

DESCRIPTION OF A NEST OF THE THREE-STRIPED WARBLER (*BASILEUTERUS TRISTRIATUS CHITRENSIS*) FROM COSTA RICA

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Descripción del nido de la Reinita Cabecilistada (*Basileuterus tristriatus*) en Costa Rica.

Key words: Three-striped Warbler, *Basileuterus tristriatus*, Parulidae, nest, Costa Rica.

The Three-striped Warbler (*Basileuterus tristriatus*) occurs from Costa Rica to eastern Peru and northern Bolivia (Ridgely & Tudor 1989, Curson *et al.* 1994) and comprises 11 (Dickinson 2003) or 13 subspecies (Curson *et al.* 1994). In Costa Rica, the species inhabits the understory and edges of primary and tall secondary highland forests at elevations of 1000–2200 m a.s.l. (Stiles *et al.* 1989). In spite of the species wide range, its breeding biology is poorly known. Hilty & Brown (1986) mention a ground nest of the West Andean subspecies, *B. t. daedalus*, but no description is given. We believe that it is unlikely that ornithologists or birdwatchers have not found more nests of this species (e.g., eggs have been collected Schönwetter 1981), and Greeney *et al.* (2005) described a nest of an eastern Ecuadorian subspecies (*B. t. baezae*). Costa Rican Tree-striped Warblers belong to the northernmost subspecies *B. t. chitrensis*. Given that *B. tristriatus* was suggested, on the basis on one nest, to belong to a group of

Basileuterus species representing more distinctly layered nests than some other species of this genus (Curson *et al.* 1994, Greeney *et al.* 2005), a description of the second *B. tristriatus* nest should be valuable. This report describes the first nest of the subspecies *B. tristriatus chitrensis*, and represents the second nest description for the Three-striped Warbler.

In 2004, during our study of the Slate-throated Redstart (*Myioborus miniatus*) in Monteverde, we found a nest of the Three-striped Warbler at the Estación Biológica Monteverde (10°18N, 84°48W; Nadkarni & Wheelwright 2000, Mumme 2002), on the eastern slope of the Tilaran Mountains above Santa Elena, Costa Rica, at an elevation of 1500 m. We found the nest on 24 April along the edge of a steep trail, about 20 m from a stream. In the same area, we found a nest of the Golden-crowned Warbler (*Basileuterus culicivorus*). We were able to compare coloration and plumage pattern of the two species

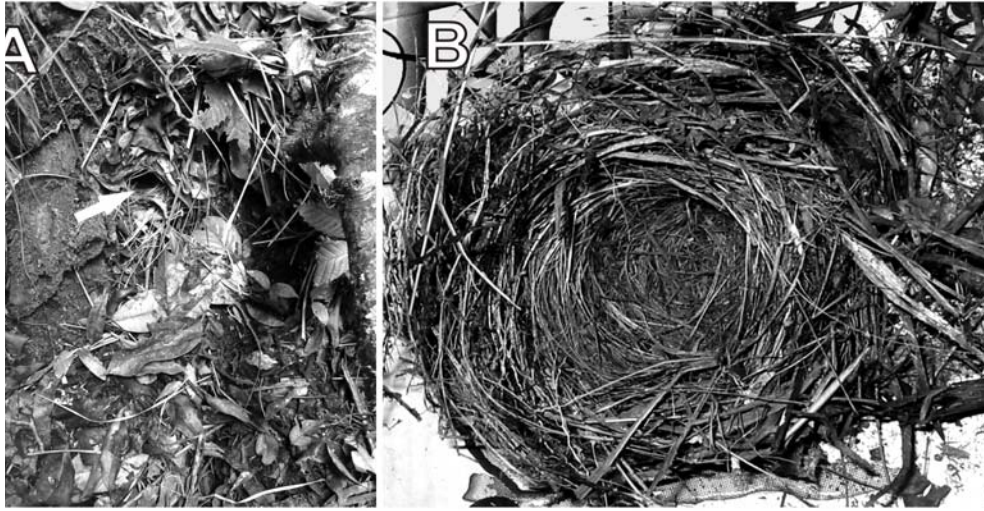


FIG. 1. A - The nest of the Three-striped Warbler (*Basileuterus tristriatus chitrensis*) on the forest floor at the Estación Biológica Monteverde, Costa Rica. The white arrow indicates nest entrance; B - nest cup interior exposed to show its structure.

to confirm that the adults from the first nest had the key characters differentiating *B. tristriatus* from *B. culicivorus* (Stiles *et al.* 1989), including more contrasting facial pattern in *B. tristriatus*, dark stripes across and behind the eyes, more buffy coloration on head, breast and belly, brownish legs, and pale bill.

The nest of *B. tristriatus* was globular with side entrance and it was located on the ground (Fig. 1A). The canopy above the nest was 15–20 m high and the understory was sparsely vegetated. Distraction displays by a parent feigning injury (broken wing display) were observed by a person located about 2 m from the nest with nestlings and 4–8 m from the displaying bird. The nest contained three nestlings, which successfully fledged on 26 April, and were later observed being fed by adults on two occasions on the 27 and 28 April. These dates indicate that the nest was initiated in early April, assuming 11–14 days for incubation stage and 11–14 days for nestling stage (typical for warblers; Harrison 1978). The nest was 9.5 cm in height, 9.5 cm

in width and 8.5 cm deep (external measurements). Cup depth was 2.0 cm and the height from the interior bottom of the cup to the nest ceiling was 7.5 cm. The nest entrance was 4.5 cm high and 6.5 cm wide. The external layer of the nest was built of thin 15–20 cm long blades and stems of grasses, and moss. The roof of the nest had six fern leaves interwoven with the external layer of the nest material, and five dead leaves added as the external-most layer (Fig. 1A). The cup was built of thin stems and blades of grass, roots, small pieces of moss, and leaves, with thinner elements comprising the cup lining (Fig. 1B). Nest walls were 0.7–2.5 cm thick (thinner on the sides touching the ground). In the bottom of the cup there were more than 100 cocoon-like structures, each containing about 2 mm long live larva (the nest was not lined with the cocoons they were under the cup), which appeared to belong to Diptera.

Although comparison of a single nest of this subspecies with other congeneric species and subspecies might lead to premature gen-

eralizations, we noted that the nest was generally similar in shape to the nests of other *Basileuterus* species (Stiles *et al.* 1989, Marini & Cavalcanti 1994, Greeney *et al.* 2005). While, the nest appeared to lack the three-layered lining structure of the Ecuadorian sub-species (due to the orange tree fern fibers in the lining there: Greeney *et al.* 2005), it had the typical general layering present in nests of some *Basileuterus* warblers. The lining was largely made of light brown fine grass stems and blades, which appeared to resemble the third lining layer in the Ecuadorian *tristriatus* sub-species or the second lining layer in *B. coronatus* (Greeney *et al.* 2005). Like nests of *B. coronatus* (Greeney *et al.* 2005), the nest cup was made of two layers: the external layer contained larger and more variable plant material, including some fern leaves. The composition of the roof material was similar to the nests of *B. coronatus* and the Ecuadorian *B. tristriatus* because it contained leaves (25 cm long and 12 cm wide), which are the major element in domes of these species (Greeney *et al.* 2006). While these characteristics of the nest from Costa Rica play down the hypothetically higher complexity of the *B. tristriatus* than *B. coronatus* nest structure (Greeney *et al.* 2005), they confirm that the variability of nest material and structure in this species is higher than in the *B. nigrocristatus*. The clutch size (three nestlings) was in the range typical for *Basileuterus* (two or three; Hilty & Brown 1986, Greeney *et al.* 2005).

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