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OBSERVATION OF A CALLING ASSEMBLAGE IN THE COLLARED TROGON (*TROGON COLLARIS*)

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Observación de coro de llamados en el Trogón acollarado (*Trogon collaris*).

Key words: Collared Trogon, *Trogon collaris*, behavior, communal calling, Trogonidae, Venezuela.

INTRODUCTION

Birds participate in diverse singing aggregations, including dawn and dusk choruses (Kacelnik & Krebs 1982, Otter *et al.* 1997, Penteriani & Delgado 2009), leks (Foster 1983, Hoglund 2003), communal nuptial displays (Moller 1990, Miller & Baker 2009), and communal roosting (Eiserer 1984, Wright *et al.* 2003). These aggregations may serve as "information centres," evolved primarily for the efficient exploitation of information (Ward & Zahavi 1973), or mate selection (Kroodma & Byers 1991), or both. Communal calling could increase foraging efficiency (Clark & Mangel 1986, Petit & Bildstein 1987) or be important concerning antipredator response, as have been reported for several bird species (Griesser 2008).

A particular type of singing aggregation in trogons, the calling assemblage, is performed by a group of 3–10, and occasionally up to 20 males (Collar 2001), which call repeatedly while chasing each other from perch to perch (Riehl 2008). This behavior, whose function is unknown, has been reported, e.g., for several African species: Narina Trogon (*Apaloderma narina*), Bare-cheeked Trogon (*A. aequatoriale*), and Scarlet Rumped Trogon (*Harpactes duvaucelii*). In the Americas, it was found in Hispaniolan Trogon (*Priotelus roseigaster*), Slaty-tailed Trogon (*T. massena*), Violaceous Trogon (*T. violaceus*), Choco Trogon (*Trogon comptus*), Eared Quetzal (*Euptilotis neoxenus*), Amazonian White-tailed Trogon (*T. viridis*), Citreoline Trogon (*T. citreolus*), Black-headed Trogon (*T. melanocephalus*), Blue-tailed Trogon (*T. comptus*), Black-tailed Trogon (*T. melanurus*), and Resplended Quetzal (*Pharomacrus mocinno*) (Brosset 1983, Wetmore & Swales 1931, Skutch 1972, Haffer 1975, Zimmerman 1978, Skutch 1983, Howell & Webb 1995, Riehl 2008, Johnsgard 2000, O´Neill 1974), but is unknown for the Collared Trogon (*Trogon collaris*).

The Collared Trogon is a common resident of humid and wet forest in several countries of central and north South America

(Restall *et al.* 2006), from 300–2300 m a.s.l. (Hilty 2003). It is one of the smallest species of the family Trogonidae (lenght ca. 25 cm), with partly iridescent red and green coloration. Sexes are dimorphic. Males have a green head, breast and belly red, the chest green with a white band, and the tail green above with many black bands at the tip. Females have the head soft brown, breast and belly pinky to red, and the uppertail dark rufous with a black band at the tip (Meyer de Schauensee & Phelps 1978, Hilty 2003). This species feeds of arthropods and fruit (Remsen *et al.* 1993). Sometimes it joins mixed flock (Restall *et al.* 2006) but is generally solitary. In addition, the Collared Trogon is typically very quiet, spending most of the time perched on branches in the subcanopy. The primary song usually sounds like '*cu cu cu cu*.' Very little is known about its breeding biology, mating system, and courtship. Collared Trogons nest in cavities, and both parents are involved in incubation and parental care (Skutch 1956). The breeding period is reported from January to May in Panama, Costa Rica and Colombia (Skutch 1956, Wetmore 1968, Hilty & Bronw 1986), from May to June in Venezuela (Schafer & Phelps 1954), and from October to January in Brazil (Johnsgard 2000).

OBSERVATIONS

On 24 July 2014, in the Avila National Park, sector Sabas Nieves in Caracas, Venezuela, (1380 m a.s.l., 10°30'62"N, 66°51'73"W) at 07:00 h, I observed a calling assemblage consisting of five males of the Collared Trogon perched in different trees forming a semicircle at the edge of the footpath. They were sitting ca. 3 m above the ground and separated from each other about 2 m, with a maximum separation of approximately 12 m. All males were calling simultaneously for about one hour before they left the site. The calls were strikingly different from the primary song of Collared Trogons, being short, clear, and strong, sounding like '*cow cow cow*.' No females visited the group of males during the period of my observation. The birds were obviously not disturbed by my presence, probably because they are used to human presence as this area of the park is frequently visited. The observations were made with naked eye and using binoculars (8x40).

DISCUSSION

To the best of my knowledge, this is the first report of a calling assemblage for the Collared Trogon. Unlike other reports, which indicate that calling assemblages of trogons are mobile and located in the canopy (Brosset 1983, Johnsgard 2000, Riehl 2008), the group of Collared Trogons reported here did not move and was located low in the subcanopy. Except for two short flights, the birds remained motionless during their calling.

In some trogon species, both sexes participate in calling assemblages, possibly supporting the view that they are strategically important for delineating and reinforcing territorial boundaries. Nevertheless, in most cases only males participate, suggesting mate choice, or opportunities to extra-pair copulations as main functions (Riehl 2008). The hypothesis that calling assemblages in trogons are similar to lek systems (Johnsgard 2000) is not based on any observational and experimental evidence. Trogons are monogamous, nest in cavities, and both sexes participate in parental care, characteristics not corresponding to lek-forming species, hence this hypothesis seems unlikely. There is no evidence that copulation occurs in the calling assemblage, as it has only been reported around the nest (Hall & Karubian 1996, Riehl 2008). On the other hand, calling assemblages have been only found during the brood period, suggesting that they are related to reproductive behavior. Surhone *et al.* (2011) reported that

several females of the Narina Trogon were attracted during a calling assemblage but no copulation occurred. In brief, the function of communal calling in trogons is yet uncertain.

The callings reported here were not accompanied by tail displays as reported for the courtship of the Elegant Trogon (Cully 1986, Hall & Karubian 1996, Bitton & Doucet 2014). Calling assemblages are obviously rare in the Collared Trogon. Although it is a common bird in Venezuela, this behavior has never been reported before. This is concordant with my observations; although I conducted nearly weekly bird surveys for six months in the study area and was able to observe single trogons frequently, I only observed grouping in this species once.

Nevertheless, with the exception of Riehl (2008) there has been no systematic research on calling assemblages in trogons, but only incidental reports (Wetmore & Swales 1937, Haffer 1975, Zimmerman 1978, Brosset 1983, Skutch 1983, Howell & Webb 1995, Johnsgard 2000, Riehl 2008). Further and more systematic studies could help to understand the dynamics and ultimate causes of calling assemblages in trogons.

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