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Korean species of the genus *Neoperla* Needham, 1905 (Plecoptera: Perlidae)*

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Abstract

Two new species of the perlid genus *Neoperla*, *N. adamantea* Murányi & Li, **sp. n.** and *N. goguryeo* Murányi & Li, **sp. n.** are described from both sexes, collected in the Kumgang and Myohyang Mountains of North Korea by personnel of the Hungarian Natural History Museum during the 1970's. Two additional species, *N. coreensis* Ra, Kim, Kang & Ham, 1994 and *N. ussurica* Sivec & Zhiltzova, 1996 are redescribed from North Korean specimens. *Neoperla quadrata* Wu & Claassen, 1934 is redescribed on the basis of the holotype from Sichuan Province, China, and the Korean occurrence of this species requires confirmation. Korean and global distributions of the five *Neoperla* species reported from the peninsula are depicted on maps.

Key words: *Neoperla*, stoneflies, Korean Peninsula, North Korea, new species, redescrptions, distributions

Introduction

Neoperla Needham, 1905 is one of the largest genera of stoneflies, widely distributed in the Nearctic, East Palaearctic, Ethiopian and Oriental Biotic provinces and in Wallacea (DeWalt *et al.* 2014). The greatest species diversity of *Neoperla* is in the Oriental Region (Cao *et al.* 2007), but East Palaearctic species occur in the Far East, to the Amur Basin in Russia. More than 70 described species are known from China (Li *et al.* 2014), at least ten species are recognized from Japan (Uchida 1990), and in the Russian Far East, two additional species are known (Teslenko 2012). The distribution and taxonomy of *Neoperla* in the Korean Peninsula is poorly known, with one species reported from North Korea (Zwick 1973a) and three from South Korea (Yoon & Aw 1985, Ra *et al.* 1994, Stark 2010).

Between 1970 and 1994, personnel from the Hungarian Natural History Museum had the opportunity to take 16 collecting expeditions to North Korea (Mahunka & Steinmann 1971, Mészáros & Zombori 1995). These efforts yielded some Plecoptera, but this material has been only partially studied (Zwick 1973b, Stark & Sivec 2008, Murányi *et al.* 2014). In this paper, we treat the *Neoperla* from these collections, including a discussion of the available information of this genus known from the Korean Peninsula.

Material and methods

Specimens were stored dry in the Collection of Smaller Insect Orders, Department of Zoology, Hungarian Natural History Museum, Budapest, Hungary (HNHM). They were relaxed and transferred to vials with 70% ethanol, their

mahunkai (Zwick, 1973b), *Amphinemura coreana* Zwick, 1973b, *A. steinmanni* Zwick, 1973b, *A. verrucosa* Zwick, 1973b, *Nemoura sahlbergi problematica* Zwick, 1973b, *Alloperla picta* Zwick, 1973b, *N. adamantea* and *N. goguryeo*). Recently, these mountains were noted also for the high diversity of the genus *Perlomyia* Banks, 1906 (Murányi *et al.* 2014). Although the first four species were found later in the Russian Far East (Teslenko & Zhiltzova 2009) and the Sobaek mountain ranges of South Korea (Zwick 2010) (*A. coreana* reported also from Kazakhstan: Murányi 2011), extensive studies in South Korean portions of the Thebaek Ranges presumes that several species are endemics to these mountain ranges, *Scopura laminata* Uchida, 1987 (in Uchida & Maruyama 1987), *S. scorea* Jin & Bae, 2005, *Despaxia asiatica* Zwick, 2010, *Nemoura aquila* Murányi, 2011 (in Murányi & Park 2011), *N. phasianusa* Ham, 2009, *N. rugosa* Zwick, 2010, *Yoraperla uchidai* Stark & Nelson, 1994 and *Perlodes kippenhani* Stark, 2010.

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