Neotropical Entomology

ISSN: 1519-566X

journal homepage: www.scielo.br/ne

SCIENTIFIC NOTE

Amblyomma dissimile Koch (Acari: Ixodidae) Attacking *Primolius maracana* Vieillot (Psittaciformes: Psittacidae) in the Amazon Region, State of Pará, Brazil

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Keywords
Bird, macaw, tick

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Edited by Gilberto J de Moraes – ESALQ/USP

Received 12 April 2010 and accepted 31 January 2011

Abstract

The tick *Amblyomma dissimile* Koch feeds preferentially on reptiles (Squamata), although amphibians (Anura) also seem to be important hosts. We report an *A. dissimile* nymph infesting a blue-winged macaw, *Primolius maracana*, held in captivity in the Mangal das Garças Park, State of Pará, Brazil. Environmental observations suggest that free-living iguanas (*Iguana iguana*), which used to walk on the bird enclosure in the park, were the source of the *A. dissimile* tick that infested the blue-winged macaw. We provide the second world record of a bird host for *A. dissimile,* and the first bird record for this species in South America.

The tick *Amblyomma dissimile* Koch is widespread in the Neotropical region, with reports from Argentina to southern Mexico and the Caribbean (Guglielmone *et al* 2003). It has also been reported in the Nearctic region, more specifically, in southern United States (Keirans & Durden 1998). Larvae, nymphs and adults of *A. dissimile* feed preferentially on reptiles (Squamata), although amphibians (Anura) also seem to be important hosts (Fairchild *et al* 1966, Jones *et al* 1972, Guglielmone *et al* 2003). Infestations by *A. dissimile* on mammalian hosts, including humans, have occasionally been reported (Jones *et al* 1972, Botelho *et al* 1992, Guglielmone *et al* 2006). There has been only a single record of bird infestation by *A. dissimile*, which refers to a male tick collected on a boat-billed heron, *Cochlearius cochlearius* (Ciconiformes: Ardeidae), in Panama (Fairchild *et al* 1966). Here we report an *A. dissimile* nymph infesting a blue-winged macaw, *Primolius maracana,* in Brazil.

This observation was performed in the Parque Mangal das Garças, Belém Municipality (01º27'21"S, 48º30'16"W), State of Pará, in eastern Brazilian Amazon. On 12 February 2010, during a routine examination of a captive *P. maracana*, a tick found attached to the base of its beak (Fig 1) was removed with forceps and immediately preserved in 70% ethanol. In the laboratory, the tick was identified as a partially engorged nymph of *A. dissimile* according to Martins *et al* (2010). In addition to characters typical for *Amblyomma*, the specimen had a scutum sparsely punctuated, with slightly sinuous posterolateral margin, basis capituli sub-triangular and without cornua, and hypostomal dentition 2.5/2.5 (Fig 2), which are typical characters of the *A. dissimile*

Fig 1 A partially engorged nymph of *Amblyomma dissimile* (white arrow) attached to the base of the beak of a blue-winged macaw, *Primolius maracana*, in the Parque Mangal das Garças, Belém Municipality, State of Pará, Brazil.

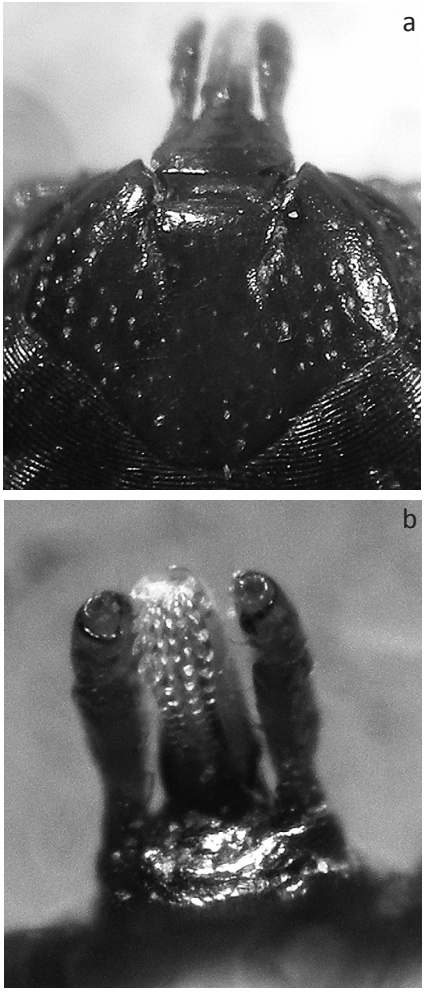

Fig 2 *Amblyomma dissimile* nymph: a) Scutum and dorsal capitulum; b) Hypostome.

nymphal stage (Martins *et al* 2010). The tick specimen has been deposited in the tick collection "Coleção Nacional de Carrapatos" (CNC) of the Faculdade de Medicina Veterinária e Zootecnia of the Universidade de São Paulo (accession number CNC-1548).

The *A. dissimile*-infested *P. maracana* had been maintained in an enclosure of the park with another *P. maracana*, a severe macaw *Ara severus*, and two scarlet macaws *Ara macao* since late 2009, when the two *P. maracana* were brought to the park. No tick infestation was detected on any of those birds during that time. A variety of free-living reptiles, especially green iguanas *Iguana iguana*, and scorpion mud turtles *Kinosternon scorpioides* are found in that park. Some of the free-living iguanas were recently examined and found to be infested by *A. dissimile* adult ticks (Carvalho N *et al* unpublished data). Iguanas are frequently observed walking on the wire screen ceiling of the macaw enclosure. Since iguanas are considered important hosts for *A. dissimile* (Aragão 1936), their close proximity to the macaws could have been the source of the *A. dissimile* nymph found on *P. maracana*.

Ticks are vectors of more infectious agents that any other group of arthropods, including mosquitoes (Oliver 1989). For instance, *A. dissimile* is a potential vector of heartwater, a severe cattle disease caused by *Ehrlichia ruminantium*, for which reptiles could be subclinical carriers, infective to vector ticks (Jongejan 1992). Heartwater is an African disease that was introduced more than 100 years ago with its African vector [(*Amblyomma variegatum* (Fabricius)] to the Caribbean, where both became established (Jongejan 1992). Since then, there has been a constant risk for a catastrophic introduction of heartwater into the American mainland, where *A. dissimile* could contribute to the amplification of *E. ruminantium* (Guglielmone *et al* 2003). Our study reinforces that besides being a typical reptile tick, *A. dissimile* could attack other hosts under certain circumstances. Knowledge on tick host range is crucial for the determination of measures for preventing and controlling tick-borne diseases.

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