

## Gastrointestinal parasites in mammals of the Rio de Janeiro Zoological Garden: preliminary results

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Gastrointestinal parasites may determine diarrhea, dysentery or even death in captive mammals. These animals tend to be more susceptible to parasitic infections due to confinement and stress. In addition, the sanitary management practices performed may facilitate the transmission of these etiological agents. To increase the information about these etiological agents in captive animals in Brazil, the gastrointestinal parasites of the captive mammals of the Rio de Janeiro Zoo were investigated between June 2016 and February 2017. A total of 162 mammal's fecal samples were collected, of these 78 belonged to the Order Artiodactyla, 22 Carnivora and 62 Primates. Fecal samples were collected from the floor of the animal enclosures by the Zoo's handlers. The feces were processed by microscopic coproparasitological techniques such as direct examination, Faust et al., Sheather modified by Huber et al., Lutz and Ritchie modified by Young et al.. To increase the efficiency of the diagnosis part of the fecal samples were submitted the staining with hot safranin solution for search of coccidia oocysts and by immunoenzymatic assay for diagnosis of antigens of *Giardia duodenalis*, *Cryptosporidium* sp. and *Entamoeba histolytica/Entamoeba dispar* complex. The overall positivity for the parasitic structures investigated in the fecal samples of the animals was 113 (69.7%). Among the evolutionary forms detected by the microscopic techniques, in the artiodactyls the frequency of the strongyle eggs was 12/78 (15.3%), *Entamoeba* sp. 10/78 (12.8%), which were mainly evidenced in feces of *Cervus unicolor* and cysts and/or trophozoites of *Balantidium coli* 8/78 (10.2%), which were detected in all samples collected from *Pecari tacaju*. Eggs of helminths were found in carnivorous feces such as hookworm eggs and the cestode eggs of the Diphylobothriidae Family in fecal material of *Leopardus pardalis* 1/22 (4.5%), *Toxascaris leonina* 1/22 (4.5%) in the feces of *Panthera leo* and eggs of Acanthocephalidae Family in feces of *Mungos mungo* 2 (9%). In the fecal material of the non-human primates, the frequency of nematode larvae 16/62 (25.8%) and eggs with morphology similar to the Rhabditoidea Superfamily 13/62 (20.9%) was detected in several species of New World primates, Old World primates and Great Primates. Eggs of *Trichuris trichiura* 11/62 (17.7%) were detected only in feces of primates of the Cercopithecidae Family. The intestinal protozoa *Balantidium coli* 6/62 (9.6%) and *Entamoeba* sp. 10/62 (16.1%) were diagnosed only in primate samples of the Cercopithecidae Family, with emphasis on animals of the *Macaca* sp., and Hominidae Family. In samples from non-human primates, oocysts with similar morphology to *Cryptosporidium* sp. 4/62 (6.4%) also were detected. Until the moment of the samples already processed, in the research of antigens, the complex *Entamoeba histolytica/E. dispar* was the most evidenced being detected in the three orders of animals studied, followed by *Cryptosporidium* sp. and by *Giardia duodenalis* that have been detected in feces of mammals of the Order Carnivora and Artiodactyla. It is suggested that the frequency of parasites may be associated with the species of the animal, the sanitary management, food and/or contaminated water and to cases of pseudoparasitism.

**Keywords:** Wild animals, Captive animals; Parasite, Helminths, Protozoa.