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Description of the immature stages of *Wyeomyia* (*Spilonympha*) *howardi* Lane & Cerqueira (Diptera: Culicidae) with a redescription of the adults

DORALICE DI PACE PALACIO, RICARDO LOURENÇO-DE-OLIVEIRA &
MONIQUE DE ALBUQUERQUE MOTTA[1]
Laboratório de Transmissores de Hematozoários, Instituto Oswaldo Cruz, Avenida Brasil 4365, 21045–900, Rio de Janeiro, RJ, Brazil
[1]Corresponding author. E-mail: mmotta@ioc.fiocruz.br

Abstract

The immature stages of *Wyeomyia* (*Spilonympha*) *howardi* Lane & Cerqueira are described and illustrated for the first time. The morphology characters of adult male, including genitalia, and female are redescribed and illustrated. The systematic treatment includes the geographical distribution of *Spilonympha* species and bionomics data for *Wyeomyia howardi* based on recent field collections as well as the literature.

Key words: systematics, Sabethini, bromeliads, phytotelmata

Introduction

The genus *Wyeomyia* Theobald is predominantly Neotropical and the immature forms develop in natural containers, or phytotelmata. This genus has been investigated to establish a better taxonomic organization and provide a secure identification of species (Judd 1996, 1998, Motta *et al.* 2007). There are about 30 *Wyeomyia* species without subgeneric placement (Motta & Lourenço-de-Oliveira 2000). In addition, morphological characters of all developmental stages of many species are not entirely known, such is the case of *Wyeomyia howardi* Lane & Cerqueira, (1942). *Wyeomyia howardi* was originally described from adult males and females collected in Bahia State, Brazil, during extensive country survey for the natural vectors of sylvatic yellow, which resulted in the review of American sabethines by Lane and Cerqueira in 1942. Since its original description, the larva and pupa of this species have been unknown, despite the value of larval characters in the taxonomy and classification. *Wyeomyia howardi* was originally placed in the subgenus *Dendromyia* (Lane & Cerqueira 1942). It was transferred to the subgenus *Spilonympha* by Motta and Lourenço-de-Oliveira (2005) together with six other species, namely *Wy. aningae* Motta & Lourenço-de-Oliveira, *Wy. mystes* (Dyar), *Wy. bourrouli* (Lutz), *Wy. forcipenis* Lourenço-de-Oliveira & Silva, *Wy. finlayi* Lane & Cerqueira and *Wy. airosai* Lane & Cerqueira. The description of subgenus *Spilonympha* was based on morphological characters of all developmental stages (Motta & Lourenço-de-Oliveira 2005). The subgenus *Spilonympha* was also supported by a phylogenetic study based on molecular and morphological characters that showed this group to be a monophyletic assemblage (Motta *et al.* 2007).

Wyeomyia howardi was the only *Spilonympha* species whose immature forms were unknown. The immature stages provide significant morphological characteristics that allow the distinction of species as well as a better taxonomic grouping of the species, especially in the genus *Wyeomyia* where adult females are very similar, as noted by Judd (1996, 1998) in her studies on Sabethini and *Wyeomyia* phylogeny. Therefore the description of the larval and pupal stages is essential. In this paper we describe and illustrate the immature stages of *Wy. howardi* for the first time, and to conclude the characterization of *Spilonympha* species, we provide herein a redescription of the adult females and males, including the male genitalia.

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