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A new species of *Hypogastrura* BOURLET, 1839 from Poland (*Collembola*: *Hypogastruridae*)

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ABSTRACT. *H. brevifurca* n. sp. from SW Poland is described and illustrated. It belongs to *H. viatica*-group.

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

INTRODUCTION

The *Hypogastrura viatica*-group was hitherto represented in the European fauna by c. 17 nominal species. However, small morphological differences, range of variability, inaccurate original descriptions and missing sufficient type material makes some of them difficult to define. They maintain species status based on geographical, ecological and reproductive isolation criteria (NAJT et al. 1984, BABENKO et al. 1994, JORDANA et al. 1997, FJELLBERG 1998).

During examination of Polish material of *viatica*-group I found specimens from SW Poland which differed clearly from the other members of this group and represented a species new to science. Its description is presented below.

Hypogastrura brevifurca n. sp.

ETYMOLOGY

Named after short furca.

DIAGNOSIS

It can be easily distinguished from the other members of *viatica*-group by the following set of characters: number of tibiotarsal sensory hairs 2, 4, 4, short furca with 5 dental setae (dens + mucro/claws 3 ratio: mean 1.24, mucro/dens ratio: mean 0.36), short dorsal setae ($a_{1 \text{ abd. } 5}$ /claws 3 ratio: mean 0.58, $p_{1 \text{ abd. } 5}$ /claws 3 ratio: mean 0.59), 7-9 usually 8 setae in the mediodorsal area between sensilla p_3 and fovea on abd. 5 (parameter after NAJT et al. 1984), presence of distinctly knobbed macrochaeta lateral to the anal spines.

DESCRIPTION

Body length of specimens with developed genital aperture: males 0.85-1.63, females 0.95-1.73 mm, holotype – female, 1.55 mm. Body colour dark greyish-blue, paler ventrally. Granulation fine, uniform, 9-14 granules between setae p_1 on abd. 5.

