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Article in *Systematic and Applied Acarology* · July 2003

DOI: 10.111158/saa.8.1.11

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First record of *Amblyomma triste* Koch, 1844 (Acari: Ixodidae) and new records of *Ornithodoros mimon* Kohls, Clifford & Jones, 1969 (Acari: Argasidae) from Neotropical bats

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Abstract

A nymph of *Amblyomma triste* Koch, 1844 was found on a bat *Myotis albescens* (E. Geoffroy 1806) (Vespertilionidae), captured in Cerro Pan de Azúcar (34°47'S 55°13'W), Departamento Maldonado, Uruguay. A retrospective search of ticks from bats deposited in the Museo Nacional de Historia Natural, Montevideo, Uruguay, yielded seven larvae of *Ornithodoros mimon* Kohls, Clifford & Jones, 1969, from *Eptesicus furinalis* (d'Orbigny 1847) (Vespertilionidae), captured in Departamento Cerro Largo; six larvae were collected at Estancia La Formosa, (31°51'S 54°12'W), north to the locality of Aceguá, and one larva was collected at Arroyo Sarandí (32°29'S 53°41'W). This is the first record of *A. triste* from Chiroptera, but it is doubtful that bats are important in the life cycle of this tick species. The present records of *O. mimon* are the first since the description of this species from larvae collected on Bolivian and Uruguayan bats more than 30 years ago.

Key words: Ixodidae, Argasidae, *Amblyomma triste*, *Ornithodoros mimon*, Chiroptera, Neotropical region, Uruguay

Introduction

Chiroptera are unusual hosts for ticks of the genus *Amblyomma* Koch, 1844. Most records of specimens of *Amblyomma* on Neotropical bats stem from studies in Venezuela by Jones *et al.* (1972). These authors found larvae and nymphs of *Amblyomma* spp. on bats of the families Molossidae: *Molossops* Peters, 1865; Mormoopidae: *Pteronotus* Gray, 1838; Noctilionidae: *Noctilio* Linnaeus, 1766; Phyllostomidae: *Artibeus* Leach, 1821, *Carollia* Gray, 1838, *Chiroderma* Peters, 1860, *Choeroniscus* Thomas, 1928, *Desmodus* Wied-Neuwied, 1826, *Glossophaga* E. Geoffroy, 1818, *Vampyrops* Peters, 1865 (= *Platyrrhinyus* Saussure, 1860), *Sturnira* Gray, 1842, and *Uroderma* Peters, 1865; and Vespertilionidae: *Eptesicus* Rafinesque, 1820. Jones *et al.* (1972) also found nymphs of *A. longirostre* (Koch 1844) on *Artibeus lituratus* (Olfers 1818) and a female of *A. parvum* Aragaão, 1908, on a *Carollia brevicauda* (Schinz, 1821). Jones *et al.* (1972) regarded as questionable their own records of adults of *A. cajennense* (Fabricius 1787), *A. rotundatum* Koch, 1844 and *A. calcaratum* Neumann, 1899, on Venezuelan bats. Keirans (1985) mentioned a finding

of a nymph of *Amblyomma* spp. on an *Artibeus jamaicensis* Leach, 1821, from Panama, and Guglielmone *et al.* (1990) recorded an *A. parvum* female and nymphs of *Amblyomma* spp. on *Carollia subrufa* (Hahn 1905) from Venezuela. More recently, Barros *et al.* (1998) observed the presence of a female of *A. cooperi* Nuttall & Warburton, 1908 (= *A. dubitatum* Neumann 1899) on a *Glossophaga soricina* (Pallas 1766) from Brazil. These authors erroneously stated their finding as the first report worldwide of an *Amblyomma* tick from a chiropteran.

