

The nest and eggs of Yellow-throated Bush Tanager

Chlorospingus flavigularis

The genus *Chlorospingus* contains at least seven species of medium-sized oscine passerines of uncertain affinity⁸. Most are inhabitants of mossy and epiphyte-laden montane forests throughout Central and South America, often traveling in noisy groups of 4–8 individuals⁶. Yellow-throated Bush Tanager *C. flavigularis* is typical of the genus, occurring at elevations of 300–2,000 m (mostly below 1,400 m)^{5,6,9}. In Ecuador it occurs on both slopes of the Andes, with the nominate subspecies on the east and the distinctive *C. f. marginatus* on the west⁹. Hilty⁴ described the nest of *C. f. marginatus* as a cup nest embedded in moss 5 m above ground, but no complete description of the species' nest has been published to date. Here we describe the eggs and two nests of the nominate subspecies from Napo province, north-east Ecuador.

We discovered both nests along the Coca–Narupa road

at elevations of 1,100–1,200 m (c.00°43'S 77°46'W). We found the first nest on 22 December 2006, when we observed an adult adding moss to the well-formed cup. We were unable to return until 1 February, by which time the nest was empty but intact. There were a few white faecal stains along the rim, suggesting it had held nestlings. We measured and collected the nest. We found the second nest on 28 August 2008, when it contained two partially incubated eggs. Both were white with dark markings, heaviest at the larger end. One was heavily blotched cinnamon, entirely coloured at the larger end (Fig. 1a), whilst the second was lightly freckled cinnamon and lavender (Fig. 1b). They measured 24.4 × 16.6 and 24.6 × 15.9 mm, respectively.

Both nests were bulky moss cups partially or entirely covered by a roof of naturally growing moss that afforded them a domed appearance. The first was 8 m above ground in a c.35-cm diameter clump of epiphytes on the side of a 3.5-cm diameter, vertical, dead trunk near the edge of relatively intact forest. The second was 3 m above ground embedded in a c.30-cm diameter

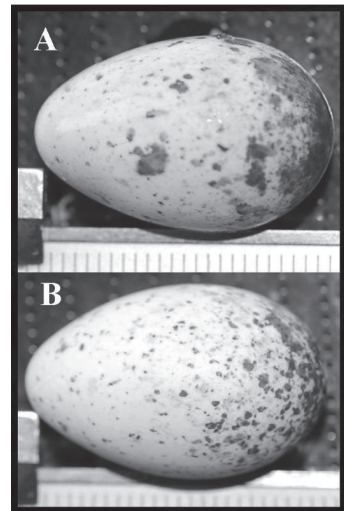


Figure 1. Complete clutch of Yellow-throated Bush Tanager *Chlorospingus flavigularis* Chontayacu, prov. Napo, Ecuador, 22 December 2006 (Harold F. Greeney)

clump of epiphytes above a small river. Both were mossy cups bound together with interwoven ferns, twigs and rootlets, and lined with thin, pale fibres and pale, delicate fern parts with a few scattered dark red-brown *Cyathea* sp. tree-fern scales. After drying the nest for three months at ambient conditions we carefully separated the lining from the rest of the cup and took each portion apart, separating them into their various components and weighing them. The outer portion consisted of moss (6.5 g), sticks (2.3 g), green fern parts (1.1 g), dicot leaf parts (0.8 g), dried pale fern parts (0.6 g), rootlets (0.6 g), bark strips (0.4 g) and tree-fern scales (0.02 g). The inner lining consisted of dried pale fern parts (1.2 g), pale fibres and rootlets (0.7 g), moss (0.2 g), tree-fern scales (0.1 g), thin twigs (0.1 g), bark strips (0.1 g), dicot leaf parts (0.1 g) and dark rootlets (0.1 g). The first nest was open on one side but otherwise concealed by naturally growing vegetation. It was slightly oblong, measuring 15 cm wide by 11 cm front to back and 7.5 cm tall. Inside, the cup was 6.0 × 5.5 cm wide by 6.0 cm deep. The second nest was circular and more deeply embedded in the surrounding vegetation such that it was well concealed but approachable from two directions. It measured 12.5 cm wide by 7.5 cm tall externally and 6.5 cm wide by 5 cm deep internally, and was built on top of a 6-cm high, loosely piled mound of moss which had apparently been stuffed into the opening to provide a platform for the nest.

