Title: Oviposition in the bird parasitic fly *Philornis torquans* (Nielsen, 1913) (Diptera: Muscidae) and eggs' adaptations to dry environments

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<ABS-HEAD>Abstract

<ABS-P>The larvae of Neotropical muscid genus *Philornis* (Meinert, 1980) are parasites of a wide range of bird species. For a long time *Philornis* reproductive biology was associated with larviposition due to the low number of empirical data and studies on the life cycle of these parasitic flies. We document oviposition of a subcutaneous species, *Philornis torquans* (Nielsen, 1913), for first time. We provide for the first time a complete morphological description of eggs with Scanning Electric Microscopy (SEM) images and highlight some adaptations to dry environments. We found that the respiratory structure (a kind of plastron) at the anterior pole is reduced in size. This suggests that *P. torquans* eggs could be adapted to birds' nests dry environment.
<KWD>Keywords: *Philornis torquans*; egg description; ultrastructure; oviposition.

<H1>1. Introduction

The genus *Philornis* (Meinert, 1890) contains 50 species, predominantly distributed in the Neotropics (Carvalho et al., 2005). An important characteristic of this muscid genus is that their larvae are parasites of a wide range of bird species (Löwenberg-Neto, 2008). *Philornis torquans* (Nielsen, 1913) is one of the four *Philornis* species that are considered valid for Argentina (Couri et al., 2009; Silvestri et al., 2011); and their larvae are subcutaneous blood feeders (Dudaniec and Kleindorfer, 2006). After penetrating into the host integument, the larvae become established between the dermis and the superficial muscles where undergo a period of development and growth (Texeira, 1999).
Philornis torquans was first observed by Nielsen (1911) in the Zoological Museum of Copenhagen, in samples collected from bird nests in Argentina by Mr. Mogensen. In this