

New record of Velvety Black Tyrant *Knipolegus nigerrimus* (Vieillot, 1818) (Passeriformes, Tyrannidae) at low altitude, in a Caatinga area, Paraíba, Brazil

Novo registro de Velvety Black Tyrant Knipolegus nigerrimus (Vieillot, 1818) (Passeriformes, Tyrannidae) em baixa altitude, em área de caatinga, Paraíba, Brasil

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ABSTRACT

Knipolegus nigerrimus is a widely distributed bird species in the Caatinga and has been recorded at altitudes between 560 and 1000 m. Here, we describe the occurrence of *K. nigerrimus* at an altitude lower than that recorded in the literature. A male individual was recorded during an avifauna study conducted in 2022 in the municipality of Passagem, Paraíba, Brazil. The individual was observed making short flights near a rocky wall and landing on rocks in the vicinity. At that time, the individual was photographed and photographs were used to identify the species. One possible explanation for what happened is that it moved to a low-altitude environment in search of a watercourse present at the site. However, the observed behaviour is described in the literature as parental care behaviour, which may indicate the presence of a nest at the site. This record is important because it shows a possible behavioural adaptation.

Keywords: Brazilian semi-arid region; geographical distribution; parental care.

RESUMO

Knipolegus nigerrimus, uma espécie de ave amplamente distribuída na caatinga, foi registrada em altitudes entre 560 e 1.000 m. Aqui se descreve a ocorrência de *K. nigerrimus* em altitude inferior à registrada na literatura. Um indivíduo do sexo masculino foi registrado durante um estudo de avifauna realizado em 2022 no município de Passagem, Paraíba, Brasil. O indivíduo foi observado realizando voos curtos próximo a um paredão rochoso e pousando em rochas próximas. Nesse momento, fotografou-se o indivíduo, e fotografias foram utilizadas para identificação da espécie. Uma possível explicação para o ocorrido é que ele se deslocou para um ambiente de baixa altitude em busca de um curso d'água presente no local. Porém o comportamento visto é descrito na literatura como de cuidado parental, o que pode indicar a presença de ninho no local. Este registro é importante porque mostra uma possível adaptação comportamental.

Palavras-chave: cuidado parental; distribuição geográfica; semiárido brasileiro.

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The genus *Knipolegus* (Passeriformes: Tyrannidae) comprises 12 described species, which inhabit a wide variety of environments in South America (HOSNER & MOYLE, 2012; SCHULTZ, 2022). Ten species occur in Brazil, seven of which are residents (LAS-CASAS & AZEVEDO-JUNIOR, 2008). Three species have been recorded in the Caatinga domain: *K. lophotes* (Boie, 1828), *K. franciscanus*

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(Snethlage, 1928) and *K. nigerrimus* (Vieillot, 1818), with *K. nigerrimus* showing the largest distribution in the region (SILVA, 2017). In the Caatinga, a phytogeographic domain that predominantly covers the semi-arid Northeast, extending as far north as the state of Minas Gerais (SILVA *et al.*, 2017), *K. nigerrimus* has been recorded in the following states: Bahia, Alagoas, Ceara, Pernambuco and Paraíba (SICK, 1997; FARIAS *et al.*, 2006; LAS-CASAS & AZEVEDO-JUNIOR, 2008; ARAUJO *et al.*, 2012) at altitudes between 560m and 1000m. Here, however, we describe a new record of *K. nigerrimus* in the Caatinga at a lower altitude than previously reported in the literature.

K. nigerrimus was recorded during bird sampling studies conducted at Fazenda Aba (figure 1), a private property located in the Depressao Sertaneja Setentrional (IBGE, 2021), in the municipality of Passagem, Paraíba, Brazil (07°05 '50"S, 37°01 '34"W). This location is characterised by its Caatinga vegetation, the presence of rocky walls at altitudes ranging from 300 to 810m, as well as springs and perennial water bodies (FERNANDO *et al.*, 2021, 2022; MEDEIROS, 2022). The climate of the region is hot and dry, with an average annual temperature of 25°C (FRANCISCO *et al.*, 2015).

