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SHORT NOTE

UNUSUAL NEST AND NESTLING APPROPRIATION BY THE EARED DOVE (*ZENAIDA AURICULATA*)

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Abstract · We report a case of interspecific nest appropriation by the Eared Dove (*Zenaida auriculata*) on a nest of the Creamy-bellied Thrush (*Turdus amaurochalinus*). The usurpation attempt resulted in the death of both nestlings, including a parasitic cowbird, despite forceful attempts by the thrushes to retake their nest and repeated attempts by the dove to feed the nestlings. We believe that the loss of the dove offspring from a nest in a neighboring tree could have triggered this behavior, which may be a hormonal byproduct caused by the recent loss of their own offspring, similar to what has been observed in Emperor Penguins (*Aptenodytes fosteri*).

Resumen · Inusual apropiación de nido y pichones por parte de la Paloma Torcaza (*Zenaida auriculata*)
Reportamos un caso de apropiación interespecífica de nido en donde una Torcaza (*Zenaida auriculata*) usurpa el nido de un Zorzal Chalchalero (*Turdus amaurochalinus*). Ambos pichones, incluido un pichón parásito de cría, resultaron muertos tras la usurpación, a pesar de los enérgicos esfuerzos de los zorzales por recuperar el nido y de los repetidos intentos de la paloma para alimentar los pichones. Creemos que la Torcaza perdió sus propios pichones cerca del nido de zorzal y esto motivó la usurpación. Atribuimos el falso reconocimiento de los pichones a un subproducto hormonal causado por la pérdida de sus propios pichones, similar a lo observado en el Pingüino Emperador (*Aptenodytes fosteri*).

KEY WORDS: Creamy-bellied Thrush · Eared Dove · Kidnapping behavior · Nest piracy · Nest usurpation · *Turdus amaurochalinus* · *Zenaida auriculata*

INTRODUCTION

Nest appropriation (nest usurpation or nest piracy) is a relatively common nesting strategy used by species that take over active nests of other species for breeding purposes (Favaloro 1942, Lindell 1996). This strategy is commonly associated to the lack of suitable nesting sites and is more frequent among cavity and enclosed nesters (Lindell 1996, Kronland 2007). Nest appropriation commonly occurs at the interspecific level (Hansell 2000, Sandoval & Barrantes 2009) but can also happen between conspecifics (Berl et al. 2013). Most of the reported cases of interspecific appropriation end with the abandonment of the nest by the usurped species (e.g., Maugeri 2007) or, alternatively, with both species sharing the breeding activities (e.g., Kozma & Mathews 1995, Govoni et al. 2009). Once the nest or cavity is usurped (mainly during nest-building, egg-laying, and incubation stages), usurpers start to build their own nest or lay their own eggs in the nest (Eguchi et al. 2013).

Despite the numerous reports about usurpers and usurped species among cavity and enclosed nesting species, there are few studies about usurpers that occupy nests during the nestling stage, and there are no records to date of interspecific usurpers that also appropriate nestlings of the usurped species. In this study, we report a documented case of interspecific nest appropriation by the Eared Dove (*Zenaida auriculata*, hereafter dove) that usurped a nest of the Creamy-bellied Thrush (*Turdus amaurochalinus*, hereafter thrush) containing two nestlings (including one of the Shiny Cowbird *Molothrus bonariensis*, hereafter cowbird).

METHODS

The observations herein described were made during a study on the community of nest predators in native forests of central-east Argentina. It was conducted in ‘‘Estancia Luis Chico’’ (35°19’S,57°11’W) near Punta Indio,

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Buenos Aires Province, Argentina. The study site is a flat area of 400 ha within the Biosphere Reserve ''Parque Costero del Sur'' (MAB-UNESCO) consisting of semi-open grassland with several patches of low woodlands dominated by native trees, such as *Celtis ehrenbergiana* (Cannabaceae), *Scutia buxifolia* (Rhammnaceae) and *Schinus longifolius* (Anacardiaceae) (Segura & Arturi 2012).

Observations took place from October 2015 to February 2016, we surveyed the study area looking for breeding territories and nesting attempts (see Segura et al. 2015) of selected passerine birds (mainly Red-crested Cardinal *Paroaria coronata*, Creamy-bellied Thrush *Turdus amaurochalinus*, Rufous-bellied Thrush, *T. rufiventris*, Blue-and-yellow Tanager *Pipraeidea bonariensis*, Masked Gnatcatcher *Polioptila dumicola*, and Vermilion Flycatcher *Pyrocephalus rubinus*). We monitored nests by using a 4-channel digital video recorder (DVR: model DH-HCVR4104C-S2, Alhua, China) and two weather-resistant surveillance cameras equipped with infrared light for night vision (model DY7028, Digital Video Camera, China). The system was powered by a 12-V deep-cycle boat battery, recharged through a 50-W solar panel.

