

# First records on nests of Pompadour Cotinga (*Xipholena punicea*) in Brazil, with notes on parental behavior

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**ABSTRACT:** Nests of cotingas are almost always inconspicuous and very difficult to find, this being especially true for forest species, which remains higher in the canopy. The nests of some Cotingidae species that occurs in Brazil have never been found, or little data on breeding has been recorded. The first two nests of Pompadour Cotinga, *Xipholena punicea* encountered in Brazil are hereby described, found in the northern Manaus, Amazonas, in September 2013 and July 2014. Nests were discovered close to each other, perhaps involving the same female. It was possible to collect some data related to the first nest, such as female feeding her nestling and collecting its feces to discard. Regarding the second nest, the female was only observed carrying materials to construct it.

**KEY-WORDS:** Amazon, breeding, Cotingidae, nestling.

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The genus *Xipholena* (Cotingidae) contains three species of which the male is spectacularly colored in different purple tones, while the female is much paler and duller. Two of these species, *X. punicea* and *X. lammelpennis*, are present in Amazonia, whereas *X. atropurpurea* is an Atlantic Rainforest species (Sick 1997, Snow 2004). *Xipholena* spp. are canopy-dwelling species most easily seen in branches of dead trees, and as all other Cotingidae, they are highly frugivorous (Lopes *et al.* 2005) and possibly opportunistic insectivorous as well (Kirwan & Green 2011).

The Pompadour Cotinga *X. punicea* is one of the most beautiful Cotingidae members. The eye of the male is white, the body and head bright reddish-purple, result of a complex of eight carotenoid pigments, six of which are known in no other bird (LaFountain *et al.* 2010). The wing feathers of males are entirely bright white, highly visible during flight; by contrast, the female is mainly grey with pale, dull wings and a pale iris. This is a widespread and common canopy bird (Kirwan & Green 2011), ranging from Guyana through central Amazonia, south to extreme northeastern Bolivia and west to northeastern Peru, mostly in areas with vegetation associated with nutrient-poor soils (Alonso & Whitney 2003, Ridgely & Tudor 2009, Kirwan & Green 2011).

The nest and breeding behavior of the species are little known: the nest was first described by Beebe in 1924 (Snow 1982) from Guyana, while a second, reported by Kirwan & Green (2011), was found in March 2009 in Canaima National Park, southeast Venezuela.

On 03 September 2013, a female *X. punicea* was observed at a nest (Figure 1A) in the canopy, approximately 30 m above ground, at Cuieiras Biological Reserve at Instituto Nacional de Pesquisas da Amazônia (INPA), north of Manaus (02°35'20.55"S; 06°60'55.12"W), in Amazonas State, Brazil. During about 100 minutes of observation, the female was seen leaving the nest several times, though never for more than five minutes, twice feeding on unidentified red fruit close to the nesting tree. The nest was sighted in a three-way fork of an unknown tree constructed of small sticks and moss, which was so small and shallow that the female could only keep her belly inside it. In this position, the nest remained almost entirely in the shadow of female's body. This, and the position of the nest in the uppermost canopy, made it impossible to gain precise measurements or more detailed information on its composition. There was only one blue-grayish egg with dark brownish spots and splotches (Figure 1B).

Ten days later, on 13 September, a small chick was observed in the nest. Small and with its first feathers, the chick appeared to have hatched one or two days earlier. The female scarcely left the nest during the 120-minutes observation period, and during this time her only movement was shifting position to protect the chick from the sun. The nest was further visited on the 14, 16, 19 and 27 September. Detailed observations were conducted on the 16 and 19 September, when the nestling and female were observed for a total of 6 h, and their behaviors noted

during this time. From the 14 September onwards, the chick increased size remarkably, as well as had the feathers developed and changed in color, from an initial pale white to white spotted with grey, similar to moss and lichens, perhaps to camouflage it from predators.

During the hottest period of the day, it was possible to see the female turning the head of the nestling away from the sun. At other times, the female was seen trying to cover the nestling, evidence that it had difficulty to thermoregulate, as it was seen panting when alone.



**FIGURE 1.** (A) Female of Pompadour Cotinga, *Xipholena punicea*, at the nest, found in September 2013 near Manaus, Brazil. Photo: Luiz Ribenboim. (B) The egg, at the first nest found (2013). Photo: Marcelo Barreiros.



