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Occurrence of *Amblyomma longirostre* in *Cyanocompsa brissonii* in Rio Grande do Sul, Brazil

Ocorrência de *Amblyomma longirostre* em *Cyanocompsa brissonii* no Rio Grande do Sul, Brasil

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– NOTE –

ABSTRACT

*Ticks are arthropods that are highly competent in transmitting pathogens to animals and humans. Among these, the genus **Amblyomma** is the most representative within the Neotropics. **Amblyomma longirostre** ticks are naturally distributed in countries of South, Central and North America. Their immature stages preferentially parasitize birds (Passeriformes), while adult stages are usually found on rodents. Therefore, reports of this tick species on wild hosts is epidemiologically relevant, especially because of these ticks' potential for transmitting pathogens to other wild and domestic animals, and also to humans. Thus, the aim of this study was to report infestation by **Amblyomma longirostre** on **Cyanocompsa brissonii** in southern Brazil.*

Key words: *ticks, **Ixodidae**, parasitism, birds.*

RESUMO

*Os carrapatos são artrópodes que apresentam elevada competência na transmissão de patógenos para animais e humanos. Entre esses, o gênero **Amblyomma** é o mais representativo dentro da região neotropical. Ixodídeos como **Amblyomma longirostre** estão distribuídos em países da América do Sul, Central e do Norte. Os estágios imaturos desta espécie parasitam preferencialmente aves (Passeriformes) e estágios adultos são encontrados principalmente em roedores. Logo, o registro de espécies de carrapatos em hospedeiros silvestres é epidemiologicamente relevante, devido ao potencial de transmissão dos patógenos a outros animais silvestres, domésticos e ao homem. Assim, o objetivo deste estudo foi relatar o parasitismo por **Amblyomma longirostre** em **Cyanocompsa brissonii** no sul do Brasil.*

Palavras-chave: *carrapatos, **Ixodidae**, parasitismo, aves.*

The genus ***Amblyomma*** (Koch, 1844) is of medical and veterinarian importance as a transmitter of pathogens. It is considered the most representative genus within the Neotropical region and at least 64 species have been described, including ***Amblyomma longirostre*** (NAVA et al., 2014). The larvae of this species are found exclusively in birds, while nymphs are generally reported parasitizing passerines but on rare occasions have been reported on mammals. Conversely, the adult stages are preferentially found on rodent hosts of the genera ***Coendou***, ***Chaetomys*** and ***Sphiggurus*** (***Erethizontidae***) (NAVA et al. 2010).

The ultramarine grosbeak (***Cyanocompsa brissonii***) is a passerine in the ***Cardinalidae*** family. It is reported in at least seven countries in South America. It occurs very commonly and since 1988 it has been classified by the International Union for Conservation of Nature (IUCN) in the category of "least concern" (BIRDLIFE, 2014). In the state of Rio Grande do Sul, Brazil, it inhabits regions of native grassland and areas with trees and bushes. It can also be reported on the edges of agricultural production zones (BENCKE, 2001).

After a storm, an adult male specimen of ***C. brissonii*** was found inside a house in the district of Boca do Monte, in the city of Santa Maria, RS (29º38'32.25" S, 53º55'44.62" W). This region is

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characterized as forming part of the Atlantic Forest biome, with the presence of semi-deciduous forest. For this bird to be taken out of the house, it was caught with the aid of towels and physically restrained. On making a visual inspection, the presence of a parasitic tick was observed. This was removed with the aid of cotton wool soaked in 70º alcohol. The tick was identified with the aid of an Olympus stereoscopic microscope (series CX40) and the dichotomous key of MARTINS et al. (2010). The specimen presented absence of a genital opening, triangular base of the capitulum, lanceolate hypostome and elongated scutum with unornamented rugose surface, and was thus identified and classified as a nymph of ***A. longirostre***. According to OGRZEWALSKA et al. (2010), nymphs of ***A. longirostre*** can easily be identified because of their sharp-pointed lance-shaped hypostome, along with their elongated scutum. The tick collected in this study was deposited in the National Tick Collection (CNC) of the School of Veterinary Medicine and Zootechnics of the Universidade de São Paulo, SP, Brazil (access number: CNC-3054).

