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Ectoparasitic Acari Found on Golden Lion Tamarins (*Leontopithecus rosalia rosalia*) from Brazil

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ABSTRACT: Anesthetized golden lion tamarins (*Leontopithecus rosalia rosalia*), a highly endangered species, were examined for ectoparasites by brushing the fur and swabbing the ears. Ectoparasites recovered from the fur included four species of immature ticks (*Amblyomma* spp.), three species of chiggers (*Euschoengastia* sp., *Microtrombicula brennani* and *Speleocola tamarina*), and one species of follicular mite (*Rhyncoptes anastosi*). Ectoparasites do not seem to be of particular significance to the health of the golden lion tamarin; this may in part result from grooming.

Key words: Golden lion tamarins, *Leontopithecus rosalia rosalia*, ticks, chiggers, follicular mites, endangered species, survey.

The lion tamarins (*Leontopithecus rosalia*) are one of the world's most endangered mammals, with only a few hundred individuals remaining in the wild (Coimbra-Filho and Mittermeier, 1977). During studies on the behavioral ecology and status of this species by J. M. Dietz (see Kleiman et al., 1986), animals were examined for ectoparasites and a number of immature ticks and a few mites were found. This note presents information on ectoparasites found in the fur of golden lion tamarins (*L. rosalia rosalia*) from Poço das Antas Biological Reserve, 12 km NE of Silva Jardim, Rio de Janeiro State, Brazil (22°30′ to 22°33′S, 42°15′ to 42°19′W). The animals were examined from April 1984 to August 1985.

Ninety tamarins were anesthetized with Vetalar (ketamine hydrochloride, Parke-Davis, 201 Tabor Road, Morris Plains, New Jersey 07950, USA). Cotton swabs were used to swab their ears, and their fur was brushed from nose to tail and back over a pan. A 5× hand lens was used to locate additional ectoparasites in the fur. Alcohol was used to rinse the brushings from the pan and to initially preserve all arthropods. Mites were cleared and stained in Nesbitt's solution and mounted in Hoyer's medium (see Krantz, 1978); the cover slips were ringed with euparal (Carolina Biological Supply Co., Burlington, North Carolina 27215, USA). Ticks were permanently stored in 70% ethanol.

The golden lion tamarins were relatively free of ectoparasites. Their white skin, golden fur and lack of underfur allowed easy examination and ectoparasites were easily seen. Seeds of several plant species were found in the fur, and a number of flying nonparasitic insects occurred in several of the preserved samples. The latter apparently flew directly into the collecting pans when the hosts were being examined at night under the gas lamps; none were seen in the fur during processing.

Ticks were the most common ectoparasites (Table 1). All were immature *Amblyomma* spp. and all were larvae except for three nymphs. Three species (A, B and D) were represented on the basis of nymphal morphology and most of the larvae could be associated with species A. Four larvae listed as species C could not be placed with any of the nymphs and 11 larvae listed as species D may belong with the nymph of species B. The genus *Amblyomma* is widespread in South America occurring on a variety of hosts. However, it has been collected infrequently from primates and this is the first report from tamarins. About 25 species of the genus *Amblyomma* have been reported from Brazil (Robinson, 1926; Jones et al., 1972). Very few species have had the immature stages described and associated with the adults. Consequently, we could not further identify these specimens.

Only 27 parasitic mites of four species

TABLE 1. Ectoparasites found on 90 golden lion tamarins from Poço das Antas Biological Reserve, Rio de Janeiro State, Brazil.

Ectoparasite	Prevalence		Intensity		
	%	*n*	Mean	*n*	Range
Acari					
Ixodidae					
Amblyomma sp. A	21	19	6.9	131	1–43
Amblyomma sp. B	1	1	1.0	1	1
Amblyomma sp. C	3	3	1.3	4	1–2
Amblyomma sp. D	3	3	4.0	12	1–10
Trombiculidae					
Euschoengastia sp.	1	1	1.0	1	1
Microtrombicula brennani	1	1	14.0	14	14
Speleocola tamarina	2	2	2.5	5	1–4
Rhyncoptidae					
Rhyncoptes anastosi	3	3	2.3	7	1–3

were found (Table 1). Twenty of these were chiggers representing three different species, all of which were undescribed at the time of collection. *Microtrombicula brennani* and *Speleocola tamarina* have since been described as new by Goff et al. (1986, 1987). In the original descriptions the type data for these two species was partly in error and lacked geographical coordinates. It should read as presented above in the present study. The remaining mites, *Rhyncoptes anastosi*, were of a species that lives at the bases of hair follicles. It was originally described from *Leontocebus* (=*Leontopithecus*) *rosalia* preserved in alcohol in the Institut Royal des Sciences Naturelles de Belgique (Brussels, Belgium; Fain, 1962). The origin of the host was unknown. Later Fain (1965) reported the same species from two other monkeys from South America, *Oedipomidas* (=*Saguinus*) *oedipus* and *Tamarinus* (=*Saguinus*) sp., which died in Antwerp (zoo?). Ours are the first records of this mite collected from hosts in their natural habitat.

Ectoparasites do not seem to have an important role in the health of golden lion tamarins and they appear to be free of larger ectoparasites such as adult ticks, gamasid mites and fleas. Grooming is considered a major cause of ectoparasite mortality among mammals and mutual grooming is well known among primates (Marshall, 1981). It may play a significant role in the lack of larger ectoparasites on tamarins. The only ectoparasites found in any numbers were several species of immature ticks of the genus *Amblyomma*. Immature members of this genus frequently occur on different hosts than the adults. Recent extensive tick surveys in Panama (Fairchild et al., 1966) and Venezuela (Jones et al., 1972) disclosed very few ticks on primates (excluding man) and almost always they were immature species of *Amblyomma*. Fairchild et al. (1966) never found ticks on wild primates in Panama; all records were from captive animals.

Chiggers likewise have been infrequently collected from primates and usually have been species with broad host ranges. The species listed here were described as new and consequently very little is known about their host relationships. The follicle mite was the only ectoparasite that previously had been reported from tamarins. There are only a few records from three different hosts in the family Callithricidae. The

species is probably restricted to members of this New World family of primates in their natural habitat.

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