Short Communication

Parental Care in the Early Days of a Fledgling of the Clay-colored Thrush (*Turdus grayi*)

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Abstract

The clay-colored thrush (*Turdus grayi*) is common in altered habitats (e.g., thickets), artificial (e.g., crop fields), and forest edges. The species nests from March to June in a cup-shaped nest typical of passerines where the female lays two to three eggs. Parents incubate the eggs for twelve to thirteen days and care for the nestlings for twelve to eighteen days. There is no information about what happens to the fledglings just after departure from the nest. On 1 May 2022, the researchers found a fledgling clay-colored thrush on the ground of a garden in a rural area in Carrizal de Alajuela, Costa Rica at 1700 m asl. The fledgling was followed for a week, during which time it was cared for and fed by the parents. This note provides information on the relationship between the fledgling and its parents.

Key words: Costa Rica, fledglings, nesting, open habitats, passerines, yigüirro

Introduction

The clay-colored thrush *Turdus grayi* (Passeriformes: Turdidae), known in Costa Rica as yigüirro, is distributed across Mexico, southwards to northern South America (Vallely and Dyer, 2018), and from sea level to 2400 m elevation (Garrigues and Dean, 2014). It is found and breeds in altered habitats such as gardens and urban areas, agricultural crops, pastureland with scattered trees, forest edges, and secondary forests (Dyrcz, 1983; Stiles and Skutch, 1989). This tropical songbird is visually monomorphic with a monogamous breeding system and a synchronous reproductive season from March to June (Dyrcz, 1983; Sánchez *et al.,* 2018). The nest is an open cup made of rootlets, stalks, moss, sticks, leaves, and other plant material with some mud on its walls (Dyrcz, 1983). Females construct the nests and incubate typically two or three eggs that are blue mottled with brown (Stiles and Skutch, 1989). Incubation lasts twelve to thirteen days (Dyrcz, 1983), and the nestling period lasts twelve to eighteen days (Dyrcz, 1983).

Parental care in passerine birds is defined as the time invested by parents in incubating, feeding the young, defending the nest from predators, and other tasks to ensure the development and survival of their offspring (Winkler, 1987; Sánchez *et al.,* 2018). Parental care is not restricted to the nestling stage but extends beyond the fledgling and even longer than the nestling period (Vega, *et al.,* 2000; Cohen and Lindell, 2004). In many species, parents continue to care for their fledged young, either by leading them to food sources, or feeding them. Birds are vulnerable after they leave the nest, but before they can fly: though once fledged, their chances of

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survival increase dramatically (Gill, 2006). Although the reproductive season and the nesting period of the clay-colored thrush have been studied, the researchers did not find any information on the relationship between the parents and the fledglings just after leaving the nest, being incapable of sustained flight and depending on the adults. Parental care of the fledglings of the white-throated Robin (*Turdus assimlis*) extends for at least three weeks (Cohen and Lindell, 2004). The average age at dispersal for this species was thirty-one days, similar to the ages of independence for two temperate breeding species of Turdidae: the American Robin *Turdus migratorius* (37 days) and the Wood Thrush *Hylocichla mustelina* (28-36 days) (Vega *et al.,* 2000; Cohen and Lindell, 2004). This note provides information on the parental care of a fledgling clay-colored thrush for five days right after it departed from the nest until it became capable of short, sustained flights.

Materials and Methods

The researchers observed the behavior of a family of clay-colored thrush from 01 May to 06 May 2022. The presence of the fledgling was checked on a daily basis four times in the morning (07:00 am, 08:00 am, 09:00 am, and 10:00 am), and four times in the afternoon (03:00 pm, 04:00 pm, 05:00 pm and 06:00 pm), with some additional searches at other times of the day when there was an opportunity for that. At each time, when the researchers found the chick, they observe it for ten minutes and then left. The observations took place in a wooded garden at Carrizal, Alajuela, Costa Rica (10° 06´ 40´´ N, 84° 09´ 53´´ W, Elev. 1700 m). The site is located in the Tropical Lower Montane Wet Forest according to Holdridge´s classification of life zones (Holdridge, 1967). However, the study site was located at a semi-urban areas dominated by agriculture crops and houses. The bird was found in a garden with ornamental plants and fruiting trees.

