



# Article

urn:lsid:zoobank.org:pub:286BA208-DC69-4A75-8785-84398C93579C

## Review of *Paracerella* Imadaté (Protura: Acerentomidae, Nipponentominae) with identification key and description of a new species

JULIA SHRUBOVYCH<sup>1</sup> & JERZY SMYKLA<sup>2</sup>

<sup>1</sup>Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, ul. Sławkowska 17, 31-016 Kraków, Poland, and State Museum of Natural History, Ukrainian National Academy of Sciences, Teatral'na St. 18, UA 79008 L'viv, Ukraine.

e-mail: shrubovych@gmail.com

<sup>2</sup>Department of Biodiversity, Institute of Nature Conservation, Polish Academy of Sciences, Mickiewicza 33, 31-120 Kraków, Poland; present address: Department of Biology and Marine Biology, University of North Carolina Wilmington, 601 S. College Rd., Wilmington, NC 28403, USA; e-mail: smykla@iop.krakow.pl

### Abstract

*Paracerella americana* Imadaté is redescribed based on the type material. The original description is corrected and supplemented with new characters, including head chaetotaxy, seta length, porotaxy and shape of the male squama genitalis. *Paracerella monterey* **sp. nov.** is described from specimens that were originally part of the “*Paracerella americana* type series”. *Paracerella americana* is characterized by presence of seta *P1a* on tergites I–VI and absence of seta on tergite VII, presence of 4 *P*-setae on sternite I, and concave hind margin of the comb on tergite VIII. *Paracerella monterey* **sp. nov.** is characterized by absence of seta *P1a* on tergites I–VII, presence of 2 *P*-setae on sternite I, and straight hind margin of the comb. A key to *Paracerella* species is provided.

**Key words:** Protura, chaetotaxy, porotaxy, key, new species, California

### Introduction

The genus *Paracerella* Imadaté, 1980 was established by Imadaté (1980) for two species: *P. shiratki* (Imadaté, 1964) and *P. americana* Imadaté, 1980. Previously, Rusek (1974) had transferred *Acerella shiratki* Imadaté, 1964 into *Verrucoentomon* Rusek, 1974. *Paracerella* is characterised by short labrum, well developed maxillary and labial palps, distinct calyx with racemose appendices on its surface, filiform foretarsal sensillum *t1*, presence of 3 pairs of *A*-setae on meso- and metanota, 3 *A*-setae on sternites I–VII, posterior position of setae *P3* on tergites II–VI, well developed striate band on segment VIII and possession of 2 setae on abdominal legs II and III (subapical seta slightly longer than apical). Imadaté (1980) justified erection of the new genus only by the position of foretarsal sensilla *d* and *a'*.

The genus contains two species: *P. shiratki* recorded from Hokkaido, Japan, and *P. americana* from California, USA (Imadaté, 1980). During examination of the type series of *P. americana*, two specimens with significantly different sets of morphological characters were found, which allowed the recognition of a new species, the description of which is given below. The new species is very similar to *P. americana*, but the two species were collected in different counties about 40 km apart. In this paper we review *Paracerella*, redescribe *P. americana* from the type series and describe the new species. A key to *Paracerella* species is provided.

Head setae are marked according to Rusek et al. (2012).

The holotype of *P. americana* and all specimens from the type series are curated in the collection of the Essig Museum of Entomology, Berkeley, California (EMEC). Imadaté (1980) and Szeptycki (2007) wrote erroneously that the type materials were deposited in the collection of the College of Agriculture, University of California, Berkeley (CAUC), but no collection with that name ever existed. Although originally the insect collection holding these type materials was curated in the Department of Entomology in the former College of Agricultural Sciences, University of California at Berkeley, the collection itself was known as the "California Insect Survey" (CIS). In