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New North Korean species of *Hymenaphorura* BAGNALL, 1949 (*Collembola*: *Onychiuridae*)

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Abstract. *Hymenaphorura rafalskii* n. sp. from North Korea is described.

Key words: entomology, taxonomy, *Collembola*, *Hymenaphorura*, new species, North Korea.

The present paper, the fourth one in a series of studies on the *Onychiurinae* of North Korea (WEINER 1986, 1989, 1994), presents a description of a new species of *Hymenaphorura*.

Our study is based on the material collected during the 1985 expedition by the staff of the Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland.

Hymenaphorura rafalskii n. sp.

TYPE MATERIAL

Holotype (female in: Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland), paratypes (males and females - 12 specimens *in*: Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland; 2 specimens *in*: Laboratoire d'Entomology, Muséum national d'Histoire naturelle, Paris, France), North Korea, North Pyongan Province: Myohyang-san Mts., Wonman-bong, 1590 m a.s.l fir forest with birches, in undergrowth rhododendrons and thujas with some herbs and other plants belonging to mountain rock grassland, fresh litter and soil, 26 Jun 1985, leg. A. SZEPTYCKI (K-85-23).

OTHER MATERIAL

North Korea, North Pyongan Province: Myohyang-san Mts., Wonman-bong, 1550 m a.s.l single firs and birches on rocky areas, soil under moss and ferns on rocks, and under litter between rocks, 26 Jun 1985, leg. A. SZEPTYCKI, 5 specimens (K-85-24). Wonman-bong, 1520 m a.s.l., fir forest with some birches, very poor undergrowth (*Acer* sp., herbs), litter, 26 Jun, 1985, leg. A. SZEPTYCKI, 4 specimens (K-85-26).

DESCRIPTION

Size 1.08 - 1.31 mm (holotype, female - 1.21 mm). Body elongated, cylindrical. Colour in alcohol white. Dorsal side of body with areas of strong granulation (figs 1, 7). Usually 7-10 grains around each pseudocellus, 11-12 grains around pseudocelli at the bases of antennae. Bases of antennae very well marked (fig. 1).

Antennae of the same length as head. Antennal segment I with 8 setae, antennal segment II with 15 setae. Sensory organ of antennal segment III consisting of 4 setae, 5 fairly large papillae, 2 smooth sensory rods, 2 equally sized sense clubs slightly morel-like, and small lateroexternal sensillum (figs 2, 3). Antennal segment IV with slender, well distinguished sensilla, with small subapical organite and one latero-external microsensillum in the posterior half of this segment (fig. 2).

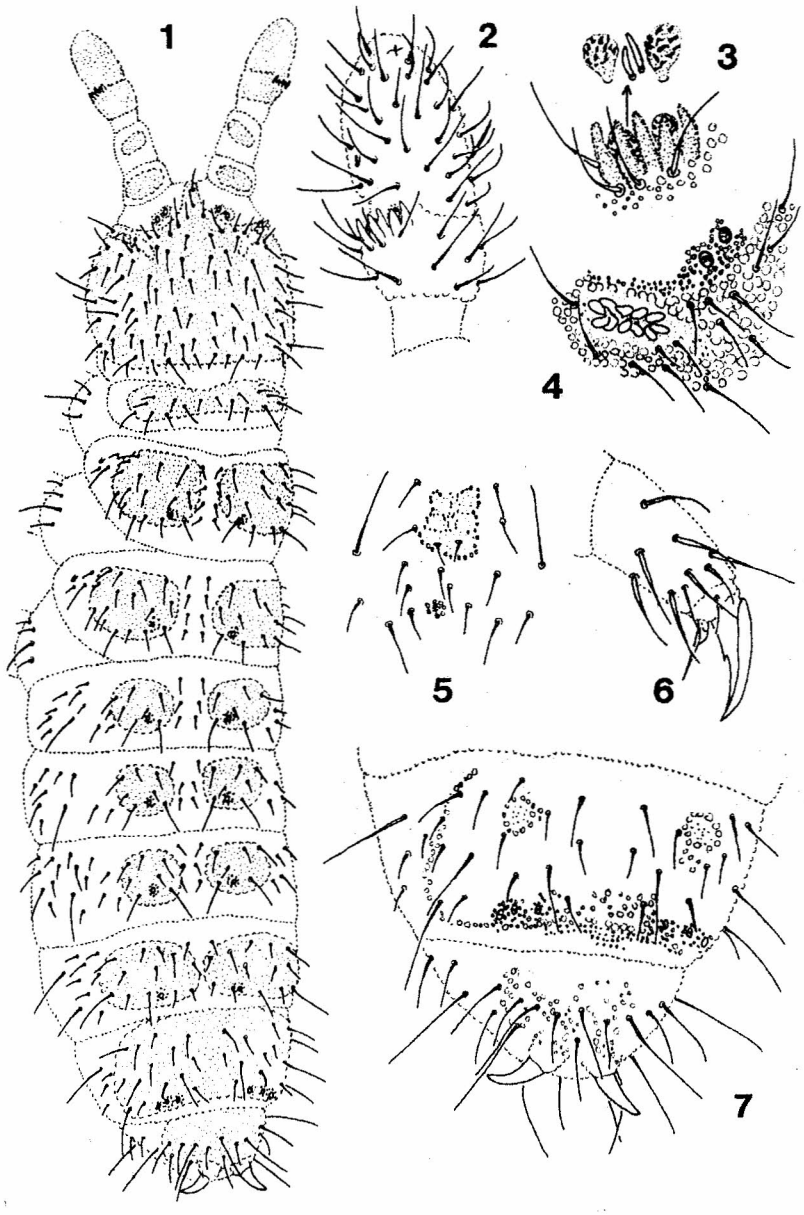
Postantennal organ with 9-12 simple vesicles, parallel or oblique in relation to the long axis of this organ, in an elongated groove (fig. 4). Labrum with 4/142 setae.

