

**COMMENTS ON THE VALIDITY OF *Haemaphysalis cinnabarina* KOCH, 1844
(ACARI: IXODIDAE), A TAXON KNOWN SOLELY BY THE TYPE SPECIMENS FROM
NORTHERN BRAZIL**

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ABSTRACT:- BARROS-BATTESTI, D.M.; ONOFRIO, V.C.; ARZUA, M.; LABRUNA, M.B. **Comments on the validity of *Haemaphysalis cinnabarina* Koch, 1844 (Acari: Ixodidae), a taxon known solely by the type specimens from northern Brazil.** [Comentários sobre a validade de *Haemaphysalis cinnabarina* Koch, 1844 (Acari: Ixodidae) um táxon conhecido somente pelos espécimes tipos do Norte do Brasil]. *Revista Brasileira de Parasitologia Veterinária* v. 17, n. 1, p.53-55, 2008. Laboratório de Parasitologia, Instituto Butantan, Av. Vital Brasil 1500, São Paulo, SP 05503-900, Brasil. E-mail: dbattesti@butantan.gov.br

The types of *Haemaphysalis cinnabarina* Koch and its junior synonym *H. sanguinolenta* Koch, both from State of Pará, Brazil, have been studied. Although *H. cinnabarina* has been considered a synonym of *H. punctata* Canestrini and Fanzago (a Palearctic species), they were compared to another closely related species *H. chordeilis* (Packard) (a Nearctic species). Based on the morphology and geographical distance among of *H. cinnabarina*, *H. chordeilis* and *H. punctata*, we are reasonably sure that all are valid taxa. The lack of additional reports of *H. cinnabarina* is more related to few investigations in South America, mainly in Northern Brazil, rather than suggesting that it does not exist.

KEY WORDS: *Haemaphysalis cinnabarina*, Northern Brazil, taxonomic reevaluation.

RESUMO

Os tipos de *Haemaphysalis cinnabarina* Koch e da espécie sinônima *H. sanguinolenta* Koch, ambos do Estado do Pará, Brasil, foram estudados. Embora *H. cinnabarina* tenha sido considerada uma sinonímia de *H. punctata* Canestrini e Fanzago (uma espécie Paleártica), elas foram comparadas a uma outra espécie próxima, *H. chordeilis* (Packard) (uma espécie Neártica). Com base em morfologia e distância geográfica entre *H. cinnabarina*, *H. chordeilis* e *H. punctata*, consideramos válidos os três taxa. A ausência de relatos adicionais de *H. cinnabarina* está mais relacionada à ausência de inves-

tigações na América do Sul, principalmente no Norte do Brasil, do que a sugestão da sua não existência.

PALAVRAS-CHAVE: *Haemaphysalis cinnabarina*, Brasil, revalidação taxonômica

The genus *Haemaphysalis* Koch, 1844 is represented by about 160 known species in the world. From those, only four species have been reported in the Americas, with three of them occurring in the Neotropical region (ONOFRIO et al., 2006). *Haemaphysalis cinnabarina* Koch, 1844 and its synonym *H. sanguinolenta* Koch, 1844 were the first *Haemaphysalis* species described in the Americas (KOCH 1844). Besides *H. cinnabarina*, the species *H. juxtakochi* Cooley, 1946 and *H. leporispalustris* (Packard, 1869) are commonly found in the Neotropical region. The later species is also common in the Nearctic region. According to Keirans and Restifo (1993), only *H. chordeilis* (Packard, 1869) and *H. leporispalustris* are known for this genus in the Nearctic region.

Nuttall and Warburton (1915) considered *H. punctata* Canestrini and Fanzago, 1878 (Palearctic), *H. chordeilis*, and

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H. sanguinolenta as junior synonyms of *H. cinnabarina*. Bishopp and Trembley (1945) reported a confusion regarding to *H. cinnabarina* and *H. chordeilis*, but they indicated the possibility that these species could be present in North America. Subsequently, Cooley (1946) examined two engorged specimens labeled as types from Massachusetts and he concluded those specimens were the common bird tick *H. chordeilis*. This author also commented that Nuttall and Warburton (1915) were precipitated to adopt *H. cinnabarina* as a valid taxon because they did not see the types of *H. chordeilis*. Aragão (1911) included *H. cinnabarina* among the Brazilian tick fauna, but according to Cooley (1946) no worker after Aragão (1911) had cited this species in listings of ticks from South and Central Americas. Although this taxon had gradually been abandoned, Hoogstraal (1973) validated and redescribed the species after a detailed study of the holotype female and of its junior synonym *H. sanguinolenta*. In addition, he compared *H. cinnabarina* with *H. punctata*, *H. chordeilis* and *H. cornupunctata* Hoogstraal and Varma, 1962 from Hymalaia, all of them included in the subgenus *Aboimisalis* Dias, 1963. On the other hand, subsequent works retained *H. cinnabarina* as synonym of *H. punctata* (KEIRANS 1992, HORAK et al., 2002, GUGLIELMONE et al., 2003) without apparent reasons for such decision. Whereas Camicas et al. (1998) and, Barker and Murrell (2004) considered *H. cinnabarina* a valid taxon but without a definitive morphologic study.

In order to confirm the taxon for Brazil, the types of *H. cinnabarina* and its synonym *H. sanguinolenta* were recently revised during a visit to the Berlin Museum, and they were also compared to the closely related species *H. chordeilis* and *H. punctata*.

The type females of *H. cinnabarina* and *H. sanguinolenta*, labeled as from "Para, Brazilien", are deposited under the numbers ZMB 1105 and ZMB 8532, respectively. Material of *H. punctata* (2 males and 2 females, Kirgizia, Russia, collected free on the vegetation in 1985), and of *H. chordeilis* (3 females, Levinston, ME, USA, collected in 1931) deposited at the Acari Collection from Instituto Butantan, under the numbers IBSP 7669 and IBSP 1073, respectively, were also examined.

Although lacking the hypostome in the types of *H. cinnabarina* and *H. sanguinolenta* other taxonomic characters could be observed as the presence of 6 ventral palpi setae on article II and the length of the ventrointernal setae that is more than one-half as long as palpal breadth in both specimens. These features are in accordance with Hoogstraal (1973) who supported the synonymy proposed by Nuttall and Warburton (1915). That author also cited dental formula 6/6 for both specimens. In fact the females of *H. cinnabarina* and *H. punctata* are closely related but they could be readily distinct because this species as well as *H. chordeilis* have dental formula 5/5, ventrointernal setae less than one-half as long as palpal breadth, and 3 ventral setae on palpal femur (article II). *Haemaphysalis chordeilis* differs from *H. punctata* by

having scutum with numerous punctuations regularly distributed and by the presence of corners on posterolateral margins, while *H. punctata* has scutum with less punctuations and the corners on posterolateral margins are absent.

On the other hand, the dental formula is not enough to separate species because it appears to be inconstant to this genus as previously observed by Kohls (1960) who synonymized *H. kochi* Aragão, 1908 with *H. juxtakochi*; these two taxa had been differentiated by only the dental formula, being 5/5 in *H. kochi* and 4/4 in *H. juxtakochi*. According to Kohls (1960), the later name became valid since the former name was preoccupied by *H. concinna* var. *kochi* Neumann, 1905.

Based on the morphology and the geographical distribution and distance among of *H. cinnabarina*, *H. chordeilis* and *H. punctata*, we are reasonably sure that the lack of reports about *H. cinnabarina* is more related to few investigations in South America, mainly in Northern Brazil, rather than suggesting that it is not valid, as previously commented by Hoogstraal (1973).

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