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Natural history notes on the highly threatened Pinto's Chachalaca *Ortalis remota* (Aves: Cracidae)

Carlos Otávio Araujo Gussoni [1] & **Marco Aurélio Galvão da Silva** [2]

[1] Rua 12B, 621, Vila Indaiá, Rio Claro, SP, 13506-746, Brazil.
[2] SAVE Brasil, R. Fernão Dias, 219 - casa 2 - Pinheiros, São Paulo - SP, 05427-000, Brazil.
[1] cogussoni@gmail.com (corresponding author), [2] marcosama@gmail.com

The genus *Ortalis* (Cracidae) is endemic of the Americas and composed of 15 species (Billerman et al. 2020), generally found in pairs or small groups (Sigrist 2006). They present a varied diet including fruits, leaves, seeds, flowers, and arthropods (Billerman et al. 2020).

Pinto's Chachalaca (*Ortalis remota* Pinto, 1960; Aves: Galliformes: Cracidae) (Image 1) is one of the world's rarest cracids, nowadays restricted to fewer than 20 municipalities in eastern Brazil. It is threatened with extinction, listed nationally as "Critically Endangered" (Instituto Chico Mendes de Conservação da Biodiversidade 2018), mainly due to poaching and habitat loss (Rego 2009). It was described by Olivério Pinto as a subspecies of *Ortalis guttata* (Pinto 1960) based on a single specimen collected in Mato Grosso do Sul state and treated as a junior synonym of *Ortalis guttata squamata* by Vaurie (1965). However, recent reference works have considered it a valid taxon, either as a subspecies (e.g., Clements et al. 2019, Remsen et al. 2021) or full species (Silveira et al. 2017). Knowledge about the species' biology is limited, being the sole information available present in Silveira et al. (2017). Therefore, most of the natural history aspects of the species remain virtually unknown. The species is locally known as 'guarda-faca' (an onomatopoeic name which is a reference to the vocal duet of the species, according to locals from Guapiaçu: 'Guarda a faca vovô; tá na cara que eu vou'), 'jacuzinho', 'jacu-cigana', 'jacutinga', and 'jacupemba'.

Field campaigns to study the species were carried out from January to December 2018 (six to ten days each month, distributed in January, March, April, September, October, and December), during 43 days in 11 municipalities in the state of São Paulo (SP), Brazil (Image 2). Searches for the species were conducted in 28 municipalities using playbacks at previously defined points distributed in the visited forest fragments with potential occurrence of the species (riparian forests) every 200m. At each point, the species' calls were played for 5 min, and then 5 min of listening (adapted from Marion 1974; Marion et al. 1981; Schmitz-Ornés 1999).

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Image 1. Pinto's Chachalaca *Ortalis remota*.

For each individual seen, information regarding group size, food items, foraging behavior, and breeding biology were noted. Perches were classified by type (lianas, dry or green branches), inclination (vertical – 81° to 99°; horizontal – up to 10° inclination) and height in relation to the ground, also recording the portion of the branch in which the bird was perched (proximal, median or distal in relation to the trunk).

Group size. Individuals were found mostly in pairs (average individuals per group= 2.03 ± 0.67; min= 1; max= 5; n= 54).

Food items. On 14 March 2018, an individual was recorded feeding on the infructescence of *Cecropia pachystachya* Trec. (Urticaceae) in Nova Granada (SP). In 48 seconds of observation, 12 pecks were recorded in at least four infructescences. On 15 December 2018, an individual was seen feeding on *Psidium guajava* L. (Myrtaceae) fruits on the edge of the forest in Guaíra (SP). In addition, in 15 November 2017, individuals were observed feeding on the infructescence of *Cecropia pachystachya* in Guapiaçu (SP).

