

Notas Breves

THE NEST OF THE GOLD-RINGED TANAGER (*BANGSIA AUREOCINCTA*), A COLOMBIAN ENDEMIC

El nido de la *Bangsia* de Tatamá (*Bangsia aureocincta*), una especie endémica colombiana

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ABSTRACT

We present the first nest description for the Gold-ringed Tanager (*Bangsia aureocincta*) and include notes on parental care. The nest is a large domed ball constructed of moss, whereas the nest lining is constructed of rootlets. We observed three adults attending the nest, the first evidence of cooperative breeding in a mountain tanager. Nest architecture is variable within *Bangsia* and mountain tanagers, but may still be phylogenetically informative within tanagers and allies. The main breeding season of the Gold-ringed Tanager in western Colombia is February-July.

Key words: *Bangsia aureocincta*, Gold-ringed Tanager, breeding season, cooperative breeding, nest description.

RESUMEN

Presentamos la primera descripción del nido de la *Bangsia* de Tatamá (*Bangsia aureocincta*) e incluimos notas breves sobre el cuidado parental. El nido tiene forma de un balón grande de musgo con un domo completo cuyo recubrimiento interno está construido con raíces. Observamos tres adultos cuidando el nido, lo cual representa el primer registro de reproducción cooperativa en el grupo de las tángaras de montaña. La arquitectura del nido es variable entre las especies de *Bangsia* y en otras tángaras de montaña, pero podría brindar información sobre afinidades filogenéticas entre los Thraupidae y aliados. La época de reproducción de *Bangsia aureocincta* en el occidente de Colombia está comprendida principalmente entre febrero y julio.

Palabras clave: *Bangsia aureocincta*, *Bangsia* de Tatamá, descripción del nido, época reproductiva, cría cooperativa.

The genus *Bangsia* (Thraupidae) is sister to *Wetmorethraupis* and the clade formed by these two is sister to a "mountain tanager" clade comprising various genera including *Iridosornis*, *Anisognathus*, and *Buthraupis* (Sedano & Burns 2010). Four species of *Bangsia* are distributed in the Chocó biogeographic zone of northwest

Ecuador and western Colombia, and a fifth species inhabits Costa Rica and Panama (Isler & Isler 1987, Hilty & Brown 1986). *Bangsia* tanagers are found in very wet, mossy, foothill/lower subtropical forests, and are all rather plump and short-tailed, often described to forage in a deliberate or even "sluggish" fashion (Hilty & Brown 1986, Ridgely

& Greenfield 2001).

The breeding biology of *Bangsia* tanagers remains largely undescribed. There is only one complete nest description for a species in the genus; the Moss-backed Tanager (*B. edwardsi*) built an open cup nest constructed of moss and ferns on a horizontal branch 2 m above the ground (Robbins & Glenn 1988). Other descriptions of *Bangsia* breeding biology pertain to the Black-and-gold Tanager (*B. melanochlamys*) of western Colombia and to the Blue-and-gold Tanager (*B. arcaeii*) of southern Central America. There is one record of a female Black-and-gold Tanager building a nest in a mass of epiphytes in the fork of a tree trunk 8 m above the ground (Stiles 1998), whereas the Blue-and-gold Tanager is known to build a bulky nest of plant fibers and mosses, hidden in epiphyte masses, 10-12 m above the ground (Isler & Isler 1987, Stiles & Skutch 1989).

The Gold-ringed Tanager (*Bangsia aureocincta*) is a Colombian Chocó endemic, restricted to a small number of localities in middle elevations (1500-2200 m) of the Pacific slope of Colombia's Western Andes (Arango Caro 2002). The Gold-ringed Tanager is the only *Bangsia* tanager that exhibits obviously sexually dichromatic plumage; the male has a black face and the female's face is olive (Hilty & Brown 1986, Isler & Isler 1987). The breeding biology of the Gold-ringed Tanager has not been described in detail, although there is one prior description of a female building a mossy nest in a mass of epiphytes 15 m above the ground (Stiles 1998). Here, we provide the first description of the nest of the Gold-ringed Tanager and include notes on parental care observed at the nest as well as the breeding seasonality of the Gold-ringed Tanager.

