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**Generic classification of the Archiborborinae
(Diptera: Sphaeroceridae), with a revision of
Antrops Enderlein, *Coloantrops* gen. nov., *Maculantrops* gen.
nov., *Photoantrops* gen. nov., and *Poecilantrops* gen. nov.**

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Abstract

The Archiborborinae comprise a diverse clade of flies in the family Sphaeroceridae. We here revise the generic classification, redefining the genus *Antrops* Enderlein and naming 5 new genera: *Boreantrops* **gen. nov.**, *Coloantrops* **gen. nov.**, *Maculantrops* **gen. nov.**, *Photoantrops* **gen. nov.**, and *Poecilantrops* **gen. nov.** The genus *Archiborborus*, until recently a paraphyletic assemblage including most of the described species in the subfamily, is treated as a junior synonym of *Antrops* (**syn. nov.**) We revise the genera *Antrops* (53 species, including 40 **sp. nov.**: *Antrops anovariegatus*, *Antrops aurantifemur*, *Antrops baeza*, *Antrops bellavista*, *Antrops biflavus*, *Antrops bucki*, *Antrops carpishensis*, *Antrops cochabamba*, *Antrops cochinoca*, *Antrops conioabptos*, *Antrops coroico*, *Antrops cotopaxi*, *Antrops didactylos*, *Antrops diversipennis*, *Antrops eurus*, *Antrops fulgiceps*, *Antrops fuliginosus*, *Antrops guandera*, *Antrops guaramacalensis*, *Antrops inca*, *Antrops juninensis*, *Antrops mucarensis*, *Antrops niger*, *Antrops papallacta*, *Antrops pecki*, *Antrops podocarpus*, *Antrops quadrilobus*, *Antrops siberia*, *Antrops sierrazulensis*, *Antrops tachira*, *Antrops tequendama*, *Antrops tetrastichus*, *Antrops tumbrensis*, *Antrops unduavi*, *Antrops variegatus*, *Antrops versabilis*, *Antrops vittatus*, *Antrops yungas*, and *Antrops zongo* and the following **comb. nov.**: *Antrops annulatus* (Richards), *Antrops chaetosus* (Richards), *Antrops femoralis* (Blanchard), *Antrops hirtus* (Bigot), *Antrops maculipennis* (Duda), *Antrops maximus* (Richards), *Antrops microphthalmus* (Richards), *Antrops quadrinotus* (Bigot), *Antrops setosus* (Duda), *Antrops simplicimanus* (Richards), *Antrops nitidicollis* (Becker), and *Antrops orbitalis* (Duda)), *Coloantrops* (1 species: *Coloantrops daedalus*, **sp. nov.**), *Maculantrops* (2 species, *Maculantrops hirtipes* (Macquart) **comb. nov.** and *Maculantrops altiplanus*, **sp. nov.**), *Photoantrops* (1 species: *Photoantrops echinus* **sp. nov.**), and *Poecilantrops* (10 species: *Poecilantrops baorucensis*, *Poecilantrops boraceiensis*, *Poecilantrops crocidosternum*, *Poecilantrops dominicus*, *Poecilantrops flavifemur*, *Poecilantrops marensis*, *Poecilantrops plaumanni*, *Poecilantrops psilosternum*, *Poecilantrops stellans*, *Poecilantrops vittifrons*, all **sp. nov.**). Six additional species of *Antrops* and two of *Poecilantrops* known from females only are diagnosed but not described. The genus *Bore-*

antrops is described for two species (*Boreantrops mexicanus* (Steyskal) **comb. nov.**, and *Boreantrops calceatus* (Duda) **comb. nov.**). *Boreantrops* includes a number of new species but is not fully revised here. New synonyms at the species level are: *Antrops femoralis* (Blanchard 1852) = *Archiborborus argentinensis* Papp 1977, and *Archiborborus submaculatus* Duda 1921, both **syn. nov.**; *Antrops hirtus* (Bigot 1888) = *Archiborborus edwardsi* Richards 1931, **syn. nov.**; *Antrops quadrinotus* (Bigot 1888) = *Archiborborus albicans* Richards 1931, *Archiborborus chilensis* Richards 1931, *Archiborborus koenigi* Duda 1932, all **syn. nov.**; *Maculantrops hirtipes* (Macquart 1844) = *Copromyza alternata* Rondani 1868, **syn. nov.**

