

First Brazilian record of the Yapacana Antbird (*Myrmeciza disjuncta*, *Thamnophilidae*) with additional notes on its natural history

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RESUMO. Primeiro registro brasileiro do formigueiro de Yapacana (*Myrmeciza disjuncta*, *Thamnophilidae*) com notas adicionais sobre sua história natural. Registramos o formigueiro de Yapacana (*Myrmeciza disjuncta*) para o Brasil a aproximadamente 500 km ao sul de sua distribuição geográfica previamente conhecida. Nossos registros de *M. disjuncta* foram documentados através de coletas de um casal, fotografias e várias gravações. A distribuição local de *M. disjuncta* está relacionada a microhabitats específicos em campos arbustivos sobre solos arenosos. Imagens de satélites são instrumentos úteis para localizar potenciais áreas onde podem ser encontradas *M. disjuncta* e outras espécies de aves relacionadas à vegetações sobre solos arenosos na Amazônia.

PALAVRAS-CHAVES: *Myrmeciza disjuncta*, aves amazônicas, conservação.

KEY-WORDS: Yapacana Antbirds, *Myrmeciza disjuncta*, Amazonian birds, conservation.

The Yapacana Antbird (*Myrmeciza disjuncta*) is considered one of the least known members of the family *Thamnophilidae* (Zimmer 1999), probably due the limited number of ornithological studies in their typical habitat: the sandy-soil vegetation. Friedmann first described this species in 1945 based on skins of an immature male and a female (Friedmann 1945). Since then, the natural history of the Yapacana Antbird was virtually unknown until recently (Ridgely and Tudor 1994). Zimmer (1999) provided the first detailed account of Yapacana Antbird, including information about morphology, distribution, habitat use, and vocalizations. The Yapacana Antbird was recently recorded by the first time to Brazil by Borges (2000). We report here a much more detailed account of the record of *M. disjuncta* reported in Borges (2000), and provide additional information on the biology of this species with emphasis on its habitat use.

STUDY AREA AND METHODS

We found *M. disjuncta* in the Jaú National Park located at lower rio Negro, Amazonas States. Jaú National Park is the largest protected area of Brazil encompassing 2,272,000 ha. We studied *M. disjuncta* in some 10 hectare patch of shrubby vegetation on sandy soil (01° 54' 42 S – 61° 35' 20 W) which is seasonally saturated by the local waterbed. *Myrmeciza disjuncta* was first recorded in March 1999 during an expedition to study the bird community in this unique area, when a male was seen and tape recorded (Borges 2000). We returned to the same site in August

1999 to collect specimens and study the biology of the species in greater detail. Tape recordings of *M. disjuncta* were made using a Marantz PMD 222 recorder and a Senheiser ME-66 microphone. Tape recordings will be archived in Library of Natural Sounds, Cornell University and Arquivo Sonoro Elias Coelho (UFRJ).

To better describe micro-habitat used by *M. disjuncta*, we took three measurements of vegetation structure following methods described in Bibby *et al.* (1997). Vertical vegetation profile was determined using a four meter pole marked at intervals of 20 cm and was represented by the number of times vegetation (leaves, branches, etc.) contacted the pole at each interval. Canopy cover was recorded at three heights: ground, one-half meter, and one meter using a esfero-densímetro. These heights were chosen because *M. disjuncta* was never observed higher than one meter above the ground. Finally, we took four estimates of canopy height at each sampling site. These measurements were recorded in 46 sampling points along the two trails that transverse the study site. To avoid the influence of the trail on the vegetation structure measurements, we chose sampling points at a perpendicular distance of five meters from the trails.

RESULTS AND DISCUSSION

Geographical distribution of M. disjuncta. The first record of *M. disjuncta* in Brazil involved a male seen and tape recorded at our site in Jaú National Park on 16 March 1999 (Borges 2000). Although we heard two additional

individuals, only a single male was seen briefly. The very dense vegetation practically prevents detailed field observations of *M. disjuncta* at this site. The brevity of our observations precluded a definitive identification of the singing bird. It was only after comparing our recording to those of Kevin Zimmer (from Venezuela) that Mario Cohn-Haft identified our bird as *M. disjuncta* (Borges 2000).

We returned to the study site and on 20 August 1999, a pair of adult birds were captured in a mist-net, photographed in the hand, and collected (specimens deposited in the ornithological collection of the Museu Paraense Emílio Goeldi; MPEG 54886 and 54887). Liver, heart, and pectoral muscle tissues were saved and preserved in a 70% solution of alcohol. Our specimens represent two of only 11 of *M. disjuncta* in ornithological collections in North and South American museums (Zimmer 1999, Borges 2000). The remaining nine specimens are as follows: five in the Colección Ornitológica Phelps (Caracas, Venezuela), three in the United States National Museum of Natural History, and one in the Academy of Natural Sciences (Philadelphia).

