

# A first record of *Amblyomma dissimile* (Acari: Ixodidae) parasitizing the lizard *Ameiva ameiva* (Teiidae) in Brazil

Primeiro registro de *Amblyomma dissimile* (Acari: Ixodidae) parasitando o lagarto *Ameiva ameiva* (Teiidae) no Brasil

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## Abstract

A non-engorged adult female *Amblyomma dissimile* and two *Amblyomma* sp. larvae were found parasitizing the lizard *Ameiva ameiva* in the municipality of Chapadinha, State of Maranhão. This is the first record in the state of Maranhão and fills a gap in the distribution of *A. dissimile* in Brazil. The lizard *A. ameiva* represents a new host for *A. dissimile*, and also the first record of this tick species infesting lizards of the family Teiidae in Brazil.

**Keywords:** *Amblyomma dissimile*, tick, Teiidae, *Ameiva ameiva*, Brazil.

## Resumo

Uma fêmea adulta não ingurgitada de *Amblyomma dissimile* e duas larvas de *Amblyomma* sp. foram encontradas parasitando o lagarto *Ameiva ameiva* no município de Chapadinha, Estado do Maranhão. Além de representar um novo registro para o Estado do Maranhão, esse trabalho preenche uma lacuna de distribuição geográfica de *A. dissimile* no país. O lagarto *A. ameiva* representa um novo hospedeiro para *A. dissimile*, sendo também o primeiro registro dessa espécie de carrapato infestando lagartos da família Teiidae no Brasil.

**Palavras-chave:** *Amblyomma dissimile*, carrapato, Teiidae, *Ameiva ameiva*, Brasil.

*Amblyomma dissimile* Koch 1844 is an ectoparasite commonly found on amphibians and reptiles. This parasite is widely distributed across several countries in the Americas, including some states in Brazil (Acre, Amazonas, Pará, Roraima, Pernambuco, Mato Grosso do Sul, Mato Grosso, and São Paulo) (ARAGÃO, 1936; SCHUMAKER; BARROS, 1994; ONOFRIO, 2007; DANTAS-TORRES et al., 2008). Records of natural tick infestation of lizards in Brazil are rare because most published reports available in the literature on parasitism focus on either snakes or on laboratory experiments (SCHUMAKER; BARROS, 1994; FREITAS et al., 2004). At present, only two species of lizards have been reported to be infested by *A. dissimile* in Brazil, namely, adults from *Iguana iguana* (FREITAS et al., 2004) and nymphs from *Tropidurus hispidus* (DANTAS-TORRES et al., 2008).

The teiid lizard *Ameiva ameiva* is widely distributed in the Neotropics, occurring from Panama to central Brazil (SCHWARTZ; HENDERSON, 1991 apud SARTORIUS et al., 1999). This species

of lizard inhabits areas ranging from the Amazonian rain forest to the savanna of Cerrado and the semi-arid region of Caatinga (VITT; COLLI, 1994). Even as a medium-sized lizard, it has fast movements and is an active forager that feeds on a variety of arthropods and vertebrates (VITT; COLLI, 1994). The objective of this study is to report the occurrence of *A. dissimile* parasitizing the lizard *A. ameiva* in the state of Maranhão, Northeastern Brazil.

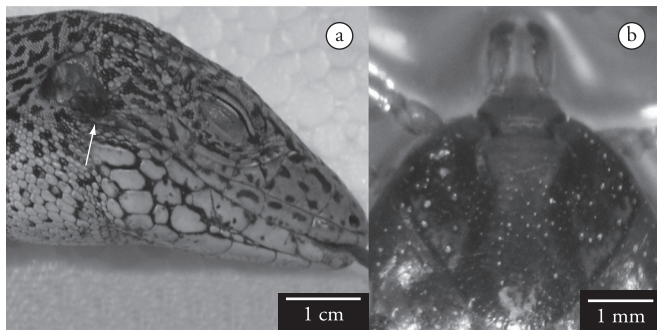
A specimen of *A. ameiva* was collected in an area of Cerrado belonging to the Universidade Federal do Maranhão (05° 44' S and 43° 10' W) in the municipality of Chapadinha, Maranhão. The lizard was visually examined for the presence of ectoparasites (Figure 1a). An engorged adult female tick and two larvae were found, collected manually and preserved in identified bottles containing 70% ethanol. The ticks were analyzed and identified with the aid of a stereomicroscope and according to the dichotomous keys of Aragão e Fonseca (1961) and Onofrio et al. (2006). The adult tick was identified as *A. dissimile* (Figure 1b) and the two larvae as *Amblyomma* sp.

Most of the studies on infestations of reptiles in Brazil concern the *Amblyomma rotundatum*, another parasite of “cold-blooded” animals that is well established in the country (ONOFRIO et al., 2006). This tick has been reported to be a parasite of *A. ameiva* (ONOFRIO, 2007), but data about the location were not reported. According to Pontes et al. (2009), data on *A. dissimile*

