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SHORT REPORT

First report of *Amblyomma dissimile* (Acari: Ixodidae) on *Spilotes pullatus* (Squamata: Colubridae) from Colombia

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ABSTRACT

Introduction. The very few studies about the tick fauna of Colombia have focused on ectoparasites of domestic and farm animals, therefore little information about the tick fauna in wildlife is available.

Objective. To contribute to the knowledge on the ticks parasitizing snakes in Colombia.

Materials and methods. In the course of field research undertaken in the Caribbean region of Colombia, ticks were recovered from a snake caught by local people in the village of Camajón, municipality of Sucre. The ticks were deposited in vials containing 70% ethanol for subsequent taxonomic identification.

Results. Three ticks were collected from a snake *Spilotes pullatus*, those ectoparasites were identified as *Amblyomma dissimile*.

Conclusions. This finding represents the first Colombian record of *Amblyomma dissimile* parasitizing this snake.

Key words: Ticks, snakes, wildlife, Colombia.

RESUMEN

Primer registro de *Amblyomma dissimile* (Acari: Ixodidae) en *Spilotes pullatus* (Squamata: Colubridae) de Colombia

Introducción. Existen pocos estudios sobre la fauna de garrapatas en Colombia, la mayoría de estos trabajos se han centrado en ectoparásitos que afectan a los animales domésticos y de producción, por lo tanto existe muy poca información acerca de la fauna de garrapatas que afecta a animales silvestres de nuestro país.

Objetivo. Contribuir al conocimiento de las garrapatas que parasitan serpientes en Colombia.

Materiales y métodos. Durante el desarrollo de investigaciones en áreas rurales de la región Caribe de Colombia, se obtuvieron garrapatas de una serpiente colectada por habitantes del corregimiento de Camajón, municipio de Sucre. Las garrapatas fueron depositadas en tubos que contenían etanol 70% para su posterior identificación taxonómica.

Resultados. Se recolectaron tres garrapatas de la serpiente *Spilotes pullatus*, estos ectoparásitos fueron identificados como *Amblyomma dissimile*.

Conclusiones. Este hallazgo constituye el primer registro colombiano del parasitismo de *Amblyomma dissimile* en esta serpiente.

Palabras clave: Garrapatas, serpientes, fauna silvestre, Colombia.

Ticks are among the most important ectoparasites of wildlife and livestock, and can severely injure or even kill their hosts when infestations are heavy (Shearer 2010; Shumaker & Barros-Battesti 1994). In regions where livestock rearing is a major economic activity, tick infestations are a major issue because of the high cost of treatment and economic losses to the production of meat, milk and leather (FAO 1984; Jongejan & Uilenberg 2004). In Colombia, the scientific literature has described the effect of ticks on production levels of livestock and the behavior of cattle ticks in affected areas (Cortés-Vecino et al. 2010; López-Valencia et al. 1985), however, ticks parasitizing wildlife have not received the same attention. In the Caribbean Department of Sucre, a single study was carried out to determine the tick species associated with different populations of dogs (Paternina et al. 2009).

In this study, three ticks were recovered from a snake caught by local people in the village of Camajón, municipality of Sucre (08°40'00"N - 74°45'00"W, Fig. 1), based on key climatic variables, this region is classified as tropical moist rainforest, most of its territory is wetlands that are formed by a complex of pipes, rivers (Magdalena, Cauca and San Jorge) and marsh ecosystems. The average annual precipitation is 2.800 mm, the monthly average temperature is 28°C, the average relative humidity is 85% and the altitude above sea level does not exceed 30 meters. The snake was identified as *Spilotes pullatus* (Squamata: Colubridae), known in the region as "culebra toche" (Fig. 1). The ticks were deposited in vials containing 70% ethanol for subsequent identification using the taxonomic key of Barros-Battesti et al. (2006). They were then photographed using an AxioCam ERC5 camera and deposited in the Collection of Arthropods of Medical Importance of the Biomedical Research Group at the University of Sucre.

The ticks were identified as three females of *Amblyomma dissimile* Koch, 1844. The characteristic morphological features of

this tick are as follows: capituli basis subtriangular; scutum with large post-orbital spots (Fig. 2a); dental formula 3/3 (Fig. 2b); all coxae bearing internal spurs (Fig. 2c) and festoons without projections (Fig. 2d). The species *A. dissimile* occurs throughout the Americas, having been reported in the United States, Mexico, Bahamas, Panama, Colombia, Venezuela, Argentina and Brazil.

Across this geographical range, *A. dissimile* has been reported to parasitize 101 vertebrate species belonging to the classes Reptilia, Amphibia, Mammalia and Aves. The 69 reptiles known to harbour this tick include *S. pullatus* and 19 other colubrid snakes (Guglielmone & Nava 2010). Although *S. pullatus* has a wide geographical distribution that extends from southern Mexico to northern Argentina (Daniel 1949) there have been only two previous reports of this biological association, the present record being the first one for Colombia.

