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Research Note

Intestinal Helminths of Capybara (*Hydrochaeris hydrochaeris*) from Bolivia

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ABSTRACT: During May to September (dry season) 1993, a total of 8 species of helminths were collected from 41, wild-caught Capybara (*Hydrochaeris hydrochaeris*) in 9 localities in eastern Bolivia. These include 3 cestodes (*Monoecocestus hagmanni,* Janicki, 1904; *M. macrobursatum,* Rego, 1961; *M. hydrochoeri,* Baylis, 1928), 3 nematodes (*Habronema clarki,* Foster and Chitwood, 1937; *Viannella hydrochoeri,* Travassos, 1920; *Protozoophaga obesa,* Diesing, 1851), and 2 trematodes (*Taxorchis schistocotyle,* Fischoeder, 1901; *Hippocrepis hippocrepis,* Diesing, 1850). This report represents new localities for all helminth species recovered.

KEY WORDS: Capybara, *Hydrochaeris hydrochaeris,* helminth parasites, Bolivia, new locality.

The capybara, *Hydrochaeris hydrochaeris,* is the largest living rodent in the world and has existed in South America (except Chile) since the upper Pliocene (Patterson and Woods, 1982). Capybara are semiaquatic herbivores and rarely are found feeding more than 500 m from water (Azcárate, 1980). They occupy a wide array of habitats, from forested riverside to open savannas, and brackish mangrove swamps (Mones and Ojasti, 1986). In this study, all animals were taken east of the Andes, from the northern city of Magdalena to Palca del Tuna in southern Bolivia.

Four recent surveys dealing with the intestinal parasites of the capybara currently exist. Rego (1961) wrote a revision of the cestode genus *Monoecocestus* from existing material at the Oswaldo Cruz Helminthological Institute collection. He revised 2 species (*M. hagmanni, M. hydrochoeri*) and described 1 new species (*M. macrobursatum*) during this study. Mayaudon (1980) looked at 18 samples from the capybara, 7 from those he necropsied and 11 from previously collected material sent to the University of Venezuela (Maracay) parasitology laboratory. He lists 7 parasites (2 trematodes, 1 cestode, 4 nematodes) and their prevalence from each host. In 1983, Mones and Martinez summarized the existing bibliographical information on capybara parasites, and a total of 54 endoparasites and 30 ectoparasites belonging to 15 families were reported. A report by Draghi (1992) for the Argentinean experimental farm lists a total of 7 species of helminths (1 cestode, 3 trematodes, 3 nematodes) recovered in 3 areas of northeastern Argentina (San Roque, Mercedes, San Martin).

The present study examined 41 *H. hydrochaeris* from 9 localities in eastern Bolivia (Department of Beni, Santa Cruz and Chuquisaca). All animals were necropsied in the field and the entire gastrointestinal tract removed from esophagus to anus. Each section (stomach, small intestine, large intestine, cecum, colon) was secured by ligature and placed separately in buckets and slit lengthwise for analysis. After opening, each section was washed and all visible worms collected. Nematodes were fixed in glacial acetic acid, stored in 70% EtOH and cleared in lactophenol. Cestodes and trematodes were relaxed in tap water, fixed in 10% formalin, stained in Semichon's acetic carmine, and mounted in Canada balsam.

Two museum skins and skeletons of *H. hydrochaeris* were donated to the Natural History Museum "Noel Kempff Mercado" in Santa Cruz, Bolivia, and voucher specimens of all helminths were deposited in the U.S. National Parasite Collection, USDA, ARS, Biosystematic Parasitology Laboratory, Beltsville, Maryland (Table 1).

Eight species of helminths were found in the present study (Table 1). Nematodes having the highest to lowest prevalence ranged from 100% in *Protozoophaga obesa* to 2% in *Habronema clarki* and *Viannella hydrochoeris.*

Only 1 genus of cestode (*Monoecocestus*) was found during this study, of which *M. macrobursatum* was the second most common parasite recovered, with *M. hagmanni* and *M. hydrochoeri* being of equal prevalence. The trematode *Hippocrepis hippocrepis* was the third most prevalent worm found, while *Taxorchis schistocotyle*

Table 1. Prevalence of infection with helminths in the Capybara from Bolivia.

