



New placement for *Spaniotoma (Eukiefferiella) claviculata* Edwards, 1931 (Diptera: Chironomidae)

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In a recent examination of Edwards' Patagonian chironomid types in the Natural History Museum (London, UK) (NHM) we found the species *Spaniotoma (Eukiefferiella) claviculata* Edwards, 1931, previously considered by Spies & Reiss (1996) as an unplaced valid species, as belonging to the genus *Parakiefferiella* Thienemann. This species fits all characters in the generic diagnosis of Cranston et al. (1989) by the possession of bare eyes, wings and squama; extended costa; acrostichals absent but with median tuft of microtrichia on scutum; hypopygium with anal point short, broadly based and subtriangular with few basal setae, virga well developed and inferior volsella subrectangular.

Recently Wiedenbrug & Andersen (2002) described *Parakiefferiella lagorum* as a new Orthoclaadiinae species of the genus *Parakiefferiella* from South America. Having analyzed the descriptions and drawings of all the species described by Wiedenbrug & Andersen (2002) we came to the conclusion that the species *P. lagorum* is identical to *Spaniotoma (Eukiefferiella) claviculata*. Therefore, the aim of this paper is to establish the new combination *Parakiefferiella claviculata* (Edwards) and *P. lagorum* as a junior synonym.

Taxonomy

Parakiefferiella claviculata (Edwards, 1931), comb. n.

Spaniotoma (Eukiefferiella) claviculata Edwards, 1931: 291.

Parakiefferiella lagorum Wiedenbrug & Andersen, 2002: 120, syn. n.

The measurements obtained by the study of the type material were carefully compared with the description of *P. lagorum* made by Wiedenbrug & Andersen (2002) and it fits exactly with all of them. Therefore, a re-description or an emendation of that diagnosis is not needed.

Material examined: Holotype male (NHM), Argentina, Terr. Río Negro, L. Nahuel Haupi Eastern End, 28/31–X–1926, leg. F. & M. Edwards, B.M.1927–63; paratype male (NHM), same data as holotype.

Ecology and distribution

Most of the ecological studies of *Parakiefferiella* have been in the northern Hemisphere. Wülker (1957) study described the habitat of eight species of *Parakiefferiella* from the Palearctic region. Later, in the Holarctic key of Orthoclaadiinae larvae, Cranston et al. (1983) mentioned that *Parakiefferiella* larvae were found mostly in standing waters.

In South America, the ecology of *Parakiefferiella* larvae is poorly known. Larvae and pupae of *Parakiefferiella* spp. were initially described by Roback & Coffman (1983). In that study, the authors identified two species of *Parakiefferiella* from two streams located above at 3200 m a.s.l. in Venezuela and Bolivia.

Later on, Walker et al. (1992) noted the larvae of Holarctic *P. nigra* is stenotopic and on the basis of modern collections appears to be most abundant in cold, oligotrophic lakes.

Finally, Wiedenbrug & Andersen (2002), based on pupae and adult stages described three species of *Parakiefferiella*: *P. lagorum*, from central Chile; *P. hernandesi*, collected in southern Chile, and *P. strixinorum* from southern Brazil. All the specimens were collected from moderately fast flowing streams and rivers located from 600 m (Brazil) to nearly 2000 m altitude (central and southern Chile). The authors also described the adult of *P. wardorum* from a lotic habitat in southern Chile.

Larvae of *Parakiefferiella* spp. are also common in late-glacial lake sediments providing important evidence for oligotrophic conditions during late-glacial time. In South America, head capsules of *Parakiefferiella* sp. were found in lake sediment cores from Northern Patagonia in Chile (Lake Huelmo) and Argentina (Lake Mascardi, Lake Frias, Lake Hess, Lake Morenito) and in Central Patagonia in Chile (Lago Facil, Lago Stibnite) (Massaferro & Vandergoes 2007, Massaferro et al. 2008). All these lakes are cold, oligo-ultraoligotrophic glacial lakes. Sediment cores were taken from the central part of the lakes concluding that the larvae inhabit lentic habitats.

Nevertheless, more studies on the different *Parakiefferiella* species are needed to fully understand their ecological requirements. In addition, association of larval and adult stages through rearing and DNA studies is essential to resolve fully taxonomic questions.

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