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***Cladotanytarsus* Kieffer (Diptera: Chironomidae): several distinctive species reviewed on the basis of records from Canada and USA**

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Abstract

Two species of the genus *Cladotanytarsus* Kieffer, 1921 are described as adult males, both peculiar in having distinctively elongated hypopygial anal points. The male of *Cladotanytarsus bilyji* Gilka *et* Puchalski, **sp. nov.** (Canada, Manitoba; USA, Ohio) is presumed to be a close relative of *C. nigrovittatus* (Goetghebuer, 1922). Another unknown *Cladotanytarsus* species (USA, Illinois and Louisiana) keys with the European *C. donmcheani* Langton *et* McBean, 2010. The intraspecific variability of the male *C. acornutus* Jacobsen *et* Bilyj, 2007 is also presented on the basis of new records (Canada, Ontario; USA, South Carolina). *Cladotanytarsus* males with similarly structured elongate anal points are reviewed, including *C. tobaquardecimus* Kikuchi *et* Sasa, 1990, considered a junior synonym (**syn. nov.**) of *C. conversus* (Johannsen, 1932). As a compilation of this study, a key to the identification of the adult males of 14 *Cladotanytarsus* species is provided.

Key words: Diptera, Chironomidae, *Cladotanytarsus*, systematics, new species, key

Introduction

Cladotanytarsus Kieffer, 1921 is one of the most species-rich genera within the large tribe Tanytarsini (over 600 species) in the family Chironomidae (over 7 000 species) (Gilka 2011a, Pape *et al.* 2011). This genus includes more than 70 described species, inhabiting aquatic, mainly freshwater ecosystems situated in most of the world's regions (Gilka 2011b). The number of known species is certainly far from complete, as numerous *Cladotanytarsus* remain undescribed, including at least several Nearctic ones (Epler 2014, authors' unpubl. data). Although some systematic revisions have been published recently (Gilka 2011b, 2012; Gilka & Dobosz 2015), a substantial number of specific names, compatible with the diagnosis of *Cladotanytarsus*, remain in their original (erroneous) systematic combinations. Due to insufficiently precise descriptions, the status of numerous names included in *Cladotanytarsus* requires re-examination; moreover, some of the names are potential synonyms.

Even the best-known life stages of *Cladotanytarsus*, the adult/pharate males, are the most difficult to diagnose among the Tanytarsini. The intrageneric homogeneity of the morphological structures of the head, wing and legs usually restricts or even rules out the use of the characters of these body parts in identification. On the other hand, the intraspecific variability of the hypopygial structures may blur the borders between various species. In such a case, an integrative-systematic approach combining morphological and molecular analyses may shed new light on diagnostics of *Cladotanytarsus*, as it has been evidenced in other Tanytarsini (*e.g.* Anderson *et al.* 2013). Nevertheless, it is the hypopygium that possesses the key, and often the sole morphologically diagnostic characters of *Cladotanytarsus*. The diagnostically critical hypopygium structures include the tergite of the distal abdominal segment terminating in a specific anal point, the length/width of which, as well as the number/arrangement of the spinulae and the shape of the anal point crests, constitute a set of diagnostic characters.

This paper focuses on North American species of the subgenus *Cladotanytarsus s. str.* [the second known subgenus *Lenziella* Kieffer, 1922 has been recently revised (Gilka 2011b)], the adult males of which feature the distal tergite with a characteristic, strongly elongated and slender anal point. The species whose males exhibit such a hypopygial structure are not numerous, but are known from various regions of the world: Europe (Langton &