Key words: taxonomy, new species, new genera, Neotropics, South America

Introduction

The Archiborborinae is a group of sphaerocerid flies almost entirely restricted to the Neotropical Region. Archiborborines occur from the subantarctic islands (South Georgia Island, the Falkland Islands) and the southern tip of South America north to northern Mexico, at elevations ranging from sea level to over 4000 m. Most species occur in forest, with a few temperate species common in beach wrack or other open habitats and some montane species in open páramo. The highest diversity of known species occurs in the Ecuadorian Andes, where at least 27 species are known. However, this region has also had extensive sampling effort, and the true diversity in poorly sampled areas such as the Peruvian and Colombian Andes and southeastern Brazil is probably higher than current records suggest.

Members of the Archiborborinae can be distinguished from other Sphaeroceridae by a combination of characters. Winged species have a complete vein M and closed cells *bm* and *cup*, distinguishing them from the subfamilies Limosiniinae and Homalomitriinae, and a dense patch of short setae on the margin of the calypter, not known in any other subfamily. While a few species lack ocellar bristles in at least one sex, when present the ocellar bristles are lateral or anterior to the median ocellus, a condition shared only with the subfamily Tucminae; archiborborines can be distinguished from the latter by the absence of tergite 6 in males, among other characters. All species have a katapisternal bristle, which is absent in the superficially similar Copromyzinae.

Literature review and taxonomic history

The subfamily was previously considered to include about 32 species placed in 4 genera: *Antrops* Enderlein, *Archiborborus* Duda, *Penola* Richards, and *Frutillaria* Richards (Roháček *et al.* 2001). These genera were considered to be closely related by Hackman (1969), and were defined as a tribe in the subfamily Copromyzinae by Norrbom & Kim (1985). The group was first treated as a subfamily by Kits and Marshall (2011).

Two additional published generic names refer to species in this subfamily: *Procopromyza* Richards 1931 and *Huapia* Richards 1931. Each of these was described as a subgenus for groups Richards (1931) considered distinctive within his concept of the genus *Archiborborus*. However, Richards had overlooked Cresson's (1923) earlier designation of *Archiborborus submaculatus* Duda (= *Antrops femoralis*, **syn. nov.**) as the type species of *Archiborborus*, and considered *Archiborborus hirtipes* (Macquart) (= *Maculantrops hirtipes*, **comb. nov.**) as the type. Thus the group he treated as subgenus *Procopromyza* (type species *Archiborborus albicans* Richards) included the true type species of *Archiborborus*, while *hirtipes* was left without an available generic name.

The first described species in the subfamily was *Maculantrops hirtipes* (described in *Borborus* Meigen by Macquart (1844)), a distinctive species found in temperate South America. This species was also described as *Borborus quinque maculatus* by Walker (1849) based on specimens collected by Charles Darwin in Montevideo and as *Copromyza alternata* by Rondani (1868) based on specimens collected Pellegrino Strobel in Buenos Aires (**syn. nov.**). Five additional currently recognized species were described prior to 1921: *Borborus femoralis* Blanchard 1852 (= *Antrops femoralis* **comb. nov.**), *Ceroptera hirta* Bigot 1888 (= *Antrops hirtus* **comb. nov.**), *Ceroptera quadrinotus* Bigot 1888 (= *Antrops quadrinotus* **comb. nov.**), *Antrops truncipennis* Enderlein 1909, and *Olina nitidicollis* Becker 1920 (= *Antrops nitidicollis*, **comb. nov.**).

One of the most significant developments in the taxonomic history of the Archiborborinae was Duda's (1921) recognition that the winged species in the group were distinct from the various Holarctic genera in which they had