



## Further study on the labial palp in the Isotomidae (Collembola) with reference to the genus *Heteroisotoma* Stach

DING JIE<sup>1</sup>, MIKHAIL POTAPOV<sup>2,4</sup> & ELENA SOKOLOVA<sup>3</sup>

<sup>1</sup>School of Life Science, Nanjing University, Nanjing 210093, P. R. China. E-mail: daisydjie@gmail.com

<sup>2</sup>Department of Zoology and Ecology, Moscow State Pedagogical University, Kibalchich Street, 6, k. 5, Moscow 129164, Russian Federation. E-mail: mpnk@orc.ru

<sup>3</sup>Institute of Water and Ecological Problems, FEB RAS, Kim Yu Chen Street, 65, Khabarovsk 680063, Russian Federation.

E-mail: Socol1980@yandex.ru

<sup>4</sup>Corresponding author

### Abstract

Two new species of the genus *Heteroisotoma* Stach are described from Northeast China, North Korea, and Far East of Russia. They are typical members of the genus although sharing spines on the dens with the genus *Semicerura* Maynard. In all members of *Heteroisotoma*, three additional processes on the labial palp are discovered and proposed as a new diagnostic generic character. The genus *Heteroisotoma* is rediagnosed and a key and records of known species are given. A contribution is made to the knowledge of labial palp.

**Key words:** taxonomy, dental spines, sensilla, China, Russia, North Korea

### Introduction

In the course of our investigation of Collembola of China and Russia we collected two blind large species of the subfamily Isotominae that share characters of the Asiatic-North American genera *Semicerura* Maynard, 1951 and *Heteroisotoma* Stach, 1947. Spines on dens, an uncommon feature for the family, led to a placement of these species in *Semicerura*, while absence of ommatidia, general appearance, and many other characters indicated a similarity to *Heteroisotoma*.

The genus *Heteroisotoma* was established by Stach (1947) for the species *Isotoma andrei* Mills, 1934, a species which is considered nowadays as a junior synonym of *Isotoma carpenteri* Börner, 1909. The latter species was described from Japan and characterized by unusual postantennal organ (PAO). Yosii (1963) and Christiansen and Bellinger (1980) considered the PAO to be a character of minor value, and synonymised *Heteroisotoma* with the subgenus *Isotoma* Bourlet s.str. Potapov and Stebaeva (1992) redescribed the genus and synonymised *Sibirisotoma* Rusek, 1991 with *Heteroisotoma*. So far, four species of the genus have been recorded in the world. The genus *Semicerura* includes three species and is distributed in North America and East Asia. It previously was the only genus of Isotominae with a spined dens in Holarctic.

In the present paper, we redefine the genus *Heteroisotoma*, describe two new species from East Asia and contribute to the knowledge of the labial palp.

### Material and methods

Specimens were mounted in Marc Andre II on flat slides after clearing in lactic acid or mounted in Gisin liquid on cavity slides, and studied using Nikon E600 and Leica DME microscopes. Figures were enhanced with Photoshop CS4/PC (Adobe Inc.). All materials are deposited in the collection of the Department of Biological Science and Technology, Nanjing University, China (NJU), Museum of Moscow State Pedagogical University, Russia (MSPU),