

**AMBLYOMMA NODOSUM (ACARI: IXODIDAE) INFESTING COLLARED ANTEATER
(TAMANDUA TETRADACTYLA, LINNAEUS, 1758) IN URUPEMA, SANTA CATARINA,
BRAZIL**

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RESUMO

Registra-se, pela primeira vez, a ocorrência de carrapatos Amblyomma nodosum em Tamanduá tetradactyla no município de Urupema, na região do Planalto Serrano de Santa Catarina, Brasil.

Palavras-chave: Amblyomma nodosum, carrapato, tamanduá-mirim, Brasil

ABSTRACT

The occurrence of Amblyomma nodosum ticks in Tamandua tetradactyla is recorded for the first time in Urupema, in the Serrano Plateau of the State of Santa Catarina, Brazil.

Key words: Amblyomma nodosum, tick, collared anteater, Brazil

Collared anteater (*Tamandua tetradactyla*, Linnaeus, 1758) is a mammal of the *Myrmecophagidae* family and *Xenarthra* order found in several Brazilian biomes, eastern part of the Andes in Venezuela, in the northern region of Argentina, and in Colombia, Peru, Ecuador, Bolivia and Paraguay (GUIMARÃES et al., 2001). This species is currently endangered because of predatory human action, habitat loss, wildfires that destroy their sources of food, road kills in roads that cross their natural habitat, and domestic dog attacks.

Ticks, which are facultative parasites of certain animals, have variable and peculiar habits and adapt differently to each species. Variations are seen in type of host, time of fixation to host, feeding conditions, and mode of progression. In general, Brazilian species may infest several animal species; only a few attach to only one host or to hosts that belong to only one animal genus (ARAGÃO, 1936; GUGLIELMONE et al., 2003).

There are 54 valid species of ticks in Brazil, and 32 of them belong to the *Amblyomma* genus (GUIMARÃES et al., 2001). Identifying and recording tick species that infest wild animals is a matter of public health because of the potential risk of transmission of diseases caused by protozoa, such as babesiosis and Lyme disease, to other wild or domestic animals as well as to human beings (MARTINS et al., 2004; GUGLIELMONE et al., 2006).

The *Amblyomma* species are trioxens that usually infest mammals (DA SILVA et al., 2007). *Amblyomma nodosum* is a common tick species in Brazil that infests both the giant (*Myrmecophaga tetradactyla*) and the collared anteater (*Tamandua tetradactyla*) in the states of Rio de Janeiro, Minas Gerais, Mato Grosso and Goiás (ARAGÃO, 1936). OLIVEIRA (1994) reported

on *Tamandua tetradactyla* infestation by *A. nodosum* in the state of Rio Grande do Sul, southern Brazil. According to GUIMARÃES et al. (2001), *A. nodosum* has a great potential to survive and, when adult, has been found almost exclusively in anteaters, such as the *Tamandua tetradactyla* living in the region of the Porto-Primavera hydroelectric power plant, between the states of São Paulo and Mato Grosso (LABRUNA et al., 2002) BECHARA et al. (2002) collected *A. nodosum* from giant anteaters living in the Emas National Park in Goiás. MARTINS et al. (2004) reported on the occurrence of *A. nodosum* and *A. parvum* in giant and collared anteaters in the region of Pantanal Sul Mato-Grossense. In Nhecolândia, in Pantanal Sul Mato-Grossense, *A. nodosum* was found to infest collared anteaters (BECHARA et al., 2006), and free-living nymphs were found on a farm in the Cerrado biome in the state of Goiás (SZABÓ et al., 2007).

Several wildlife animals, such as pumas, deer and anteaters, live in the Serrano Plateau in the state of Santa Catarina. In recent years, they have been seen closer to human populations and by roadsides (PEREIRA et al., 2000). The presence of ticks in wild animals in the Catarinense Plateau was first detected at the beginning of last century (ARAGÃO, 1936; ARAGÃO & FONSECA, 1961), and *Amblyomma* species were found to be part of the wild fauna of the region not long ago (PEREIRA et al., 2000).

The purpose of this study was to document, for the first time, the presence of *Amblyomma nodosum* as a parasite of free-living *Tamandua tetradactyla* in the Catarinense Plateau in southern Brazil.

On March 21, 2009, a collared anteater was rescued after a road kill at km 23 of the SC 439 highway in

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Urupema (28°17'S; 49°55'W). The animal body was sent to necropsy at Universidade do Planalto Catarinense (UNIPLAC) in the city of Lages. Exams at the Laboratory of Parasitology revealed that it was a male anteater, about 10 years old, weighing 15 kg. External examination revealed ticks on the thorax. The ticks were stored in a labeled flask with 70% alcohol and sent to the Laboratory for Ixodid Ticks of the Oswaldo Cruz Institute (FIOCRUZ, RJ, Brazil) for confirmation of taxonomic identification. There, the ticks were identified as *Amblyomma nodosum* (NEUMANN, 1899).

