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Nest Description of the Garden Emerald (*Chlorostilbon assimilis*) from Costa Rica

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ABSTRACT.—The Garden Emerald (*Chlorostilbon assimilis*) is endemic to southwestern Costa Rica and Panama, and knowledge about its' reproductive habits is limited. We describe the nest and nestlings of the Garden Emerald based on a nest found in La Amistad International Park. The nest was built on an anthropogenic substrate, and was similar to nests described for other emerald species. However, unlike other emeralds, the nest contained no lichens, mosses, or ferns. The nestlings resembled adult female plumage, similar to that for other nestling emerald species. *Received 24 August 2009. Accepted 3 February 2010.*

The neotropical genus *Chlorostilbon* includes 17 species of small hummingbirds (AOU 1998,

Remsen et al. 2009), 11 of which have described nests (Wolf 1964, Hilty and Brown 1986, Stiles and Skutch 1989, Thomas 1994, Howell and Webb 1995, Stiles 1996, Oniki and Antunes 1998, Schuchmann 1999, Garrido and Kirkconnell 2000). The Garden Emerald (*Chlorostilbon assimilis*) is endemic to southwestern Costa Rica and Panamá to western Darién, including pacific islands, and rarely from Bocas del Toro along the Caribbean coast of Panamá (Ridgely and Gwynne 1989, Stiles and Skutch 1989). This hummingbird inhabits secondary forest and open areas with isolated shrubs at elevations up to 1,500 m (AOU 1998, Garrigues and Dean 2007). The nest of the Garden Emerald is undescribed (Stiles and Skutch 1989, Schuchmann 1999) and we provide the first nest description for this species. We also include a brief description of the nestlings.

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FIG. 1. Nest of Garden Emerald found on 28 March 2009 near the Altamira Ranger Station, La Amistad International Park, Costa Rica. (Collected on 18 April 2009; photograph by Luis Sandoval).

OBSERVATIONS

We found a nest of Garden Emerald on 28 March 2009 at the Altamira Ranger Station in La Amistad International Park, Buenos Aires, Puntarenas, Costa Rica ($09^{\circ} 02.9' N$, $83^{\circ} 00.8' W$; 1,375 m asl). The site is an open area with a park ranger station, surrounded by a garden, which included a live fence of *Stachytarpheta* spp. (Verbenaceae) bushes, *Heliconia* spp. patches, and young secondary forest. The nest was collected on 18 April 2009 after the chicks fledged, and was deposited in the Museo de Zoología, Universidad de Costa Rica.

The nest was a cup built on a hanging portion of steel mesh under the elevated floor of the ranger station, 1 m above ground. The egg cup was 28.0×23.5 mm in diameter, and 15.8 ± 2.9 mm (mean \pm SD) deep. The outside of the nest measured 37.1×40.7 mm in diameter and 19.7 ± 3.5 mm tall. The nest was comprised of two layers. The outer layer included tree bark, small

pieces of dry leaves, twigs, spider web, and downy seeds (mostly Asteraceae). The inner layer was comprised mostly of dry fine plant fibers and downy plant material (Fig. 1).

The nest contained two completely feathered nestlings when found. The bills of the nestlings were black with reddish in the mandible base. The throat and breast of the nestlings were gray, and the backs were green with buffy-tipped feathers.

DISCUSSION

The nest structure, including the two-layer construction, is similar to nests described for other species of emeralds (Schuchmann 1999). However, the nest of Garden Emerald, unlike other emerald nests, contained no lichens, mosses, or fern materials (Oniki and Antunes 1998, Schuchmann 1999, Garrido and Kirkconnell 2000). The feather color pattern of the Garden Emerald nestlings was similar to that described for others emerald species where the nestlings

resemble the adult female plumage (Wolf 1964, Stiles and Skutch 1989, Schuchmann 1999).

The female did not attend the chicks during the night of 28 March, likely because the chicks filled the entire nest. We observed the female attending the nest and feeding both fledglings the following morning. The nest was built on an anthropogenic substrate, but we postulate that, in natural conditions, Garden Emeralds would build nests in the lower branches of bushes along trails, forest edge, or in forest gaps. Our observations reveal that Garden Emeralds can take advantage of human structures and successfully use them for nesting similar to wrens, swallows, or flycatchers (Stiles and Skutch 1989, Baicich and Harrison 2005, Sandoval and Barrantes 2009).

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