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## First record of *Amblyomma dissimile* Koch 1844 (Acari: Ixodidae) parasitizing a wild raptor, the Gray-lined Hawk *Buteo nitidus* (Latham 1790) (Accipitriformes: Accipitridae), Brazilian Amazon

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The genus *Amblyomma* Koch 1844 has a total of 33 species described in the Brazilian territory, parasitizing various species of wild animals (Dantas-Torres *et al.* 2019; Martins *et al.* 2019). Among these species, *Amblyomma dissimile* Koch 1844 occurs in the Neotropical region and usually parasitizes both homeothermic and heterothermic animals. Adult forms are found especially on cold-blooded hosts such as frogs (Anura), turtles (Testudines), snakes and lizards (Squamata) (Fischer *et al.* 2009; Lopes *et al.* 2010; Luz & Faccini 2013). Immature forms of *A. dissimile* are observed in other animals, such as cattle, goats, sheep, rabbits, rodents (Guglielmone & Nava 2010) and, less frequently, in birds and humans (Guglielmone *et al.* 2006; Scofield *et al.* 2011; Martínez-Sánchez *et al.* 2020). In this record, we describe for the first time parasitism by *A. dissimile* in a wild raptor, the Gray-lined Hawk *Buteo nitidus* (Latham 1790).

In July 2018, an adult specimen of Gray-lined Hawk (Figure 1A) has arrived at the Zoobotanic Park of the Museu Paraense Emílio Goeldi (1°27'9"S; 48°28'35"W), located in the municipality of Belém, state of Pará, Brazilian Amazon. The wildlife bird came from a rescue carried out by the Environmental Police Battalion near the forest area in the Metropolitan Region of Belém. In the clinical evaluation of the animal, nine ticks were found attached to the base of the beak, which were collected with the aid of tweezers and then preserved in 70% ethanol. The specimens collected were sent to the laboratory for the morphological identification of nymphs using the taxonomic key proposed by Dantas-Torres *et al.* (2019). The larvae were only identified generically, due to the absence of a specific key in Brazil. A sample of ticks was deposited in the “Coleção de Invertebrados em meio líquido do Museu Paraense Emílio Goeldi”, also located in the municipality of Belém.

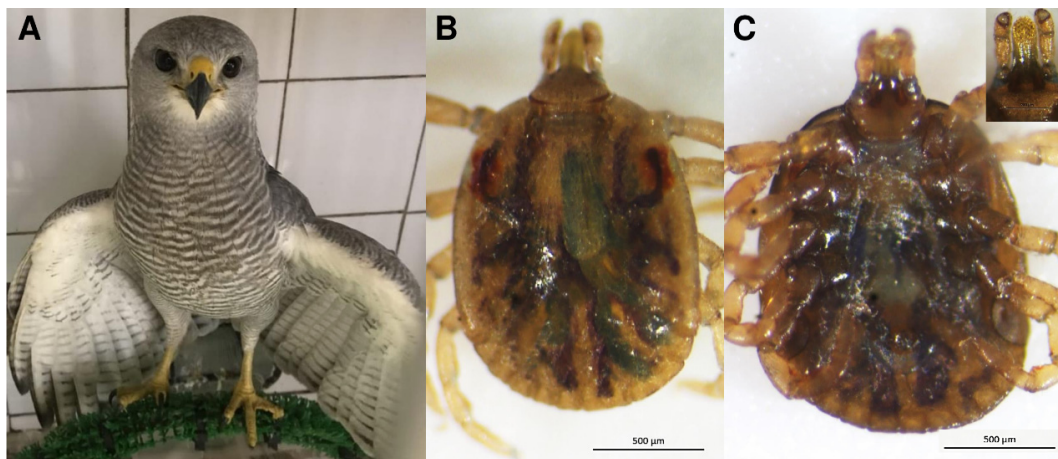
Among the specimens analyzed, were identified four larvae of *Amblyomma* sp. and five *A. dissimile* nymphs, deposited in the collection under the code MPEG.ACA 000159. The *A. dissimile* nymphs presented the following morphological characteristics (Figure 1B and 1C): coxa I with two unequal spurs, the external longer than the internal, coxa II with one spur, cornua absent, ventral basis capituli lacking small posterolateral rounded projections, hypostome dentition 3/3 apically and 2/2 in the remaining toothed portion, alloscutum not densely pilose, spiracular plates lacking festooned margins, scutum with deep punctations concentrated in the lateral fields, compatible with the descriptions of the species (Martins *et al.* 2010).

This note describes for the first time the infestation of a predator by *A. dissimile* ticks. Although tick infestation in *B. nitidus* is poorly described, Teixeira *et al.* (2020) observed the occurrence of

*Amblyomma coelebs* Neumann 1899 in *B. nitidus* in the state of Mato Grosso, central-western Brazil. In addition, tick infestations have been described in another species of the genus: *Buteo platypterus* (Vieillot 1823), being found *Amblyomma longirostre* (Koch 1844) in Costa Rica (Tonn *et al.* 1963) and *A. auricularium* (Conil 1878) in the United States (Mertins *et al.* 2016); and *Buteo brachyurus* (Vieillot 1816), with *Amblyomma sculptum* (Berlese 1888) nymphs in the state of São Paulo, Brazil (Martins *et al.* 2017). Thus, the findings in this note expand the host range for *Amblyomma dissimile*.

The Gray-lined Hawk is a predator of the Order Accipitriformes and Family Accipitridae that has diurnal habits, being extremely fast and agile. It occurs in South America and in almost all Brazilian states, except Santa Catarina and Rio Grande do Sul, in the southern region. The species is considered locally migratory, being quite adapted to anthropic areas. It feeds mainly on insects, lizards, and frogs, in addition to small snakes, birds and mammals (Sigrist 2013; Menq 2018). The fact of feeding on animals such as amphibians and reptiles, considered the main hosts of *A. dissimile* (Fischer *et al.* 2009; Guglielmone & Nava 2010; Lopes *et al.* 2010; Luz & Faccini 2013), may be a factor that contributed to the finding of this note, since foraging brings the bird closer to the environment infested by immature forms (larvae and nymphs in the soil). Furthermore, it should be noted that the habit of being a locally migratory species can be important in the spread of *A. dissimile* to other areas, especially within the Amazon biome.

The findings of this note reinforce the host diversity of immature forms of *A. dissimile*, as well as include *B. nitidus* as a host of this tick in the Brazilian Amazon.



**FIGURE 1:** A—Adult *Buteo nitidus* analyzed in the present work. B—Dorsal view of *Amblyomma dissimile* nymph (scale bar: 500 µm). C—Ventral view of a nymph of *A. dissimile* (scale bar: 500 µm), highlighting the hypostome, which presents dentition 3/3 apically and 2/2 in the remaining toothed portion (detail, scale bar: 200 µm).

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