



Three new species of *Neoperla* in the *montivaga* group (Plecoptera: Perlidae) from China

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Abstract

Three new species of the genus *Neoperla* in the *montivaga* species group, *N. baisha* Kong & Li, **sp. nov.**, *N. bicurvata* Kong & Li, **sp. nov.**, and *N. furcomaculata* Kong & Li, **sp. nov.**, are proposed from Hainan Province, China. Their taxonomic relationships are discussed with related congeners.

Key words: Plecoptera, Perlidae, *Neoperla*, new species, China

Introduction

The genus *Neoperla* is one of the most speciose perlid groups in China (Du *et al.* 1999, Sivec *et al.* 1988). The Chinese *Neoperla* species were mainly described by Chu (1929), Du (1999, 2000a, 2000b), Du and Sivec (2004, 2005), Du and Wang (2005, 2007), Du *et al.* (1999), Du *et al.* (2001), Li *et al.* (2011), Li *et al.* (2011), Li and Wang (2011), Li *et al.* (2012), Li *et al.* (2012), Li and Li (2013 a, b), Li *et al.* (2013), Li *et al.* (2013), Li *et al.* (2014), Qin *et al.* (2013), Sivec and Zwick (1987), Wang *et al.* (2013), Wang *et al.* (2013), Wu (1935, 1938, 1948, 1962, 1973), Wu and Claassen (1934), Yang and Yang (1990, 1991) and Yang and Yang (1992, 1993, 1995a, 1995b, 1996, 1998). In the present paper three new species, *N. baisha* Kong & Li, **sp. nov.**, *N. bicurvata* Kong & Li, **sp. nov.**, and *N. furcomaculata* Kong & Li, **sp. nov.** are proposed from Hainan Province, China. The previously known species of *Neoperla* described from the island include *N. longispina* Wu (1938) and *N. bicornuta* (Yang and Yang 1995a) and *N. hainanensis* (Yang and Yang 1995a). The new species all belong to the *N. montivaga* species group as defined by Zwick (1983) because of the incomplete sclerotization of the aedeagal tube.

Material and methods

Specimens used in this study were collected using light traps. Types of the new species and other examined material were preserved in 75% ethanol. Studied specimens are deposited in the Insect Collection of Henan Institute of Science and Technology (HIST), Xinxiang, and the Entomological Museum of China Agricultural University (CAU), Beijing, respectively, as indicated in the text. Aedeagi were everted using the cold maceration technique of Zwick (1983).

Results and discussion

Neoperla baisha Kong & Li, **sp. nov.**

(Figs. 1–2)

Male. Forewing length 12.2–12.5 mm. Distance between ocelli about as wide as diameter of the ocellus. Head

Diagnosis and remarks. The male of new species is characterized by a very elongate ventral aedeagal projection and two small dorsal spinulose lobes and an incomplete spinose ring at apex of sac. Therefore, this species is tentatively assigned to the *N. oculata* species complex and seems similar to the Bornean *N. divergens* Zwick 1986 (figs. 62–63 in Zwick 1986). *Neoperla furcomaculata* has a basoventral projection with spinose apex but without subapical protrusions whereas the sac of *N. divergens* has several subapical protrusions and swellings in addition to the basoventral spinose projection (Fig. 63 in Zwick 1986).

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