



Review of three little-known monotypic empidoid genera (Diptera: Empidoidea: Brachystomatidae), assigned to Trichopezinae

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Abstract

The monotypic genera *Boreodromia* Coquillett, *Ceratempis* Melander and *Sematopoda* Collin are reviewed with redescrptions of their respective type species and distributions outlined. The male and female terminalia of *B. bicolor* (Loew) and *C. longicornis* Melander are here described and illustrated for the first time. The male terminalia of *S. elata* Collin are illustrated in detail for the first time. The assignment of these genera to the Trichopezinae is discussed.

Key words: *Boreodromia*, *Ceratempis*, *Sematopoda*, systematics, Canada, North America, United States, New Zealand

Introduction

The empidoid (Diptera) genera *Boreodromia* Coquillett and *Ceratempis* Melander were originally assigned to the Clinocerinae (Melander 1928) and *Sematopoda* Collin to the Hemerodromiinae (Collin 1928). In a generic revision of the Clinocerinae, the former two genera were transferred to a redefined subfamily, Trichopezinae (Sinclair 1995). In phylogenetic analysis of the Empidoidea based on morphological characters (Sinclair & Cumming 2006), all little-known and unplaced genera were re-examined and *Sematopoda* was also assigned to the Trichopezinae in the family Brachystomatidae. All three genera are distributed in highly speciose “empidoid hotspots”, with *Boreodromia* and *Ceratempis* from northwestern North America and *Sematopoda* from New Zealand.

This review updates the description of the type species of each of these monotypic genera. Many features of these genera, especially the terminalia, have remained undescribed, which has confounded confident subfamily assignment of these taxa. It is hoped that this paper will aid in the identification of possible additional congeneric material and assist in future phylogenetic analyses.

Materials and methods

This study is based on material borrowed from or deposited in the following institutions: American Museum of Natural History, New York, USA (AMNH); The Natural History Museum, London, England (BMNH); California Academy of Sciences, San Francisco, USA (CAS); Canadian National Collection of Insects, Ottawa, Canada (CNC); Cornell University, Ithaca, USA (CUIC); United States National Museum of Natural History, Washington, DC, USA (USNM); Washington State University, Pullman, USA (WSU).

All dissections were made in glycerin and tissues cleared using hot 85% lactic acid. Terms used for adult structures primarily follow those of McAlpine (1981), except for the antenna where terms of Stuckenberg