Parasite	Prevalence	Range of worms/host	$\bar{x}$	USNM Helm. Coll. No.
Cestoda				
Monoecocestus hagmanni Janicki, 1904	5/41 (12%)	1–15	10	83958
M. hydrochoeri Baylis, 1928	5/41 (12%)	1–9	5	83962
M. macrobursatum Rego, 1961	14/41 (34%)	1–30	20	83960 and 83961
Nematoda				
Habronema clarki Foster and Clitwood, 1937	1/41 (2%)	—	10	83956
Viannella hydrochoeri Travassos, 1920	1/41 (2%)	—	5	83954
Protozoophaga obesa Diesing, 1951	41/41 (100%)	Massive*		83955
Trematoda				
Taxorchis schistocotyle Fischoeder, 1901	5/41 (12%)	1–20	10	83959
Hippocrepis hippocrepis Diesing, 1850	8/41 (20%)	1–15	10	83957

* Too numerous to count.

equaled *M. hydrochoeri* and *M. hagmanni* in percentage infected. The range of worms per host varied from 1,000+ in *P. obesa* to a single worm for the cestodes and trematodes. In *H. clarki* and *V. hydrochoeri,* only single infections were found, consisting of 10 and 5 worms, respectively.

Although more than 80 parasites have been previously reported from the South America capybara (Mones and Martinez, 1983), this is the first report from Bolivia. *Protozoophaga obesa* has been previously reported from Argentina as infecting the stomach (Draghi, 1992). This was not found as a site of infection during the present study. We found *P. obesa* free in the lumen of the cecum while always attached to the mucosal wall in the intestines. Draghi (1992) also reported the cestode *M. macrobursatum* as occurring in the unusual site of the stomach; our study did not confirm this finding as all cestodes were found only in the intestine.

The only other report on prevalence of intestinal helminths from the capybara was by Mayaudon (1980). He examined 7 animals from Venezuela and found only 4 of the parasites reported in this study (*V. hydrochaeri,* 42.8%; *P. obesa,* 100%; *H. hippocrepis,* 42.8%; *T. schistocotyle,* 100%). In all cases he found heavier infections (except *P. obesa*) than were found in Bolivian populations. He also reported finding the cestode *Monoecocestus decrescens* (Diesing, 1876) Fuhrmann, 1932, in 5 of 7 animals examined. This parasite was not found in our Bolivian study. It must be stated that the Mayaudon study was conducted on a site where capybara are raised for propagation purposes. In contrast, all 41 animals in this study were taken in the wild.

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Literature Cited

Azcárate, T. D. 1980. Sociobiología y Manejo de Capibara (*Hydrochoerus hydrochaeris*). Doñana Acta Vertebrata (Sevilla, España) 7:13–227.

Draghi, M. G. 1992. Importancia del Carpincho (*Hydrochoerus hydrochaeris*) como reservorio de enfermedades de interés económico y zoonótico. Estación Experimental Agropecuaria, Mercedes, Corrientes, Argentina, pp. 1–22.

Mones, A., and S. Martinez. 1983. Estudios sobre la Familia Hydrochoeridae (Rodentia), XIII. Parasitosis y patología de *Hydrochoerus* Brisson, 1762. Revista de la Facultad de Humanidades y Ciencias (Ciencias Biológicas) 1:297–329.

———, **and J. Ojasti.** 1986. *Hydrochoerus hydrochaeris.* Mammalian Species No. 264, 1–7. American Society of Mammalogists, Lawrence, KS.

Mayaudon Tarbes, H. 1980. Sobre una colección de helmintos del chigüire (*Hydrochaeris hydrochoeris*) de Venezuela. Revista Facultad de Ciencias Veterinarias U.C.V., Vol. 28, Nos. 1–8, 1979–1980.

Patterson, B., and A. E. Woods. 1982. Rodents from the Deseadon Oligocene of Bolivia and the relationships of the Caviomorpha. Bulletin Museum Comparative Zoology 149:371–543.

Rego, A. A. 1961. Revisão do gênero *Monoecocestus* Beddard, 1914 (Cestoda, Anoplocephalidae). Memorias do Instituto Oswaldo Cruz 59:325–354.