Necropsy did not reveal any macroscopic abnormalities in internal organs. Fragments of the heart, kidney, liver, spleen, stomach and bowel were collected, fixed in 10% formalin and sent to histological examination. Fecal matter was collected from the bowel and sent to parasitological examination. Results of parasitological and histological exams were negative.

The infestation of free-living *Tamandua tetradactyla* by *Amblyomma nodosum* ticks was recorded for the first time in Urupema, in Serrano Plateau of the State of Santa Catarina, Brazil. Our findings suggest that this tick species is more prevalent in anteaters, which confirms data reported in other studies (OLIVEIRA, 1994; GUIMARÃES et al., 2001; LABRUNA et al., 2002; BECHARA et al., 2002; MARTINS et al., 2004; BECHARA et al., 2006). This first report will be useful in monitoring tick species that infest anteaters and other free-living wild animals in this ecosystem.

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REFERENCES

[1] ARAGÃO, H. Ixodidas brasileiros e de alguns países limítrofes. **Memórias do Instituto Oswaldo Cruz**, v. 31, n. 4, p. 759-844, 1936.
 [2] ARAGÃO, H.; FONSECA, F. Notas de Ixodologia. VIII. Lista e chave para os representantes da fauna ixodológica brasileira. **Memórias do Instituto Oswaldo Cruz**, v.59, n.2, p.115-129, 1961.

[3] BECHARA, G. H. et al. Ticks associated with armadillo (*Euphractus sexcinctus*) and anteater (*Myrmecophaga tridactyla*) of Emas National Park, State of Goiás, Brazil. **Annals of the New York Academy of Sciences**, v. 969, p. 290-293, 2002.
 [4] BECHARA, G. H. et al. Ticks associated with wild animals in the Nhecolândia Pantanal, Brazil. **Annals of the New York Academy of Sciences**, v. 916, p. 289-297, 2006.
 [4] DA SILVA, A. S.; DA SILVA, M. K.; MONTEIRO, S. G. Parasitismo por *Amblyomma triste* em gato doméstico. **Revista Brasileira de Parasitologia Veterinária**, v. 16, n. 2, p. 108-109, 2007.
 [5] GUGLIELMONE, A. A. et al. Hosts and distribution of *Amblyomma auricularium* (Conil 1878) and *Amblyomma pseudoconcolor* Aragão, 1908 (Acari: Ixodidae). **Experimental and Applied Acarology**, v. 29, p. 131-139, 2003.
 [6] GUGLIELMONE, A. A. et al. Ticks (Ixodidae) on humans in South America. **Experimental and Applied Acarology**, v. 40, p. 83-100, 2006.
 [7] GUIMARÃES, J. C.; TUCCI, E. C.; BARROS-BATESTTI, D. M. **Ectoparasitos de importância veterinária**. São Paulo: Plêiade, 2001. 213p.
 [8] LABRUNA, M. B.; DE PAULA, C. D.; LIMA, T. F.; SANA, D. A. Ticks (Acari: Ixodidae) on wild Animals from the Porto-Primavera Hydroelectric Power Station Area, Brazil. **Memórias do Instituto Oswaldo Cruz**, v. 97, n. 8, p. 1133-1136, 2002.
 [9] MARTINS, J. R.; MEDRI, Í. M.; OLIVEIRA, C. M.; GUGLIELMONE, A. Occurrence of ticks on giant anteater (*Myrmecophaga tridactyla*) and collared anteater (*Tamandua tetradactyla*) in the Pantanal region of Mato Grosso do Sul State, Brazil. **Ciência Rural**, v. 34, n.1, p. 293-295, 2004.
 [10] OLIVEIRA, C. M. *Amblyomma nodosum* em tamanduá, RS- Brasil. IN **Anais: XII Estadual de Medicina Veterinária**, Porto Alegre, RS, **Abstract**, p. 48, 1994.
 [11] PEREIRA, M. C. et al. Ticks (Acari:Ixodidae) associated with wild animals in the Pantanal region of Brazil. **Journal of Medical Entomology**, v.37, n.6, p.979-983, 2000.
 [12] SZABÓ, M. P. J.; OLEGÁRIO, M. M. M.; SANTOS, A. L. Q. Tick fauna from two locations in the Brazilian savannah. **Experimental and Applied Acarology**, v. 43, n. 1, p. 73-84, 2007.