The female left the nest and food for the nestling when returned, having been seen on four occasions feeding the chick with unidentified a small red fruit. Between 06:00 h and 10:00 h, the female always left the nest and returned by the same route, pausing among several large trees nearby before finally landing on the nest. Another common female's behavior was swallowing feces of the chick during several minutes, presumably to keep the nest clean. During the final days of observation, the nestling had grown sufficiently and the female could not remain in the nest along with it, opting instead to perch on a branch nearby.

On 21 July 2014, another nest was found in the same reserve around 30 m distant and nearly 5 m higher than the first one (Figure 2). The female was observed arriving at the nest three times with nest materials

similar to those used in the first nest; little sticks on two occasions and on the third an unidentified soft material that she manipulated with her beak. Until the nest was finished, the bird spent some minutes arranging materials, using her beak while sitting inside. Observation of this nest lasted only two hours (07:00 h to 09:00 h). Two differences could be noted between both nests: the fork of the first nest had near-horizontal branches in a three-way fork, whereas in the second nest it had four thick almost vertical branches, allowing it to be deeper than the first one. Furthermore, the first nest was situated far from the center of the tree on which it sat, more exposed to the sun and less protected than nest two. The second nest remained in the center of the tree, in a much shadier position. Unfortunately, four days later, the nest was no longer seen.



**FIGURE 2.** Female of *Xipholena punicea* at another nest, observed carrying sticks and soft material in July 2014. Photo: Marcelo Barreiros.

The nests here reported were found active in the midst of the local dry season (September), while the other two known nests were both found in March, one with an egg (Guyana) (Kirwan & Green 2011) and the other with a well-grown chick (southern Venezuela) (Kirwan & Green 2011). However, the regions of Guyana and Venezuela in which the nests were found both presents a dry season between January and June, indicating that the regional breeding period is adapted to local seasonality, a

feature widely reported over the Amazon basin (Cohn-Haft *et al.* 1997).

There is clearly some variability regarding the location of *X. punicea* nests. While the nest recorded by Kirwan & Green (2011) was found in the canopy, the nest found by Beebe (1924) was slightly lower, 18 m above the floor in the fork of a bamboo clump. Site flexibility may be characteristic of the genus: a nest in a bamboo fork was recorded for *X. atropurpurea* in

Maraú City, Bahia state, northeastern Brazil (Albano 2013), while Sick (1997) mentioned another nest of *X. atropurpurea* in Espírito Santo state, southeastern Brazil, in the basal leaves of an epiphyte (“gravatá”: *Bromelia pinguin*, Bromeliaceae), and Teixeira & Almeida (1997) cited two nests of *X. atropurpurea* in the canopy, one in São Miguel dos Campos, Alagoas state, and another one in Camamú, Bahia state.

Regarding the eggs of *X. atropurpurea*, there is little difference between the color of the egg found in this study and the one found by Beebe (1924), in which he cites the egg color as very pale greenish-grey, heavily spotted and blotched within different tones of brown, especially at the large end (Teixeira & Almeida 1997). Regarding structure, the second nest described is most similar to another two nests found in Venezuela, described as “a deep open-cup” (Snow 1982, Kirwan & Green 2011), whereas the first nest was not very deep, perhaps due to the difference of forks used as nest support.

Despite the huge recent advances in our knowledge on tropical birds (Birkhead *et al.* 2013), there are still large gaps in what we know of their natural history. For Cotingidae, there are no data on the breeding biology of many species. Species occurring in Brazil of which no nest seems to have been found, or description data recorded, include *Laniisoma elegans*, *Lipaugus streptophorus*, *Tijuca atra*, *Tijuca condita*, *Xipholena lamellipennis*, *Procnias albus*, *Cotinga maynana*, *Cotinga cotinga*, *Phoenicircus nigricollis* and *Calyptura cristata*. This scarcity of information may be partially explained by the fact that many species are canopy-dwellers (Kirwan & Green 2011), and therefore access to this part of the forest is difficult. This is the case of *Haematoderus militaris*, with only one nest found and no detailed description, due to impossible access (Whittaker 1993).

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