Results

On 1 May 2022, at 09:00 am, the researchers observed a fledgling clay-colored thrush on the ground close to some herbs just after departure from the nest. Apparently it was the only nestling in the nest that was at 2.4 m high in the fork of a branch of a lemon tree. The fledgling was very noisy, and moving on the ground with clumsy hops as it screeched, though the parents were moving close by. The researchers concluded that the bird was a fledgling based on its plumage, for it was clear the bird has lost nearly all the downy feathers and has quite well developed wings and tail, although they were shorter than those of the adults; also, it has its flight feathers although they were not in adult condition (Figure 1A). At this stage, many birds are weak flyers, and they are cared for by adults, often on the ground (Gill, 2006). Over the period of observation, the bird showed some ability to fly confirming it was a fledgling.

On 2 May 2022, at 8:00 am, the fledging was seen on a small branch about 60 cm above the ground, where it remained for about an hour. During this time, one of the parents approached the fledgling to feed it, and later it descended to the ground and moved with clumsy steps about 2 m towards a site with herbaceous vegetation. At approximately 11:00 am it began to rain; nevertheless, the fledgling remained in the same place under the rain for at least an hour; observation ended after the fledgling hid in the vegetation. On 3 May 2022, at 8:00 am, the fledgling was found on a rock about 70 cm above the ground, where it remained for a little over two hours. During that time, one of the parents (the researchers were unable to determine if it was the same individual or two different ones) fed the fledgling five times: three times with fruits and two with insects (Figure 1C, D). When the researchers approached the young bird trying to photograph it, one of the parents landed next to it and lightly knocked it down behind some plants where it was much less visible. Around 11:00 am it started to rain, and the fledgling stayed on its perch, but

