



DESCRIPTION OF THE NEST AND EGGS OF THE GREEN THORNTAIL (*DISCOSURA CONVERSI*)

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ABSTRACT The breeding biology of the genus *Discosura* (Trochilidae) is poorly known. Here, we describe in detail the nest and eggs of the Green Thorntail (*D. conversii*). We analyze two nests; one was collected with two eggs at Limón province, Costa Rica, the other was observed and photographed at Departamento de Antioquia, Colombia. The eggs are white and oval-shaped. Both nests are deep and compact open cups, however, the nest from Colombia is externally covered with green-colored lichens while this feature is not present in the nest collected in Costa Rica. We recommend reporting more data from other nests and eggs of this species to determine possible causes for intraspecific variation.

RESUMEN · Descripción del nido y los huevos del Rabudito Verde (*Discosura conversii*)

La biología reproductiva del género *Discosura* (Trochilidae) es poco conocida. En este manuscrito, describimos en detalle el nido y los huevos del Rabudito Verde (*Discosura conversii*). Analizamos dos nidos, uno de ellos fue recolectado con dos huevos en la provincia de Limón, Costa Rica y el otro fue observado y fotografiado en el Departamento de Antioquia, Colombia. Los huevos son de color blanco y de forma ovalada. Ambos nidos son copas abiertas y profundas, sin embargo el nido observado en Colombia estaba cubierto por líquenes en su parte externa, esta característica no está presente en el nido que fue recolectado en Costa Rica. Recomendamos continuar reportando datos tanto del nido como de los huevos de esta especie, con el fin de determinar las posibles causas de esta variación intraespecífica.

KEY WORDS Colombia · Costa Rica · Eggs · Hummingbird · Nest · Trochilidae

INTRODUCTION

There are five species of *Discosura* thorntails (Trochilidae; Dickinson & Remsen 2013), with a distribution ranging from Costa Rica south to Brazil on the Atlantic coast and to Northern Peru along the Pacific coast (Schuchmann 1999). The breeding biology of this hummingbird genus is poorly known, probably because most of its members inhabit the canopy of mature secondary forest and primary forest and may be overlooked due to their tiny size (Schuchmann 1999). Breeding information, such as parental care, eggs, and nest description is available for the Black-bellied Thorntail (*D. langsdorffi*, Züchner *et al.* 2013a); clutch-size, incubation period, fledgling period, and nest description for the Racket-tailed Coquette (*D. longicauda*, Züchner *et al.* 2013b), and a nest report without more information for the Wire-crested Thorntail (*D. popelairii*, Züchner & Kirwan 2013). To our knowledge, no information is available on the descriptions of nests or eggs of other species in the genus.

Here we describe in detail the nest and eggs of the Green Thorntail (*D. conversii*), the only trans-Andean species of the genus. This species occurs from Costa Rica south to western Ecuador. In Costa Rica, it inhabits the Caribbean slope, south from the Cordillera de Tilarán on both slopes of Panama, and along the Magdalena Valley lowlands and the Pacific coast of Colombia to El Oro and Loja provinces in Ecuador (Schulenberg 2013). The Green Thorntail inhabits mid elevations (400–1400 m a.s.l.) preferring canopy, forest edges, and isolated trees in open areas, where it is considered a common species (Stiles & Skutch 1989).

METHODS

Our description is based on two complete nests. The first nest was collected on 1 June 2001 at the reserve Teleférico Bosque Lluvioso, Pococí, Limón province, Costa Rica (10°11' N, 83°55' W, 299 m a.s.l.), and deposited at the Museo de Zoología, Universidad de Costa Rica (MZUCR-AN95). This area is characterized by primary forest and forest edge, representing tropical wet forest. The terrain is hilly and canopy heights average 30 m, although emergent trees are common. The mean for temperature is 24°C and for annual rainfall 4000 mm, respectively. The second nest was observed and photographed on 26 July 2011 at Municipio Cocorná, Departamento de Antioquia, Colombia (6° 01'11"N, 75°08'7"W, 1100 m a.s.l.). This area show tropical forest dominated mostly by *Cespedesia* sp. trees (Ochnaceae), but other woody plants, such as *Quararibea cordata* (Bombacaceae), and Melastomataceae and Piperaceae shrubs are also common. Temperatures average 22 °C and annual rainfall 4200 mm.

