Article

Occurrence of *Acrocinus longimanus* (Linnaeus, 1758)(Coleoptera: Cerambycidae) in Montes Claros, Minas Gerais, Brazil

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Abstract

The species *Acrocinus longimanus*, popularly called harlequin beetle, is one of the most emblematic beetles of Neotropical fauna. In the presente study we report on the first record of *Acrocinus longimanus* (Linnaeus, 1758) in the city of Montes Claros, Minas Gerais, Brazil. The specimen was registered in November 2018 in the urban zone of Montes Claros in a residential and commercial area. This is the first record of *Acrocinus longimanus* in the city of Montes Claros, Minas Gerais and represents only the fourth record of the species in the Brazilian Cerrado region. Our study reinforces the occurrence of this species in the Brazilian Cerrado and the use of urban areas by this longhorned beetle.

Keywords Cerrado; geographich distribution; new record; urban areas.

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1 Introduction

Lamiinae (Coleoptera: Cerambycidae) is the richest cerambycid subfamily including 2,964 genera and more than 21,000 species in the world (Monné et al., 2017). In the Neotropical region the subfamily presents 36 tribes, 723 genera and 4,231 species recorded (Monné, 2018). Among the several tribes of Lamiinae is Acrocinini Swainson, 1840 that includes only the genus *Acrocinus*(Linnaeus, 1758), and the species *Acrocinus longimanus* (Linnaeus, 1758) (Monné, 2018).

The species *Acrocinus longimanus*, popularly called harlequin beetle, is one of the most emblematic beetles of Neotropical fauna (Randeem, 2015). Harlequin beetle has a Neotropical distribution extending from Argentina to Mexico (Monné, 2018). Most records of *Acrocinus longimanus* have been made in forested areas, predominantly undisturbed forests, especially in the Amazon and Atlantic forests (Randeem, 2015; Monné, 2018). Due to their large body size and herbivorous dietary habits of different Neotropical tree species, tropical

rain forests constitute the main habitat from the species.

In the present study we report for the first time the occurrence of *Acrocinus longimanus* in the city of Montes Claros (Minas Gerais, Brazil) and we present evidences that reinforce the occurrence of the species in the Brazilian Cerrado.

2 Materials and Methods

The present study was performed in the city of Montes Claros located in the North of state of Minas Gerais, Brazil (Fig. 1). The climate is hot and dry (classified as of Köppen), characterized by well-defined rainy periods and with an average temperature of 23ºC and average annual precipitation of 1,000 mm (Santos et al., 2007; Costa et al., 2010). The city is located in the midst of a complex of mountains and large green areas that surround the city, for example, Parque da Serra do Sapucaia and Parque Estadual da Lapa Grande (Fig. 1).

