



A new species of *Parapsectrocladius* Cranston (Diptera: Chironomidae: Orthoclaadiinae) from Patagonia, Argentina

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Abstract

Parapsectrocladius setosus sp. n. is described and figured as pupa and male imago, based on material collected in Patagonia, Argentina. The male of the new species groups with *P. escondido* Cranston & Añón Suárez by having the anal point tapering triangular; inferior volsella simple, rounded, without any dorsal ridge and apically blunt. It can be distinguished from *P. escondido* by the possession of strong setae on the inner margin of inferior volsella. New material of *Parapsectrocladius* belonging from several localities allows us to emend the generic diagnosis of the adult male, female and larva of *Parapsectrocladius*, discuss its phylogenetic position and to expand the geographic distribution of *P. acuminatus* Cranston, *P. escondido* and *P. reissi* Cranston.

Key words: *Parapsectrocladius*, Orthoclaadiinae, Phylogeny, Patagonia

Introduction

The knowledge of the Patagonian Chironomidae diversity has its cornerstone in the work of F. W. Edwards, published in 1931 as the result of the study of specimens collected by him during an expedition in the years 1926–7. Amongst taxa described by Edwards was *Cardiocladius acuminatus*. As the author described in its diagnosis, this species possesses the fourth tarsomere cordiform, as in all the European *Cardiocladius* Kieffer, but differs from them by the stout hairy anal point and the non-pruinose thorax. Particularly the stout hairy anal point led Brundin (1956) to doubt the placement of *acuminatus* in *Cardiocladius*. After the examination of the type of this species, Halvorsen (1988) proposed that the species could be best placed in the genus *Paratrissocladius* Zavřel until additional knowledge from the other life history stages became available. The information provided by the immature stages would not wait long. A reared male together with additional immature and adult specimens from southern Argentina and Chile allowed Cranston (2000) to erect the genus *Parapsectrocladius* for *P. acuminatus* (Edwards) and describe three new species: *P. longistylus* Cranston, *P. reissi* Cranston, and *P. escondido* Cranston & Añón Suárez. The cladistic analysis performed in that study placed *Psectrocladius* Kieffer as the sister genus of *Parapsectrocladius*.

The genus *Parapsectrocladius* is endemic to the Subantarctic forest of Argentina and Chile and lives in lentic environments, except for *P. acuminatus* whose immatures were reported living in running waters. Cranston (2000) described *P. longistylus* as the only species with a trans-Andean distribution, *P. acuminatus* and *P. reissi* occurring in Chile and *P. escondido* occurring in Argentina. The species *P. acuminatus* was cited later from Argentina by Donato *et al.* (2008) from lentic and lotic environments.

The species *P. escondido* is known in all the life stages based on rearing of larva to adult. The association between larva, pupa and adult of *P. acuminatus* was obtained by mass rearing and the female is unknown. The associated larva, pupa and female of *P. reissi* and the association to the pupa and female of *P. longistylus* were based on co-occurrence of the development stages at their type localities.

Concerning this last species, the rearing of two pupae from Nahuel Huapi National Park (Bariloche, Argentina)

al. (2012) based on molecular evidence, *Parapsectrocladius acuminatus* is the sister group of a clade [*Rheocricotopus* [*Synorthocladius* [*O. (Euorthocladius) luteipes* [*Cricotopus* [*Cricotopus*, *Paratrachocladius*]]]]]. All the morphological-based phylogenies here discussed are constrained by high levels of homoplasy and therefore generating difficulties to recognize characters that may provide unambiguous evidence of relationships. As an exercise, different analyses in both data matrices were performed either using prior weightings in those characters proposed by the authors to support their phylogenetic hypotheses or the application of implied weights, but all results were poorly supported.

Future studies including more taxa together with morphological evidence will better resolve these conflicting relationships.

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