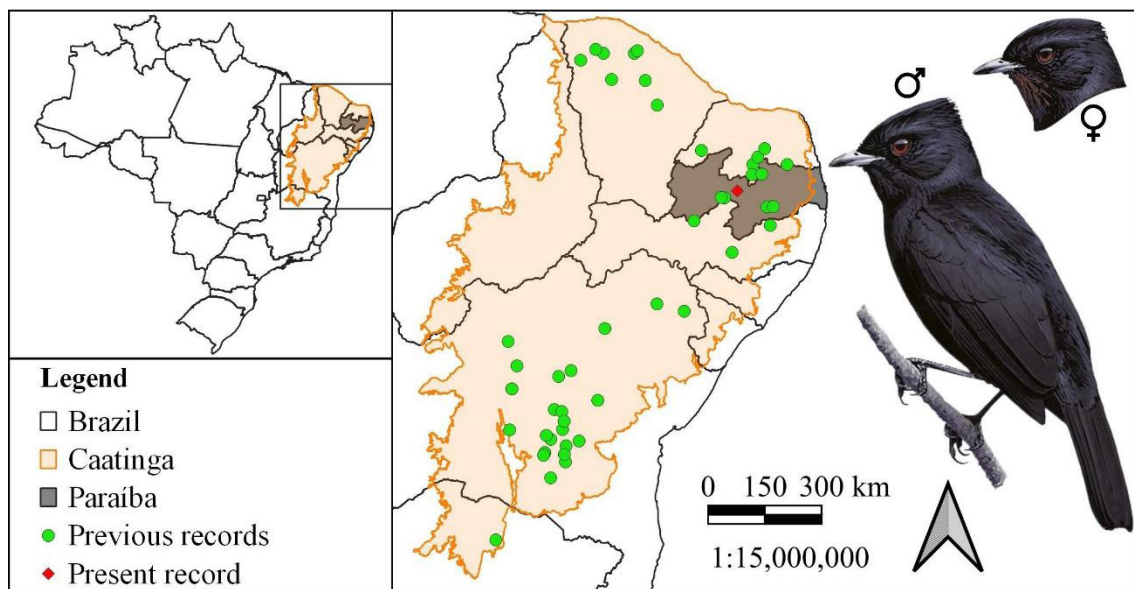


Figure 1 – Distribution of *Knipolegus nigerrimus* in the biome Caatinga, Brazil. The green markers represent known occurrences of the species in the region, according to the records available on WikiAves (wikiaves.com.br). The red marker represents the new records described here. Illustration of species: Farnsworth *et al.* (2020). Source: primary.

The individual was recorded during a morning excursion at approximately 8:12am on 23 October 2022. An adult male was observed near a rocky wall in a canyon at an altitude of approximately 290 m. Its behaviour consisted of short flights, followed by immediate landings on the rocky surfaces where it was. The specimen was identified based on its morphological and vocalisation characteristics. During the observation period, a photographic record of the individual was taken for documentation (figure 2), which was essential for subsequent analysis. A Canon PowerShot SX50 HS camera was used as the photographic equipment.



Figure 2 – Individual *K. nigerrimus* recorded at Fazenda Aba, Passagem, Paraíba, Brazil. Source: primay.

The individual *K. nigerrimus*, identified as an adult male, was making short-distance flights in the vicinity of rocky walls, located in a canyon region, taking off and landing on the same rocks. This location is approximately 290 m above the sea level. Several diagnostic characteristics were analysed to identify the species in question. The plumage, which consists of a predominantly black colouration, is its most distinctive feature: the presence of a hidden white band on the remiges, observed in flight, the rudimentary crest, tonal variations of the beak, lighter at the base and darker at the tip, and body size, as few species in the region have the same dimensions and colouration. The determination of the individual's sex was made by the absence of a brown spot in the gular area, which is exclusive to females of this species (figure 3).