In both cases, one female *D. conversii* was observed incubating. Similar species occurring in

sympatry are Black-crested Coquette (*L. helenae*) in Costa Rica (Garrigues & Dean 2007) and Rufous-crested Coquette (*L. delattrei*) in Colombia (DC-F pers. obs.), respectively. Although Green Thorntail females could be confused in the field with female coquettes (*Lophornis* spp.; Garrigues & Dean 2007), but the latter lack the distinctive white malar stripe of the *D. conversii* females.

The dimensions (i.e., inner and outside diameter, depth, and egg size) were measured using a digital caliper (OEM 25363, ± 0.01 mm). We measured three times the depth of the inner cup, the height of the outside nest, and the thickness of the nest wall to obtain means for these dimensions.

RESULTS

The first nest was built on a horizontal petiole of *Cecropia* sp. leaf (Cecropiaceae) (Figure 1), at approximately 10 m high. The *Cecropia* tree was at the edge of secondary tropical forest. This nest was an open cup, made of seed fibers possibly of Malvaceae (s.l.), Bombacaceae, or Bromeliaceae, and spider webs in the external layer (Figure 1). The base of the nest was enlarged around the petiole (Figure 1). The inner cup was 21.1 × 24.6 mm in diameter and 20.1 ± 0.6 mm (mean ± SD) in depth. The outside nest diameter was 34.7 × 38.5 mm and 27.9 ± 9.2 mm in height. The thickness of the nest wall was 6.9 ± 1.3 mm. This nest contained two white oval eggs (MZUCR-AH115, Figure 2); one of them was broken at one tip, so we only report the width. Egg dimensions and mass are 7.6 mm (width) and 0.40 g (broken egg), and 11.9 × 7.8 mm and 0.38 g (unbroken egg).

The second nest (Figure 3) was placed on a fork of a 1 cm thick branch in a *Clibadium surinamense* (Asteraceae) shrub, and about 2 m high. This nest was at tropical forest edge, next to a dirt road. It was similar to the first in shape and was also made of seed fibers (similar fibers to those of the previously described nest) and spider webs, especially at the external top of the cup, but differed from the other nest by being covered with green-colored lichens. Although we were unable to check its interior, the behavior of the female suggested that she was incubating.

DISCUSSION

The Green Thorntail nest structure for both Costa Rica and Colombia is a deep and compact cup, similar to the nests described for Racket-tailed Coquette (Züchner *et al.* 2013b) and Black-bellied Thorntail, where lichens were encrusted in the external layer (Greeney & Gelis 2008). They also resemble another nest of the Green Thorntail observed at Silanche Reserve, Ecuador (https://www.youtube.com/watch?v=5sZnf_z0anI, with no further data). However, the nest structure described for Costa Rica was different in the lack of external lichen-encrusted layer. Considering our small sample size, these differ-

