

A RUFOUS-TAILED HUMMINGBIRD (*AMAZILIA TZACATL*) CAUGHT IN A SPIDER WEB OF *ERIOPHORA FULIGINEA* (ARANEAE: ARANEIDAE)

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Abstract · In this note, we report on a Rufous-tailed Hummingbird caught in a spider web of *Eriophora fuliginea*. The observation was made in a tropical dry forest fragment in the department of Córdoba, northern Colombia. The Hummingbird was found with its head down and given that after five minutes of observation it was unable to free itself, we removed it from the net and released it. Although *E. fuliginea* is a nocturnal orb weaver, the fact that this species does not dismantle the spider web at daybreak, makes it a possible source of mortality for Hummingbirds and other small birds. This finding represents the first published record of a Rufous-tailed Hummingbird trapped in a spider web in Colombia. Considering that Hummingbirds fly through sites where large orb weavers locate their webs, Hummingbirds caught in webs could be more frequent than reported in the literature.

Resumen · Un Colibrí Cola Roja (*Amazilia tzacatl*) atrapado en la telaraña de *Eriophora fuliginea* (Araneae: Araneidae)

En esta nota reportamos un Colibrí Cola Roja (*Amazilia tzacatl*) atrapado en una telaraña de *Eriophora fuliginea*. Este hallazgo representa la primera documentación de esta interacción entre estas dos especies y el primer evento de un colibrí atrapado en una telaraña para Colombia. El registro se hizo en un fragmento de bosque seco de Córdoba, norte de Colombia. El Colibrí permaneció cabeza abajo y luego de cinco minutos de observación no fue capaz de liberarse, de manera que fue liberado por nosotros. Aunque *E. fuliginea* es una tejedora nocturna, el hecho de no desmontar sus telas durante el día la convierte en una posible fuente de mortalidad para colibríes. Si se tiene en cuenta que los colibríes transitan por sitios en los que las grandes tejedoras ubican sus telas, los eventos de colibríes atrapados en telarañas podrían ser más frecuentes de lo reportado actualmente.

Key words: Araneidae · Colombia · Hummingbird · Orb-weaver spider · Predation · Tropical dry forest

INTRODUCTION

Hummingbirds (Trochilidae) are small birds, distributed across nearly the entirety of the Americas, from Alaska to Tierra del Fuego and throughout the Caribbean (e.g., Schuchmann 1999, McGuire et al. 2014). Their diet is based on nectar and small arthropods (Stiles 1995, Schuchmann 1999). Although these birds use different forest strata for foraging (including canopy) (Stiles 1995), they commonly forage in the understory along paths, riparian forests, and open areas (Graham 1997). The sources of mortality for different species of Trochilidae are poorly known (Robinson 2003). Documented sources of mortality include: starvation (Stiles 1995), predation by birds (e.g., raptors) (Robinson 2003) and large insects, such as hymenopterans (Grant 1959), odonates (Hofslund 1977), and mantids (Carignan 1988, Nyffeler et al. 2017), and collisions with windows (Graham 1997, Hager & Craig 2014). Birds trapped in spider webs are unusual events, however, it is possible that spider webs represent an important mortality source for Hummingbirds (Graham 1997, Brooks 2012). According to Brooks (2012) about 30% of the records of birds found entangled in spider webs have been Hummingbirds. Here we report on the finding of a Rufous-tailed Hummingbird (*Amazilia tzacatl*) trapped in the spider web of *Eriophora fuliginea* (Araneidae) in a tropical dry forest fragment in Córdoba, northern Colombia.

OBSERVATIONS

On 14 July 2016 at 11:55 h, while sampling diurnal butterflies (Lepidoptera: Papilionodea) and dung beetles (Coleoptera: Scarabaeinae) in a lowland tropical dry forest fragment (120 ha, Figure 1A) located in the department of Córdoba (08°35'34.0"N, 75°57'31.1"W, 103 m a.s.l.), northwestern Colombia, we found a Rufous-tailed Hummingbird (Trochilidae) trapped in a spider web of *E. fuliginea* (Figure 1B).

