



<http://dx.doi.org/10.11646/zootaxa.3955.3.11>

<http://zoobank.org/urn:lsid:zoobank.org:pub:392AB19E-479E-43B8-A310-F4CAC01731A4>

Redescription of the adults and new descriptions of the previously unknown immature stages of *Culex (Culex) articularis* Philippi, 1865 (Diptera: Culicidae) from central Chile

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Abstract

Male and female adults of *Culex (Culex) articularis* Philippi are redescribed, and the 4th-instar larva and pupa are described and illustrated for the first time. *Culex articularis* is compared with other species of the subgenus *Culex*. Illustrations of diagnostic characters of the female, male genitalia, 4th-instar larva, and pupa are also provided.

Key words: taxonomy, adult, mosquitoes, Neotropical Region

Introduction

The genus *Culex* Linnaeus has a worldwide distribution, with 768 known species in 26 subgenera (Harbach 2011). The most diverse subgenera are *Melanoconion* Theobald and *Culex* s.str. *Culex* L. Like other genera, they have many polymorphic species that are difficult to identify using female morphological characteristics. Several species of *Culex* are important vectors of human diseases (Richards *et al.* 2014).

The subgenus *Culex* is cosmopolitan, and comprises 199 species in six species groups, with the Neotropical species grouped in the Coronator and Pipiens groups. Most Chilean species fall into the Apicinus Subgroup (e.g. *Cx. articularis*) of the Pipiens Group (Harbach 2011). The subgenus *Culex* in the neotropics was last revised by Bram (1967), who based his study on characters of the male genitalia, and recognized 61 species. However, many species are still poorly known and remain difficult to identify accurately. Recently, Laurito & Almirón (2013) explored the phylogenetic relationships of species distributed in Argentina employing morphological characteristics.

Culex (Culex) articularis was described by Philippi (1865) based on a few morphological characters of adult specimens collected in south Chile (Corral). Dyar (1928) illustrated the distinctive male terminalia. Lane (1951) synonymized *Cx. archegus* Dyar with *Cx. articularis*; however, the terminalia of *Cx. articularis sensu* Lane do not agree with the terminalia of *Cx. articularis*. Since there is no type specimen of this species, Bram (1967) designated a neotype from material collected 200 km south of the type locality. However, because of the incomplete description of the female and male, the absence of illustrations, and the unknown immature stages, it has been difficult to identify the species based on the male genitalia only.

The purpose of this paper is to provide a complete descriptions of the adult female and male, pupa and fourth-instar larva of *Cx. (Cux.) articularis*, in order to facilitate the identification of this species, particularly its females.