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| Genus | Vol. 12 (4): 411-414 | Wrocław, 28 XII 2001 |
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A new species of *Ceratophysella* BÖRNER, 1932 from Ukraine
(*Collembola: Hypogastruridae*)

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ABSTRACT. *Ceratophysella vargovychi* n. sp. from Crimean caves (Ukraine) is described and illustrated.

Key words: entomology, taxonomy, new species, Ukraine, *Collembola*, *Hypogastruridae*, *Ceratophysella*.

In the material from Crimean caves which we obtained thanks to the kindness of Mr ROBERT VARGOVYCH, we found a new species of the genus *Ceratophysella* BÖRNER, 1932. Its description is given below.

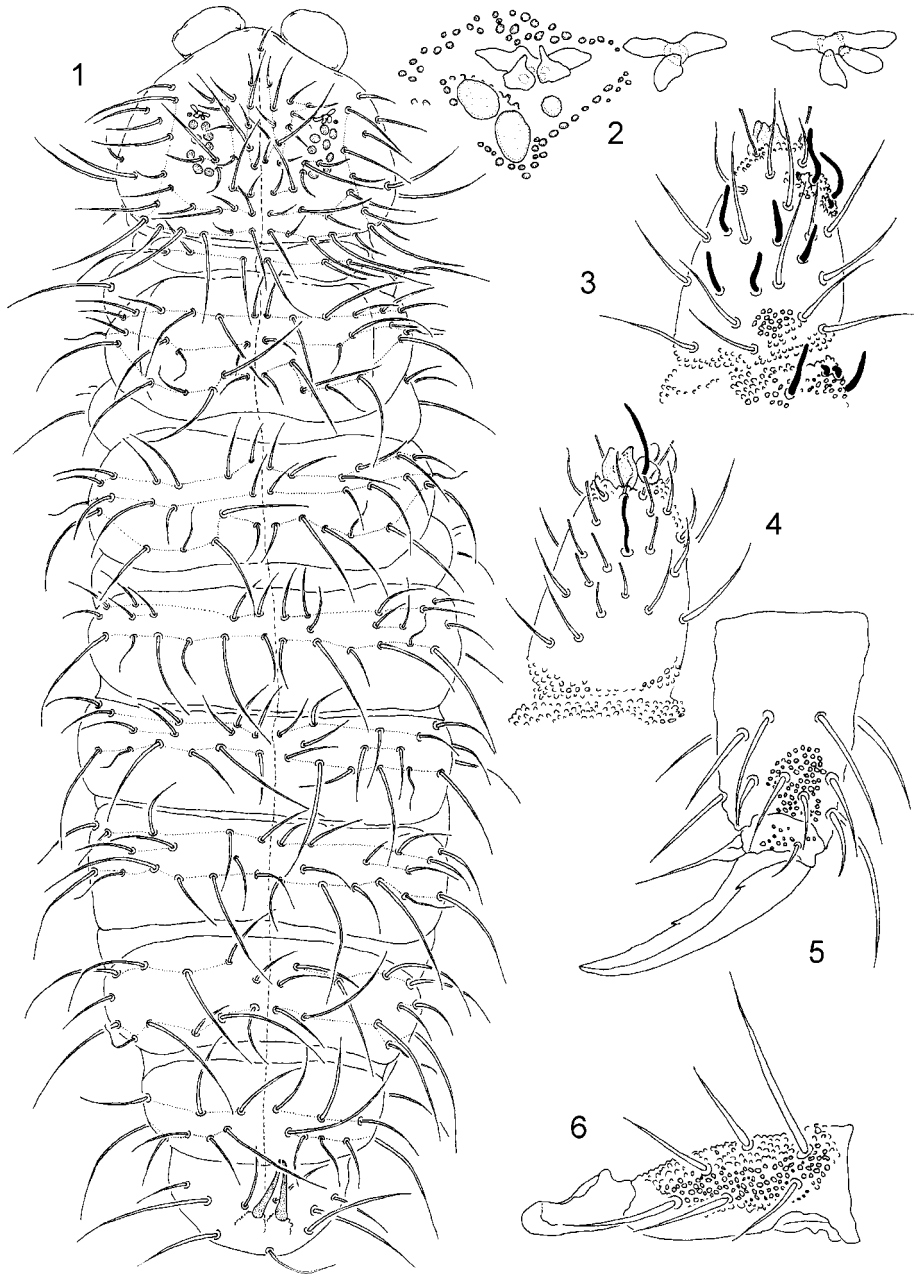
***Ceratophysella vargovychi* n. sp.**

ETYMOLOGY

This species is dedicated to ROBERT VARGOVYCH, a Ukrainian speleologist, who collected specimens of the new species.

DIAGNOSIS

This species is distinguished from other members of the *denticulata*-group by the following combination of characters: 8+8 ocelli, eversible sac between antennal segments III-IV absent, antennal segment IV with trilobed apical vesicle and 5-10 thin, slightly curved and blunt-tipped sensilla in ventral file, long body setae, long



1-6. *Ceratophysella vargovychi* n. sp.: 1 – dorsal chaetotaxy, 2 – postantennal organ, 3 – dorsal side of antennal segments III-IV, 4 – ventral side of antennal segment IV, 5 – tibia and claw III, 6 – dens and mucro

and thin anal spines, furca fully developed with 6 setae on dens and mucro boat-shaped with lateral lamella.