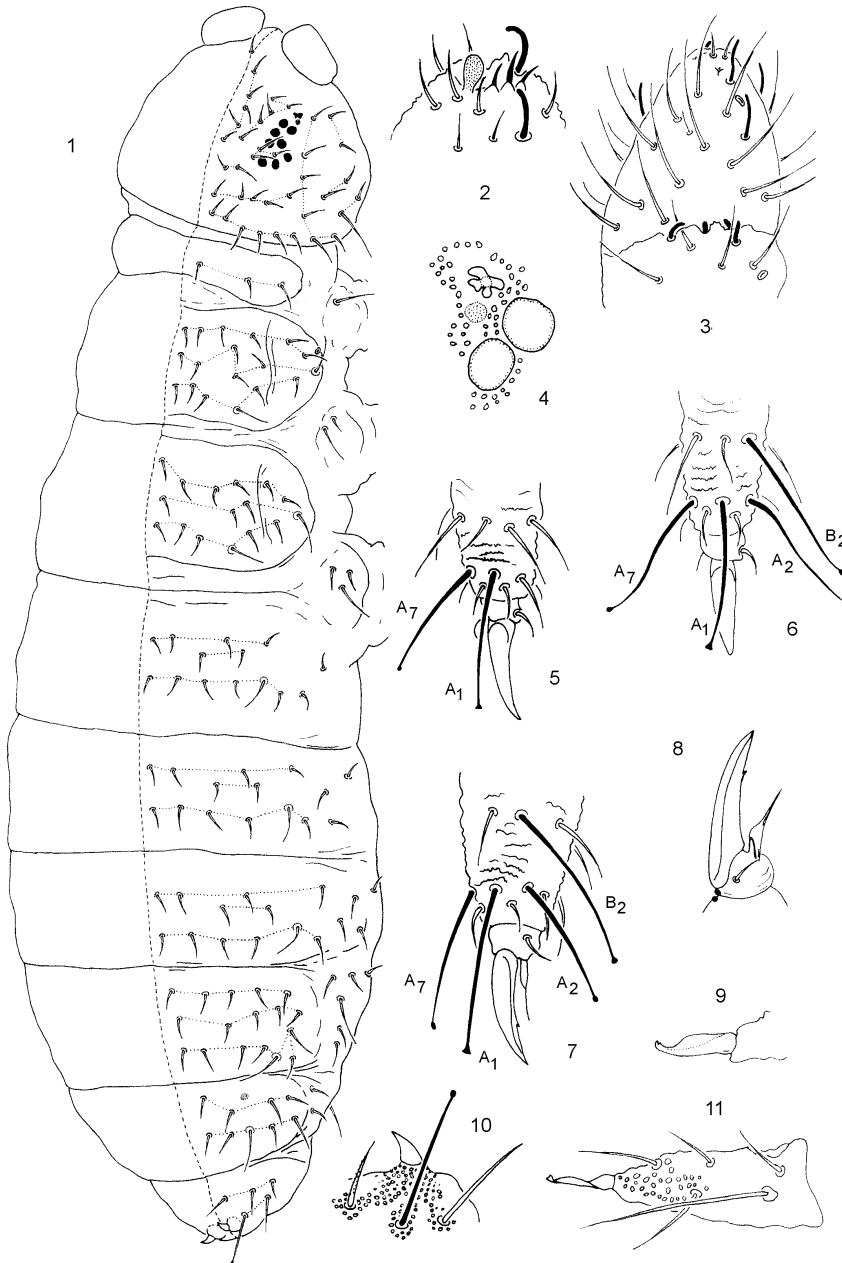
Dorsal chaetotaxy as in fig. 1. Body hairs short and fine (macrochaetae: L_1 on head and near anal spines), on last abdominal terga more or less thickened, sometimes slightly serrated. Length of seta $a_{1 \text{ abd. } 5}$ /length of claws 3 ratio: 0.5-0.68 (mean 0.58), length of seta $p_{1 \text{ abd. } 5}$ /length of claws 3 ratio: 0.51-0.7 (mean 0.59), length of sensillum $p_{3 \text{ abd. } 5}$ /length of claws 3 ratio: c. 1. The variability of dorsal chaetotaxy is rather low and affects mainly abd. 4 and 5. Setae m_3 and p_3 on abd. 4 are usually present while seta m_2 is usually absent. Row p on abd. 5 consists of 5 setae (2 specimens with 5 + 4) and row a consists of 4-6 setae (4 specimens with 6 + 4, 19 with 5 + 4, 46 with 4 + 4). 7-9 setae in the mediodorsal area between sensilla p_3 and fovea on abd. 5 (62 specimens with 8 setae, 2 specimens with 7 - p_2 absent, 5 specimens with 9 - additional seta between a_1 and a_2). There is one strong macrochaeta lateral to the anal spines which is always distinctly knobbed (fig. 10). Males c. 1 mm in length have a higher number of distinctly knobbed macrochaete: p_5 on abd. 5 and macrochaetae near border of anal valvae and tergum of abd. 6. Subcoxa 1-3 with 1, 2, 3 setae respectively (fig. 1).

Ant. 4 with simple (sometimes slightly trilobed) apical bulb, subapical pit, microsensillum and 4 weakly differentiated sensory setae (3 dorsoexternal and 1 dorsointernal) (figs. 2, 3). Ant. 3 organ without additional spines (fig. 3). Ant. 1 with 7 setae.

Ocelli 8 + 8. PAO smaller than an ocellus, with 4 subequal lobes of which the anterior pair larger than the posterior. Accessory boss present, relatively large but smaller than PAO (fig. 4).

Labrum with 5, 5, 4 setae and 6 distal papillae. 4 prelabral setae. Head of maxilla of the *tullbergi*-type (FJELLBERG 1984), outer lobe with 2 sublobal hairs. Labium of the *tullbergi*-type (FJELLBERG 1998/1999) but labial palp with rough guard papilla e_1 which resemble proximal setae.