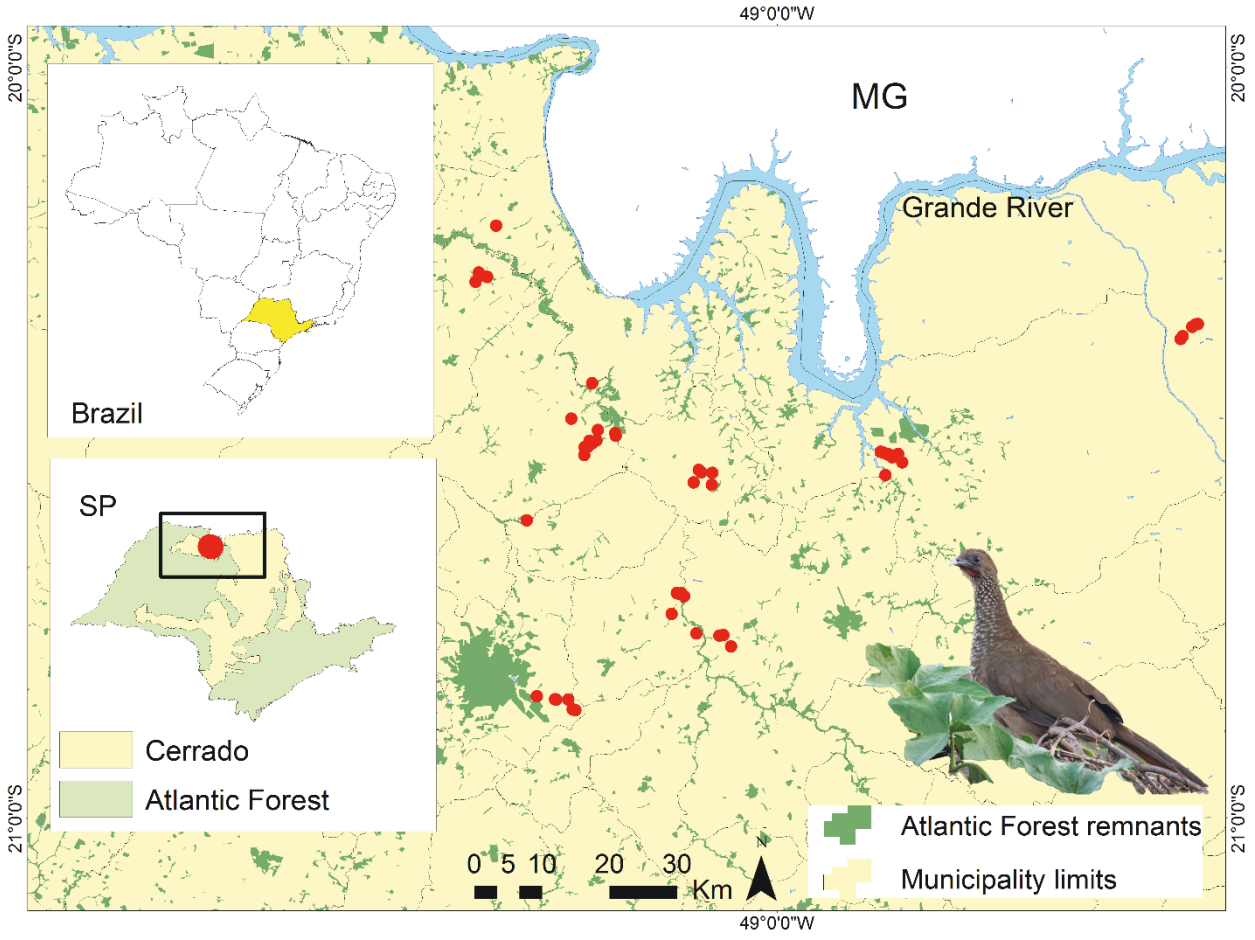

Image 2. Occurrence spots for *Ortalis remota* sampled in this study. Map elaborated by Paula Ribeiro Anunciação

Perches. 109 perching locations used by *O. remota* individuals were noted. Of this total, 96 (88.07%) were branches (88 inclined and 8 horizontal) and 13 (11.93%) were liana aggregations. The average inclination of the branches used as perches was 48.43 ± 20.19° (min= 10°; max= 80°) (n= 67). The majority of perches used (67.4%) were green branches, with 32.55% of the records in dry branches and one encounter on the ground (n= 86). The average height of the perches was 5.58 ± 2.6 m (min= 1 m; max= 12.5 m) (n= 109). In half of the observations (52%), the species was seen using the median portion of the perches, while the proximal portion was used 33 times (44%) and the distal portion three times (n= 75).

Reproductive biology. On 25 and 30 January 2018, four young individuals were found in two points (two in each) in the municipality of Guapiaçu (SP). In addition, Ciro Albano and Cristine Prates (pers. comm.) found a subadult following two adults on 16 May 2018, in Nova Granada (SP).

The fact that the species is found preferably in pairs, but also in small groups, agrees with what is described for most species of the genus *Ortalis* (Sigrist 2006). In addition, the two food items registered for the species are also part of the diet of other *Ortalis*. Five species of the genus have already been recorded feeding on *Cecropia* infructescence (Del Hoyo & Kirwan 2020a,b,c,d; Kirwan et al. 2020) and *O. cinereiceps* have already been observed feeding on *Psidium guajava* fruits (Del Hoyo & Kirwan 2020a).

Information on reproductive biology of *Ortalis* is scarce and highly scattered in literature and the data presented here are the first for *O. remota*. In Brazil, the breeding season varies significantly among species in the genus; however, most of the species of *Ortalis* have also been recorded breeding during the period that comprises the last and first months of the year (Billerman et al. 2020).

The data presented here about the perches utilized by the species are the first for the genus. This kind of information, along with the data about diet, group size and breeding biology, is utterly important for the design of ex situ conservation initiatives and breeding the species in captivity, which is one of the conservation strategies suggested by Silveira et al. (2017) for *O. remota*.

Despite the new information obtained in our study, many aspects of species' natural history remain poorly known and we encourage future work focusing on the biology of this highly threatened species.

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