In addition to these nests, we observed adults with dependent fledglings at the Bilsa Biological Station (prov. Esmeraldas) on 14 December 2007 and in the same area as the above nests on 20 December 2007. We also saw an adult carrying moss at 1,600 m near Mindo (prov. Pichincha) on 2 December 2008. Other than mention of fledglings in north-west Ecuador by Solano-Ugalde *et al.*¹¹, these are the first published breeding data for Ecuador.

Whilst the breeding of Common Bush Tanager *C. ophthalmicus*

has been fairly well studied^{1,10}, the nesting habits of most *Chlorospingus* are poorly known apart from scattered nest descriptions^{2-4,12}. Most species lack complete descriptions of their nests and require further studies of their reproductive behaviour before comparisons can be made. With what few data exist, however, the nest, eggs and nest placement in Yellow-throated Bush Tanager appear consistent with other *Chlorospingus*^{1-4,12}.

Acknowledgements

We thank Field Guides Inc., John V. & the late Ruth Ann Moore, Matt Kaplan, Tim Metz, the PBNHS, Tom Walla and the Population Biology Foundation for supporting our field work. This is publication no. 209 of the Yanayacu Natural History Research Group.

References

1. Cadena, C. D., Córdoba-Córdoba, S., Londoño, G. A., Calderón-F., D., Martín, T. E. & Baptiste, M. P. (2007) Nesting and singing behavior of Common Bush-Tanagers (*Chlorospingus ophthalmicus*) in South America. *Orn. Colombiana* 5: 54–63.
2. Christian, D. G. (2001) Nests and nesting behavior of some little known Panamanian birds. *Orn. Neotrop.* 12: 327–336.
3. Greeney, H. F. (2005) The nest and eggs of the Yellow-whiskered Bush-Tanager (*Chlorospingus parvirostris*) in eastern Ecuador. *Orn. Neotrop.* 16: 437–438.
4. Hilty, S. L. (1977) *Chlorospingus flavirovirens* rediscovered, with notes on other Pacific Colombian and Cauca Valley birds. *Auk* 94: 44–49.
5. Hilty, S. L. & Brown W. L. (1986) *A guide to the birds of Colombia*. Princeton, NJ: Princeton University Press.
6. Isler, M. L. & Isler, P. R. (1999) *The tanagers: natural history, distribution, and identification*. Washington

DC: Smithsonian Institution Press.

7. Ogilvie-Grant, W. R. (1912) *Catalogue of the collection of birds' eggs in the British Museum (Natural History)*, 5. London, UK: British Museum.
8. Remsen, J. V., Cadena, C. D., Jaramillo, A., Nores, M., Pacheco, J. F., Robbins, M. B., Schulenberg, T. S., Stiles, F. G., Stotz, D. F. & Zimmer, K. J. (2010) A classification of the bird species of South America. www.museum.lsu.edu/~Remsen/SACCBaseline.html (version 15 January 2010).
9. Ridgley, R. S. & Greenfield P. J. (2001) *The birds of Ecuador*, 1. Ithaca, NY: Cornell University Press.
10. Skutch, A. F. (1967) *Life histories of Central American highland birds*. Publ. Nuttall Ornithological Club No. 7. Cambridge, MA: Nuttall Ornithological Club.
11. Solano-Ugalde, A., Arcos-Torres, A. & Greeney, H. F. (2007) Additional breeding records for selected avian species in northwest Ecuador. *Bol. Soc. Antioqueña Orn.* 17: 17–25.
12. Strewé, R. (2001) Notes on nests and breeding activity of fourteen bird species from southwestern Colombia. *Orn. Neotrop.* 12: 265–269.

Harold F. Greeney, Bryan Suson, Rudy A. Gelis, Ben Freeman and Eliot T. Miller
Yanayacu Biological Station & Center for Creative Studies, Cosanga, Napo, Ecuador; c/o 721 Foch y Amazonas, Quito, Ecuador. E-mail: revmmoss@yahoo.com.

Received 18 January 2010; final revision accepted 12 September 2010 (published online 16 March 2011)