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A new species of *Isospora* Schneider, 1881 (Apicomplexa: Eimeiriidae) from the grey-hooded attila *Attila rufus* Vieillot, 1819 (Passeriformes: Tyrannidae) on the Marambaia island, Brazil

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The New World tyrant-flycatcher (Tyrannidae) *Attila rufus* (Vieillot, 1819) is commonly known as grey-hooded attila or 'capitão-de-saíra' in Brazil (Sick 1997; CBRO 2014). This species has a wide distribution and their population trends appear to be stable; therefore, it is least concern according to IUCN (2015) criteria.

Although the Tyrannidae is one of the most biodiverse families in the Passeriformes, only two parasites of *Isospora* have been described from the family including: (1) *Isospora ferox* Berto, Luz, Flausino, Ferreira and Lopes, 2009 from the short-crested flycatcher *Myiarchus ferox* (Gmelin, 1789); and (2) *Isospora mionectesi* Berto, Flausino, Luz, Ferreira and Lopes, 2009 from the greyhooded flycatcher *Mionectes rufiventris* Cabanis, 1846 (Berto *et al.*, 2011). This study describes a new species of *Isospora* parasitizing a grey-hooded attila *A. rufus* on Marambaia Island, Rio de Janeiro State, Brazil.

Material and methods

Bird populations were sampled thirteen times on Marambaia Island (23°04'S, 43°53'W) using mist nets. Sampling occurred during periods between the years 2007 to 2014, including sampling related by Lopes *et al.* (2013). Throughout the entire period, only five *A. rufus* were captured. These birds were kept in individual boxes and feces collected immediately after defecation. After identification of the species, the bird was released and stool samples were placed in centrifuge tubes containing 2.5% potassium dichromate solution (K₂Cr₂O₇) 1:6 (v/v). Samples were sent to the Laboratório de Coccídios e Coccidioses, Universidade Federal Rural do Rio de Janeiro (UFRRJ). Samples were incubated at 23–28°C for 10 days or until ~70% of the oocysts were sporulated. Oocysts were recovered by flotation in Sheather's sugar solution (Specific gravity: 1.20) and examined microscopically using the technique described by Duszynski & Wilber (1997) and Berto *et al.* (2014). Morphological observations, line drawings, photomicrographs and measurements were made using an Olympus BX binocular microscope coupled to a digital camera Eurocam 5.0. Line drawings were edited using two software applications from CorelDRAW® (Corel Draw Graphics Suite, Version 11.0, Corel Corporation, Canada), specifically Corel DRAW and Corel PHOTO-PAINT. All measurements are in micrometres and are given as the range followed by the mean in parentheses. *Abbreviations*: total number of measurements [n], micropyle [M], oocyst residuum [OR], polar granule [PG], Stieda body [SB], substieda body [SSB], parastieda body [PSB], sporocyst residuum [SR], sporozoite [SZ], refractile body [SRB], nucleus [N].

Results

Five *A. rufus* were captured and examined between the years 2007 to 2014; however, only one captured in July 25, 2014, was positive for coccidia.