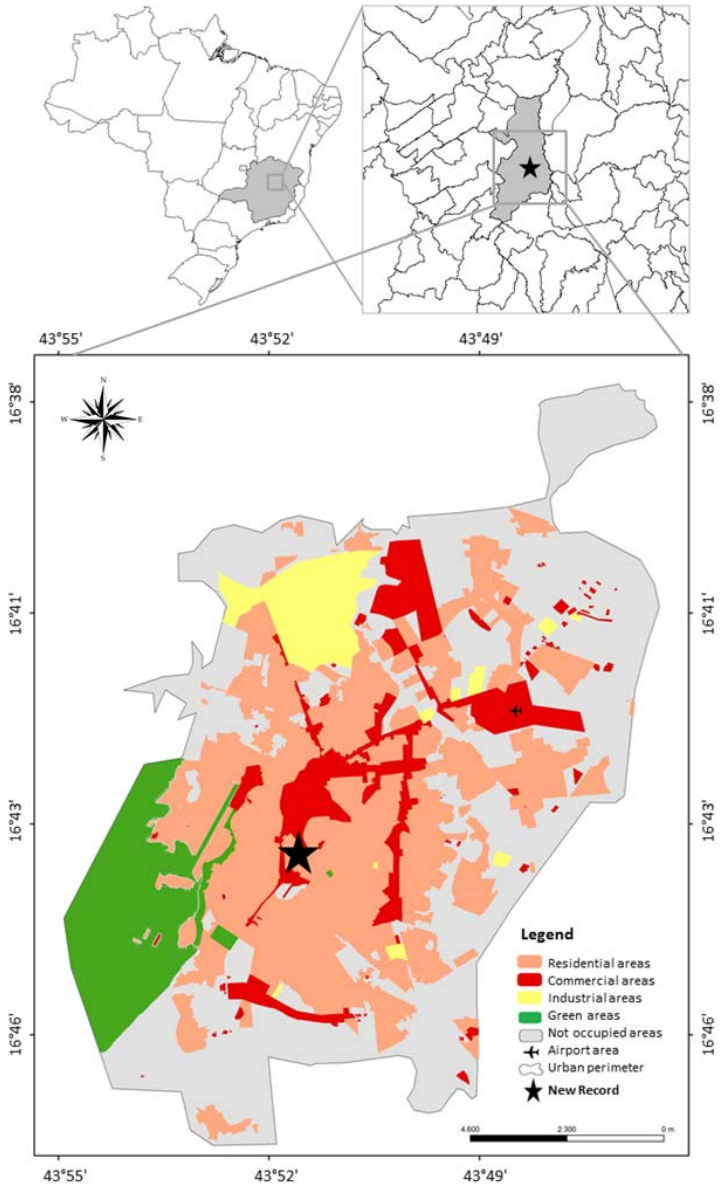

Fig. 1 Location of the study area in the urban zone of the municipality of Montes Claros, Minas Gerais, Brazil. The urban zone of Montes Claros is dominated by residential and commercial areas, but is located approximately 2 km from preserved green areas (Parque da Serra do Sapucaia and Parque Estadual da Lapa Grande). The black star indicates the exact location of the new record (16°44'15" S, 43°52'11" W). Modified of Montes Claros (2015).

The study area is located a region under domain of the Brazilian Cerrado. Cerrado is distributed throughout Central Brazil and is the second largest biome of Brazil with two million square kilometers. Unlike the Brazilian tropical rain forests (i.e., Amazon and Atlantic Forest), the Cerrado presents a predominantly savanna vegetation with scleromorphic plants due to the morphoclimatic characteristics of region (Ribeiro and Walter 2008). Montes Claros is located in a zone on influence of Caatinga biome, presenting the main phytophysiognomies of the cerrado *sensu stricto* and tropical dry forests (Santos et al., 2007; Costa et al., 2010).

The specimen was registered in November 2018 in the urban zone of Montes Claros in a residential and commercial area (Fig. 1 and 2). The insect was collected manually, stored in a 70% alcohol plastic container and sent to the laboratory. The specimen is deposited in the Entomological Collection of the Laboratory of Zoology (LABZOO) in the Universidade Estadual de Montes Claros (voucher number LABZOO 2018005).The specimen was identified based on the morphological characteristicsfollowing descriptions provided by Zeh et al. (1992). The identification was also supported by comparison with specimens deposited in the collection of the Instituto de Ciências Biológicas of the Universidade Federal de Goiás (ICB-UFG). Records of the distribution of *Acrocinus longimanus* in the Neotropical Region were obtained from Valle et al., (2017) and Monné (2018). Additional historical records were done from other recently published data (Table 1). When geographic coordinates were not available, localities were geolocated with Google Earth (Google, 2019). The geographic distribution map of the species was build using DIVA-GIS 7.3.0 (datum WGS84).

Fig. 2 Specimen of *Acrocinus longimanus* (Linnaeus, 1758) registered in the urban area of Montes Claros, Minas Gerais, Brazil.