RESULTS

The thrush nest was located in a Tala tree (*Celtis ehrenbergiana*) at 1.9 m above ground. We started to film the nest at an early incubation stage (third incubation day). The complete clutch consisted of three thrush eggs and five cowbird parasite eggs. Two eggs (one of thrush and one of cowbird) were punctured by female cowbirds visiting the nest (see Segura & Reboreda 2012). On 18 December, the first two eggs hatched (one thrush and one cowbird), the next day three eggs hatched (one thrush and two cowbirds), and the next day the last cowbird egg hatched. On the fifth day of the nestling stage (day 0 = day of the first egg hatched), one cowbird nestling died (the last to hatch), on the sixth day another two cowbird nestlings died, and on the eighth day a thrush nestling died. Thus, on the eighth day the nest had two remaining nestlings (one thrush and one cowbird).

On 25 December at 12:17 h, a dove burst into the nest evicting the adult thrushes and began to brood the two nestlings, while being attacked by the two thrushes. The usurped thrushes attacked continuously the dove for 41 minutes, until they managed to expel the dove from the nest. The thrushes fed the nestlings twice during the dove's absence. The dove (always a single individual) burst back into the nest at 13:10 h and remained in the nest resisting the aggressive attacks by thrushes until 18:37 h. Again, for a short period of time, the thrushes returned to feed the nestlings three times until the dove returned to the nest at 19:02 h. Several times we observed the dove start pumping up its throat (probably to ready the slurry of dove crop milk) and attempt to bring its bill close to the bill of the nestlings. These movements triggered the immediate opening of the nestling's mouth, but food was never successfully transferred.

The attacks by the thrushes were almost constant, and when not, we could observe them moving in the nest surroundings. Even during the night, we could observe one of the thrushes trying to expel the intruder from the nest several times, but the dove rejected the thrush with wing blows (Figure 1). At 20:26 h, while the dove and one of the thrushes were fighting over the nest, the cowbird nestling fell from the nest (Figure 1). The next day, we observed the last attempt by the thrushes to defend the nest at 08:36 h. We inspected the nest at 11:56 h and we observed the dove brooding the dead thrush nestling. At 18:19 h the dove left the nest, and we only observed a few further approaches to the nest before sunset. Neither the dove nor thrushes were observed again at the nest after that.

DISCUSSION

The death of the thrush nestling after usurpation (probably caused by starvation) most likely happened due to the different type of feeding technique that both species have. Typically, dove nestlings initiate feeding by forcing their bill into the adult throat, which is the reverse of the typical passerine method where the adults force food into the nestling throat. It is unlikely that the thrush nestlings could adapt to this mode of feeding and even more unlikely that they could survive on a diet of crop milk and seeds (see Middleton 1991).

After the appropriation event, we found an inactive dove nest in the neighboring tree (just four meters away from the thrush nest). We suspect that it could had been a dove nest that failed due to predation and that the loss of the offspring could have triggered the dove attempts to kidnap the thrush/cowbird nestlings. We were unable to confirm this idea because the field of view monitored by our video cameras was too small (i.e., excluding the dove nest).

There are few records of interspecific adult birds being unable to recognize and discriminate between their own nestlings and that of other species (except for brood parasites). As an example, Butler & Campbell (1987) reported a pair of Barn Swallows (*Hirundo rustica*) and a pair of Tree Swallows (*Tachycineta bicolor*) both feeding Tree Swallow nestlings in the same nest. These authors concluded that the Barn Swallows do not always discriminate between foreign and their own nestlings for a substantial part of the nestling period. In a similar way, Ouellet (1990) reported Savannah Sparrows (*Passerculus sandwichensis*) attempting to feed the nestlings and clean the nest of Lapland Longspurs (*Calcarius lapponicus*). However, unlike these examples, where the interaction resulted in successful fledging of offspring, both nestlings died in our case.

The function and causes of kidnapping nestlings are still poorly understood, and have been studied mainly in cooperative (Heinsohn 1991) and colonial

Figure. 1. Nocturnal view of an Eared Dove (*Zenaida auriculata*) usurping a Creamy-bellied Thrush (*Turdus amaurochalinus*) nest in natural forest of central-east Argentina. The Creamy-bellied Thrush (on the left) is attempting to expel the intruding Eared Dove (on the right). Just below the dove (black circle), a Shiny Cowbird (*Molothrus bonariensis*) nestling is falling off the nest.

(Angelier et al. 2006) breeders. This type of behavior between non-related species has frequently been attributed to reproductive errors (see Ouellet 1990, Angelier et al. 2006), resulting from failure to recognize the own offspring. In addition, the fact that the level of prolactin (a hormone associated with the parental behavior during the breeding cycle; Buntin 1996) does not decrease immediately after the nest failure, may have caused the behavior of the dove. For example, attempts to kidnap chicks occur commonly in Emperor Penguins (*Aptenodytes fosteri*) that have lost their own offspring, and these attempts cease if the effects of prolactin are blocked (Angelier et al. 2006). In this context, we hypothesize that kidnapping behavior observed in this study may result from a hormonal byproduct caused by the loss of the own offspring of the dove.

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