Notes on Nest and Chicks of the Guianan Red Cotinga (*Phoenicircus carnifex*) in Amazonas, Brazil

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ABSTRACT.—The Guianan Red Cotinga (*Phoenicircus carnifex*) is a poorly known member of the family Cotingidae, and information concerning its biology, ecology, and natural history are scarce. We provide the first description of the nest and young of the Guianan Red Cotinga and provide additional natural history data on its diet and habitat preferences. Received 3 June 2014. Accepted 24 January 2015.

Key words: Cotingidae, diet, natal plumage, nest, Rupicolini.

Members of the family Cotingidae include some of the most spectacular of all Neotropical birds (Snow 1982). The Guianan Red Cotinga (*Phoenicircus carnifex*), an uncommon species, is found in the lower and mid-levels of humid forests in northern Brazil, Venezuela, Guyana, Suriname and French Guiana (Kirwan and Green 2011). In Brazil, it occurs in “terra firme” and “campinarana” forests on both banks of the Amazon River on the Guiana Shield and along the lower Tapajós River, where it is in contact with its sister species the Black-necked Red Cotinga (*Phoenicircus nigricollis*; Kirwan and Green 2011). Both species participate in a lek-
based breeding system (Trail and Donahue 1991), with the parental care performed exclusively by the female (Kirwan and Green 2011).

Long subject to speculation of its systematic position, *Phoenicircus* is now known to form part of the subfamily Rupicolini, composed of *Phoenicircus*, *Rupicola* and *Snowornis* (Ohlson et al. 2007, Tello et al. 2009, Martins 2012). Breeding data for the Guianan Red Cotinga are largely absent, birds in breeding condition (developed gonads and/or brood patch) have been collected between September and October in Surinam (Kirwan and Grenn 2011) and in April, in Amapá, Brazil (Novaes 1978). We provide the first description of the nest and chick of the Guianan Red Cotinga, and information on the diet of the chick in the nest. We discuss characteristics of the chick’s plumage comparing it to related taxa which may be useful in the determination of the species’ phylogenetic position.

**RESULTS**

The nest was found on 20 January 2013 (F. Lima, pers. comm.), in the Santuário Reserve, Presidente Figueiredo municipality, Amazonas, Brazil (02° 03’ 34.0” S; 059° 55’ 43.8” W). The nest was located in campinarana forest, an uncommon forest physiognomy with low canopy height, few arboreal species and absence of palm trees, and located on poor sandy soils with high water permeability (see Anderson et al. 1975).

The nest was built in a crevice of a macucu tree (*Aldina heterophylla*) 160 cm in circumference, at 270 cm above from the forest floor. The nest was a shallow cup, with an external width of 123 mm, external margin high of 38 mm, internal width of 97 mm and internal depth of 19 mm. It was constructed of mud and thin sticks and lined mainly with black and brown rootlets and yellowish fibers.

On the day of discovery the female was inside the nest, presumably incubating. On 29 January 2013, the nest contained two chicks (D. Lagroteria, pers. comm.). On February 10, the start of our observation period, only one chick of unknown age was present (Fig. 1). The chick was well developed and covered in yellowish-olive feathers. The tail and head included reddish feathers interspersed among the yellowish-olive feathers. Filamentous feathers were present among the feathers on the entire body, but mainly on the head, wings, and tail. The eyes were dark brownish, and the beak dark gray, with the inferior marginal line cream colored. There was no commissure coloration. The chick was 61 mm in total body length, with a 23 mm tail, 50 mm wing length, 31 mm head length and a 19 mm beak.

We observed an adult female feeding the chick in the nest with two different types of reddish fruit (probably *Iryanthera* spp. and *Protium* spp.). We collected apparently regurgitated seeds from the base of the nest tree. These were later identified as seeds of: *Iryanthera* sp. (Myristicaceae, n = 3), *Attalea* sp. (Arecaceae, n = 2), *Guatteria* sp. (Anonaceae, n = 3), *Protium* sp. (Burseraceae, n = 2), two Anacardeaceae sp., two Cluseaceae sp., and five unidentified seeds.

The nest was visited once again, on 14 February 2013. There was no sign of the chick in the nest, which was intact with no sign of predation. After playback (male territorial call; FBRG, pers. obs.), the adult female appeared after a few minutes, vocalized and moved away.

**DISCUSSION**

The cotingas present variable nest architecture and placement, and complex breeding behaviors, without a consistent pattern within the family or subfamilies (Snow 1971, Kirwan and Green 2011): *Haematoderus militaris* (Whittaker 1993) and *P. carnifex* build shallow cup nests from mud and plant fibers and lined with rootlets; *Rupicola* spp. nests are built on sandstone cave or stone walls using mud, fibers and plant sap; *H. militaris* uses crevices in tall trees (<20 m); *Cephalopterus penduliger* builds a stick nest without mud in the tree canopy (Greeney et al. 2012), and *Snowornis* spp. build nests very similar to *Lipaugus* spp., of untidy mounted twigs and vines (Kirwan and Green 2011). The mud used in the *P. carnifex* nest.
we observed was hardened, so we do not know if wet mud alone was used or if saliva and plant sap were included as observed in *R. rupicola* (Omena and Martins 2007).

The male *P. carnifex* in our study was not observed around the nest area, despite our use of playbacks, which only attracted the female. The absence of the male may have been due to itslek activities or its non-participation in the parental care, as observed in *R. rupicola* (Omena and Martins 2007) and *Rupicola peruvianus* (Kirwan and Green 2011).

The juvenile plumage of *P. carnifex* presents a color pattern very different from the adult plumage, perhaps an adaptation to reduce predation risk in the nest (Dumbacher and Pruett-Jones 1996). The young of *R. rupicola* and *R. peruvianus* (Omena and Martins 2007, Kirwan and Green 2011) also have a lighter line on the inferior margin of the beak, which becomes darker with age in *R. rupicola*, as observed in *P. carnifex*. This pale lining to the bill may help aid the parents in accurately placing food items in the chick’s bill in the dark environment of the interior of the nest (e.g., Heeb et al. 2003).

The presence of filamentous body feathers have also been found in juveniles of *Laniocera hypopyrra* and *Laniisoma elegans* (D’Horta et al. 2012); however, both species are members of the Tityridae with conspicuous plumage in comparison to cryptically-plumaged *P. carnifex* chick. On the *P. carnifex* chick, the filamentous feathers helped to make the chick cryptic in the nest, in contrast to *L. hypopyrra* and *L. elegans*, which are orange, and perhaps mimicking venomous Lepidoptera caterpillars (D’Horta et al. 2012). Regardless of the specific function of these modified feathers, their presence on species from different families should be studied more carefully, as they may be useful in phylogenetic and other analyses.

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LITERATURE CITED


