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The *Tachytrechus alatus* species group (= *Syntomoneurum* Becker) revisited: new species and revised species group limits (Diptera: Dolichopodidae)

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Abstract

The *Tachytrechus alatus* species group is revised. The species group is defined within the genus *Tachytrechus* on the basis of possession of a strong basiventral bristle on the fore femur and very reduced pulvilli on the mid- and hindlegs of both sexes. Males also possess a strongly reduced vertical bristle, and a cluster of 2–3 strong bristles on both the fore femur and mid coxa. The *T. alatus* species group is now known from southern Mexico, Central and South America and comprises eight Neotropical species including three new species: *Tachytrechus alatus* (Becker), *Tachytrechus analis* (Parent), ***Tachytrechus costaricensis*** Brooks **sp. nov.**, ***Tachytrechus dios*** Brooks **sp. nov.**, *Tachytrechus giganteus* (Brooks), *Tachytrechus peruicus* Yang & Zhang, *Tachytrechus transversus* (Van Duzee) and ***Tachytrechus zumbadoi*** Brooks **sp. nov**. A revised key to species is provided, as well as remarks on the phylogeny and zoogeography of the group.

Key words: Dolichopodidae, Dolichopodinae, *Tachytrechus*, Neotropical, new species, key, phylogeny, zoogeography

Introduction

The *Tachytrechus alatus* species group was originally recognized as the genus *Syntomoneurum* Becker and was placed in the subfamily Hydrophorinae (Becker 1922; Parent 1931, 1934, 1954; Robinson 1970). More recently, *Syntomoneurum* has been classified in the Dolichopodinae (Negrobov 1980; Ulrich 1981; Brooks & Wheeler 2002; Brooks 2005). Brooks & Wheeler (2002) provided evidence supporting Ulrich's hypothesis of a close relationship between *Syntomoneurum* and *Tachytrechus* Haliday, and noted that *Syntomoneurum* may represent a species group within *Tachytrechus*, making the latter paraphyletic. Brooks (2005) verified this prediction and *Syntomoneurum* was accordingly synonymized with *Tachytrechus*.

Following the publication of Brooks & Wheeler's (2002) revision of *Syntomoneurum*, Harold Robinson (in litt.) advised us that *Tachytrechus transversus* (Van Duzee), from Guatemala and Mexico, is also part of this lineage. In addition, we have found three new species belonging to this group, including two from Costa Rica and one from Peru. The *T. alatus* species group now includes eight species. The purpose of this paper is to revise the *T. alatus* species group to incorporate these additional species, provide a new key, and to examine the phylogenetic relationships and possible zoogeographic history of this lineage.

Material and methods

Specimens examined in this study were obtained from the following collections: Canadian National Collection of Insects, Ottawa, Canada (CNC); Utah State University Insect Collection, Logan, Utah, USA (EMUS);

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