While walking along a path following the forest edge, we heard an intermittent buzzing sound from the understory. The buzzing resembled the flight of a beetle. Upon inspecting the surrounding vegetation, we found a Rufous-tailed Hummingbird

Receipt 17 September 2018 · First decision 8 November 2018 · Acceptance 3 January 2018 · Online publication 11 January 2019

Communicated by Kaspar Delhey © Neotropical Ornithological Society

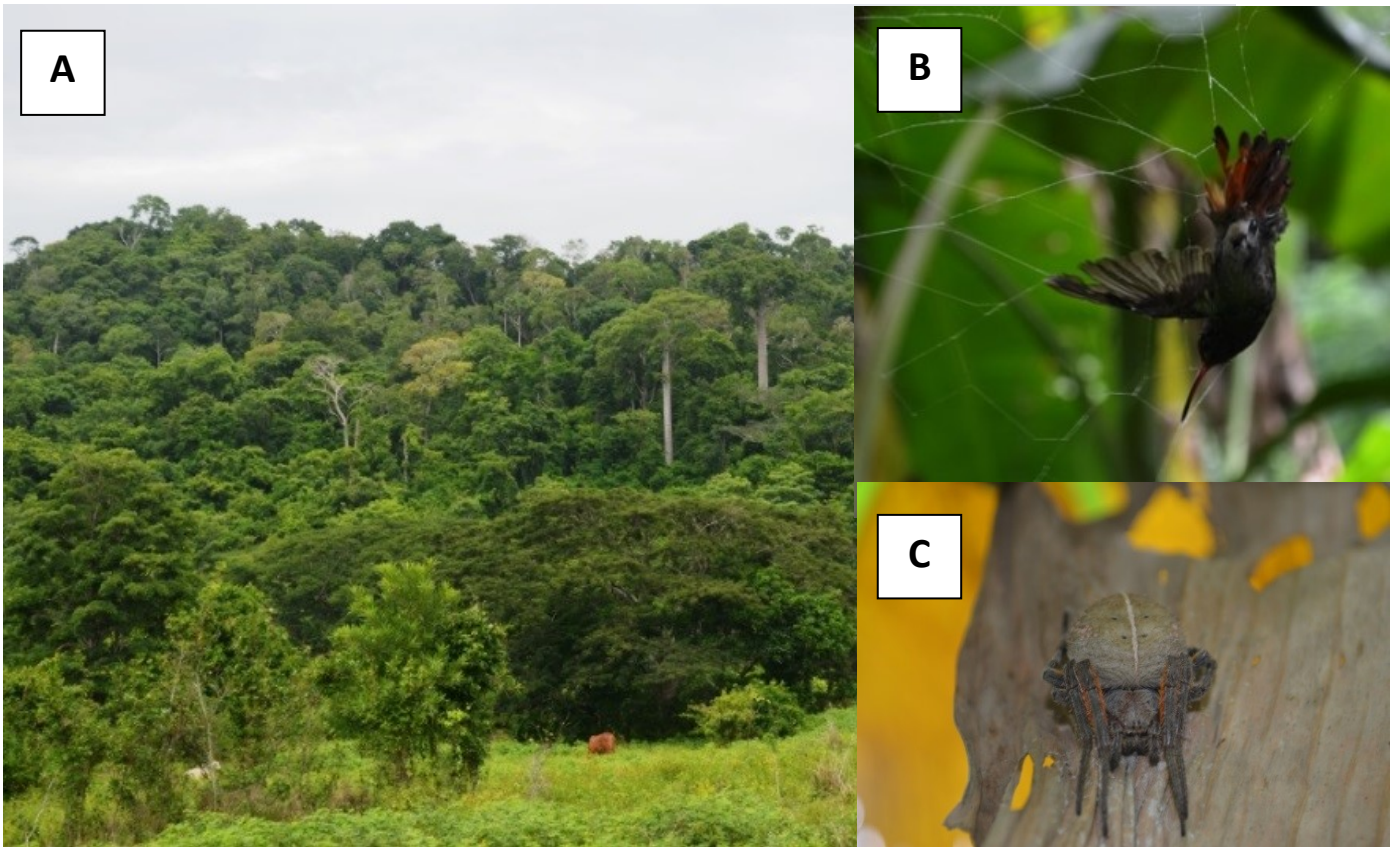


Figure 1. A) Lowland tropical dry forest fragment in the department of Córdoba, north-western Colombia, where the Rufous-tailed Hummingbird (*Amazilia tzacatl*) trapped in a spider web was found on 14 July 2016; B) Rufous-tailed Hummingbird trapped in the spider web of a female of *E. fuliginea*; C) *Eriophora fuliginea* resting under a dry leaf of *Musa paradisiaca*.

trapped close to the center of a spider web, with its head down, the wings and tail feathers folded, completely entangled within the web. The spider web was anchored in plants of the family Musaceae, locally known as platano (*Musa paradisiaca*), at an approximate height of 1.60 m (center of the spider net). The web was located in a forest clearing, with open areas, dense low vegetation, and high incidence of sunlight. We observed the behavior of the Hummingbird for ca. five minutes. During that time, the Hummingbird fluttered its wings several times and finally remained still. There were no signs of the spider in the web, so we decided to release the bird before it died of fatigue or starvation. Excess web was removed from the legs, wings, head, and tail feathers, with extreme care not to damage the feathers. The Hummingbird rested for about two minutes and then flew energetically into the understory.

