



## Additional notes on biting midges from the subtropical forest of northeastern Argentina (Diptera: Ceratopogonidae)

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### Abstract

Adult males and pupae of *Culicoides guarani* Ronderos & Spinelli and *Parabezzia brasiliensis* Spinelli & Grogan are fully described and illustrated with a modern criterium from material recently collected in the vicinities of the city of Posadas in Misiones province, Argentina. Both species are compared with their most similar congeners. Besides, *Bezzia blantoni* Spinelli & Wirth and *B. brevicornis* (Kieffer) are firstly recorded from Misiones province.

**Key words:** *Culicoides guarani*, *Parabezzia brasiliensis*, male, pupa, taxonomy

### Resumen

Se describen e ilustran con un criterio moderno los adultos machos y las pupas de *Culicoides guarani* Ronderos & Spinelli y *Parabezzia brasiliensis* Spinelli & Grogan, sobre la base de material colectado recientemente en las cercanías de la ciudad de Posadas en la provincia de Misiones, Argentina. Ambas especies son comparadas con sus congéneres más similares. Además, *Bezzia blantoni* Spinelli & Wirth y *B. brevicornis* (Kieffer) son citadas por primera vez para la provincia de Misiones.

### Introduction

The Ceratopogonidae are commonly known as biting midges. Adult females of *Leptoconops* Skuse, *Culicoides* Latreille and *Forcipomyia* Meigen (only in the subgenus *Lasiohelea* Kieffer) are haematophagous on vertebrates and, in some instances, transmit harmful diseases (Borkent & Spinelli, 2007). On the other hand, this group of flies provides important services in a wide array of ecosystems, being some species important pollinators of such plants as cacao and rubber trees, and the larvae of many are important predators of other organisms in semiaquatic and aquatic habitats. The adults of most biting midges actually suck blood from other insects and may even be important vectors of viruses that kill caterpillars (Borkent *et al.*, 2009).

Borkent (2015), in his World catalogue, mentioned 6224 extant and 277 extinct valid species, grouped in 110 extant and 21 extinct genera. Many of these species are known only by the adults (especially females) and the majority of the descriptions of pupae are very old and/or incomplete

During a sampling program focused on the collection and study of biting midges recently carried out in the subtropical forest area of northeastern Argentina, pupae of four species of ceratopogonids were collected and posteriorly reared to adults. We are presenting here the first results of this program, describing for the first time the adult males and pupae of *Culicoides guarani* Ronderos & Spinelli and *Parabezzia brasiliensis* Spinelli & Grogan, and recording *Bezzia blantoni* Spinelli & Wirth and *B. brevicornis* (Kieffer) for the Argentinean Misiones province.

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