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Dipylidium caninum (Cyclophyllidea, Dipylidiidae) in a Wild Carnivore from Brazil

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ABSTRACT: We report *Dipylidium caninum* for the first time in a wild carnivore in Brazil, the crab-eating fox (*Cerdocyon thous*). Presence of the cestode could be the consequence of anthropogenic expansion into natural habitats of this host, as this parasite has only previously been reported in domestic hosts in Brazil.

Dipylidium caninum (Linnaeus, 1758; Cyclophyllidea, Dipylidiidae) is a cestode of domestic dogs (*Canis lupus familiaris*) and cats (*Felis catus*), some wild carnivores, and occasionally humans around the world (Schmidt and Roberts, 2000). Two extensive reports on cestodes in wild carnivores in Brazil (Travassos, 1965; Vieira et al., 2008) do not include this species, which has only been found in domestic dogs and cats (Travassos, 1965; Dantas-Torres, 2008). A similar pattern is seen in other South American countries, as this cestode is reported only in the pampas fox (*Lycalopex gymnocercus*; Carnivora, Canidae) in Argentina (Lucherini and Vidal, 2008). We provide the first report of *D. caninum* in a wild crab-eating fox, *Cerdocyon thous* (Carnivora, Canidae), in Brazil.

Dead crab-eating foxes from the municipality of Juiz de Fora (21°41'20"S, 43°20'40"W), State of Minas Gerais, Brazil, were collected by the Screening Center for Wild Animals in Juiz de Fora (CETAS/JF), which is maintained by the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), and sent to the Zoology Department of the Universidade Federal de Juiz de Fora (UFJF) between 2007 and 2009.

Six crab-eating foxes were necropsied. Cestodes were fixed in alcohol-formaldehyde-acetic acid (AFA; 70% ethanol, 93 parts; 37% formalin, 5 parts; glacial acetic acid, 2 parts) for 48 hr, stained with Mayer's carmalum (Humason, 1979) and mounted in Canada balsam for examination as whole mounts. Identification of the cestode was based on Witenberg (1932) and Khalil et al. (1994). The intensity of infection was four adult parasites in the small intestine of one adult female *C. thous*. Voucher specimens of *D. caninum* were deposited in the Helminthological Collection of Oswaldo Cruz Institute (CHIOC No. 37581).

Several species of cestodes have been reported in wild carnivores in Brazil (Travassos, 1965; Vieira et al., 2008, Pinto et al., 2009, Muniz-Pereira et al., 2009), and the cestodes in crab-eating fox in Brazil include: *Mesocestoides michaelsoni* Loemberg, 1896 (Cyclophyllidea, Mesocestoididae), *Spirometra mansonii* (Cobbold, 1883) (Pseudophyllidea, Diphylobothriidae; = *Diphylobothrium mansonii*) and *Spirometra mansonoides* Muller, 1935 (= *Diphylobothrium mansonoides*; Vieira et al., 2008). The crab-eating fox is the host species with the largest number of records of helminthes among wild carnivores in Brazil (Vieira et al., 2008).

Infection by *D. caninum* is generally asymptomatic. However, some infected domestic dogs may drag their rump across the floor as a consequence of the perianal pruritus caused by the movement of gravid

proglottids in the anus of the host (Dantas-Torres, 2008). In domestic cats, severe infection by *D. caninum* may lead to seizures and epilepsy (Bowman et al., 2002).

The crab-eating fox is found throughout Brazil, with the exception of the Amazon region. It is typically a generalist species with opportunistic habits, occupying a large variety of habitats. The diet is composed of small invertebrates, small vertebrates and fruit, but this fox will occasionally feed on carrion and garbage (Courtenay and Maffei, 2004).

Habitat destruction is the greatest threat to biological diversity worldwide. The fragmentation of forests is directly related to anthropogenic effects stemming from agricultural expansion (Primack and Rodrigues, 2001; Michalski and Peres, 2005). Therefore, this first record of parasitism by *D. caninum* in *C. thous* in Brazil may be the result of anthropogenic expansion into the natural habitats of this host.

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