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Helminths from a stranded manatee in the Dominican Republic

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Abstract

Endangered West Indian manatees (*Trichechus manatus*) are known to be parasitized by a number of helminths and ectoparasites. Records of parasitic associations exist for Florida, Mexico, Guyana, Brazil, Cuba and recently for Puerto Rico. Parasites of manatees in other Caribbean areas have not been documented, particularly from Hispaniola. We report on the occurrence of a species of nematode and of two trematodes from a 238-cm male manatee from Portillo (19°20′N, 69°35′W), Las Terrenas, in the Dominican Republic. Three species of helminths were collected, including the opisthotrematid *Cochleotrema cochleotrema*, the ascarid *Heterocheilus tunicatus*, and the paramphistomid trematode *Chiorchis fabaceus*. The documentation of these helminths constitutes the first record of these parasites and host relationships for Hispaniola and the second for the northeastern Caribbean.

Keywords: Sirenia; *Trichechus manatus*; Endoparasites; Nematodes; Trematodes; Caribbean

West Indian manatees (*Trichechus manatus* Linnaeus, 1758) are highly endangered in Hispaniola, and are distributed along the northern and southwestern portions of the island

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(Belitsky and Belitsky, 1980; Rathbun et al., 1985; Lefebvre et al., 1989). If preventive measures are not rapidly taken, including those of scientific research and pro-active management and enforcement, this species may soon be extinct in both Haiti and the Dominican Republic. Thus, opportunities to examine these animals for parasites as part of basic life history research of the species are extremely limited. The species is known in other areas to be parasitized by a number of helminths and ectoparasites. Records of parasitic associations exist for Florida (USA), Mexico, Guayana, Brazil (Beck and Forrester, 1988; Dailey et al., 1988; Upton et al., 1989), Cuba (Coy-Otero, 1989; Ortíz et al., 1992) and recently for Puerto Rico (Mignucci-Giannoni et al., in press). Parasites of manatees in Hispaniola have not been documented. We report on the occurrence of a species of nematode and of two trematodes in a manatee from the Dominican Republic.

On 10 June 1995, a subadult male manatee stranded alive in the tourist area of Portillo (19°20′N, 69°35′W), Las Terrenas, on the north coast of the Dominican Republic. The manatee was transported to Santo Domingo and transferred for rehabilitation to the Acuario Nacional. A preliminary physical evaluation of the manatee revealed that the animal was weak, slightly dehydrated, highly emaciated, and exhibited breathing difficulties. The animal measured 238 cm in length and weighed 192 kg. Notwithstanding medical care, the manatee died on the morning of 12 June. The carcass was necropsied following the protocol in Bonde et al. (1983) and the gastrointestinal tract, major organs, and nares, were examined visually for metazoan endoparasites. The skin was also searched for external parasites and commensal associates. Specimens of helminths collected were fixed initially in 10% buffered formalin and then stored in glass vials containing 70% ethanol. Tissues from major organs were collected for histopathology, preserved in 10% buffered formalin for 24 h at a fluid to tissue ratio of 10 : 1, and transferred to 70% ethanol for storage. They were later prepared in 5 μm paraffin sections stained in hematoxylin and eosin, giemsa, gram stain and periodic acid-Schiff.

The necropsy and later histopathological studies indicated the cause of death as pulmonary edema and emphysema, related to congestive cardiac insufficiency, and fibrilopurulent bronchopneumonia. Three species of helminths were collected in the manatee, but no ectoparasites or commensals were found. Eight specimens of the opisthotrematid *Cochleotrema cochleotrema* were collected from the nares and trachea. During internal examination of the stomach, specimens of the ascarid nematode *Heterocheilus tunicatus* Diesing, 1839 were collected associated with its lumen and the outer portions of the ingesta. Examination of the intestinal tract revealed the presence of the paramphistomid trematode *Chiorchis fabaceus* (Diesing, 1838). More than 3000 of these flukes were present in the colon, but this degree of infection appears normal in otherwise healthy manatees examined in Florida (Beck and Forrester, 1988) and Puerto Rico (Mignucci-Giannoni et al., in press). Representative specimens of each helminth species were deposited in the US National Parasite Collection (Beltsville, Maryland 20705; Accession No. USNPC 878170.01-03).

These three species of helminths are known to parasitize manatees, especially in Florida, Mexico, Guyana, Brazil (Beck and Forrester, 1988), and Puerto Rico (Mignucci-Giannoni et al., in press). Coy-Otero (1989) described a new species of paramphistomid trematode from the intestines of a manatee from Ciénaga de Zapata in Cuba, as *Chiorchis groschafti* Coy-Otero, 1989. Future post mortem studies of manatees from the Dominican

Republic, should emphasize documentation of the prevalence and intensity of these helminths and other species of parasites reported for the manatee elsewhere (see Beck and Forrester, 1988; Dailey et al., 1988; Upton et al., 1989), using fine-mesh screen sifting, flotation and sedimentation of ingesta and digesta from carcasses. The documentation of the three helminths in the Dominican manatee constitutes the first record of these parasites and host relationships for Hispaniola and the second for the northeastern Caribbean.

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