

Procnias averano (Bearded Bellbird)

Family: Cotingidae (Bellbirds and Cotingas)

Order: Passeriformes (Perching Birds)

Class: Aves (Birds)



Fig. 1. Bearded bellbird, *Procnias averano*.

[<http://www.oiseaux.net/photos/steve.garvie/bearded.bellbird.5.html> downloaded 14 November 2014]

TRAITS. The only bellbird species resident in Trinidad, the bearded bellbird has chocolate-brown hood, black wings and contrasting white bodies in males (Fig. 1) or pale grey bodies in females (Naughton et al., 2012). Plumage of females are mostly olive green, with a duskier, crown especially their upper parts. The breast and throat of the female are also streaked with olive and yellow, with dull yellow under tail coverts. Males take two and a half years to acquire complete plumage (Naughton et al., Cornell Laboratory of Ornithology, 2012). Males have a total length up to 28 cm, short tail and strong legs and weigh up to 178g. Females have a length of 26.5 cm. Adult males have a wing length ranging from 152-155mm, females, 130-136mm (D. Snow, 1982). A distinctive feature of the bellbird is its short bill, very wide at gape (Avibase, 2013).

ECOLOGY. Inhabitants of humid evergreen forest at altitudes of 150-300m (B. K. Snow, 1970), this bird is also found in lower parts of humid montane forest near 2.5m of rainfall (ffrench, 1991). Nests of *Procnias averano* consist of fine twigs obtained by the female, built by intertwining twigs (Fig. 2), usually *Terminalia obovata* (base) and *Maprounea guianensis* (nest cup), with feet and shaping with breast (D. Snow, 1982). Foraging within the canopy for 13% of the day, these animals mostly eat drupes and fruits collected from below the male's nest and calling perch (Fig. 3) (B. K. Snow, 1970).

SOCIAL ORGANIZATION. Not much information has been published on the social organization of the bearded bellbird. However they have been observed to be aggressive and territorial over females as well as territorial sites. Adult males are polygamous and mostly solitary in their own calling territory where they spend most of their time throughout the day. Although solitary however, the bearded bellbird can be found in groups up to six at one time within fruiting trees (Kirwan and Green, 2011). In each territory however, there are special seedlings where displays and mating occurs. Both males and females visit the adult male within his calling territory. The locations of territories are usually situated within the forest canopy where foraging for fruits can easily occur (B. K. Snow, 1970).

ACTIVITY. *Procnias averano* spends most of its day showing displays to visitors of his black and white plumage, wattles of beard, and a bare patch on its thigh. Male bearded bellbirds, maintain their calling territory for 87% of the day, only leaving for short periods for foraging (B. K. Snow, 1970). Not including the period of moulting (August to mid-October), males sing in Trinidad for most of the year (ffrench, 1991). Bearded bellbirds found in Venezuela however sing mainly during the months of March to July around coastal areas while southern Venezuelan bearded bellbirds are more vocal during December to August (Hilty, 2003).

FORAGING BEHAVIOUR. Frugivorous animals, with a diet consisting of over 45 identified species of fruits; the bellbird eats mostly drupes and fruits belonging to the Lauraceae family, followed by the Burseraceae, Araliaceae and Melastomataceae families of fruit. Fruit is taken in flight with a short sally hover found within the canopy of the trees. While the large seeds are regurgitated by the bellbirds, small seeds pass through the gut. Additionally, some seeds are collected from below the male's nest and calling perch (Fig. 3) (B. K. Snow, 1970). The nestlings' diet also consists entirely of fruit (B. K. Snow, 1970).

COMMUNICATION. Vocal communication: the show songs of the adult male are loud, ventriloquial comprising of mostly a single note, described as a bock, single syllable repeated every few seconds. This note can last approximately half a second, displayed with the beak widely opened (Fig. 3) (D. Snow, 1982). During mating, calls described as a series of tonks are made from branches without a lot of foliage on the upper parts of the canopy. Additionally a faint whirring sound is made during flight by the wings of males, displaying perch when a visiting bellbird enters the calling territory (B. K. Snow, 1970). Female bellbirds rarely vocalize (D. Snow, 1982).

