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Identification and character analysis of the Acerentomidae (Protura) of the northeastern Palearctic (Protura: Acerentomidae)

JULIA SHRUBOVYCH
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

Abstract

This paper is a summary of proturan fauna from Siberia and the Russian Far East, collectively termed the northeastern Palearctic. Special attention is given to the analysis of Acerentomidae, which is extraordinarily diverse in these regions (31 species). A key to species and a brief exposition of distribution of each genus are provided. A redescription of *Imadateiella sharovi* is presented, additional morphological characters are added for *Nipponentomon khabarovskense*, *N. bidentatum, Yamatentomon yamato* and *Callientomon chinensis*, and additional collection data are given for *Y. yamato, C. chinensis*, *Nipponentomon jaceki* and *N. nippon*. A cladistic analysis is presented of hypothetical relationships among the discussed acerentomid taxa. A scheme for ventral porotaxy is proposed, and the taxonomic importance of porotaxic characters within Acerentomata is discussed. Some biogeographical and phylogenetic considerations are given.

Key words: taxonomy, cladistic analysis, porotaxy, key, redescription, new records

Introduction

Protura inhabit soils worldwide, excepting the Arctic and Antarctic regions (Pass & Szucsich 2011). In general the taxonomy and distribution of this group is poorly known. Several taxonomic monographs have been published, including Protura of the world (Tuxen 1964), Europe (Nosek 1973), Japan (Imadaté 1974) and China (Yin 1999). The known world fauna of Protura currently comprises 808 species in 75 genera. The proturan fauna of China (approximately 200 species) and Japan (88 species according to Kaneko *et al.* 2012), neighbors to the northeastern Palearctic, have been studied most completely. The proturan fauna of Europe comprises approximately 180 species of Protura.

The larger territories of the northeastern Palearctic (Siberia and the Russian Far East) had been scarcely investigated. Szeptycki (1988) described three new genera and 10 new species from the Altaj mountains. This paper remains the only work on Siberian Protura. For the Russian Far East Martynova (1977) described the new species *Acerella sharovi* from Snow Valley near Magadan and Nakamura (2004) recorded nine species from Khabarovsk, four of which were new.

The objectives of this paper are to present a reliable means of identification for the 35 currently recognized species of the studied territory, analyze the phylogenetic importance of morphological characters within Acerentomata, and discuss the biogeographic considerations of the proturan fauna of the northeastern Palearctic.

Material and methods

Specimens were collected by several individuals at different localities in Siberia and the Russian Far East during the last 30 years and deposited in the collections of various institutions. Binomens and their authors and dates are given in Table 1.

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