Zootaxa 3673 (2): 207–220
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3693.2.7
http://zoobank.org/urn:lsid:zoobank.org:pub:A47BD6E6-E2DF-4F54-AF4C-7EAA81556DBD

Two new species and one new country record of *Protaphorura* Absolon, 1901 (Collembola: Onychiuridae) from northeast China

XIN SUN[1], BING ZHANG[2] & DONGHUI WU[1, 2, 3]

[1]*Key laboratory of Wetland Ecology and Environment, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, Changchun 130102, China. E-mail: sunxin@neigae.ac.cn*
[2]*College of Earth Sciences, Jilin University, Changchun 130061, China*
[3]*Corresponding author. E-mail: wudonghui@neigae.ac.cn*

Abstract

One species new to China, *Protaphorura bicampata* (Gisin, 1956), and two new species, *Protaphorura changbaiensis* **sp. nov.** and *Protaphorur minima* **sp. nov.**, are reported from northeast China. *P. changbaiensis* **sp. nov.** is similar to *P. ajudagi* and *P. microcellata*, but it can be distinguished from them by absence of a-pso on Th. II tergum. *Protaphorura minima* **sp. nov.** is chracterized by its male ventral organ on Abd. VI sternum. It can be separated from other species of the genus with the male ventral organ by the position of the male ventral organ and the dorsal pso formula.

Key words: taxonomy, male ventral organ, first instar larva

Introduction

Protaphorura Absolon, 1901 is characterized by the postantennal organ with numerous simple vesicles, the number of chaetae in the distal row of tibiotarsi as 11, the absence of chaeta d0 on the head, the furca reduced to a cuticular pocket with 2+2 dental chaetae, the presence of three or four manubrial rows of chaetae and having anal spines set on distinct papillae (Weiner 1996, Pomorski 1998). Among the 127 species of the genus known in the world (Bellinger *et al.* 1996–2013), only one species, *Protaphorura armata* (Tullberg, 1869), has been recorded from China till now (Rusek 1971). During our recent sampling in northeast China, one species new to China (*Protaphorura bicampata* (Gisin, 1956)) and two new species (*Protaphorura changbaiensis* **sp. nov.** and *Protaphorura minima* **sp. nov.**) were collected and are described 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). Type of chaetotaxy on Th. I tergum follows Gisin (1952). The name of the pseudocellus follows Pomorski (1986).

Abbreviations used in descriptions:

Ant.—antennal segments, PAO—postantennal organ, Th.—thoracic segments, Abd.—abdominal segments, p-

Accepted by W. M. Weiner: 15 Jul. 2013; published: 29 Jul. 2013