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Taxonomic notes on the genus *Baetiella* Uéno from China, with the descriptions of three new species (Ephemeroptera: Baetidae)

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Abstract

Nine *Baetiella* species, including three new species, are reported from China. *Baetiella lanpingensis* n. sp. is diagnosed by the 2nd segment of labial palpus without inner-apical lobe, the posteromedian margin of terga I–VI each with a single protuberance, posterior margin of sterna V–IX each with a row of continuous long spatulate setae and median caudal filament with only one segment. *Baetiella sexta* n. sp. is characterized by the 2nd segment of labial palpus bearing an inner-apical lobe, the posteromedian margins of terga I–VI each with a single protuberance, posterior margins of sterna I–VII smooth and median caudal filament with 3–5 segments. *Baetiella spathae* n. sp. is distinguished from its congeners by the terminal segment of labial palpus asymmetric coniform, the posteromedian margin of terga I–IX each with a single protuberance and posterior margin of sterna V–IX each with a row of long spatulate setae. Additionally, *B. macani* (Müller-Liebenau, 1985) is removed from the synonymy with *B. bispinosa* (Gose, 1980) and considered as a valid species. *B. marginata* Braasch, 1983 is recorded for the first time from China. A key to fourteen species of *Baetiella* known from mature nymphal stages in the world is provided.

Key words: mayflies, *Baetiella*, new species, bona species, Oriental region

Introduction

Baetiella Uéno, 1931 is a small genus of Baetidae distributed in the East Palaearctic and Oriental regions (Waltz & McCafferty 1987; Tong & Dudgeon 2000; Ishiwata 2001). Uéno (1931) originally established this genus based on *Acentrella japonica* Imanishi, 1931 and defined the generic diagnosis for *Baetiella* as the median terminal filament absent and apical segment of labial palpus obtusely conical in nymph, and absence of hind wings in imagos. Because the generic concept is simple and ambiguous, *Baetiella* was historically treated as a subgenus of *Pseudocloeon* Klapálek, 1905 (e.g. Kazlauskas 1963; Braasch 1978; Kluge 1983), or a junior synonym of *Pseudocloeon* (Müller-Liebenau 1985), and even a subgenus of *Baetis* (Tshernova *et al.* 1986). Waltz & McCafferty (1987) revised and clarified the generic definition of *Baetiella* in which 12 species were listed, but most mayfly workers did not agree to treat *Baetis ursina* Kazlauskas as a species of *Baetiella* (e.g. Kluge 1995, 1997; Bae & Park 1998; Beketov & Kluge 2003; Jacob 2003). Tong & Dudgeon (2000) added another species, *B. trispinata* Tong & Dudgeon, to the genus. *Baetiella aino* (Matsumura, 1931) was considered as a junior synonym of *Baetiella japonica* by Ishiwata (2001). Recently three Taiwanese species previously assigned to *Baetiella* by Waltz & McCafferty (1997) appear to represent a distinct genus with unclear relationships to *Baetiella* and were reinstated as the valid genus *Tenuibaetis* by Fujitani *et al.* (2003, 2011), i.e. *Tenuibaetis arduus* (Kang & Yang, 1994); *T. inornatus* (Kang & Yang, 1994) and *T. pseudofrequentus* (Müller-Liebenau, 1985). Before this study, the genus *Baetiella* consists of only 11 species in the world, of which, six species are recorded only at the nymphal stage, four species, i.e. *Baetiella japonica* (Imanishi, 1930), *B. muchei* (Braasch, 1978), *B. trispinata* Tong & Dudgeon, 2000 and *B. tuberculata* (Kazlauskas, 1963), are described both at imaginal and nymphal stages (Kluge 1983; Novikova & Kluge 1987; Tong & Dudgeon 2000), and *B. ladakae* Traver, 1939 from Himalaya is only known at imaginal stage so far. The generic diagnosis of *Baetiella* nymphs is as follows: Antennae approximately 1.5 times length of head width; submarginal setae on labrum simple; maxillary palpus 2-segmented; labial palpus