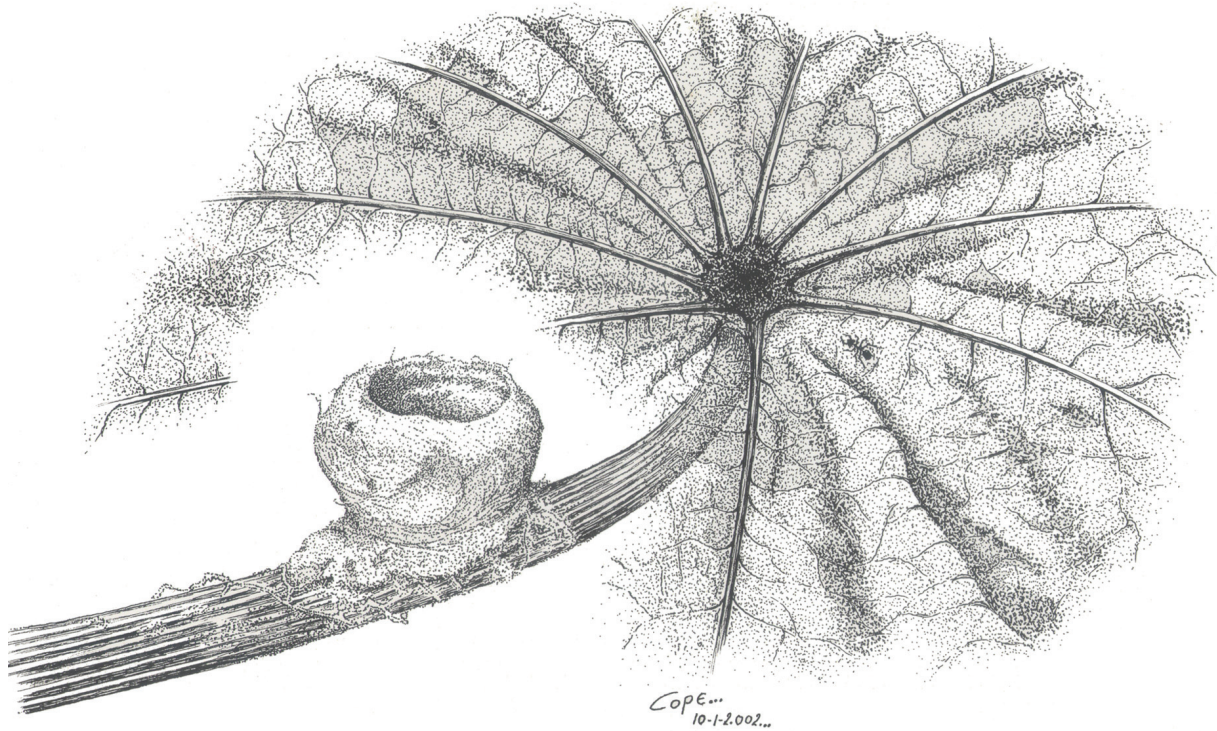


Figure 1. Nest of the Green Thorntail (*Discosura conversii*), 1 June 2001, at Teleférico Bosque Lluvioso, Pococí, Limón province, Costa Rica (illustration by Alberto Pérez).

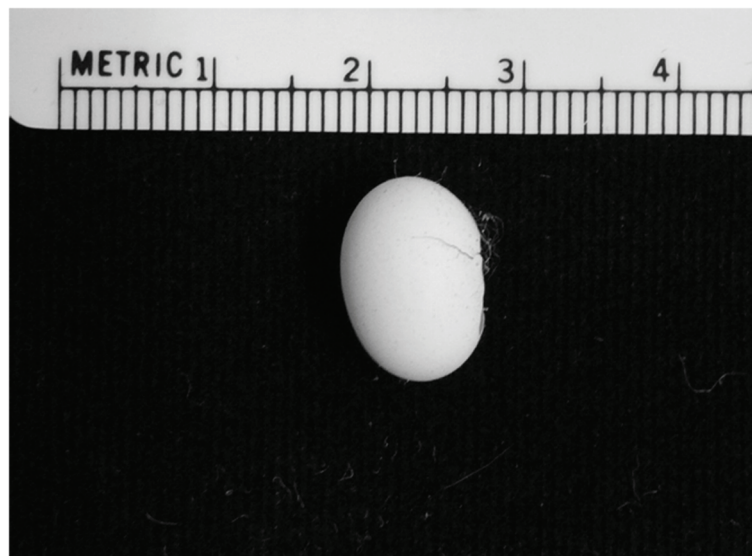


Figure 2. One of the two eggs of the Green Thorntail (*Discosura conversii*) 1 June 2001, at Teleférico Bosque Lluvioso, Pococí, Limón province, Costa Rica (photograph by Luis Sandoval).

ences may result from differences in the local abundance of lichens and/or reflect some intraspecific plasticity in the nest structure composition; however, to test these hypotheses it would be necessary to have a larger sample size including populations from the entire distributional range. As in many hummingbird species (see Schuchmann 1999, Baicich & Harrison 2005, Sandoval & Escalante 2010), the Green

Thorntail uses spider webs to attach the nest to the support substrate, and in both nests they were also present to cover the external layer. The eggs showed the same white color and oval shape reported for virtually all species in the family Trochilidae (Schuchmann 1999, Züchner *et al.* 2013b). The use of branches in the canopy as nest sites seems a common pattern in this hummingbird genus (Greeney &



Figure 3. Nest of Green the Thorntail (*Discosura conversii*), 26 July 2011, at Municipio Cocorná, Departamento de Antioquia, Colombia (photograph by Diego Calderón-Franco).

Gelis 2008, Züchner *et al.* 2013a, Züchner & Kirwan 2013), and such placement is probably the main cause for the low number of nests reported in the literature and the lack of other breeding behavior information. Given the variation in materials used for the external cover of the nests, and that our knowledge is limited to two nests only, we strongly recommend reporting information on other nests and eggs for this species.

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