Unlike to *Amblyomma*, several species of Neotropical *Ornithodoros* Koch, 1844 (*O. azteci* Matheson 1935, *O. brodyi* Matheson 1935, *O. clarki* Jones & Clifford 1972, *O. dusbabeki* Cerny 1967, *O. dyeri* Cooley & Kohls 1940, *O. eptesicus* Kohls, Clifford & Jones 1969, *O. hasei* Schulze 1935, *O. kelleyi* Cooley & Kohls 1941, *O. knoxjonesi* Jones & Clifford 1972, *O. kohlsi* Guglielmone & Keirans 2002, *O. marinkellei* Kohls, Clifford & Jones 1969, *O. mimon* Kohls, Clifford & Jones 1969, *O. mormoops* Kohls, Clifford & Jones 1969, *O. natalinus* Cerny & Dusbabek 1967, *O. peropteryx* Kohls, Clifford & Jones 1969, *O. peruvianus* Kohls, Clifford & Jones 1969, *O. rossii* Kohls, Sonenshine & Clifford 1965, *O. setosus* Kohls, Clifford & Jones 1969, *O. stageri* Cooley & Kohls 1941, *O. tadaridae* Cerny & Dusbabek 1967, *O. tiptoni* Jones & Clifford 1972, *O. viguerasi* Cooley & Kohls 1941 and *O. yumatensis* Cooley & Kohls 1941) are parasitic on Chiroptera (Guglielmone, A.A., unpublished). Herein we report the first record of *A. triste* and new records of *O. mimon* on Neotropical bats captured in Uruguay.

Materials and methods

Captures of bats were conducted during January 2003 in Cerro Pan de Azúcar (34°47'S 55°13'W), Departamento Maldonado. A retrospective search of ticks from Chiroptera deposited in the Museo Nacional de Historia Natural, Montevideo, Uruguay, was conducted after finding a *Myotis albescens* (E. Geoffroy 1806) (Vespertilionidae) bat infested with a nymphal of *Amblyomma* on January 12 (collectors E. M. González and D. Capellino). The museum search yielded seven larvae of *Ornithodoros* from *Eptesicus furinalis* (Dd'Orbigny 1847) (Vespertilionidae) captured in the Departamento Cerro Largo; six larvae were collected at Estancia La Formosa (31°51'S 54°12'W), north to the locality of Aceguá, Departamento Cerro Largo, in 1997, and one larva was collected at Arroyo Sarandí (32°29'S 53°41'W), April 16, 2000, by E. M. González.

The nymphal of *Amblyomma* was identified using the keys and descriptions of Estrada Peña *et al.* (1993, in press) and Keirans and Durden (1998). The larval of *Ornithodoros* were identified tousing the keys of Kohls *et al.* (1965, 1969). Two larvae were prepared for scanning electron microscopy by the method of Corwin *et al.* (1979).

Results and discussion

Our *Amblyomma* nymph was identified as *A. triste* Koch, 1844, a tick species closely related to *A. maculatum* Koch, 1844 and *A. tigrinum* Koch, 1844. Nymphs of these three tick species possess a triangular basis capituli in dorsal aspect, with retrograde projections laterally on the ventral surface. These projections are posteriorly directed in *A. maculatum* and *A. tigrinum*, but slightly postero-externally directed in *A. triste* (Estrada Peña *et al.* in press).

Amblyomma triste is a little-known species whose adults have been found on man, cattle, pampas deer [*Ozotoceros bezoarticus* (Linnaeus 1758)], dogs, goats and horses, while immatures stages have been found on Rodentia of the genera *Oligoryzomys* Bangs, 1900, *Oxymycterus* Waterhouse, 1837 and *Scapteromys* Waterhouse, 1837, and Didelphimorphia of the genus

Monodelphis Burnett, 1830, by one of us (JMV) in Uruguay. The catholic feeding habits of this tick species may explain its occurrence on an Uruguayan bat. However, it is doubtful that Chiroptera plays an important role in the life cycle of *A. triste*. *Ornithodoros mimon* is known only from the original description of the larva. This stage of *O. mimon* bears a 4/4 hypostomal dentition apically, a character which is shared with the globally distributed *O. capensis* Neumann, 1901, and the Neotropical-Nearctic *O. stageri*, as well as the Neotropical species *O. eptesicus* and *O. echimys* Kohls, Clifford & Kohls, 1969. However, *O. mimon* can be separated from these species by the shape of the dorsal plate (Kohls *et al.* 1965, 1969). Figure 1 depicts the dorsum and details of the plate of a larva of *O. mimon* found on *E. furinalis* in Uruguay.