3 Results

The specimen collected of *Acrocinus longimanus* (Fig. 3) is characterized by a color pattern very typical with black, orange and / or red spots on their elytra and large size with males being able to reach 70 mm of body length. In addition, there is sexual dimorphism in the species with males having very long legs with 110 mm in length and curved anterior tibia.This is the first record of *Acrocinus longimanus* in the city of Montes Claros, Minas Gerais and represents only the fourth record of the species in the Brazilian Cerrado region (Fig. 4).

Fig. 3 Dorsal view of male specimen of *Acrocinus longimanus* (Linnaeus, 1758) recorded in Montes Claros, Minas Gerais, Brazil (voucher number LABZOO 2018005).

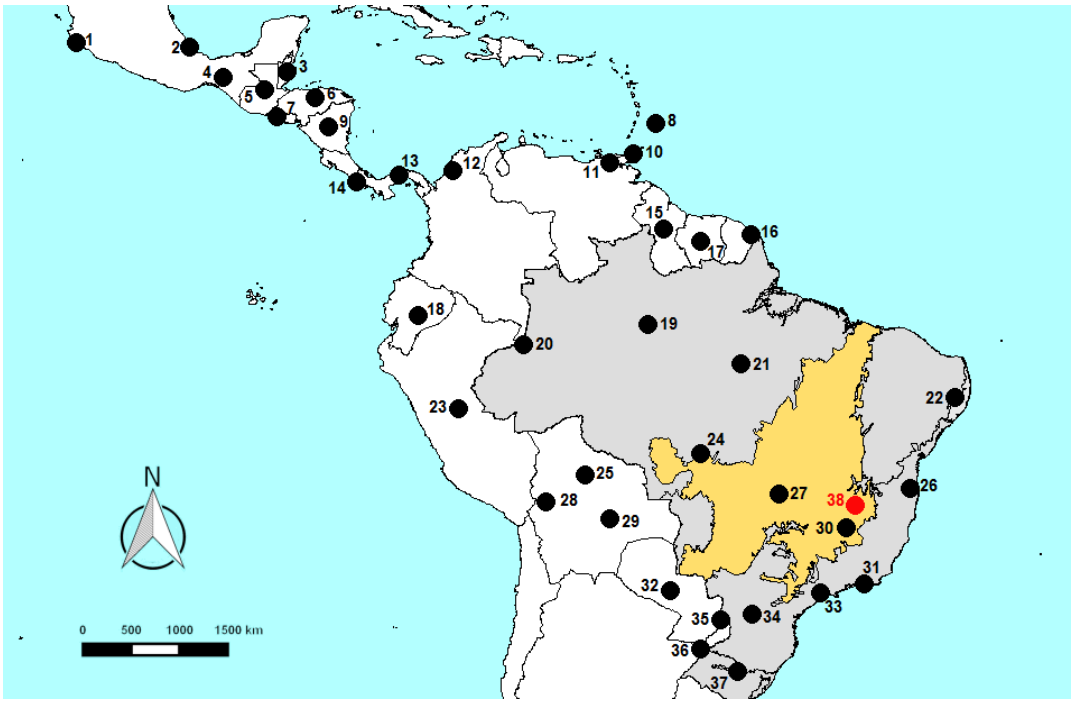

Fig. 4 Geographic distribution of *Acrocinus longimanus* in the Neotropical Region. Black dots are localities with previous records and the red dot (38) is the locality with new record as described in the Table 1. Orange area is the extension of Brazilian Cerrado according to IBGE (2004).

Table 1 Historical and new records of *Acrocinus longimanus* (Linnaeus, 1758) in the Neotropical Region.

