



## *Phytotelmatomyia*, a new Neotropical subgenus of *Culex* (Diptera: Culicidae)

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### Abstract

*Phytotelmatomyia*, a new subgenus in the Neotropical Region, is proposed for four described species, including *Cx. castroi* Casal & García, *Cx. hepperi* Casal & García, *Cx. machadoi* da Silva Mattos, da Silveira Guedes & Hamilton Xavier, and *Cx. renatoi* Lane & Ramalho (type species), and two potentially new species without formal Latin names. Monophyly of the group is supported by cladistic analyses of morphological data. *Phytotelmatomyia* is separated and distinguished from subgenera *Culex* and *Phenacomomyia*. Diagnostic and differential characters of the male genitalia, larvae, and pupae of the three subgenera are tabulated and illustrated. Bionomics and distributional data are provided for *Phytotelmatomyia* species.

**Key words:** Culicidae, mosquitoes, Culicinae, Culicini, *Culex*, *Phytotelmatomyia*, new subgenus

### Introduction

While conducting comparative studies of mosquitoes of subgenus *Culex* of genus *Culex* Linnaeus, we noticed that two potentially new species that inhabit the axils of *Eryngium* species (Umbelifera = Apiaceae) share characteristics of the adult, larval, and pupal stages with *Cx. (Cux.) hepperi* Casal & García and *Cx. (Cux.) castroi* Casal & García. Furthermore, the same features were observed in two other species that live in Neotropical phytotelmata, *Cx. (Cux.) renatoi* Lane & Ramalho and *Cx. (Cux.) machadoi* da Silva Mattos, da Silveira Guedes & Hamilton Xavier, the last one from its published description. The two potentially new species are not described at present due to a paucity of individually reared specimens. Other species whose larvae are found in plants other than *Eryngium* species, including *Culex spinosus* Lutz, *Cx. fernandezi* Casal, García & Cavallieri, and *Cx. dohenyi* Hogue, do not exhibit all of the characteristics observed in the former group, which indicates that it is a heretofore unrecognized group within genus *Culex*. The restricted larval habitat of the species of this group has resulted in adaptations of the immature stages that are sufficiently unique to suggest that it represents a new subgenus. The adaptations are especially evident in the development of the chaetotaxy, as a proliferation of branches that aid movement in a semi-aquatic medium. Based on the results of a cladistic analysis of morphological data that support the monophyly of the group, it is formally recognized as subgenus *Phytotelmatomyia*. Diagnostic and differential characters that distinguish *Phytotelmatomyia* from subgenera *Culex* and *Phenacomomyia* Harbach & Peyton are listed and illustrated.

### Materials and methods

Morphological structures were examined in the adult, pupal, and fourth-instar larval stages. Diagnostic and differential characters were confirmed in all specimens listed in the **Material examined** section. The morpho-