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Redescription of *Aposycorax chilensis* (Tonnoir) (Diptera, Psychodidae, Sycoracinae) with the first identification of a blood meal host for the species

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Abstract

Adults of *Aposycorax chilensis* were collected from several sites during fieldwork in Chilean Patagonia, December 2013. Specimens were swept or aspirated from roadside seeps and found in greatest numbers during the morning hours. DNA was extracted from a recently blood-fed female and was subjected to the polymerase chain reaction using vertebrate-specific 16S primers. An amplicon was obtained and the resulting sequence was found to have over 99% identity with two frogs in the genus *Batrachyla*, thus establishing this species' preference for amphibian hosts. The diagnosis and description of adult *A. chilensis* are revised, including the first description of the complete male genital tract. Habitat characteristics for this species and rotation of the male genitalia are discussed.

Key words: hematophagous, moth flies, *Batrachyla*, frogs, Chile, Patagonia

Introduction

Sycoracinae is a subfamily of Psychodidae with a world extant fauna currently comprised of 45 described species (Curler & Jacobson 2012; Santos *et al.* 2013). Extant Sycoracinae are widespread with species recorded from every continent except Antarctica and North America; however, about two thirds of all extant species have been described from the Palaearctic (12 species) and Neotropical (17 species) regions. Regardless of the limited sample on a global scale, morphological diversity within the subfamily, especially regarding the male and female genitalia, is greatest in the Neotropical region where species are currently classified in three genera: *Sycorax* Haliday *in* Curtis; *Parasycorax* Duckhouse and *Aposycorax* Duckhouse (Duckhouse 1972; Young 1979). Many Sycoracinae exhibit complex male genitalia, and differences in the body shape among genera and species are often significant (Curler, pers. obs.). Nonetheless, diagnoses and descriptions for the majority of species in this subfamily are brief and without comparison to relatives.

As with morphological data, natural history data are limited for the majority of sycoracine species. Larvae of most (all?) Palaearctic species are aquatic while those of one Australasian species were collected from a terrestrial, though permanently moist, habitat (Duckhouse 1972; Vaillant 1978). Females of three species, one each from the Palaearctic, Neotropical and Oriental regions, have been observed feeding on the blood of frogs (Desportes 1942; Bravo and Salazar-Valenzuela 2009; Curler, unpublished). One Palaearctic species, *Sycorax silacea* Haliday, has been incriminated as a vector of parasites among frogs (Desportes 1942). In contrast, some species of Australasian Sycoracinae were found to have undeveloped mouthparts and are, therefore, not hematophagous (Curler & Jacobson 2012).

Aposycorax is a genus proposed by Duckhouse (1972) to include a single unique species, *Sycorax chilensis* Tonnoir, 1929, from south Chile. Tonnoir's description of this species is based on three specimens and includes