In a study conducted by NAVA et al. (2010), larval, nymph and adult stages of ***A. longirostre*** from different hosts such as birds and mammals (including humans) were catalogued. According to epidemiological studies, birds tend to be hosts for transporting ***A. longirostre***, thereby helping to disperse the immature phases (larvae and nymphs), but only rarely the adult form (STORNI et al., 2005). Among the immature stages of ***A. longirostre***, although larvae may often infest birds, reports of parasitism at this stage are less frequent because of difficulty in identifying the larvae. ARZUA et al. (2005) reported on a nymph stage of ***A. longirostre*** in ***C. brissonii*** in the state of Minas Gerais, Brazil. These authors also described bird species parasitized by ticks of the species ***A. longirostre*** in the state of Rio Grande do Sul (Table 1), and this has been one of the most significant studies so far. These findings reiterate that birds are important hosts for the immature stages of this species and have high potential for dispersing ticks and the pathogens that they transmit, such as bacteria of the genus ***Rickettsia***.

According to LABRUNA et al. (2004), two adult specimens of ***A. longirostre*** that were collected from ***Coendu prehensilis*** (Linnaeus, 1758) in the state of Rondônia, Brazil, were positive for a strain of ***Rickettsia*** belonging to the macular fever group. This was then named "aranha" (spider) strain. OGRZEWALSKA et al. (2008) reported that immature stages (nymphs) of ***A. longirostre*** removed from birds were infected with Rickettsia. Their isolate was named the AL strain. According to MARTINS et al. (2004), identifying and recording tick species in wild hosts is epidemiologically important because of their potential for transmitting pathogens to other wild, and domestic animals and humans.

Table 1 - Hosts of ***A. longirostre*** in the state of Rio Grande do Sul.

Host	-----Stage----- L	N	A	Reference
----------Mammals----------				
Coendou villosus			2	Oliveira et al., 1997 apud SOARES et al., 2009; BRUM et al., 2003
----------Birds----------				
Lathrotriccus euleri	1			ARZUA et al., 2005
Pipraeidea melanonota	1			ARZUA et al., 2005
Saltator similis	3			ARZUA et al., 2005
Synallaxis spixi	1			ARZUA et al., 2005
Tachyphonus coronatus	1			ARZUA et al., 2005
Turdus amaurocalinus	1			ARZUA et al., 2005
Turdus subalaris	1			ARZUA et al., 2005
Cyanocompsa brissonii	1			Present study
Ramphastos dicolorus	NS			SOARES et al., 2009

*NS = not stated.

According to TORGA et al. (2013), records of tick species have recently been made among forest birds in the Araucaria, Atlantic Forest, Amazon and Cerrado regions and in northeastern Brazil. However, there is a scarcity of studies relating to characterization of parasitism among birds or among mammals, caused by ***A. longirostre*** or even by other species of ***Amblyomma*** in the ecosystems of the state of Rio Grande do Sul. The geographical distribution of ***A. longirostre*** includes countries in North, Central and South America. In Brazil, it occurs in all five macroregions (north, northeast, center-west, southeast and south) (SOARES et al., 2009). Table 1 shows the records of this species and its respective hosts in the state of Rio Grande do Sul up to the present date.

Factors such as constant changes to and desecration of ecosystems, undertaken in order to introduce livestock-rearing and, more intensively, agriculture and forestry, have reduced the size of natural areas. This process has increased the degree of contact between humans and wild animals and consequently their contact with very many parasites, including ticks (TORGA et al., 2013). This finding highlights the widespread distribution of species of ***Amblyomma*** and their parasitism in a great

diversity of wild hosts. This is the first report of ***A. longirostre*** in a bird of the family ***Cardinalidae*** in the state of Rio Grande do Sul. The present study is of importance for future epidemiological and ecological investigations and because of the implications of parasitism by this species among members of this family or even in other passerines.

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