We studied two Gold-ringed Tanager nests at Alto Galápagos, a reserve managed by the Colombian NGO Serraniagua. The reserve is located in west-central Colombia, on the border of the Departments of Valle de Cauca and Chocó, and protects very wet subtropical forest along a ridge crest and on the Pacific slope of the Western Andes between ca. 1600-2100 m.

The first nest was discovered in July 2008, when we

observed a male Gold-ringed Tanager bringing food (probably a worm) to the nest. It was not possible to access this nest and we did not monitor it further. The second nest was discovered at 11:00 h on 27 March 2009, when we observed a female Gold-ringed Tanager fly up to it carrying an unidentified item in her beak. This nest was located on a very steep slope with dense shrubby (ca. 3-8 m tall) vegetation, with taller forest in the area (04°49' N, 76°12' W, elev. 1928 m). This nest was observed for one hour. When we were able to return to the nest, at 0630 h on 29 March 2009, it was no longer active, and we closely examined the nest architecture. We recorded other observations of Gold-ringed Tanager breeding biology at this site opportunistically in the course of other fieldwork.

The first nest was located on a horizontal branch 6 m above the ground, completely hidden underneath a bromeliad (Bromeliaceae). The second nest was a large domed ball nest (Fig. 1), a nest type termed closed/long/fork in the standard nest terminology described by Simon and Pacheco (2005). This nest was located 2.3 m above the ground in a thin (diameter at breast height ca. 2.5 cm) 2.7 m tall shrub. The bulky nest was supported by a triple fork, and further supported by the main stems of two similar shrubs located just upslope, whose stems had been bent down into the triple fork, with the nest constructed around these bent stems as well.

The nest ball was 23.6 cm wide, 16.2 cm from front to back, and 14.5 cm tall; the domed roof comprised 5.8 cm of the 14.5 cm height. The nest entrance was 8.2 cm wide and 6.8 cm tall; the nest cup was 7.9 cm wide internally, 9.5 cm wide externally, 3.7 cm deep internally and 4.8 cm deep externally.

The nest ball, including the domed roof, was constructed completely of moss (Fig. 1). The nest lining was clearly differentiated and constructed almost entirely of rootlets. There was a clear division within the nest lining between the base lining and the egg-cup lining (the upper portion of the lining that the eggs and chicks physically touched); the base nest lining was constructed of interwoven brown rootlets with some pieces of moss whereas the inner lining was constructed entirely of fine black fibers resembling horse hair in size and



Figure 1. Nest of the Gold-ringed Tanager (*Bangsia aureocincta*) found at Alto Galápagos. The arrow in (A) points to the nest; (B) shows the domed ball nest with an arrow pointing to the nest entrance.

texture (Fig. 2).

We observed the nest for one hour on 27 March 2009. We did not observe the female in the nest area after her initial visit that resulted in our discovery of the nest. Instead, two males attended the nest, arriving to the nest entrance in quick succession; both would arrive to the nest within a 20-40 s period (Fig. 3). We observed eight total visits to the nest in one hour, four by each male. The males brought food to the nest on each visit; on five occasions, the food item was a pinkish flower bud from a common Ericaceae species blooming in the area. The males entered the nest while feeding, disappearing from sight and remaining in the nest for 5-15 seconds. It was impossible to tell how many nestlings were present in the nest, although the successive visits by

males suggests the existence of more than one nestling. The nestling(s) were presumably at an advanced age at this date because they apparently fledged before the early morning of 29 March.

In addition to the March and July nests, we observed a female Gold-ringed Tanager feeding fledglings in June 2007, and stub-tailed fledglings in July 2008. Additionally, we have mist-netted Gold-ringed Tanagers in breeding condition at the study site between February-July. We also observed a male carrying dry fibers for nest-construction on 19 December 2008.

