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An endemic *Taenia* from South America: validation of *T. talicei* Dollfus, 1960 (Cestoda: Taeniidae) with characterization of metacestodes and adults

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Abstract

Taenia talicei is redescribed based on new data from polycephalic, fimbriocercus and cysticercus metacestodes found in *Ctenomys* spp. (Rodentia: Ctenomyidae) from Argentina. Strobilate adult specimens, derived from experimental infections in domestic dogs, are described for the first time. Identity of the adult and metacestodes stages is based on the number of rostellar hooks (44–50 hooks in 2 rows), their dimensions (large hooks= 232–242; small= 150–187) and shape. *Taenia talicei* is distinguished from those species that occur naturally in Neotropical Felidae and from those cosmopolitan species that circulate in synanthropic cycles with rodents (or lagomorphs) and domestic hosts such as cats and dogs in South America based on the structure of the metacestode, dimensions and numbers of rostellar hooks and a suite of specific characters of the genital system in strobilate adults. This species is the first that can be considered endemic to South America. Origins of an endemic *Taenia* species or taeniid assemblages in South America would have relationships to either North American or Eurasian placental carnivores. In these instances, the expansion of *Taenia* may have resulted from geographic colonization of South America, radiation in both felids (and canids), and host switching by tapeworms to caviomorphs, prior to the emergence of the Panamanian Isthmus. *Taenia talicei* is capable of development in domestic dogs, and metacestodes in species of *Ctenomys* were found in urban or semi-urban environments. These factors may establish a role for synanthropic cycles linked to definitive hosts including dogs and cats as a route for exposure of humans to infection by this taeniid.

Key words: South American rodent, *Ctenomys*, cestodes, larval forms, taeniid tapeworms

Introduction

Taeniids (Cestoda: Cyclophyllidea) are characteristic parasites of carnivores, and are unique among the tapeworms in having 2 obligate mammalian hosts linked in a predator-prey association involved in transmission. Species of the genus *Taenia* Linnaeus, 1758 are geographically widespread, and inhabit all continents except Australia and Antarctica (Hoberg 2002). The genus is relatively large, and most of the approximately 42 species (Loos-Frank 2000; Hoberg 2006) have been described based on both strobilate adults and metacestodes; 7 species are based only on adults and 3, *T. talicei* Dollfus, 1960, *Taenia saigoni* Le-Van-Hoa, 1964, *Taenia kotlani* Murai, Gubanyi & Sugar, 1993 are based only on metacestodes. *T. talicei* was described based on two metacestodes from the peritoneal cavity of *Ctenomys torquatus* Lichtenstein (Rodentia, Ctenomyidae) from Uruguay (Dollfus1960). This species, which is the focus of the current study, remained undetected following its original description and was omitted from major revisions of genus (e.g., Abuladze 1964; Verster 1969; Loss-Frank 2000).

Ctenomyids, commonly named tuco-tucos, are the most speciose of the subterranean rodents of South America (approximately 60 species) and are widely distributed in a wide variety of habitats (Reig *et al*. 1990). At present, only three records of infection by taeniid metacestodes have been documented for these fossorial rodents; one corresponding to an unidentified species in *Ctenomys peruanus* Sanborn et Pearson from Peru

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