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**Revision of New World *Leptocera* Olivier
(Diptera, Sphaeroceridae)**

MATTHIAS BUCK & STEPHEN A. MARSHALL



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Revision of New World *Leptocera* Olivier (Diptera, Sphaeroceridae)

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Abstract

The 35 species of *Leptocera* in the New World are revised and keyed. Five species groups are recognised: *L. caenosa* group (15 spp.: widespread), *L. fontinalis* group (10 spp.: North and Central America), *L. fulva* group (5 spp.: Florida and Neotropical), *L. nigra* group (1 sp.: Venezuela, introduced), *L. plax* group (3 spp.: Central America and Ecuador), species incertae sedis (*L. schlingeri* Richards: Ecuador, Peru). Twenty-one species are newly described (authorship by M.B.): *L. argentinica* sp.n., *L. erratica* sp.n., *L. gongylothea* sp.n., *L. longilimbata* sp.n., *L. papallacta* sp.n., *L. parallelipennis* sp.n., and *L. sphaerothea* sp.n. (*L. caenosa* group); *L. angulispina* sp.n., *L. cymatonota* sp.n., *L. hexadike* sp.n., *L. kanata* sp.n., *L. neofontinalis* sp.n., *L. neovomerata* sp.n., and *L. tenuispina* sp.n. (*L. fontinalis* group); *L. dicrofulva* sp.n., *L. insularum* sp.n., *L. prolixofulva* sp.n., and *L. rhadinofulva* sp.n. (*L. fulva* group); *L. plax* sp.n., *L. posteronitens* sp.n., and *L. tapanti* sp.n. (*L. plax* group). *Leptocera pararoralis* Duda is given new status as subspecies of *L. erythrocer*a Becker. Lectotypes are designated for *L. aequilimbata* Duda, *L. pararoralis* Duda, *L. abdominiseta* Duda and *L. scutellaris* (Williston) [= *L. discalis* (Malloch)]. The relationship between *Leptocera* and its putative sister genus *Rachispoda* is discussed in detail. Based on a newly hypothesized transformation series of the male cercus, *Leptocera* is probably paraphyletic with regard to *Rachispoda*. Putative synapomorphies for the different species groups of *Leptocera* are discussed and monophyly is demonstrated for all groups except the *L. fontinalis* group.

Key words: *Leptocera*, Sphaeroceridae, Nearctic, Neotropical, new species, key, phylogeny

Introduction

The genus *Leptocera* Olivier has a worldwide distribution and is one of the most commonly collected sphaerocerid genera. The University of Guelph Insect Collection (Ontario, Canada), which houses the largest Sphaeroceridae collection in the World, holds about 38 drawers of specimens of this genus. This is more than for any other genus in the family, although the genera *Coproica* Rondani, *Spelobia* Spuler, *Pterogramma* Spuler and *Sclerocoelus* Marshall are also very well represented. Despite its remarkable abundance *Leptocera* is far from being the most speciose genus in the family. Including the 21 new species from this revision the genus is comprised of 56 described species worldwide. In comparison, the sphaerocerid genera with the highest number of described species are *Rachispoda* Lioy (158 spp.), *Spelobia* (80 spp.), *Minilimosina* Roháček (70 spp.) and *Poecilosomella* Duda (56 spp.) (Roháček *et al.*, 2001; Marshall *et al.*, in prep.). In the future certain unrevised but very speciose tropical genera such as *Pterogramma* and *Sclerocoelus* will certainly surpass *Leptocera* as well.

Previous to this revision the New World fauna was poorly known. The first review of Nearctic *Leptocera* by Spuler (1924) included only “*L. fontinalis*” (five other species mentioned by Spuler are now either in different genera or were recorded from the Neotropical region). *Leptocera fontinalis* (Fallén) is in fact a Palaearctic species that was only discovered in North America during the course of this study (see comments