Visual communication: During mating, bearded bellbirds communicate via a series of body movements displaying their interest in a partner including jumping from one branch to another as well as preening. Preening refers to the behaviour of the bird as it cleans oneself.

SEXUAL BEHAVIOUR. Female bearded bellbirds select a mate from numerous males within a fixed area. Often times this area is next to other male territories so that males can hear each other without seeing them. Vocalizations are made from branches high in the canopy lacking foliage until the visitor, either male or female approaches. Upon being approached the calling male drops below the canopy to a special perch designated for interactions (D. Snow 1982). *Procnias averano* then begins to display behaviour involving jumps between two adjacent branches of the same height, pausing after each jump facilitating a pose with a spread tail as well as body and head leaned forward facilitating the exposure of the fleshy wattles hanging from the throat. Additionally, breast feathers are often erected as well as the feathers of the rump raised slightly. If not directly facing the visitor, the displaying male turns his head directly to the visitor, repeating this behaviour until the visitor remains attentive (B. K. Snow, 1970). Following this, a preening display occurs as the male moves to a different branch and begins to display by thrusting one leg outwards from his body making the bare area on the tibia visible. Frequent preening additionally occurs in the direction of the visitor especially under the wing of the same side, usually slightly lifted away from the body (B. K. Snow, 1970).

When visited by a female and the display described intrigues her, a branch is shared within close proximity to each other positioned towards each other. After maintaining direct eye contact for a few seconds, the male jumps to the female from his perch whilst sounding a loud bock call. This is repeated for several times before the final call and jump eventually landing next to the female. Upon landing on the female's perch, the male bearded bellbird crouches and spreads the feathers or his tail (D. Snow, 1982). In cases where the female evades the male, she flies to a nearby perch (B. K. Snow, 1970). Following copulation, females do not interact with the males and are responsible for the complete construction of the nest and carrying out all parental duties (B. K. Snow, 1961).

JUVENILE BEHAVIOUR. Similar to the female bearded bellbird, the upper-parts of the bodies of juveniles are mostly olive, crown darker olive with blacker feather centers. Breast of the juveniles are clearly streaked with yellow above and olive throat; undertail coverts are also dull yellow. Nestlings, which are grey in colour at first hatch 23 days after being laid. No begging behaviour is observed in nestlings of *Procnias averano*, however they are fed strictly fruit which is mostly undigested and regurgitated by their mothers. On the 33rd day the nestling leaves the nest still not fully grown (D. Snow, 1982).

REPRODUCTION. Breeding primarily occurs during the months of April to July, additionally at times during late October and November (D. Snow, 1982). Nests found during studies were usually situated 3-15 m above the ground in small or medium sized trees with full foliage. Usually well hidden within the trees, nests are 18cm in diameter with a cup 5cm in diameter (Fig. 2) (B. K. Snow, 1970). One egg weighs about 18 grams accounting for 13% of the female's body weight. Incubation period is usually around 22.5- 23.5 days (B. K. Snow, 1970).

ANTIPREDATOR BEHAVIOUR. Not enough information or research has been conducted and published on the anti-predator behaviour of the bearded bellbird. Known predators of the bearded bellbird however include monkeys, toucans and snakes (D. Snow, 2008).

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Fig. 2. Bearded bell bird nest and eggs.

[http://upload.wikimedia.org/wikipedia/commons/8/80/Bearded_Bellbird_egg.jpg, downloaded 16 November 2014]



GB 2010

Fig. 3. Calling perch of male bearded bellbird, *Procnias averano*.

[<http://www.glennbartley.com/naturephotography/Trinidad/GB%20Collection%20-%20Trinidad/Bearded%20Bellbird%20-%202002.jpg>, downloaded November 16 2014]