

Identification of *Isospora corruirae* (Apicomplexa: Eimeriidae) from the southern house wren *Troglodytes musculus* (Passeriformes: Troglodytidae) in the Itatiaia National Park, Brazil

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The southern house wren *Troglodytes musculus* Naumann, 1823 is a passerine of the family Troglodytidae. Passerines are often observed parasitized by coccidia; however, from *T. musculus* the first and only description was *Isospora corruirae* Lopes, Rodrigues, Silva, Berto, Luz, Ferreira, Lopes, 2016 from *T. musculus* in Marambaia Island, Rio de Janeiro, Brazil. In this context, the aim of this study was to examine the feces from *T. musculus* captured in the Itatiaia National Park in southeastern Brazil to determine the phenotype and genotype of their coccidian parasites. The birds were kept in individual boxes and feces collected immediately after defecation. After identification of the species, the bird was photographed and released and stool samples were placed in centrifuge tubes containing a potassium dichromate 2.5% solution at 1:6 (v/v). Field-collecting permits were issued to B.P. Berto (SISBIO/ICMBio: 49605-1; CEUA/UFRRJ/ICBS: 008/2015). Samples were carried to the Laboratório de Biologia de Coccídios, UFRRJ. Samples were incubated at room temperature for 10 days. Oocysts were isolated by flotation in Sheather's solution and examined microscopically. Morphological observations, photomicrographs and measurements were made using an optical microscope coupled to a digital camera. After the morphological identification of coccidian species, the oocysts identified in microscope slide were isolated in Ethanol 70% and sent to the Laboratório de Atividade Genotóxica de Plantas, UFRRJ, for molecular identification. Five *T. musculus* were captured and examined and two of them were positive for *I. corruirae*. Its oocysts are subspherical to ovoidal, $24.8 \times 21.9 \mu\text{m}$, with smooth, bilayered wall, $\sim 1.1 \mu\text{m}$ thick. Micropyle and oocyst residuum are absent, but small spherules and splinter-like granules are present in some oocysts. Sporocysts are ovoidal to piriform, $15.0 \times 10.3 \mu\text{m}$. The Stieda body is prominent and knob-like. Sub-Stieda body is rounded to trapezoidal. Sporocyst residuum is composed of scattered spherules of different sizes. Sporozoites are vermiform with posterior refractile body, nucleus and striations. The molecular identification has been performed through the amplification of part of mitochondrial cytochrome oxidase (COI) gene. For DNA extraction, the samples were subjected to four cycles of freeze/thaw to ensure efficient lysis of oocysts before being processed using Qiagen's DNeasy® Blood & Tissue extraction kit according to manufacturer's protocol. Amplification of COI locus has been carried out using a nested PCR. Of the six samples tested so far, three have amplified and await the sequencing result. Finally, in the current study *I. corruirae* was identified morphologically and is being molecularly characterized. The type-locality of *I. corruirae* is the Marambaia Island, which is distant about 100 km, including the distance of 10 km from the island to the mainland by the sea, of the Itatiaia National Park; therefore, the Itatiaia National Park is recorded as a new locality of parasitism, emphasizing the wide dispersion of this coccidian species in the southeastern Brazil.

Keywords: Coccidia, oocysts, morphological identification, molecular identification, Taxonomy, Ecology, Parque Nacional do Itatiaia