The breeding biology of the Gold-ringed Tanager and other *Bangsia* species is poorly known, perhaps because they tend to nest in epiphyte masses 6-15 m above the ground (Isler & Isler 1987, Stiles 1998, Stiles & Skutch 1989; but see Robbins & Glenn 1988). Indeed, one of the nests we studied was hidden beneath a bromeliad and therefore impossible to study in detail. We were able to describe the Gold-ringed Tanager's nest architecture in detail because we found a nest located in the open, in a similar location to the Moss-backed Tanager nest described by Robbins & Glenn (1988).

Nest architecture can be a phylogenetically informative trait (Winkler & Sheldon 1993, Zyskowski & Prum 1999). Most tanagers and allies build open-cup nests (Isler & Isler 1987), but there is a well-defined clade of tanagers that build closed nests, first identified by Burns *et. al* (2002). This



Figure 2. The nest lining was composed of a base lining (right) constructed of brown rootlets and a top lining (left) constructed of thin black rootlets.



Figure 3. A male Gold-ringed Tanager (*Bangsia aureocincta*) attending the nest (left). The male's black auriculars are clearly distinguishable from the female (right), with her olive auriculars.

“domed nest clade” includes the Galapagos finches, *Tiaris* grassquits, the Bananaquit (*Coereba flaveola*), and several species of tanagers from the Caribbean (Burns *et. al* 2002). Although Burns *et. al* (2002) stated that closed, domed nests were unknown from the Thraupini, a recent study documented that the Grass-green Tanager (*Chlorornis riefferi*) does build a closed, domed nests, but the dome itself was formed by an existing clump of moss in which the nest was placed (Greeney & Gelis 2005). Our observations on the Gold-ringed Tanager further suggest that domed nests might be more common among the Thraupini, and especially in mountain tanagers, than previously thought. However, phylogenetic conservatism of nest architecture within the mountain tanagers might be weak, considering that the Gold-ringed Tanager (closed nest) is sister to the Moss-backed Tanager (open cup nest; Robbins & Glenn 1988; Sedano & Burns 2010). Although many mountain tanager nests remained undescribed, at least some *Anisognathus* (Strewe 2001) build open-cup nests.

Cooperative breeding behavior has been documented in a variety of tanagers and allies (see Gelis *et al.* 2006). However, our observations of two males and a female of *B. aureocincta* attending a nest represent the first published evidence of cooperative breeding in the mountain tanagers clade identified by Sedano & Burns (2010). Cooperative breeding in this clade is perhaps unsurprising, as mountain

tanagers (including *Anisognathus*, *Iridosornis*, *Buthraupis* and *Chlorornis*) are social birds, frequently observed foraging in small bands presumed to be family groups (Hilty & Brown 1986, Isler & Isler 1987). Information on the sex and age of helpers at tanager nests remains scanty, and future research should explore the sexes and contributions of helpers.

We present records of breeding Gold-ringed Tanagers from February to July, consistent with Stiles's (1998) report of Gold-ringed Tanagers in breeding condition and actively nest-building in March and April. We therefore suggest that the period from February to July is the main breeding season of the Gold-ringed Tanager. However, we once observed a Gold-ringed Tanager nest building in December; the species therefore may occasionally breed outside of our posited reproductive season. These months, roughly the first half of the year, comprise the principal breeding season for most birds inhabiting the Chocó mountain slopes and adjacent lowlands (Hilty & Brown 1986). The first half of the year is the dry, or “less wet” season in the Chocó (Hilty & Brown 1986), and Chocó birds seem to preferentially breed during this “less wet” season and the subsequent start of the May-June “rainier” season (Hilty & Brown 1986). Future research should address the generality of this trend, especially considering interannual variation in rainfall periodicity and

intensity.

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