Although *A. dissimile* has previously been regarded as having little economic importance (Freitas et al. 2004), the results of artificial infection experiments suggest that this species may be a competent vector of *Ehrlichia ruminantium* (Jongejan 1992), the etiological agent of cowdriosis or heartwater, a rickettsial disease of ruminants present throughout sub-Saharan Africa and the Caribbean (OIE 2009). According to Jongejan (1992), *A. dissimile* may play an important role in the maintenance of this bacterium among reptile species, by harboring subclinical infections of *E. ruminantium* strains infective to the usual tick vector, *A. variegatum* (Kelly et al. 2011). Furthermore *Rickettsia colombianensis*, a new rickettsial agent associated with this tick with unknown pathogenicity, was recently reported from the Caribbean region of Colombia (Miranda et al. 2012). Additional studies are therefore required to determine the possible role of *A. dissimile* in the transmission of rickettsiae among poikilothermic vertebrates and men.

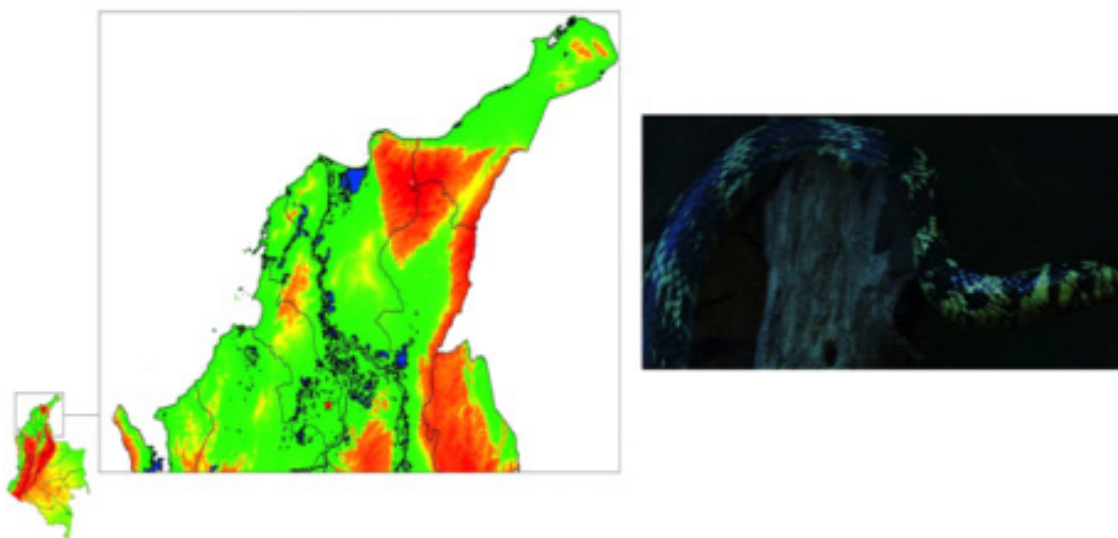


Figure 1. Geographical location of the village of Camajón (red star), municipality of Sucre, department of Sucre, Colombia, and a photograph of *Spilotes pullatus*.

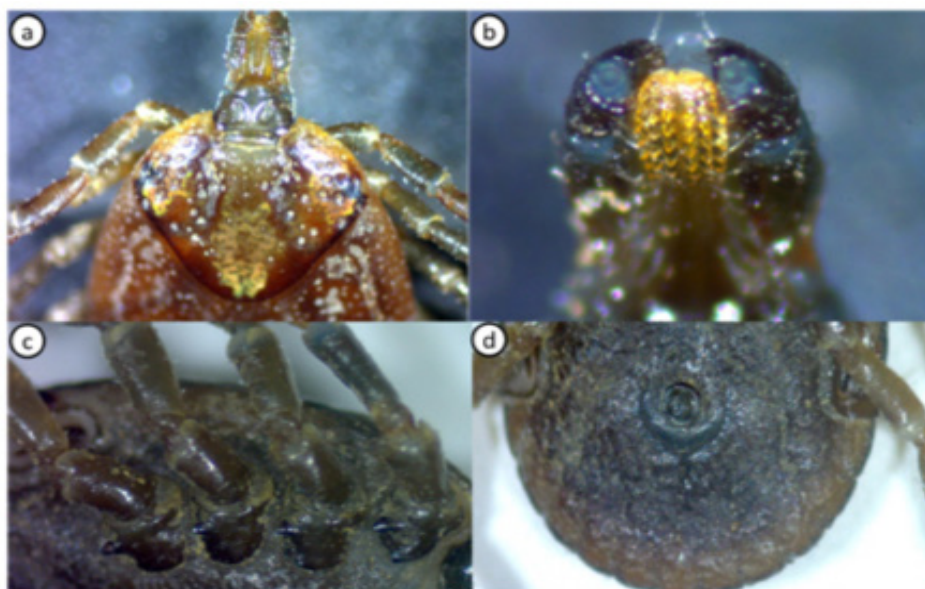


Figure 2. Morphological features of female *Amblyomma dissimile*. A) Dorsal view of the anterior part of the idiosome, B) dental formula, C) Internal and external spurs of coxae, D) Ventral view of the posterior area.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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