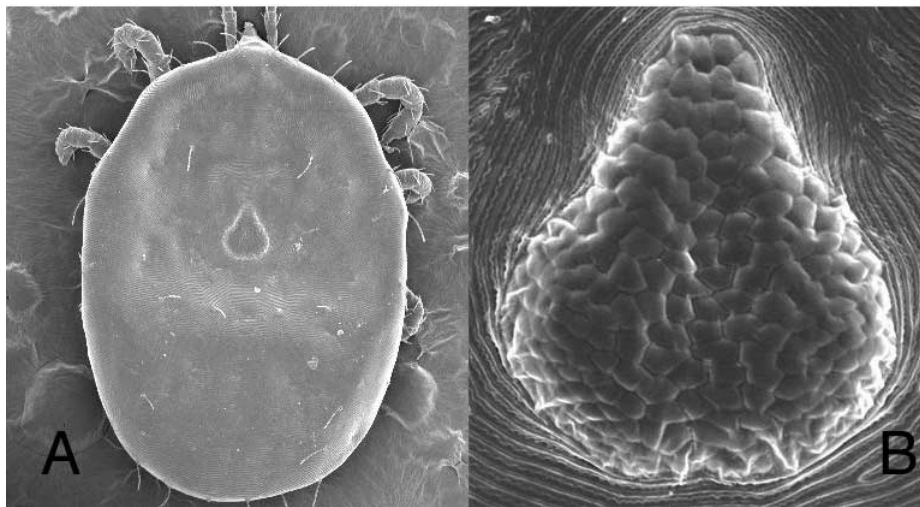


FIGURE 1. A. Dorsal view of a larva of *Ornithodoros mimon* from *Eptesicus furinalis* captured in Uruguay (50x). B. View of the dorsal plate (400x). The pyriform dorsal plate is characteristic of this tick species.

Larvae of *O. mimon* have previously been collected from *Mimon crenulatum* (E. Geoffroy, 1810) in Bolivia and *Eptesicus brasiliensis* (Desmarest 1819) in Uruguay (Kohls *et al.* 1969). The Bolivian finding has been made at about 100 km from the borderline with the Brazilian state of Rondonia. Earlier Uruguayan collections of *O. mimon* by Kohls *et al.* (1969) were carried out from Departamentos Tacuarembó, Río Negro and Cerro Largo; the last two Departamentos border Argentina and Brazil, respectively. The present record of *O. mimon* at Estancia La Formosa is very close to the frontier of the Brazilian state of Rio Grande do Sul. The range of *O. mimon* probably extends well beyond Bolivia and Uruguay; at minimum, it likely includes Argentina and Brazil.

Eptesicus furinalis may be a new host for *O. mimon*. However, while González (2000, 2001) stated that Uruguay is outside of the range of *E. brasiliensis* (the host for previous records of *O. mimon* in Uruguay) that has been confused with *E. furinalis*, but Wilson and Reeder (1993) do list this bat from Uruguay. In any vent, it is clear that bats of the genus *Eptesicus* are hosts for *O. mimon*, and the present records of this tick species are the first since its description made more than 30 years ago.

Acknowledgements

We acknowledge the support of INTA and Fundación ArgenINTA to AAG and CIDEDEC project 6383/01779/2002 for assistance to JMV. We are also grateful to Alejandro Márquez and Jorge Trócoli from the Unidad de Microscopía Electrónica, Facultad de Ciencias, Montevideo (Uruguay) for their assistance providing scanning electron micrographs.

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Accepted: 30 May 2003