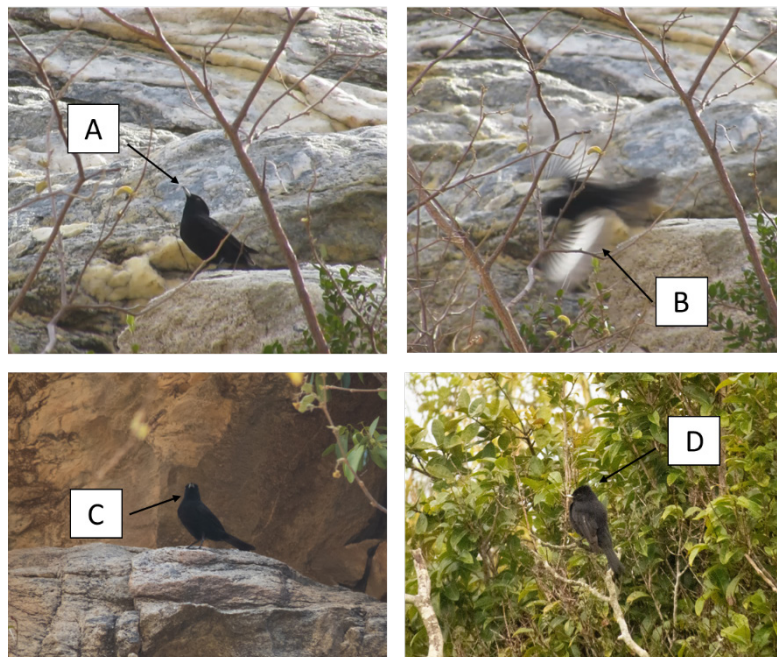


Figure 3 – Diagnostic characteristics for the identification of *K. nigerrimus*: A) tonal variations of the beak; B) white band on the remiges; C) gular region; D) rudimentary crest. Source: primary.

K. nigerrimus is distributed across the states in the southern, southeastern, and northeastern regions of Brazil, where it inhabits forested areas and high-altitude grasslands, transitioning between these habitats (SICK, 1997). It is a bird that exhibits a dependency on high altitudes, ranging from 700 to 2,700 meters, and is even classified as endemic to these regions (SIGRIST, 2006).

The present record describes an individual at an altitude of 290 meters, which constitutes an atypical occurrence for the species. The specimen in question was found near a perennial watercourse that crosses Fazenda Aba. One possibility for this distribution at an unusual altitude could be the search for water, following the individual's descent from higher elevations in the region.

Another possible explanation for the event described here is related to the reproductive biology of the species, as the observed behaviour in our study resembles that described by Pichorim *et al.* (1996). In their description, despite the female being responsible for egg care, the male remains perched on rocks or shrubs nearby, at approximately 8-15 m away from the nest, occasionally flying to ward off individuals from other species. The date of our record aligns with that of the reproductive period of the species recorded by Pichorim *et al.* (1996), which occurs between October and November. Although some crevices were observed along the rocky wall, we did not observe other *K. nigerrimus* individuals near the recording location, making it impossible to confirm the presence of a nest in the area.

The fact that the reported event is based on a single record, coupled with the lack of information in the literature regarding the biology, ecology, and behaviour of *K. nigerrimus*, limits the possible conclusions regarding the occurrence of the species at such an atypical altitude, as observed in our study. This singular record is, therefore, of great significance as it offers a unique perspective on possible adaptive behaviours of *K. nigerrimus* and expands the species' distribution in the Caatinga. However, further studies involving the responses of species to seasonal fluctuations, as well as reproductive behaviours, are necessary, not only in the Caatinga, but throughout Brazil.

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