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Thienemanniella Kieffer from East Asia, with a systematic review of the genus (Diptera: Chironomidae: Orthocladiinae)

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Abstract

The orthoclad genus *Thienemanniella* Kieffer in East Asia including 30 species is reviewed. Parsimony analyses of species of *Thienemanniella* and *Onconeura* Andersen *et* Sæther including *Corynoneurella* Brundin, *Tempisquitoneura* Epler and *Ubatubaneura* Wiedenbrug *et* Trivinho-Strixino are performed showing that *Thienemanniella afra* Lehmann belongs to *Corynoneurella* and that other *Thienemanniella* species with bare eyes may belong to *Onconeura*. Five new species: *Thienemanniella absens* **sp. n.**, *T. hainanensis* **sp. n.**, *T. sichuana* **sp. n.**, *T. triangula* **sp. n.**, and *T. wuyiensis* **sp. n.** are described and illustrated as adult males. *Thienemanniella clavicornis* Kieffer, *T. ginzanquerea* Sasa, Kitami *et* Suzuki, *T. nipponica* (Tokunaga), *T. obscura* Brundin, *T. togamijika* Sasa *et* Okazawa, *T. tusimufegeai* Sasa *et* Suzuki and *T. xena* (Roback) are reviewed for the Chinese specimens. The holotypes of 13 Japanese species: *Corynoneura ginzanquinta* Sasa *et* Suzuki**,** *Thienemanniella chuzeduodecima* Sasa, *T. ginzanquerea* Sasa *et* Suzuki, *T. nagaramaculata* Sasa, *T. ogasaquardecima* Sasa *et* Suzuki, *T. ogasaquindecima* Sasa *et* Suzuki, *T. okigrata* Sasa, *T. oyabedilata* Sasa, Kawai *et* Ueno, *T. togamijika* Sasa *et* Okazawa, *T. tonewquerea* Sasa *et* Tanaka, *T. tusimuefea* Sasa *et* Suzuki, *T. tusimufegea* Sasa *et* Suzuki, *T. yakysetea* Sasa *et* Suzuki are re-examined. *Corynoneura ginzanquinta* Sasa *et* Suzuki is transferred to the genus *Thienemanniella*. A key to the males of *Thienemanniella* so far known is provided.

Key words: Chironomidae, *Thienemanniella*, key, new species, new combination, East Asia

Introduction

Kieffer (1911) established the world wide distributed orthoclad genus *Thienemanniella* after *Corynoneura clavicornis* (Kieffer) after its type species. Schlee (1968) revised the North-European species of *Thienemanniella*, Hestenes and Sæther (2000) provided a key to the five Nearctic larvae of the genus, Fu *et al*. (2010) revised the Afrotropical species of the genus. *Thienemanniella*, *Corynoneura* Winnertz and a few recently described genera are those chironomids where the radial sector is retracted, swollen and fused with costa at the apex forming a thick clavus at or before the midpoint of the wing.

The larvae of the genus are prevalent in most lotic habitats of the fast mountain streams and weirs to slow moving ditches and lowland rivers. Both *Thienemanniella* and *Corynoneura* larvae are frequently found in interstices in submerged stones where their small sizes are said to allow them to resist high water speeds.

Presently 50 named species have been recorded (including eyes bare species, excepting dubious records), 30 species in the Palaearctic Region, 8 in the Nearctic Region, 4 in the Neotropical Region, 14 in the Oriental Region, 6 in the Afrotropical Region and 1 in the Australian Region (Boesel & Winner 1980; Brundin 1947, 1949; Cranston *et al*. 1989; Cranston & Martin 1989; Edwards 1924, 1929; Freeman 1953; Fu *et al*. 2010; Harrison 1992; Hestenes & Sæther 2000; Lehmann 1979, 1981; Makarchenko *et al*. 2005, Makarchenko & Makarchenko 2006; Paggi 1985; Roback 1957, 1962; Sæther 1981; Sasa 1984, 1989, 1990; Sasa, Kawai & Ueno 1988; Sasa & Okazawa 1992; Sasa & Suzuki 1997, 1999, 2000a, 2000b, 2001; Sasa & Tanaka 2002; Schlee 1968; Sublette 1970; Sublette & Sasa 1994; Sublette & Sasa 1994; Tokunaga 1936; Wang 2000; Sæther & Spies 2004, Yamamoto 2004).

Prior to this study 24 species of the genus have been reported from East Asia: 20 from Japan, 3 from China and 6 from Russian Far East (Makarchenko *et al*. 2005, Makarchenko & Makarchenko 2006; Sasa 1984, 1989, 1990; Sasa *et al*. 1988; Sasa & Okazawa 1992; Sasa & Suzuki 1997, 1999, 2000a, 2000b, 2001; Sasa & Tanaka 2002; Wang 2000; Yamamoto 2004).

Based on material at Nankai University and holotypes of *Thienemanniella* from Japan the genus from East Asia is reviewed, *Corynoneura ginzanquinta* Sasa *et* Suzuki from Japan is transferred to *Thienemanniella*, and 5 new species are described. Accordingly, there presently are 30 species in the East Asia Region. The range of some measurements given by Cranston *et al*. (1989) is enlarged and a key to East Asian species is presented.

Methods, terminology and material

The material is mounted on microslides following the procedure outlined by Sæther (1969). Morphological nomenclature follows Sæther (1980) with the additions and corrections given by Sæther (1990).