The Yapacana Antbird was previously documented from only four sites in Venezuela and Colombia (figure 1 in Zimmer 1999). The site closest to Jaú National Park is the Cerro de la Neblina on the Brazilian/Venezuelan border (Willard *et al.* 1991). Though on the border, *M. disjuncta* was recorded only from the Venezuelan side of this mountain. Our records extend approximately 500 km southward from the previously documented distributional range of *M. disjuncta*.

General habits and morphology. The Yapacana Antbird can be described as a small (14 g), semi-terrestrial bird because the most of our direct observations of the bird was located from the ground to the maximum one meter in height. The vocalizations of *M. disjuncta* can be transcribed as “chiiiiiii pitchiii pitiiiiuu” (not even suggesting a passerine bird!) emitted actively between 5:45 to 7:00 and rarely after this time period. A more complete description of habit and natural history of this bird can be found in Zimmer (1999). The external morphology of our male agrees well with the plumage described by Zimmer (1999). Female plumage features not noted by Zimmer (1999) were the presence of narrow fringes of ochraceous-buff on the upper wing coverts and a white interscapular-patch. The measurements of culmen (15.6-17.5 mm), wing (58-61 mm), and tail (44.5-46 mm) present no clear sexual dimorphism (table 1).

Macro and micro-habitat of M. disjuncta. The general vegetation where we found *M. disjuncta* is classified as sandy-soil vegetation (Anderson 1981). Although sandy-soil vegetation is found at many sites in the Amazon Basin, it is especially extensive in the basins of the Rio Negro and the Rio Branco (Anderson 1981). This vegetation type

presents a great heterogeneity in structure. The sandy-soil vegetation can be divided roughly into woody campina (or campinarana), a low stature forest with a canopy height of 15-25 m and an open understory dominated by small diameter treelets, and the shrubby campina, an open field with low shrubby vegetation with few treelets over five meters tall (Anderson 1981). We recorded the Yapacana Antbird only in shrubby campina. The palms trees *Bactris campestris* and *Mauritia carana* was typical in this habitat.

Table 1. Morphological measurements of six skins of *M. disjuncta* deposited in the Colección Ornitológica Phelps and Museu Paraense Emílio Goeldi. The tail of one female was not measured.

Measurements (mm)	Male	Female
Total length	131, 130, 125	145, 136, 130
Culmen	17.5, 16.5, 16	17.5, 16, 15.6
Wing	60, 61, 58	59, 59, 55
Tail	44.5, 46, 46	45, 45.5

In our study site the canopy height varied from 0.5 to 6 m, but most of the height estimates were between 1 and 3.5 m (figure 1a). Most of our observations of the Yapacana Antbird were in areas where the canopy averaged 2.7 m in height. The vegetation cover in the strata used by *M. disjuncta* was denser at ground-level, where it varied from 31 to 89% with 71% in average (figure 1b). The vertical profile of vegetation structure in the campina studied is typical of shrubby vegetation, where the densest strata are from 0 to 0.5 m in height (figure 1c).

The vegetation structure in our site differed somewhat from that studied by Zimmer (1999) in Venezuela. His site was described as a woodland with sawgrass and bamboo scattered in the understory, and a canopy height from 6 to 10 m. We observed neither sawgrass nor bamboo at our site. Additionally, our campina site has a lower overall canopy height. In Venezuela, *M. disjuncta* is restricted to a type of white-sand woodland locally called “monte cerrado” (Zimmer 1999). The local distribution of this species maybe is related to specific, but as yet poorly known, micro-habitats in the general sandy-soil vegetation as suggested by Zimmer (1999). For example, we were unable to find *M. disjuncta* in a much more extensive campina (over 900 ha) in Jaú National Park.