Based on experience studying spiders, the first author searched the adjacent vegetation, following the anchoring threads of the spider web and located the spider above the web. The spider, an adult female, was sheltered on the underside of a dried leaf of *M. paradisiaca*, which had been folded with the aid of silk threads (Figure 1C). For the final taxonomic identification of the spider we sent pictures to Alexander Sabogal (expert Colombian arachnologist from CIF Universidad Nacional de Colombia).

DISCUSSION

The Rufous-tailed Hummingbird is distributed in the tropical and subtropical zone of the Neotropical region. It is a common resident of open areas, clearings, gardens, coastal

areas, gallery forests, mangrove, and humid forest edges (Skutch 1931, Weller & Schuchmann 1999, Miller et al. 2011). Of the 21 documented events of Hummingbirds trapped in spider webs (Brooks 2012, Martínez et al. 2013), there is only one report of an individual of Rufous-tailed Hummingbird trapped in the web of a "golden silk orb-weaver" spider (*Nephila* sp.), in San Félix, Las Lajas area, southeastern Chiriquí, Panamá (Brooks 2012). This note reports the second event of a Rufous-tailed Hummingbird trapped in a spider web and the first record of the interaction of this bird with *E. fuliginea*. Although the Rufous-tailed Hummingbird has been reported investigating spider webs in search of small arthropods and material for the construction of their nests (Borrero 1975), the record of this Hummingbird entangled in a spider web supports the idea that spider webs could represent an important source of natural mortality for these birds (Brooks 2012). This could be due to the overlap between sites selected by large orbicular weavers to install their webs and the flight paths of Hummingbirds and also due to the design of the spider web, which does not necessarily advertise its position (i.e., through web decorations) to avoid damage by birds (Brooks 2012). Individuals of the genus *Eriophora* had already been reported trapping birds in their webs (e.g., *E. biapicata* trapping the passerine New Holland Honeyeater *Phylidonyris novaehollandiae*) in Australia; Brooks 2012); In fact, it is the second time that *Eriophora* have been recorded capturing birds in its spider webs, and also represent the first record in the western hemisphere.

Most (50%) cases of birds trapped in spider webs, where the spider was identified, referred to spiders of the genus

Nephila. However, body size, web anchoring sites, and web architecture of *Eriophora* spiders could indicate them as a source of mortality for birds as important as *Nephila* species. *Eriophora fuliginea* constructs resistant webs that reach a diameter of approximately 2 m, which have been reported to trap even small bats (*Myotis nigricans*; Levi 1971, Robinson et al. 1971). In addition, sites used by *E. fuliginea* to place their webs are similar to those selected by *N. clavipes*. In particular, *E. fuliginea* usually builds its webs in the lower parts of the vegetation (transit sites for some species of Hummingbirds), matching the lower edge of the web with the top of the herbaceous layer of the forest (Robinson et al. 1971). Although *E. fuliginea* is a nocturnal weaver, it represents a danger for these small birds because their webs are not necessarily dismantled during the day (Robinson et al. 1971), being active at times when these birds are frequent.

The fact that we did not find *E. fuliginea* interacting on the web with the Hummingbird could be explained by the nocturnal habit of the spider. The body size of these Hummingbirds would place them as casual prey for these spiders. Although *Eriophora* spider webs are designed to catch insects (e.g., beetles, winged ants, katydids; Robinson et al. 1971) and not birds, these spiders have depredated similar-vertebrate prey (e.g., small bats) (Levi 1971).

Although reports of Hummingbirds trapped in spider webs are relatively rare, these events may be more frequent than they appear, since Hummingbirds often co-exist with orb-weaving spiders (Skutch 1931). The fact that detecting these events is difficult for cryptic species, such as *Eriophora*, could leave many cases of spiders entrapping small vertebrates undocumented.

ACKNOWLEDGMENTS

We express our sincere thanks to Alexander Sabogal for the taxonomic determination of the spider. To Luis Eduardo Mendoza and his family for all the logistical support during the sampling. To Daniel Books for his comments and suggestions. To Nick Bayly for his help in improving the English of the manuscript. To the quarry of crushed "Española" and to the owners of the farm "La Floresta" in the locality of El Porvenir, Montería, for allowing us access to their property. Finally, we thank the project "Ribereños" FB0714 (funded by the Universidad de Córdoba, Colombia) under which this report was made.

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