Tibiotarsi 1-3 with 19, 19, 18 setae including 2, 4, 4 long, clavate sensory hairs (8 specimens c. 1 mm in length with 2, 3, 4). Tib. 1 with A_1 and A_7 clavate



1-11. *Hypogastrura brevifurca* n. sp.: 1 – dorsal chaetotaxy, 2 – ant. 4 ventro-apical sensilla, 3 – ant. 3-4 sensilla in dorsolateral view, 4 – PAO, accesory boss and neighbour ocelli, 5 – chaetotaxy of tib. 1, 6 – chaetotaxy of tib. 2, 7 – chaetotaxy of tib. 3, 8 – claw and empodial appendage of third leg, 9 – mucro in lateral view, 10 – anal spine and surrounding setae in lateral view, 11 – dens and mucro

(fig. 5), tib. 2 and 3 with A_1 , A_2 , A_7 , B_2 clavate (figs. 6, 7) (nomenclature of tibiotarsal setae after LAWRENCE 1977). Seta A_1 always roughly clavate. Length of tibiotarsal sensory hairs/length of related claws ratio: 1.2-1.4 (A_1), 1-1.15 (A_2 , A_7), 1.25-1.3 (B_2).

Claws with distinct inner tooth, lateral teeth absent (sometimes subapical visible). Empodial appendage with narrow basal lamella and apical filament reaching middle of inner unguis or slightly above (fig. 8).

Ventral tube with 4 + 4 setae. Retinaculum with 3 + 3 teeth.

Furca short, length of dens + mucro/length of claws 3 ratio: 1.15-1.35 (mean 1.24), length of mucro/length of dens ratio: 0.33-0.38 (mean 0.36). Dens with fine uniform granulation and 5 setae (2 specimens with 5 + 4) (fig. 11), mucro with small, variable lamella (figs. 9, 11).

Anal spines short and curved, slightly longer than basal lamella (length of AS/length of claws 3 ratio: 0.28-0.35) (figs. 1, 10).

In order to present the variability of quantitative characters I have examined 69 specimens but to present the variability of characters based on measurements I have examined 35 specimens of both sexes with fully developed genital plate 1.2-1.73 mm in length.

There were no ecomorphic stages in the collected material of *H. brevifurca* n. sp.

TYPES

Holotype: female on slide, mosses on sandstone rocks in sparse oak wood, S slope of Wilkołak Hill (c. 250 m a.s.l.) near Złotoryja (SW Poland, Sudetes, Kaczawskie Highlands), 15.05.1985, leg. R. J. POMORSKI.

Paratypes: 2 females, 3 males, 1 juv. on slides, same data as holotype; 3 females, 5 males and 1 juv. on slides, 12.11.1999, leg. D. SKARŻYŃSKI, same locality as holotype; 6 females, 6 males on slides, 4.12.1999, leg. D. SKARŻYŃSKI, same locality as holotype (type material preserved in R. J. POMORSKI and D. SKARŻYŃSKI collection).

Other material examined: 11 females, 29 males on slides, 4.12.1999, leg. D. SKARŻYŃSKI, same locality as holotype; 1 male on slide, 2 specimens in alcohol, mosses on granitic rocks in mixed spruce-beech wood, valey of river Kamienna (470 m a.s.l.) near Szklarska Poręba (SW Poland, Sudetes, Karkonosze Mountains), 1.11.1999, leg. D. SKARŻYŃSKI.

DISCUSSION

H. brevifurca n. sp. is closely related to *Hypogastrura subboldorii* DELAMARE & JACQUEMART, 1962 sensu NAJT et al., 1984 (Pyrenees) from which it differs in the following characters: unique arrangement of tibiotarsal sensory hairs 2, 4, 4 (*H. subboldorii* - 2, 3, 4), lower degree of plurichaetosis in the mediodorsal area on abd. 5, 7-9 usually 8 setae (*H. subboldorii* - 5-12 usually 8-10), shorter dorsal setae $a_{labd.5}/cl. 3$: 0.5-0.68, $p_{labd.5}/cl. 3$: 0.51-0.7 (*H. subboldorii* - 0.72-0.87 and 0.74-0.84 respectively) and constant number of dental setae 5 (*H. subboldorii* - 4-6).

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