated from the once existing proto-Balkan or proto-North-Mediterranean soil and/or humus habitats.

In addition, it is interesting to note that the type locality of *H*. (*V*.) *constantius* is also inhabited by the sminthurid *Galeriella liciniana* Ćurčić & Lučić, 2007 (Ć u r č i ć et al., 2007).

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