It is related to *Ceratophysella kapoviensis* BABENKO, 1994, which was recently described from a cave in Bashkortostan (Russia) (BABENKO et al. 1994). They differ in the following characters: length of the body (*C. vargovychi* n. sp.: 1.2-2.2 mm, *C. kapoviensis*: 1.1-1.3 mm), body colour (*C. vargovychi* n. sp.: uniform greyish-brown, *C. kapoviensis*: pale bluish-grey with pigment spots), shape of apical vesicle on antennal segment IV (*C. vargovychi* n. sp.: trilobed, *C. kapoviensis*: simple), shape of postantennal organ (*C. vargovychi* n. sp.: 3-4 lobes, *C. kapoviensis*: 4-5 lobes), shape of setae (*C. vargovychi* n. sp.: rather thick and serrated, *C. kapoviensis*: fine and smooth), presence of setae a'_2 on abdominal tergites I-III (*C. vargovychi* n. sp.: usually present, *C. kapoviensis*: always absent), presence of setae p_3 on abdominal tergite IV (*C. vargovychi* n. sp.: usually present, *C. kapoviensis*: always absent), setae p_2 and p_4 on abdominal tergite V (*C. vargovychi* n. sp.: always present, *C. kapoviensis*: always absent).

DESCRIPTION

Body length of males 1.2-2 mm, females 1.6-2.1 mm. Body colour greyish-brown. Granulation fine and uniform, 12-18 granules between setae p_1 on abdominal tergite V.

Dorsal chaetotaxy as in fig. 1. Setae long (length of setae p_1 and p_2 on abdominal tergite IV is 70-100 μm and 140-200 μm respectively), rather thick and serrated. Body sensilla fine and smooth (length of sensillum p_5 on abdominal tergite IV is 70-100 μm). Setae a_2 and a_3 on thoracic tergite II as macrochaetae. Setae a'_2 on abdominal tergites I-III and p_3 on abdominal tergite IV usually present. Subcoxae I, II, III with 1, 3, 3 setae respectively. Microsensillum on thoracic tergite II present.

Antennal segment IV with usually trilobed apical vesicle, subapical organite, microsensillum, 7 cylindrical sensilla, 5-10 thin, slightly curved and blunt-tipped sensilla in ventral file (figs 3, 4). Antennal III-organ with two long (lateral, c. 22 μm) and two short (internal) curved sensilla (fig. 3). Microsensillum on antennal segment III present. Eversible sac between antennal segments III-IV absent. Antennal segment I with 7 setae.

Ocelli 8+8 (2 specimens with 8+7). Diameter of single ocellus 10-14 μm . Postantennal organ usually with 4 lobes (2 specimens with 3+3 and 1 with 4+3 lobes) of which the anterior pair distinctly larger than the posterior (fig. 2). Lobes usually with secondary tubercles. Mean size of postantennal organ 34 μm . Accessory boss present (fig. 2).

Labrum with 5, 5, 4 setae and 4 prelabrals. Head of maxilla as in *Ceratophysella denticulata* (BAGNALL, 1941), lamella 1 distinctly broadened at the tip with long filaments (see SKARZYŃSKI 2000). Outer lobe with 1 sublobal hair. Labium of the *denticulata*- type with 6 proximal setae and papilla C present.

Tibiotarsi I, II, III with 19, 19, 18 setae respectively, clavate setae absent (fig. 5). Claws with inner tooth and pair of lateral teeth (fig. 5). Length of claws III varies from 70 to 110 μm . Empodial appendage with broad basal lamella and apical filament reaching slightly beyond inner tooth (fig. 5).

Ventral tube with 4+4 setae.

Furca fully developed, dens with uniform granulation and 6 setae (1 specimen with 6+7 and 1 with 5+6) (fig. 6). Long basal macrochaeta only slightly shorter than dens. Length of dens varies from 64 to 94 μm . Mucro boat-like with more or less distinct lateral lamella (fig. 6), length of mucro varies from 32 to 44 μm . Retinaculum with 4+4 teeth.

Anal spines yellowish long (60-110 μm) and thin, slightly curved, situated on high basal papillae (fig. 1).

Epitokous individuals have shortened setae, anal spines, claws, mucro and maxillary lamellae. Moreover, lamella 1 in the head of maxilla is distinctly narrower at the tip, sensilla in antennal III-organ of males are enlarged, cuticular skeleton of the furca is delicate and seems to be incomplete (see SKARŻYŃSKI 2000).

TYPES

Holotype: female on slide, bottom of a cave Zjuk, 70 m from an entrance, Aj-Petri Mt. (Crimea, Ukraine), 15 VII 1994, leg. ROBERT VARGOVYCH.

Paratypes: 5 females (including 1 epitokous), 5 males (including 3 epitokous) on slide, same data as holotype; 2 females, 4 males (including 2 epitokous), 4 juv. on slide, bottom of a cave Kaskadna, 240 m from entrance, Aj-Petri Mt. (Crimea, Ukraine), 18 VII 1994, leg. ROBERT VARGOVYCH.

The type material deposited in the collection of the State Museum of Natural History, National Academy of Sciences of Ukraine, L'viv, Ukraine.

ACKNOWLEDGEMENTS

We would like to express our sincere thanks to ROBERT VARGOVYCH for the material. This study was financed by the University of Wrocław (grant 1018/IZ/2001).

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