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Description of immature stages and redescription of adults of *Ixodes luciae* Sénevet (Acari: Ixodidae)

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Abstract

The tick *Ixodes luciae* occurs in many countries within the Neotropical region but only adult ticks have been morphologically described. Larvae and nymphs parasitize marsupials and rodents while adults are common on marsupials. A colony of *I. luciae* was obtained from females collected on marsupials from the State of Rondônia, Northern Brazil. After being fed on rabbits, the specimens were maintained under controlled conditions of temperature and humidity. Unfed larvae, nymphs, males and females of the first generation were cleaned and prepared for both optical and scanning electron microscopy. *Ixodes luciae* is closely related to *Ixodes loricatus*, *Ixodes schulzei*, and *Ixodes amarali*, although each species has its own array of distinctive characters. The larva of *I. luciae* differs from those of both *I. schulzei* and *I. amarali* in the length of the capitulum and from *I. schulzei* in the number of posthalleral setae in the Haller's organ. Nymphs differ from *I. amarali*, *I. loricatus* and *I. schulzei* by the length of the external spur on coxae I, and from *I. schulzei* and *I. amarali* in having slender and shorter capitulum and hypostome. Males and females of *I. luciae* differ from the other three species by the length of the external spur on coxae I and by the scutal punctations, which are much longer and larger, respectively, in *I. luciae*. However, except for a few features, the chaetotaxy is the same for larvae of the four species, not only on the idiosoma (e.g. scutum with four pairs of setae), palpi and tarsus I, but also the number of porose setae within the capsule of Haller's organ and the prehalleral setae.

Key words: *Ixodes luciae*, ixodid ticks, morphology, taxonomy, Brazil

Introduction

Ixodes luciae Sénevet occurs in many countries within the Neotropical Zoogeographic Region but only adult ticks have been described (Guglielmone *et al.* 2003). This species is widely distributed from Argentina to southern Mexico, with records in Argentina, Belize, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Surinam, Trinidad and Tobago and Venezuela (Onofrio *et al.* 2006).

In Brazil, *I. luciae* has been reported in the states of Pará, Amazonas, Rondônia and Mato Grosso do Sul (Labruna *et al.* 2005). However it seems to be rare in the southern half of South America, where another closely related species, *Ixodes loricatus* Neumann, is frequently found on marsupials and small rodents (Aragão 1936; Barros-Battesti & Knysak 1999). In southern South America, the only *I. luciae* records are from Argentina (Cooley & Kohls 1945; Floch & Fauran 1958; Fairchild *et al.* 1966; Autino *et al.* 2006) and from the state of Mato Grosso do Sul, Brazil (Labruna *et al.* 2005).

Adults of *I. luciae* are primarily found on marsupials, while immature stages parasitize marsupials and rodents (Fairchild et al. 1966; Jones et al. 1972; Barros-Battesti & Knysak 1999; Autino *et al.* 2006; Onofrio *et al.* 2006; Díaz *et al.* 2007, 2009; Labruna *et al.* 2009). The type depository of *I. luciae* was not stated by Sénevet (1940), but probably the type is in IPG (Institute Pasteur), Cayenne, French Guiana (Cooley & Kohls 1945; Guglielmone *et al.* 2003).

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