Label	Country	Province/state	Latitude	Longitude	Reference
1	Mexico	Jalisco	19°29’54” N	105°02’40”W	Monné (2018)
2	Mexico	Veracruz	19°10’25” N	096º08’03”W	Monné (2018)
3	Belize	—	17°11’23” N	088°29’51”W	Monné (2018)
4	Mexico	Chiapas	16°45’31” N	093º31’33”W	Monné (2018)
5	Guatemala	—	15°47’00” N	090°13’50”W	Monné (2018)
6	Honduras	—	15°11’59” N	086°14’30”W	Monné (2018)
7	El Salvador	—	13°40’27” N	089°17’24”W	Monné (2018)
8	Barbados	—	13°11’37” N	059°32’35”W	Valle et al. (2017)
9	Nicaragua	—	12°51’55” N	085°12’26”W	Monné (2018)
10	Trinidad and Tobago	—	10°45’00” N	061°19’00”W	Monné (2018)
11	Venezuela	—	10°06’39” N	063°06’16”W	Monné (2018)
12	Colombia	Sucre	09°26’59” N	075°26’30”W	Fuentes-Mario and Salcedo-Rivera (2018)
13	Panama	—	09°04’27” N	079°39’35”W	Monné (2018)
14	Costa Rica	—	08°33’00” N	083°30’00”W	Monné (2018)
15	Guyana	—	04°51’37” N	058°55’48”W	Monné (2018)
16	French Guiana	—	04°29’00” N	052°02’00”W	Monné (2018)
17	Surinam	—	03°55’09” N	056°01’40”W	Monné (2018)
18	Ecuador	—	01°49’52” S	078°11’00”W	Monné (2018)
19	Brazil	Amazonas	02°35’21” S	060°06’55”W	Monné (2018)
20	Colombia	—	04°11’37” S	069°56’24”W	Monné (2018)
21	Brazil	Pará	05°39’34” S	052°54’03”W	Monné (2018)
22	Brazil	Pernambuco	08°17’40” S	036°03’00”W	Santos and Pereira-Colavite (2017)
23	Peru	—	09°11’23” S	075°00’54”W	Valle et al. (2017)
24	Brazil	Mato Grosso	12°40’54” S	056°04’00”W	Monné (2018)
25	Bolivia	Beni	14°22’41” S	065°05’44”W	Monné (2018)
26	Brazil	Bahia	15°23’00” S	039°33’00”W	Monné (2018)
27	Brazil	Goiás	15°49’47” S	049°50’08”W	Monné (2018)
28	Bolivia	La Paz	16°29’22” S	068°07’09”W	Monné (2018)
29	Bolivia	Santa Cruz	17°48’52” S	063°09’21”W	Monné (2018)
30	Brazil	Minas Gerais	18°30’47” S	044°33’18”W	Monné (2018)
31	Brazil	Rio de Janeiro	22°54’24” S	043°10’22”W	Monné (2018)
32	Paraguay	—	23°26’33” S	058°26’37”W	Monné (2018)
33	Brazil	São Paulo	23°33’01” S	046°37’59”W	Monné (2018)
34	Brazil	Paraná	25°15’09” S	052°01’17”W	Monné (2018)
35	Argentina	Misiones	25°40’59” S	054°27’16”W	Monné (2018)
36	Argentina	Corrientes	27°56’59” S	055°59’21”W	Valle et al. (2017)
37	Brazil	Rio Grande do Sul	29°46’00” S	053°10’00”W	Monné (2018)
38	Brazil	Minas Gerais, Brazil	16°44’15” S	043°51’55”W	The present publication

4 Discussion

Previous records of the species have shown that in Brazil the harlequin beetle has a preferential occurrence in tropical rain forests, especially in areas of Atlantic Forest and Amazon Forest. The present study reinforces the occurrence of *Acrocinus longimanus* in the Brazilian Cerrado, which in the North of Minas Gerais is dominate by savannas and tropical dry forests (Santos et al., 2007). Besides that, the specimen was recorded in the urban area of Montes Claros, corroborating recent evidences that species can colonize urban forest fragments (Santos and Pereira-Colavite, 2017; Fuentes-Mariaand and Salcedo-Rivera, 2018). These results might indicate that the constant fragmentation of natural habitats of harlequin beetle has led the species to inhabit small fragments, and often urban areas.

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