



Chironomus blaylocki sp. n. and *C. bifurcatus* sp. n., North American species near the base of the decorus-group (Diptera: Chironomidae)

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Abstract

Two species of the cytologically defined *Chironomus* decorus-group, *C. bifurcatus* sp. n. and *C. blaylocki* sp. n., are described on the basis of their salivary gland polytene chromosomes and larval morphology, with the associated male and pupa of *C. bifurcatus* and the putative male of *C. blaylocki* included as paratypes. The banding patterns of the salivary gland chromosomes indicate that these species are near the base of the cytologically defined decorus-group. The cytology and adults of these new species are compared with those of a number of other undescribed North American decorus-group species to demonstrate that they are distinct species.

Key words: Chironomidae, *Chironomus*, new species, karyosystematics

Introduction

Wuelker *et al.* (1991) introduced the concept of a cytologically defined decorus-group within the genus *Chironomus* Meigen, 1803, to include those species with the thummi-cytocomplex chromosome arm combination (AB, CD, EF, G) and with the inversion In2–9 in arm F. Most of the members of this group are in North America, but it also includes five species from Eurasia. These Palaearctic species form a closely related cluster that is referred to as the obtusidens-group (Wuelker *et al.* 1983, Kiknadze *et al.* 2007), although this separation is not complete, as seen by the branch containing the Nearctic *Chironomus utahensis* Malloch, 1915 and the Palaearctic *C. obtusidens* Goetghebuer, 1921 (Fig. 8). The overall grouping is therefore referred to as the cytological decorus-group, since all conform to the definition of Wuelker *et al.* (1991). In a paper of Martin (1979) on chromosomes of chironomid midges as tools for taxonomy, a phylogenetic scheme for arm F of the genus *Chironomus* places two taxa of the cytologically defined decorus-group at the base of this group, namely *decorus* B and species a. The first is that species described erroneously as "*C. tentans*" by Blaylock *et al.* (1964), the second a species described as "species a" by Martin (1979, 2008), in our experience (this paper) identical with *C. decorus*-group species 1 in Butler *et al.* (1995).

Neither species have valid names or descriptions, so we describe them here on the basis of their salivary gland polytene chromosomes (hereafter, polytene chromosomes) and larval morphology, as well as brief descriptions of the adult morphology and the pupa of *C. bifurcatus*. There are more undescribed North American species with the key inversion In2–9 in arm F, e.g. *C. decorus* (*sensu* Rothfels & Fairlie 1957) (= *C. decorus* R&F of Martin 2008); species b Martin (2008); *C. decorus*-group species 2 (Butler *et al.* 1995) (=species 2g of Martin 2008); and species 3a (Martin *et al.* 1979) (= *C. decorus* Johannsen, 1905 *sensu*