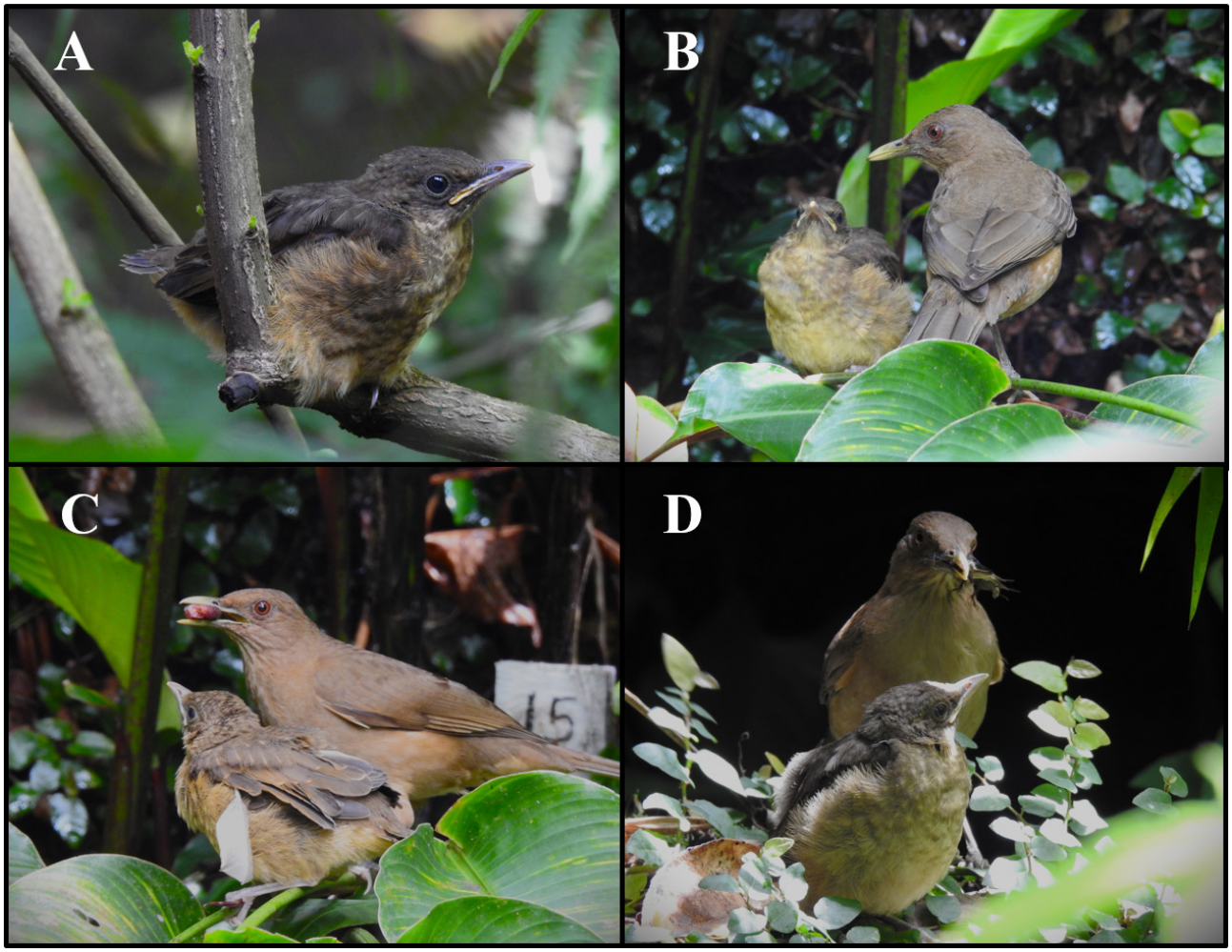

Figure 1. A) Fledgling clay-colored thrush (*Turdus grayi*). B) One parent landed close to the fledgling and pushed it out of rain. C) Fledgling being fed fruits. D) Fledgling being fed insects. Photos © José Manuel Mora.

nearly fifteen minutes later, a parent landed near it making some calls (Figure 1B), and the chick moved under nearby broad leaves that protected it from the rain.

On 4 May 2022, at 10:00 am, the fledgling was spotted on a 2-m-high branch of a lemon tree, where one of the parents fed it on three occasions. Shortly after 11:00 am it started to rain heavily, and it was impossible to observe the chick. The researchers were unable to find the fledgling the following day, although it was found on 6 May 2022 at 10:00 am on a 3.5 -m- high branch of the lemon tree. Upon approaching the position of the chick from below, the fledgling flew without any apparent difficulty to another branch about 2 m away. Two adults began to call (alarm), and some fluttering in the branches was heard. After that, the researchers could no longer observe the birds, even though they looked carefully for the chick for the following two days, searching all branches of the tree.

Discussion

The researchers did not find any reports on the parental care of fledglings by the adults of the clay-colored thrush. Nesting and parental care of the clay-colored thrush on the nest have been studied in Costa Rica as well as in other countries (Lindell *et al.,* 2011; Chanona *et al.,* 2017; Sanchez *et al.,* 2018). However, these investigations stopped after the fledglings left the nests, so they did not generate information about this particular life stage for this species. This is a stage where most studies on avian reproduction cease (Russell, 2000). The post-fledging period is one of the least understood phases of the avian life cycle, mainly because it is difficult to observe young birds after they leave the nest (Cohen and Lindell, 2004). The present observations show that the clay-colored thrush protect their fledglings at least until the time they are capable of sustained

flight. The fact that both parents took care of the fledgling and that the chick responded to their alarm calls was fundamental for its survival showing the appropriate behavior of its age (Magrath *et al.,* 2006).

Nestlings generally leave the nest before they are fully grown, and generally they are helpless for some days and remain cryptic, hidden away until an adult approaches with food, when they beg vociferously (Russell, 2000). On different occasions, the researchers were not able to find the studied fledgling, probably because it was hidden. It was possible to observe it only at times when it was exposed waiting or begging for food. A similar behavior was observed for the fledglings of *Turdus asimilis* who were able to fly five days after they left the nest (Cohen and Lindell, 2004). The fledglings of this species sat still on, or close to, the ground and were rarely observed flying during the first week out of the nest, but they were able to fly distances up to 30 m by the end of the second week (Cohen and Lindell, 2004). These fledglings were seen foraging for the first time during the third week after leaving the nest (Cohen and Lindell, 2004). This means that, probably, the studied fledgling required at least two more weeks of parental care before it was able to feed itself. Besides, the fledging had to be protected from predation during this time. Six fledglings of *Hylocichla mustelina*, another Turdidae, were depredated (within five days after leaving the nest) in Virginia, USA, but 23 (85%) survived to independence (Vega *et al.*, 2000). These fledglings were able to fly at least 30 m in response to parental alarm calls only five days following nest departure; this is the time when they stayed on the forest floor or on bushes (Vega *et al.,* 2000), also similar to the fledgling observed in this work. The researchers did not notice any interaction among potential predators and the family of the clay-colored thrush. Parents provisioning was strongly related to the ambient risk of predation (Ghalambor *et al.,* 2013). this factor could have been favorable in the current study because it allows for the fledgling to be constantly fed by its parents being incapable of flying and looking for its own food. Unfortunately, the researchers were not able to follow the fledging until it became capable of sustained flight and can feed itself. However, it is possible that the parents continued to take care of the fledging for several more days, a behavior that still needs to be documented.

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