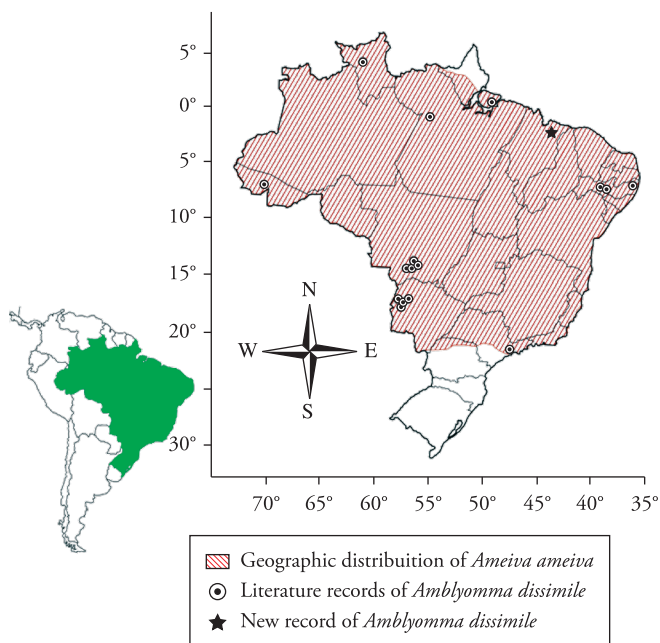
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and *A. rotundatum* in Brazil indicate that these two species may have a geographically sympatric distribution in the country. At present, the known geographical distribution of *A. rotundatum* in Brazil is broader than that of *A. dissimile*. Thus, further studies are needed to corroborate this idea. The municipality of Chapadinha is within the known range for *A. dissimile* in Brazil, but the collected specimen represents the first recorded occurrence in the state of Maranhão and fills a distribution gap (Figure 2). This is a report of *A. ameiva* as a new host for *A. dissimile* and is also the first record of this tick species infesting lizards of the family Teiidae in Brazil.

Infestations by larvae and nymphs of *Amblyomma* spp. have been reported in some species of Brazilian reptiles (PEREIRA et al., 2000; LABRUNA et al., 2002; DANTAS-TORRES et al., 2008, 2010), but the difficulty involved in identifying the immature stages of several species of *Amblyomma* found in Brazil has prevented a more precise identification.



**Figure 1.** Adult female *Amblyomma dissimile*: a) Parasitizing an *Ameiva ameiva* lizard (white arrow); b) Ornated shield.



**Figure 2.** The geographic distribution of *Ameiva ameiva* and *Amblyomma dissimile* in Brazil. (Sources: ARAGÃO, 1936; ONOFRIO, 2007; DANTAS-TORRES et al., 2008; GBIF, 2009).

The lizard *A. ameiva* inhabits a range of ecosystems and is abundant in natural and anthropogenic areas (VITT; COLLI, 1994). Thus, it represents a potential host for ticks of the genus *Amblyomma*. Information on its geographical distribution and host-parasite relationship, in addition to contributing to the current knowledge of Brazilian tick fauna, provide insights for future research on the ecological and epidemiological infestations by *A. dissimile* of wild reptiles.

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## References

- ARAGÃO, H. B. Ixodidas brasileiros e de alguns países limítrofes. **Memórias do Instituto Oswaldo Cruz**, v. 31, n. 4, p. 759-843, 1936.
- ARAGÃO, H. B.; FONSECA, F. Notas de Ixodologia. VIII. Lista e chaves para os representantes da fauna ixodológica brasileira. **Memórias do Instituto Oswaldo Cruz**, v. 59, n. 2, p. 115-130, 1961.
- DANTAS-TORRES, F. et al. Ticks infesting amphibians and reptiles in Pernambuco, Northeastern Brazil. **Revista Brasileira de Parasitologia Veterinária**, v. 17, n. 4, p. 218-221, 2008.
- DANTAS-TORRES, F. et al. Ticks on captive and free-living wild animals in northeastern Brazil. **Experimental and Applied Acarology**, v. 50, n. 2, p. 181-189, 2010.
- FREITAS, L. H. T. et al. Experimental infestation with the immatures of *Amblyomma dissimile* Koch, 1844 (Acari: Ixodidae) on *Tropidurus torquatus* (Lacertilia: Iguanidae) and *Oryctolagus cuniculus*. **Arquivo Brasileiro de Medicina Veterinária e Zootecnia**, v. 56, n. 1, p. 126-129, 2004.
- GLOBAL BIODIVERSITY INFORMATION FACILITY - GBIF. Species *Ameiva ameiva* Linnaeus, 1758. Disponível em: <http://data.gbif.org/species/13500252>. Acesso em: 16 jan. 2009.
- LABRUNA, M. B. et al. 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.
- ONOFRIO, V. C. et al. Comentários e chaves para as espécies do gênero *Amblyomma*. In: BARROS-BATTESTI, D. M.; ARZUA, M.; BECHARA, G. H. (Ed.). **Carrapatos de importância médico-veterinária da Região Neotropical: um guia ilustrado para identificação de espécies**. São Paulo: Vox/ICTTD-3/Butantan, 2006. p. 53-113.
- ONOFRIO, V. C. **Revisão do gênero *Amblyomma* Koch, 1844 (Acari: Ixodidae) no Brasil**. 2007. 174 f. Tese (Doutorado em Ciências Veterinárias)–Universidade Federal Rural do Rio de Janeiro, Seropédica, 2007.
- 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.

PONTES, J. A. L. et al. Ecology of ticks in a taxocenosis of snakes from the Serra do Mendanha, Rio de Janeiro, Brazil, with new host records. **Zoologia**, v. 26, n. 2, p. 328-333, 2009.

SARTORIUS, S. S.; VITT, L. J.; COLLI, G. R. Use of naturally and antropogenically disturbed habitats in Amazonian rainforest by the teiid lizard *Ameiva ameiva*. **Biological Conservation**, v. 90, p. 91-101, 1999.

SCHUMAKER, T. T. S.; BARROS, D. M. Notes on the biology of *Amblyomma dissimile* Koch, 1844 (Acari: Ixodida) on *Bufo marinus* (Linnaeus, 1758) from Brazil. **Memórias do Instituto Oswaldo Cruz**, v. 89, n. 1, p. 29-31, 1994.

VITT, L. J.; COLLI, G. R. Geographical ecology of a Neotropical lizard: *Ameiva ameiva* (Teiidae) in Brazil. **Canadian Journal of Zoology**, v. 72, p. 1986-2008, 1994.