Conservation of M. disjuncta. *Myrmeciza disjuncta* has a local distribution with high density populations. At least 24 pairs of these birds were found along a 1350 m trail in Venezuela (Zimmer 1999). In our small site (some 10 ha), five individuals (pairs?) were detected. As noted by Zimmer (1999), the real conservation status of *M. disjuncta* will require a better understanding of its micro-habitat dependence. The very typical landscape features (low

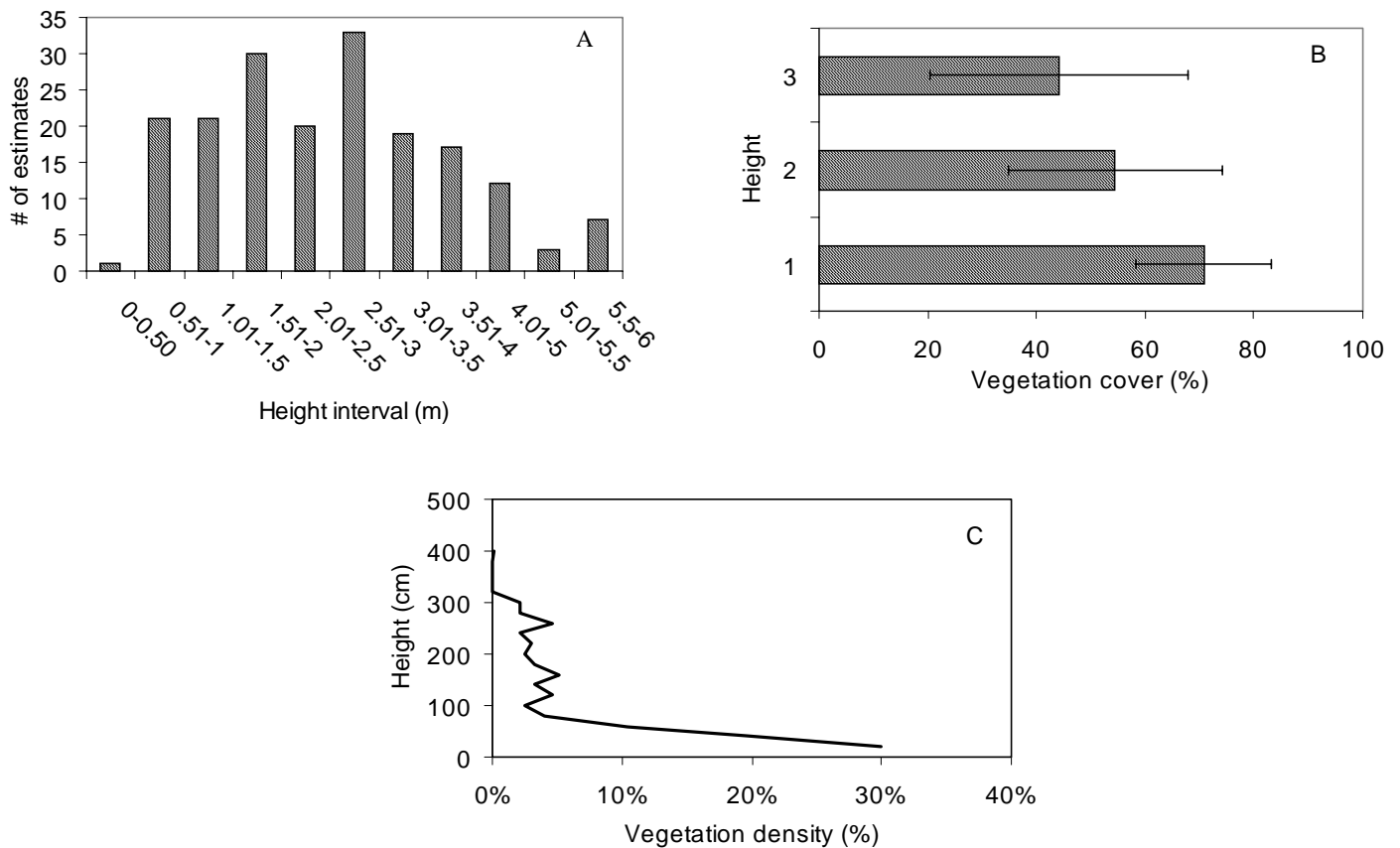


Figure 1. Vegetation structure in the study site: (A) canopy height variation, (B) mean canopy cover at ground (1), one-half meter (2) and one meter (3) levels – the bars are standard deviations; (C) vertical vegetation profile in the campina.

canopy, sandy and seasonally saturated soil) of the macro habitat of *M. disjuncta* are easily detected by Landsat TM satellite images. Satellite images are thus a useful tool for locating potential areas where Yapacana Antbird and other birds restricted to sandy-soil vegetation (e. g. *Dolospingus fringilloides*, *Elaenia ruficeps*) may be found (Oren 1980). Because the sandy-soil vegetation covers hundreds of thousands of square kilometers along the Rio Negro basin, especially in their median and upper reaches (RadamBrasil 1983), we expect that *M. disjuncta* will be recorded at other sites in the future, including conservation units such as Pico da Neblina National Park.

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