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Dioctophymosis in the Little Grison (*Galictis cuja*)

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ABSTRACT: Two cases of dioctophymosis in wild little grisons (*Galictis cuja*) were found in Paraná State (southern Brazil). One female host was infected with eight nematodes and a male harbored a single parasite. This represents the first report of the giant kidney nematode (*Dioctophyme renale*) in the little grison.

Key words: *Dioctophyme renale*, *Galictis cuja*, giant kidney worm, little grison, new host record, case reports.

The cosmopolitan nematode *Dioctophyme renale* is a common parasite in carnivores, especially in the domestic dog (e.g., Neves and Morais, 1983) it also has been observed in man (Levine, 1968; Osborne et al., 1969; Olsen, 1973; Amato et al., 1976). Several examples of dioctophymosis are recorded from wild mammals of North America, Europe and Asia, but very little is known about this helminth infection in neotropics. The few examples of dioctophymosis reported from wild mammals in Brazil are from *Chrysocyon brachyurus* by Giovannoni and Molfi (1960), Carneiro et al. (1974) and Diesing (1850, *in* Rocha et al., 1965), *Speothos venaticus* by Proença (1935), *Nasua nasua* by Lutz (1924, *in* Giovannoni and Molfi, 1960) and *Lutra longicaudis* by Molin (1860, *in* Giovannoni and Molfi, 1960). Although there are records of 11 specimens of *Galictis vittata* parasitized by *D. renale* reported by Lutz (1901, 1924 and 1925, *in* Giovannoni and Molfi, 1960), Proença (1935), and Diesing (1850, *in* Rocha et al., 1965), these references need confirmation, as the involved specimens were not referred to any zoological collection and this species is easily confused with a similar species, *Galictis cuja*. In addition, it is noteworthy that *G. vittata* seems to be a rather uncommon grison, represented in the Brazilian museums by less than a dozen skins. However, in the last 5 yr, it was possible to confirm the occurrence of *D. renale* in two specimens of *G. cuja*, now housed in the mammal collection of Museu de História Natural "Capão da Imbuia" (Curitiba, Paraná, Brazil).

The first host, an edamatous adult female of *G. cuja* (MHNCI 1102) from Paranaguá (25°39'S, 48°33'W), Paraná State (Southern Brazil), exhibited ascites; necropsy revealed infection with four large females (225 to 410 mm long and 48 to 88 mm diameter) of *D. renale* in the abdominal cavity. In the right kidney, which was reduced to a fibrous capsule with a central opening, a fifth female (total length 350 mm and diameter 84 mm) and three males (110 to 250 mm long and 30 to 53 mm diameter) nematodes were found.

The second host, an adult male of *G. cuja* (MHNCI 1266) from Quatro Barras (25°23'S, 49°05'W), Paraná State (Southern Brazil) harbored a single female of *D. renale* (total length 362 mm and diameter 56 mm) in the right kidney, which was quite fibrous and bloody. The specimens obtained from both hosts were deposited in the parasitological collection of Museu de História Natural "Capão da Imbuia" (MHNCI lots 48 and 52).

The life cycle of *D. renale* is quite complex, incompletely known and seems to include annelids as primary intermediate hosts, freshwater mollusks, crustaceans or fishes as second intermediate hosts and carnivores as definitive hosts (Dacorso Filho et al., 1954; Olsen, 1973; Celerin and McMullen, 1981; Coppo and Brem, 1983). Nevertheless, some authors believe that frogs also could be considered intermediate hosts (Jorde, 1980). However, in experiments performed by Karmanova (1960) and Mace and Anderson (1975) the larvae of *D. renale* become infective even

in the annelid intermediate host. According to this, the second intermediate host would be merely a reservoir to bring the parasite directly to the final host (Olsen, 1973). It should be noted that mollusks, crustaceans or fishes are not recorded as prey of grisons in Brazil, but *G. vittata* will consume frogs in captivity (Kaufmann and Kaufmann, 1965). Unfortunately, the diet of the genus *Galictis* is too poorly known to clarify this question.

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LITERATURE CITED

AMATO, J. F. R., L. GRISI, AND V. L. M. ROSA. 1976. Reunião dos casos brasileiros de dioctofimose canina, com registro do caso de mais alta intensidade de infecção por *Dioctophyme renale* (Goeze, 1782). Revista Brasileira de Biologia 36: 117–122.

CARNEIRO, J. R., E. PEREIRA, AND L. R. PUGLIA. 1974. Nota sobre a ocorrência de *Dioctophyme renale* (Goeze, 1782) em Goiânia. Revista de Patologia Tropical 3: 215–216.

CELERIN, A. J., AND M. E. MCMULLEN. 1981. Giant kidney worm in a dog. Journal of the American Veterinary Medical Association 179: 245–246.

COPPO, J. A., AND J. J. BREM. 1983. Canine dioctophymosis in the north east of Argentina. Revista do Instituto de Medicina Tropical de São Paulo 25: 259–262.

DACORSO FILHO, P., J. LANGENEGGER, AND J. DÖBEREINER. 1954. Sobre a infestação e lesões anátomo-patológicas produzidas por *Dioctophyme renale* (Goeze, 1782) em cães. Veterinária 8: 35–54.

GIOVANNONI, M., AND A. MOLFI. 1960. O *Dioctophyme renale* (Goeze, 1782) no Brasil. Anais da Faculdade de Medicina da Universidade Federal do Paraná 3: 99–104.

JORDE, D. G. 1980. Occurrence of *Dioctophyme renale* (Goeze, 1782) in mink from North Dakota. Journal of Wildlife Diseases 16: 381–382.

KARMANOVA, E. M. 1960. The life-cycle of the nematode *Dioctophyme renale* (Goeze, 1782), parasitic in the kidneys of carnivorous mammals and man. Dokladi Akademii Nauk SSSR 132: 1219–1220.

KAUFMANN, J. H., AND A. KAUFMANN. 1965. Observations of the behavior of tayras and grisons. Zeitschrift Saugetierk 30: 146–155.

LEVINE, N. D. 1968. Nematode parasites of domestic animals and of man. Burgess Publishing Company, Minneapolis, Minnesota, 600 pp.

MACE, T. E., AND R. C. ANDERSON. 1975. Development of the giant kidney worm, *Dioctophyme renale* (Goeze, 1782) (Nematoda: Dioctophymatoidea). Canadian Journal of Zoology 53: 1552–1568.

NEVES, D. S., AND A. N. MORAIS. 1983. Ocorrência de *Dioctophyme renale* (Goeze, 1782) em cães da região de Lages, Estado de Santa Catarina. Arquivo Brasileiro de Medicina Veterinária e Zootecnia 35: 665–673.

OLSEN, O. W. 1973. Animal parasites. Their life cycle and ecology 3rd ed. University Park Press, Baltimore, Maryland, 562 pp.

OSBORNE, C. A., J. B. STEVENS, G. F. HANLON, E. ROSIN, AND W. A. BEMRICK. 1969. *Dioctophyme renale* in the dog. Journal of the American Veterinary Medical Association 155: 605–620.

PROENÇA, C. 1935. Sobre dois casos de *Dioctophyme renale* em cão no Rio de Janeiro. Boletim Veterinário do Exército 2: 50–51.

ROCHA, U. F., R. G. SERRA, AND R. GRECHI. 1965. Parasitismo por *Dioctophyme renale* (Goeze, 1782) em "preguiça," *Choloepus didactylus* Linnaeus, 1758. Revista da Faculdade de Farmácia e Bioquímica de São Paulo 3: 325–334.

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