Pseudocellar formula per half tergite 20/011/11113, ventral pseudocelli absent. Parapseudocelli very difficult to distinguish: their formula per half segment: 01/111/1111 (dorsal) and 01/000/11111 (ventral). Subcoxa I of each leg without pseudocelli, with two parapseudocelli. Each femur with one parapseudocellus. Abdominal sternites II-V with one odd medial pseudopore.

Tibiotarsi I, II and III with 20, 20, 19 setae respectively. Claw with one very distinct tooth near middle of inner edge. Empodial appendage with basal lamella reaching from 1/3 to half the length of inner edge of claw. Apical filament reaching 2/3 length of the inner edge of claw. Tibiotarsal dorsodistal setae acuminate (fig. 6).

Dorsal chaetotaxy as in figs 1, 7, always with some asymmetry present. Seta d0 absent on the head. Body with macro- and mesochaetae of different length, with slightly marked sensilla (s) (well distinguished on abdominal tergite V), head with 2+2 sensilla (s). Thorax II-III with lateral microsensilla (ms). On thoracic tergites II-III and abdominal tergites I-III the p-setae on each side of the pseudocelli (seta p2 and p3 according to POMORSKI 1990) are quite strong and subequal. On abdmoninal tergite IV setae p2 as mesochaetae, on abdominal tergite V both setae on each side of pseudocelli are mesochaetae. Abdominal tergite V with 6 macrochaetae: 5 on strongly granulated areas, and with one long macrochaeta outside this area (fig. 7). One macrochaeta on abdominal pleurite V. Thorax I-III ventrally with 0+0, 1+1, 1+1 setae, respectively. Ventral tube with 7+7 setae, but sometimes with 6+6 or more (i.e. 9+11).

Male ventral organ absent, but in some specimens on the third abdominal sternite some midventral setae are more sturdy. Furcal rudiment (fig. 5): small area with fine



1-7. *Hymenaphorura rafalskii* n.sp.: 1 - dorsal chaetotaxy; 2 - antennal segments III and IV, dorsal side; 3 - sensory organ of antennal segment III; 4 - postantennal organ and pseudocelli at base of antenna; 5 - furcal rudiment; 6 - tibiotrasus III with claw and empodial appendage; 7 - chaetotaxy of abdominal tergites V and VI

granulation and 2 small dental setae posteriorly, two irregular manubrial rows present (terminology according to WEINER 1996). Macrochaetae of posterior manubrial row (mp) displaced to anterior one (ma).

Anal spines equal in length to the edge of claw and 2.5 times as long as their basal diameter. Basal papillae about half as long as the spines (figs 1, 7).

DISCUSSION

The new species has dorsally the same number of pseudocelli on thoracic segments I-III and abdominal segments I-IV (011/1111) as the species belonging to the *sibirica*-group. It differs from them in the presence of 2+2 pseudocelli at the bases of antennae and 3+3 pseudocelli on abdominal tergite V. *H. alticola* (BAGNALL, 1935) has, like the new species, 2+2 pseudocelli at the base of antennae, but it has 1+1 pseudocelli on thoracic tergite I (0+0 in *H.rafalskii*) and 2+2 pseudocelli on abdominal tergite V (3+3 in *H. rafalskii*).

DERIVATIO NOMINIS

The new species is dedicated to the memory of Professor Jan RAFALSKI, the great Polish specialist in *Acarina*, *Pauropoda* and *Pseudoscorpiones*, and most of all a talented and enthusiastic university teacher. He was a patron of several generations of Polish taxonomists; to the present authors, he was not only a master, but a friend and a scholarly *pater familiae*.

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