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New species and new records of *Protaphorura* species from northeast China (Collembola: Onychiuridae)

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Abstract

A new species, *Protaphorura genheensis* sp. nov., and two new records, *Protaphorura taimyrica* (Martynova, 1976) and *Protaphorura kaszabi* (Dunger, 1978) are reported from northeast China. New localities for *P. bicampata* are presented. *P. genheensis* sp. nov. belongs to the ‘oligopseudocellar’ group as having fewer pso on Th. II–III and can be distinguished by the dorsal pso formula, number of pso on the subcoxa I of legs, ventral psx formula and the number of chaetae on Th. I–III sterna. *P. taimyrica* is described basing on the Chinese specimens, and the individuals who have the dorsal pso formula as 33/012/33342 are found.

Key words: taxonomy, *Protaphorura bicampata*, oligopseudocellar, pso formula, description

Introduction

During our study on the family Onychiuridae of Collembola in northeast China, the genus *Protaphorura* Absolon, 1901 is found as the most abundant and widely distributed group. Until now, there are more than 130 species of the genus reported all over the world, and only six species are recorded in northeast China (Bellinger *et al.* 1996–2014, Sun *et al.* 2013a, Sun *et al.* 2013b). In the present paper, A new species, *Protaphorura genheensis* sp. nov., and two new records, *Protaphorura taimyrica* (Martynova, 1976) and *Protaphorura kaszabi* (Dunger, 1978), have been mentioned below.

Material and methods

Specimens were collected by Berlese extraction, cleared in lactic acid and then mounted in Marc André II solution. They were studied using a Nikon Eclipse 80i microscope. The material is deposited in the Key Laboratory of Wetland Ecology and Environment, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, Changchun.

Labial types are named after Fjellberg (1999). Labium areas and chaetal nomenclature follow Massoud (1967) and D’Haese (2003). Chaetae on anal valves are named following Yoshii (1996). Chaetae on the furcal area are classified in accordance with Weiner (1996).

Abbreviations used in descriptions:

Ant.—antennal segments, PAO—postantennal organ, Th.—thoracic segments, Abd.—abdominal segments, p-chaeta—chaeta of row p, ms—microsensillum, pso—pseudocellus, psx—parapseudocellus, psp—pseudopore, ^m—unpaired parapseudocellus or pseudopore, AIIIIO—Ant. III sensory organ, AS—anal spines, M—submedial posterior macrochaeta on Abd. V tergum, sp—posterior s-chaeta on Abd. V tergum, s’—additional microchaeta on Abd. I–III and Abd. V terga, set above the submedial pso.

The individuals of *P. taimyrica* who have the dorsal pso formula as 33/012/33342 belong to the ‘oligopseudocellar’ group, as the new species *P. genheensis* **sp. nov.** described above. The main differences among them refer to Table 2.

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